

# 建设项目环境影响报告表

## (污染影响类)

项 目 名 称：辽宁新爱特科技有限公司建设项目  
建设单位（盖章）：辽宁新爱特科技有限公司  
编 制 日 期：2025年12月

中华人民共和国生态环境部制

打印编号: 1764919110000

编制单位和编制人员情况表

|               |                                                        |          |     |
|---------------|--------------------------------------------------------|----------|-----|
| 项目编号          | 4uyldn                                                 |          |     |
| 建设项目名称        | 辽宁新爱特科技有限公司建设项目                                        |          |     |
| 建设项目类别        | 24—049卫生材料及医药用品制造；药用辅料及包装材料制造                          |          |     |
| 环境影响评价文件类型    | 报告表                                                    |          |     |
| 一、建设单位情况      |                                                        |          |     |
| 单位名称（盖章）      | 辽宁新爱特科技有限公司                                            |          |     |
| 统一社会信用代码      | 91210500MAG17HJ1XK                                     |          |     |
| 法定代表人（签章）     | 张君锋                                                    |          |     |
| 主要负责人（签字）     | 张君锋                                                    |          |     |
| 直接负责的主管人员（签字） | 王海龙                                                    |          |     |
| 二、编制单位情况      |                                                        |          |     |
| 单位名称（盖章）      | 致诚华远（辽宁）建设工程管理咨询有限公司                                   |          |     |
| 统一社会信用代码      | 91210106MA10KM5J5K                                     |          |     |
| 三、编制人员情况      |                                                        |          |     |
| 1. 编制主持人      |                                                        |          |     |
| 姓名            | 职业资格证书管理号                                              | 信用编号     | 签字  |
| 单士亮           | 2016035210352014211501000311                           | BH008487 | 单士亮 |
| 2 主要编制人员      |                                                        |          |     |
| 姓名            | 主要编写内容                                                 | 信用编号     | 签字  |
| 单士亮           | 环境保护措施监督检查清单、结论                                        | BH008487 | 单士亮 |
| 周丽国           | 建设项目基本情况、工程分析、区域环境质量现状、环境保护目标及评价标准、主要环境影响和保护措施、附表、附件附图 | BH039090 | 周丽国 |



## 一、建设项目基本情况

| 建设项目名称    | 辽宁新爱特科技有限公司建设项目                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                       |                                                                                                                                                                 |      |      |      |      |    |                                                                                       |                |   |     |                             |        |   |      |                                          |               |   |    |                                                         |         |   |    |                    |         |   |
|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|------|------|------|------|----|---------------------------------------------------------------------------------------|----------------|---|-----|-----------------------------|--------|---|------|------------------------------------------|---------------|---|----|---------------------------------------------------------|---------|---|----|--------------------|---------|---|
| 项目代码      | /                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                       |                                                                                                                                                                 |      |      |      |      |    |                                                                                       |                |   |     |                             |        |   |      |                                          |               |   |    |                                                         |         |   |    |                    |         |   |
| 建设单位联系人   | 王海龙                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 联系方式                                                                                  | 18741434200                                                                                                                                                     |      |      |      |      |    |                                                                                       |                |   |     |                             |        |   |      |                                          |               |   |    |                                                         |         |   |    |                    |         |   |
| 建设地点      | 辽宁省本溪市经济技术开发区仙榆路 5-15 栋 1-5 层 1 号                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                       |                                                                                                                                                                 |      |      |      |      |    |                                                                                       |                |   |     |                             |        |   |      |                                          |               |   |    |                                                         |         |   |    |                    |         |   |
| 地理坐标      | (东经 123 度 41 分 24.879 秒, 北纬 41 度 26 分 2.758 秒)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                       |                                                                                                                                                                 |      |      |      |      |    |                                                                                       |                |   |     |                             |        |   |      |                                          |               |   |    |                                                         |         |   |    |                    |         |   |
| 国民经济行业类别  | C2770 卫生材料及医药用品制造、C3586 康复辅具制造                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 建设项目行业类别                                                                              | 二十四、医药制造业 27-49、卫生材料及医药用品制造 277                                                                                                                                 |      |      |      |      |    |                                                                                       |                |   |     |                             |        |   |      |                                          |               |   |    |                                                         |         |   |    |                    |         |   |
| 建设性质      | <input checked="" type="checkbox"/> 新建（迁建）<br><input type="checkbox"/> 改建<br><input type="checkbox"/> 扩建<br><input type="checkbox"/> 技术改造                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 建设项目申报情形                                                                              | <input checked="" type="checkbox"/> 首次申报项目<br><input type="checkbox"/> 不予批准后再次申报项目<br><input type="checkbox"/> 超五年重新审核项目<br><input type="checkbox"/> 重大变动重新报批项目 |      |      |      |      |    |                                                                                       |                |   |     |                             |        |   |      |                                          |               |   |    |                                                         |         |   |    |                    |         |   |
| 项目审批部门    | /                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 项目审批文号                                                                                | /                                                                                                                                                               |      |      |      |      |    |                                                                                       |                |   |     |                             |        |   |      |                                          |               |   |    |                                                         |         |   |    |                    |         |   |
| 总投资（万元）   | 500.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 环保投资（万元）                                                                              | 7.7                                                                                                                                                             |      |      |      |      |    |                                                                                       |                |   |     |                             |        |   |      |                                          |               |   |    |                                                         |         |   |    |                    |         |   |
| 环保投资占比（%） | 1.5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 施工工期                                                                                  | 2 个月                                                                                                                                                            |      |      |      |      |    |                                                                                       |                |   |     |                             |        |   |      |                                          |               |   |    |                                                         |         |   |    |                    |         |   |
| 是否开工建设    | 否 <input checked="" type="checkbox"/><br>是 <input type="checkbox"/> : _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 用地面积（m <sup>2</sup> ）                                                                 | 1000                                                                                                                                                            |      |      |      |      |    |                                                                                       |                |   |     |                             |        |   |      |                                          |               |   |    |                                                         |         |   |    |                    |         |   |
| 专项评价设置情况  | <p>本项目不涉及排放含有二氯甲烷、甲醛等 11 项《有毒有害大气污染物名录（2018 年）》中的有毒有害污染物、二噁英、苯并（a）芘、氰化物、氯气等污染物；本项目废水排放方式为间接排放；危险物质存储量未超过临界量；不涉及河道取水；不属于涉海项目。综上分析，本项目无须设置专项评价，具体情况详见表 1-1。</p> <p style="text-align: center;"><b>表 1-1 专题评价设置情况明细表</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">类别</th> <th style="width: 50%;">设置原则</th> <th style="width: 25%;">项目情况</th> <th style="width: 15%;">是否设置</th> </tr> </thead> <tbody> <tr> <td>大气</td> <td>排放废气含有毒有害污染物<sup>1</sup>、二噁英、苯并（a）芘、氰化物、氯气且厂界外 500 米范围内有环境空气保护目标<sup>2</sup>的建设项目</td> <td>不涉及排放前述所列废气污染物</td> <td style="text-align: center;">否</td> </tr> <tr> <td>地表水</td> <td>新增工业废水直排建设项目；新增废水直排的污水集中处理厂</td> <td>废水间接排放</td> <td style="text-align: center;">否</td> </tr> <tr> <td>环境风险</td> <td>有毒有害和易燃易爆危险物质存储量超过临界量<sup>3</sup>的建设项目</td> <td>危险物质存储量未超过临界量</td> <td style="text-align: center;">否</td> </tr> <tr> <td>生态</td> <td>取水口下游 500 米范围内有重要水生生物的自然产卵场、索饵场、越冬场和洄游通道的新增河道取水的污染类建设项目</td> <td>不涉及河道取水</td> <td style="text-align: center;">否</td> </tr> <tr> <td>海洋</td> <td>直接向海排放污染物的海洋工程建设项目</td> <td>不属于涉海项目</td> <td style="text-align: center;">否</td> </tr> </tbody> </table> |                                                                                       |                                                                                                                                                                 | 类别   | 设置原则 | 项目情况 | 是否设置 | 大气 | 排放废气含有毒有害污染物 <sup>1</sup> 、二噁英、苯并（a）芘、氰化物、氯气且厂界外 500 米范围内有环境空气保护目标 <sup>2</sup> 的建设项目 | 不涉及排放前述所列废气污染物 | 否 | 地表水 | 新增工业废水直排建设项目；新增废水直排的污水集中处理厂 | 废水间接排放 | 否 | 环境风险 | 有毒有害和易燃易爆危险物质存储量超过临界量 <sup>3</sup> 的建设项目 | 危险物质存储量未超过临界量 | 否 | 生态 | 取水口下游 500 米范围内有重要水生生物的自然产卵场、索饵场、越冬场和洄游通道的新增河道取水的污染类建设项目 | 不涉及河道取水 | 否 | 海洋 | 直接向海排放污染物的海洋工程建设项目 | 不属于涉海项目 | 否 |
|           | 类别                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 设置原则                                                                                  | 项目情况                                                                                                                                                            | 是否设置 |      |      |      |    |                                                                                       |                |   |     |                             |        |   |      |                                          |               |   |    |                                                         |         |   |    |                    |         |   |
|           | 大气                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 排放废气含有毒有害污染物 <sup>1</sup> 、二噁英、苯并（a）芘、氰化物、氯气且厂界外 500 米范围内有环境空气保护目标 <sup>2</sup> 的建设项目 | 不涉及排放前述所列废气污染物                                                                                                                                                  | 否    |      |      |      |    |                                                                                       |                |   |     |                             |        |   |      |                                          |               |   |    |                                                         |         |   |    |                    |         |   |
|           | 地表水                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 新增工业废水直排建设项目；新增废水直排的污水集中处理厂                                                           | 废水间接排放                                                                                                                                                          | 否    |      |      |      |    |                                                                                       |                |   |     |                             |        |   |      |                                          |               |   |    |                                                         |         |   |    |                    |         |   |
|           | 环境风险                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 有毒有害和易燃易爆危险物质存储量超过临界量 <sup>3</sup> 的建设项目                                              | 危险物质存储量未超过临界量                                                                                                                                                   | 否    |      |      |      |    |                                                                                       |                |   |     |                             |        |   |      |                                          |               |   |    |                                                         |         |   |    |                    |         |   |
|           | 生态                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 取水口下游 500 米范围内有重要水生生物的自然产卵场、索饵场、越冬场和洄游通道的新增河道取水的污染类建设项目                               | 不涉及河道取水                                                                                                                                                         | 否    |      |      |      |    |                                                                                       |                |   |     |                             |        |   |      |                                          |               |   |    |                                                         |         |   |    |                    |         |   |
|           | 海洋                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 直接向海排放污染物的海洋工程建设项目                                                                    | 不属于涉海项目                                                                                                                                                         | 否    |      |      |      |    |                                                                                       |                |   |     |                             |        |   |      |                                          |               |   |    |                                                         |         |   |    |                    |         |   |

|                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                  | <p>注：1.废气中有毒有害污染物指纳入《有毒有害大气污染物名录》的污染物（不包括无排放标准的污染物）。</p> <p>2.环境空气保护目标指自然保护区、风景名胜区、居住区、文化区和农村地区中人群较集中的区域。</p> <p>3.临界量及其计算方法可参考《建设项目环境风险评价技术导则》（HJ169）附录 B、附录 C。</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 规划情况             | <p>规划文件名称：《沈本新城总体规划（2013～2030）》；</p> <p>审批机关：本溪市人民政府。</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 规划环境影响评价情况       | <p>规划环评名称：《沈本新城总体规划（2013～2030）环境影响报告书》；</p> <p>审批机关：本溪市生态环境局（原本溪市环境保护局）；</p> <p>审批文件名称：《关于沈本新城总体规划（2013～2030）环境影响报告书的审查意见》；</p> <p>审批文号：本环规审字（2014）2 号。</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 规划及规划环境影响评价符合性分析 | <p style="text-align: center;"><b>（一）规划相符性分析</b></p> <p>2013 年 1 月，本溪高新技术产业开发区管理委员会委托中国对外建设总公司城市规划设计院编制了《沈本新城总体规划（2013-2030）》，2014 年 8 月取得其审批文件。根据《沈本新城总体规划（2013-2030）》及其审批文件，沈本新城规划区域面积 176.97km<sup>2</sup>，行政辖区覆盖日月岛、石桥子和张其寨三个街道办事处，其中城市建设用地规模为 68.37km<sup>2</sup>。规划期限为 2013-2030 年。园区规划主导产业定位为以现代中药、功能食品保健品、医疗器械、高端仿制药及化药、生物制药及疫苗、医药相关配套产业、现代物流、新兴产业为主导，打造成引领区域转型发展的国家级医药产业园区、东北地区知名的健康、休闲旅游先导示范区。</p> <p>经对照沈本新城规划图，本项目位于石桥子片区的生物制药及疫苗产业园，具体位置详见附图 9。石桥子片区建设方向依托大学城，创新发展医药制造业、教育科研、研发孵化产业。根据规划，石桥子片区允许发展居住、公用设施、教育科研、医疗卫生、商业服务等项目，同时可发展对居住和公共环境基本无干扰或有一定干扰、污染和安全隐患的工业项目；禁止引进对居住和公共环境有严重干扰、污染和安全隐患的工业项目。生物制药及疫苗产业园重点发展生化药物、基因工程药物、基因工程疫苗、单克隆抗体治疗药物、重大疾病治疗药物及预防疫苗。根据《国民经济行业分类》（GB/T4754-2017）及《国家统计局关于执行国民经济行业分类第 1 号修改</p> |

单的通知》（国统字〔2019〕66号），本项目行业类别为 C2770 卫生材料及医药用品制造、C3586 康复辅具制造，产品为氧化锆瓷块、玻璃陶瓷、陶瓷件、定制义齿、矫治器、种植导板等，为口腔全瓷修复材料的医用陶瓷耗材和康复辅具产品，属医疗器械行业，为《沈本新城总体规划（2013-2030）》的主要发展产业。且医疗器械属于医药行业范畴，满足石桥子片区产业发展定位要求。本项目不属于两高项目，运营期产生的各类污染物通过有效治理均能做到稳定达标排放，不会对当地居住和公共环境造成严重干扰、污染和安全隐患，不属于石桥子片区明令禁止建设的项目。另根据沈本新城近期土地利用规划图，项目土地利用性质为二类工业用地（具体位置详见附图 8），与本项目所从事生产行业相协调。故本项目的建设符合《沈本新城总体规划（2013-2030）》及其审查文件中发展规划要求。

## （二）规划环境影响评价文件及其审查意见相符性分析

2014 年 1 月，本溪高新技术产业开发区管理委员会委托沈阳环境科学研究院编制了《沈本新城总体规划（2013-2030）环境影响报告书》。

沈本新城位于辽宁省本溪市，东接抚顺市和本溪满族自治县、西接辽阳市、南靠本溪老城区、北临沈阳市，区域规划面积 176.97km<sup>2</sup>，行政辖区覆盖日月岛、石桥子和张其寨三个街道办事处，其中城市建设用地规模为 68.37km<sup>2</sup>。规划期限为 2013-2030 年。其中近期为 2013-2018 年，远期为 2019-2030 年，远景为 2030 年以后。

根据沈本新城产业空间布局图，本项目位于沈本新城石桥子片区，利用现有闲置工业厂房建设，新建氧化锆瓷块、玻璃陶瓷、陶瓷件、定制义齿、矫治器、种植导板等产品生产线，行业类别为 C2770 卫生材料及医药用品制造、C3586 康复辅具制造，为医疗器械行业，属医药行业范畴。本项目与《沈本新城总体规划（2013-2030）环境影响报告书》主要结论相符性分析详见表 1-2。

| 表 1-2 与《沈本新城总体规划（2013~2030）环境影响报告书》主要结论相符性分析表                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |      |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
| 规划环评主要结论                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 本项目情况                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 是否符合 |
| 《沈本新城总体规划（2013~2030）》本着保护生态、全面规划、合理开发的原则，坚持以产业基地为引擎，打造强大的产业集群，重点发展医药制造、医疗器械制造、先进制造和商贸物流等产业。沈本新城规划区域面积 176.97km <sup>2</sup> ，行政辖区覆盖日月岛、石桥子和张其寨三个街道办事处，其中城市建设用地规模为 68.37km <sup>2</sup> 。规划期限为 2013-2030 年。                                                                                                                                                                                                                                                                                                                                        | 本项目位于石桥子片区，利用工业园区内闲置工业厂房建设氧化锆瓷块、玻璃陶瓷、陶瓷件、定制义齿、矫治器、种植导板等口腔全瓷修复材料的医用陶瓷耗材和康复辅具产品生产线，所属行业为医疗器械行业，为沈本新城重点发展产业。                                                                                                                                                                                                                                                                                                                                                        | 是    |
| <p>环保准入条件：(1)引进属于国家《产业结构调整指导目录（2011 年本）》中鼓励类和允许类项目。外商投资项目应符合《外商投资产业指导目录（2011 年修订）》中鼓励类和允许类项目；</p> <p>(2)引进属于《辽宁省产业发展指导目录（2008 年本）》中鼓励类和允许类项目。</p> <p>(3)引进项目应符合沈本新城总体规划产业定位。</p> <p>(4)引进项目应符合沈本新城总体规划土地利用规划。</p> <p>(5)引进项目应符合环境保护、安全生产、节能等法律、法规规定；符合《工业项目建设用地控制指标》（国土资发〔2008〕24 号）规定的有关投资强度、容积率、建筑系数、行政办公及生活服务设施用地所占比重、绿地率等指标要求。</p> <p>(6)禁止高能耗、高物耗、高污染、高风险、产品质量不符合国家标准及国家法律法规规定的禁止投资的项目入区。</p> <p>(7)限制生产能力严重过剩、新上项目对产业结构没有改善、工艺技术落后（已有先进、成熟工艺技术替代）、不利于节约资源和保护生态环境及法律法规规定的限制投资的项目入区。</p> <p>(8)规划建设用地严格执行《城市用地分类与规划建设用地标准》（GB50137-2011）。</p> | <p>(1)本项目为口腔全瓷修复材料的医用陶瓷耗材和康复辅具生产，经对照《产业结构调整指导目录（2024 年本）》（中华人民共和国国家发展和改革委员会令第 7 号），本项目为允许类，符合国家产业政策。本项目不属于外商投资项目。</p> <p>(2)该文件现已废止，本项目不执行。</p> <p>(3)本项目为医疗器械行业，并属于医药行业范畴，符合沈本新城总体规划产业定位。</p> <p>(4)本项目土地利用性质为工业用地，符合沈本新城总体规划土地利用规划。</p> <p>(5)经分析，本项目的建设符合环境保护、安全生产、节能等法律、法规规定；土地性质为工业用地，符合《工业项目建设用地控制指标》（国土资发〔2008〕24 号）等要求。</p> <p>(6)本项目为医疗器械行业，不属于前述禁止类项目。</p> <p>(7)本项目为医疗器械行业，不属于前述所列限制引入类项目。</p> <p>(8)项目用地为工业用地，符合《城市用地分类与规划建设用地标准》（GB50137-2011）。</p> | 是    |
| 石桥子片区行业环保准入要求：石桥子片区建设方向依托大学城，创新发展医药制造业、教育科研、研发孵化产业。根据规划，石桥子片区允                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 本项目行业类别为 C2770 卫生材料及医药用品制造、C3586 康复辅具制造，为医疗器械行业，且属于医药                                                                                                                                                                                                                                                                                                                                                                                                            | 是    |



| <p>许发展居住、公用设施、教育科研、医疗卫生、商业服务等项目，同时可发展对居住和公共环境基本无干扰或有一定干扰、污染和安全隐患的工业项目；禁止引进对居住和公共环境有严重干扰、污染和安全隐患的工业项目。</p>                                                                                                                                                                                                                                                             | <p>行业范畴，满足《沈本新城总体规划》（2013~2030）石桥子片区的产业发展定位要求。项目运营期各类污染物通过有效治理后，能够做到稳定达标排放，不会对当地居住和公共环境造成严重干扰、污染和安全隐患，不属于石桥子片区禁止建设的项目。项目土地利用性质为二类工业用地，符合沈本新城总体规划要求。</p> |          |
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| <p>综上所述，本项目的建设符合《沈本新城总体规划（2013~2030）环境影响报告书》主要结论。</p> <p>2014年8月10日，该规划环评取得原本溪市环境保护局下发的《关于沈本新城总体规划（2013~2030）环境影响报告书的审查意见》，审批文号为本环规审字〔2014〕2号。本项目与该审查意见的相符性分析详见表1-3。</p>                                                                                                                                                                                              |                                                                                                                                                         |          |
| <p><b>表 1-3 与《关于沈本新城总体规划（2013~2030）环境影响报告书的审查意见》（本环规审字〔2014〕2号）相符性分析表</b></p>                                                                                                                                                                                                                                                                                         |                                                                                                                                                         |          |
| 规划环评审查意见                                                                                                                                                                                                                                                                                                                                                              | 本项目情况                                                                                                                                                   | 是否符合     |
| <p>沈本新城位于辽宁省本溪市，东接抚顺市和本溪满族自治县、西接辽阳市、南靠本溪老城区、北临沈阳市，规划区域面积176.97km<sup>2</sup>，行政辖区覆盖日月岛、石桥子和张其寨三个街道办事处，其中城市建设用地规模为68.37km<sup>2</sup>。规划期限为2013-2030年。《沈本新城总体规划（2013-2030）》（以下简称《规划》）本着促进可持续发展的原则，协调经济、人口与资源利用、生态环境保护的关系，通过打造强大的产业集群，重点发展医药制造、医疗器械制造等先进制造和商贸物流等产业，将沈本新城建设成为生态环境优越、社会经济协调发展，人民生活宜居的国家重要的医药产业基地，辽中地区重要的生态健康城市，沈阳经济区生态发展示范新城，本溪市对外开放中心，最终实现沈本新城跨越式发展。</p> | <p>本项目利用工业园区内闲置工业厂房建设氧化锆瓷块、玻璃陶瓷、陶瓷件、定制义齿、矫治器、种植导板等口腔全瓷修复材料的医用陶瓷耗材和康复辅具产品生产线，所属行业为医疗器械行业（属于医药行业范畴），为石桥子片区的重点发展产业。本项目的建设有利于沈本新城的社会经济发展。</p>               | <p>是</p> |
| <p>根据《报告书》环境影响预测，《规划》的实施，沈本新城的空气质量、水环境质量将有局部改善，声环境质量将维持现有水平，陆生生态系统将受到一定的影响。根据规划环评大气及地表水监测结果，部分点位监测因子超标，同时该区域处于丘陵，群山之间，集中供热也将成为规划的制约因素，在调整新城发展布局基础及采取严格的环境影响减缓措施后，资源与环境承载力</p>                                                                                                                                                                                         | <p>本项目运营期废气污染物排放量极少，通过合理有效的治理，各项污染物能够实现稳定达标排放，不会对项目所在区域的环境质量产生明显的不利影响，不会突破当地的资源与环境承载力。</p>                                                              | <p>是</p> |

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|  | <p>基本能够保证总体规划的实施。</p> <p>《报告书》对总体规划提出的 7 条建议基本可行，建议在《规划》实施过程中认真考虑以下问题：1、严格控制引进项目环保准入条件，主导产业医疗器械工艺中可能涉及到化学电镀、高端仿制药及化药中部分产品属于“高污染、高风险、高能耗”项目，应予严格控制，严禁入驻，进一步核定工业用地类别。2、沈本新城北接沈阳市、东北邻抚顺市，西侧为辽阳市，东侧和南侧为本溪市，要严格控制跨界污染和扰民现象产生。3、沈本新城规划建设的工业区基本是沿着河流建设的，河流两岸生态易遭破坏，河体水质易受污染，建议沿河两岸应严格要求设置绿化隔离带。</p> | <p>1.本项目位于沈本新城石桥子片区，利用工业园区内闲置工业厂房建设氧化锆瓷块、玻璃陶瓷、陶瓷件、定制义齿、矫治器、种植导板等口腔全瓷修复材料的医用陶瓷耗材和康复辅具产品生产线，所属行业为医疗器械行业，生产工艺不涉及化学电镀，符合引进项目环保准入条件，不属于“高污染、高风险、高能耗”项目。项目土地利用性质为工业用地，符合沈本新城总体规划要求。2.本项目为新建项目，位于石桥子片区生物制药及疫苗产业园，利用工业园区内闲置工业厂房进行建设，用地性质为工业用地，且距离学校、居住区等敏感点距离较远，不会造成跨界污染和扰民现象产生。3.经预测，本项目污染物排放量极少，通过合理有效的治理，能够做到稳定达标排放，废水采取间接排放方式，不会对周围河流生态环境产生明显不利影响。</p> | <p>是</p> |
|  | <p>综上所述，本项目的建设符合《关于沈本新城总体规划（2013~2030）环境影响报告书的审查意见》要求。</p>                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                    |          |

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| 其他符合性分析 | <p><b>（一）产业政策相符性分析</b></p> <p>本项目主要生产氧化锆瓷块、玻璃陶瓷、陶瓷件、定制义齿、矫治器、种植导板等口腔全瓷修复材料的医用陶瓷耗材和康复辅具产品，经对照《产业结构调整指导目录（2024 年本）》（中华人民共和国国家发展和改革委员会令第 7 号），本项目不属于其中规定的鼓励类、限制类和淘汰类项目，为允许类，故本项目的建设符合国家产业政策。</p> <p><b>（二）“三线一单”相符性分析</b></p> <p>根据《关于实施“三线一单”生态环境分区管控的指导意见（试行）》（环环评〔2021〕108 号），实施“三线一单”（生态保护红线、环境质量底线、资源利用上线和生态环境准入清单）生态环境分区管控制度，是新时代贯彻落实习近平生态文明思想、深入打好污染防治攻坚战、加强生态环境源头防控的重要举措。本项目与生态保护红线、环境质量底线、资源利用上线的相符性分析内容详见表 1-4。</p> |                                                                                                                     |      |
|         | <p align="center"><b>表 1-4 与生态保护红线、环境质量底线、资源利用上线相符性一览表</b></p>                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                     |      |
|         | “三线一单”内容                                                                                                                                                                                                                                                                                                                                                                                                                   | 本项目情况                                                                                                               | 是否符合 |
|         | <p>生态保护红线是生态空间范围内具有特殊重要生态功能必须实行强制性严格保护的区域。相关规划环评应将生态空间管控作为重要内容，规划区域涉及生态保护红线的，在规划环评结论和审查意见中应落实生态保护红线的管理要求，提出相应对策措施。除受自然条件限制、确实无法避让的铁路、公路、航道、防洪、管道、干渠、通讯、输变电等重要基础设施项目外，在生态保护红线范围内，严控各类开发建设活动，依法不予审批新建工业项目和矿产开发项目的环评文件。</p>                                                                                                                                                                                                   | <p>本项目不在本溪市生态保护红线范围内，详见附图 6。</p>                                                                                    | 是    |
|         | <p>环境质量底线是国家和地方设置的大气、水和土壤环境质量目标，也是改善环境质量的基准线。有关规划环评应落实区域环境质量目标管理要求，提出区域或者行业污染物排放总量管控建议以及优化区域或行业发展布局、结构和规模的对策措施。项目环评应对照区域环境质量目标，深入分析预测项目建设对环境的影响，强化污染防治措施和污染物排放控制要求。</p>                                                                                                                                                                                                                                                    | <p>本次评价深入分析预测本项目的建设对项目所在地环境质量的影响，强化污染防治措施和污染物排放控制要求。本项目实施后，废气污染物排放量极少，可以做到稳定达标，运营期企业加强污染物达标排放与监控，可维持项目厂界周边环境空气、</p> | 是    |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                    | 声环境质量现状等级，不会引发厂区周边环境恶化降级。                                                                                                                                                      |      |         |  |     |      |        |                                             |                                                                                                           |   |                                                                                                |                                                                                                                                                                                |   |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 资源是环境的载体，资源利用上线是各地区能源、水、土地等资源消耗不得突破的“天花板”。相关规划环评应依据有关资源利用上线，对规划实施以及规划内项目的资源开发利用，区分不同行业，从能源资源开发等量或减量替代、开采方式和规模控制、利用效率和保护措施等方面提出建议，为规划编制和审批决策提供重要依据。 | 本项目运营过程中消耗一定量的电、水等能源，项目资源消耗量相对区域资源利用总量较少，符合资源利用上线要求。                                                                                                                           | 是    |         |  |     |      |        |                                             |                                                                                                           |   |                                                                                                |                                                                                                                                                                                |   |
| <p>本项目位于石桥子片区生物制药及疫苗产业园现有闲置工业厂房内。2024 年 12 月 11 日，本溪市生态环境局发布《关于&lt;本溪市生态环境分区管控成果动态更新&gt;的通知》。根据《本溪市生态环境分区管控成果动态更新》，经辽宁省三线一单数据应用系统（lnsthj.cn）查询，查询结果截图详见附图 10，项目所在环境管控单元类型为重点管控单元，环境管控单元编码为 ZH21050320002，园区级别为国家级，具体相符性分析详见表 1-5，与本溪市生态环境管控单元分布示意图的位置关系详见附图 6。</p> <p style="text-align: center;"><b>表 1-5 与附件 4 本溪市工业园区生态环境准入清单相符性分析</b></p> <table><tr><th colspan="2">管控区具体要求</th><th>本项目</th><th>是否符合</th></tr><tr><td rowspan="2">空间布局约束</td><td>1.积极推动园区产业结构向低碳新业态发展，依据国家产业政策严格管控“两高”类项目入区。</td><td>本项目利用工业园区内闲置工业厂房建设氧化锆瓷块、玻璃陶瓷、陶瓷件、定制义齿、矫治器、种植导板等口腔全瓷修复材料的医用陶瓷耗材和康复辅具产品生产线，所属行业为医疗器械行业，属于医药行业范畴，不属于“两高”类项目。</td><td>是</td></tr><tr><td>2.园区新建、改建、扩建“两高”项目须符合生态环境保护法律法规和相关法定规划，满足重点污染物排放总量控制、碳排放达峰目标、相关规划环评和相应行业建设项目环境准入条件、环评文件审批原则要求。</td><td>本项目利用工业园区内闲置工业厂房建设氧化锆瓷块、玻璃陶瓷、陶瓷件、定制义齿、矫治器、种植导板等口腔全瓷修复材料的医用陶瓷耗材和康复辅具产品生产线，所属行业为医疗器械行业，不属于“两高”项目，且符合生态环境保护法律法规和相关法定规划要求。本项目产生的废气污染物排放量极少，可以做到稳定达标排放，能够满足重点污染物排放总量控制、碳排放达峰目标、相关规划</td><td>是</td></tr></table> |                                                                                                                                                    |                                                                                                                                                                                |      | 管控区具体要求 |  | 本项目 | 是否符合 | 空间布局约束 | 1.积极推动园区产业结构向低碳新业态发展，依据国家产业政策严格管控“两高”类项目入区。 | 本项目利用工业园区内闲置工业厂房建设氧化锆瓷块、玻璃陶瓷、陶瓷件、定制义齿、矫治器、种植导板等口腔全瓷修复材料的医用陶瓷耗材和康复辅具产品生产线，所属行业为医疗器械行业，属于医药行业范畴，不属于“两高”类项目。 | 是 | 2.园区新建、改建、扩建“两高”项目须符合生态环境保护法律法规和相关法定规划，满足重点污染物排放总量控制、碳排放达峰目标、相关规划环评和相应行业建设项目环境准入条件、环评文件审批原则要求。 | 本项目利用工业园区内闲置工业厂房建设氧化锆瓷块、玻璃陶瓷、陶瓷件、定制义齿、矫治器、种植导板等口腔全瓷修复材料的医用陶瓷耗材和康复辅具产品生产线，所属行业为医疗器械行业，不属于“两高”项目，且符合生态环境保护法律法规和相关法定规划要求。本项目产生的废气污染物排放量极少，可以做到稳定达标排放，能够满足重点污染物排放总量控制、碳排放达峰目标、相关规划 | 是 |
| 管控区具体要求                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                    | 本项目                                                                                                                                                                            | 是否符合 |         |  |     |      |        |                                             |                                                                                                           |   |                                                                                                |                                                                                                                                                                                |   |
| 空间布局约束                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 1.积极推动园区产业结构向低碳新业态发展，依据国家产业政策严格管控“两高”类项目入区。                                                                                                        | 本项目利用工业园区内闲置工业厂房建设氧化锆瓷块、玻璃陶瓷、陶瓷件、定制义齿、矫治器、种植导板等口腔全瓷修复材料的医用陶瓷耗材和康复辅具产品生产线，所属行业为医疗器械行业，属于医药行业范畴，不属于“两高”类项目。                                                                      | 是    |         |  |     |      |        |                                             |                                                                                                           |   |                                                                                                |                                                                                                                                                                                |   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 2.园区新建、改建、扩建“两高”项目须符合生态环境保护法律法规和相关法定规划，满足重点污染物排放总量控制、碳排放达峰目标、相关规划环评和相应行业建设项目环境准入条件、环评文件审批原则要求。                                                     | 本项目利用工业园区内闲置工业厂房建设氧化锆瓷块、玻璃陶瓷、陶瓷件、定制义齿、矫治器、种植导板等口腔全瓷修复材料的医用陶瓷耗材和康复辅具产品生产线，所属行业为医疗器械行业，不属于“两高”项目，且符合生态环境保护法律法规和相关法定规划要求。本项目产生的废气污染物排放量极少，可以做到稳定达标排放，能够满足重点污染物排放总量控制、碳排放达峰目标、相关规划 | 是    |         |  |     |      |        |                                             |                                                                                                           |   |                                                                                                |                                                                                                                                                                                |   |

|  |              |                                                                         |                                                                                                                                                                                                                                                                            |   |
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|  |              |                                                                         | 环评和相应行业建设项目环境准入条件、环评文件审批原则要求。                                                                                                                                                                                                                                              |   |
|  | 污染物排放<br>管控  | 1.持续推进园区工业企业大气污染物全面达标排放要求，核发排污许可证的企业将严格依据排污许可证管理要求进行管理。                 | 本项目运营期产生的废气污染物排放量极少，企业加强污染物达标排放与监控，可保证各项污染物稳定达标排放，并按照排污许可证管理要求进行管理。                                                                                                                                                                                                        | 是 |
|  |              | 2.深化医药、制药企业 VOCs 排放治理，采取源头削减、过程控制、末端治理的全过程防治措施，严控工业挥发性有机物排放。            | 本项目 VOCs 排放采取源头削减措施。项目采用的 UV 油墨为能量固化油墨，胶为环氧树脂类本体型胶粘剂，VOCs 含量均低于 10%，符合源头削减要求。此外，本项目在生产过程需使用少量的无水乙醇作为清洗剂（因工艺生产所需，暂不具备替代条件），年用量仅为 50L。由于本项目使用的油墨和胶黏剂均为低 VOCs 原辅料，核算后有机废气初始产生量极小。且乙醇具备易分解、低毒性特征，扩散性较强。有机废气拟以无组织形式排放，可满足《挥发性有机物无组织排放控制标准》(GB37822-2019)以及其他现行 VOCs 治理技术规范文件要求。 | / |
|  |              | 3.新建、扩建、改建涉 VOCs 的制药企业视情况执行特别排放限值。                                      | 本项目废气污染物产生量极小，均以无组织形式排放，无相关的特别排放限值要求。                                                                                                                                                                                                                                      | / |
|  | 环境风险防<br>控   | 1.完善与更新重污染天气应急预案；                                                       | 按照相关部门要求严格执行。                                                                                                                                                                                                                                                              | 是 |
|  |              | 2.细化应急减排措施，落实到企业各工艺环节，实施“一厂一策”清单化管理。                                    | 按照相关部门要求严格执行。                                                                                                                                                                                                                                                              | 是 |
|  | 资源开发效<br>率要求 | 1.企业应当建立节约用水管理制度，使用先进节约用水技术、工艺和设备，采取循环用水、综合利用和废水处理回用等措施，降低用水消耗，提高重复利用率。 | 建设单位建立节约用水管理制度，生产采取循环用水、废水综合利用等措施，降低用水消耗，提高重复利用率。                                                                                                                                                                                                                          | 是 |
|  |              | 2.企业主要产品综合能耗达到清洁生产一级/二级水平。                                              | 本项目利用工业园区内闲置工业厂房建设氧化锆瓷块、玻璃陶瓷、陶瓷件、定制义齿、矫治器、种植导板等口腔全瓷修复材料的医用陶瓷耗材和康复辅具产品生产线，所属行业为医疗器械行业，目                                                                                                                                                                                     | 是 |

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|                                                                                                                                                                                                                                                  |  | 前相关部门尚未发布所属行业清洁生产评价指标体系。与同类项目相比，本项目所使用的原辅料不涉及高毒、高害原辅料，生产工艺和装备不涉及限制和淘汰类，水、电等能源消耗均可达到相关用水定额要求。产生的各类污染物均可实现稳定达标排放，满足所在区域重点污染物排放控制指标要求。综上，本项目清洁生产能够达到国内先进水平（即二级水平）。 |      |
| 综上所述，本项目的建设符合《本溪市生态环境分区管控成果动态更新》要求。                                                                                                                                                                                                              |  |                                                                                                                                                                 |      |
| <b>（三）相关环境保护规划、政策、规范相符性分析</b>                                                                                                                                                                                                                    |  |                                                                                                                                                                 |      |
| 本项目与其他相关环境保护管理文件相符性分析见表 1-6。                                                                                                                                                                                                                     |  |                                                                                                                                                                 |      |
| 表 1-6 与其他相关环境保护管理规定相符性分析表                                                                                                                                                                                                                        |  |                                                                                                                                                                 |      |
| 文件要求                                                                                                                                                                                                                                             |  | 本项目情况                                                                                                                                                           | 是否符合 |
| 《重点行业挥发性有机物综合治理方案》（环大气〔2019〕53 号）                                                                                                                                                                                                                |  |                                                                                                                                                                 |      |
| 推进建设适宜高效的治污设施。企业新建治污设施或对现有治污设施实施改造，应依据排放废气的浓度、组分、风量，温度、湿度、压力，以及生产工况等，合理选择治理技术。鼓励企业采用多种技术的组合工艺，提高 VOCs 治理效率。                                                                                                                                      |  | 根据预测，项目有机废气污染物产生量极少，且有机废气以乙醇为主，乙醇低毒，扩散性强，因此本项目废气未配置 VOCs 处理设施，以无组织形式排放。                                                                                         | 是    |
| 大力推进源头替代。通过使用水性、粉末、高固体分、无溶剂、辐射固化等低 VOCs 含量的涂料，水性、辐射固化、植物基等低 VOCs 含量的油墨，水基、热熔、无溶剂、辐射固化、改性、生物降解等低 VOCs 含量的胶粘剂，以及低 VOCs 含量、低反应活性的清洗剂等，替代溶剂型涂料、油墨、胶粘剂、清洗剂等，从源头减少 VOCs 产生。工业涂装、包装印刷等行业要加大源头替代力度；化工行业要推广使用低（无）VOCs 含量、低反应活性的原辅材料，加快对芳香烃、含卤素有机化合物的绿色替代。 |  | 本项目采用的 UV 油墨为能量固化油墨，胶为环氧树脂类本体型胶粘剂，根据其 MSDS 报告，VOCs 含量均低于 10%，属于低 VOCs 含量溶剂。项目清洗固化工序运行过程中需用到无水乙醇，用量很少。因运行工艺条件所需，不具备替代条件。乙醇废气低毒、扩散性强，以无组织形式排放，对周围环境空气影响较小。        | 是    |
| 鼓励企业采用多种技术的组合工艺，提高 VOCs 治理效率。低浓度、大风量废气，宜采用沸石转轮吸附、活性炭吸附、减风增浓等浓缩技术，提高 VOCs                                                                                                                                                                         |  | 本项目不属于 VOCs 治理重点行业。项目采用的 UV 油墨为能量固化油墨，胶为环氧树脂类本体型胶粘剂，                                                                                                            | 是    |

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|------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|
|                                                                  | <p>浓度后净化处理；高浓度废气，优先进行溶剂回收，难以回收的，宜采用高温焚烧、催化燃烧等技术。</p>                                                                                                                                                                                                                                                                                                                                                                    | <p>VOCs 含量均低于 10%，符合源头削减要求。此外，本项目在生产过程需使用少量的无水乙醇作为清洗剂（因工艺生产所需，暂不具备替代条件），年用量仅为 50L。由于本项目使用的油墨和胶黏剂均为低 VOCs 原辅料，核算后有机废气初始产生量极小。且乙醇具备易分解、低毒性特征，扩散性较强。项目有机废气拟以无组织形式排放，可满足《挥发性有机物无组织排放控制标准》(GB37822-2019)以及其他现行 VOCs 治理技术规范文件要求。</p>                     |                         |
| <p align="center"><b>《2020 年挥发性有机物治理攻坚方案》（环大气〔2020〕33 号）</b></p> |                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                    |                         |
|                                                                  | <p>大力推进低（无）VOCs 含量原辅材料替代。将全面使用符合国家要求的低 VOCs 含量原辅材料的企业纳入正面清单和政府绿色采购清单。企业应建立原辅材料台账，记录 VOCs 原辅材料名称、成分、VOCs 含量、采购量、使用量、库存量、回收方式、回收量等信息，并保存相关证明材料。采用符合国家有关低 VOCs 含量产品规定的涂料、油墨、胶粘剂等，排放浓度稳定达标且排放速率满足相关规定的，相应生产工序可不要求建设末端治理设施。使用的原辅材料 VOCs 含量（质量比）均低于 10%的工序，可不要求采取无组织排放收集和处理措施。推进政府绿色采购，要求家具、印刷等政府定点招标采购企业优先使用低挥发性原辅材料，鼓励汽车维修等政府定点招标采购企业使用低挥发性原辅材料；将低 VOCs 含量产品纳入政府采购名录，并在政府投资项目中优先使用；引导将使用低 VOCs 含量涂料、胶粘剂等纳入政府采购装修合同环保条款。</p> | <p>本项目 UV 油墨为能量固化油墨，胶为环氧树脂类本体型胶粘剂，且 VOCs 含量均低于 10%。此外，本项目在生产过程需使用少量的无水乙醇作为清洗剂（因工艺生产所需，暂不具备替代条件），年用量很少。由于本项目使用的油墨和胶黏剂均为低 VOCs 原辅料，核算后有机废气初始产生量极小。且乙醇具备易分解、低毒性特征，扩散性较强。项目有机废气拟以无组织形式排放，可满足《挥发性有机物无组织排放控制标准》(GB37822-2019)以及其他现行 VOCs 治理技术规范文件要求。</p> | <p align="center">是</p> |
|                                                                  | <p>企业在无组织排放排查整治过程中，在保证安全的前提下，加强含 VOCs 物料全方位、全链条、全环节密闭管理。储存环节应采用密闭容器、包装袋，高效密封储罐，封闭式储库、料仓等。装卸、转移和输送环节应采用密闭管道或密闭容器、罐车等。生产和使用环节应采用密闭设备，或在密闭空间中操作并有效收集废气，或进行局部气体收集；非取用状态时容器应密闭。处置环节应将盛装过 VOCs 物料的包装容器、含 VOCs 废料（渣、液）、废吸附剂等通过加盖、封装等方式密闭，妥善存放，不得随意丢弃。</p>                                                                                                                                                                      | <p>本项目 VOCs 物料为 UV 油墨、胶和无水乙醇，至使用前均为购买时原始密封状态，仅在添加物料时开封，添加完成后即刻封闭盛装容器。同时采用的 UV 油墨为能量固化油墨，胶为环氧树脂类本体型胶粘剂，VOCs 含量低于 10%，有机废气初始产生量较低，按要求可不采取无组织排放收集和处理措施。此外，本项目在生产过程需使用少量的无水乙醇作为清洗剂（因工艺生产所</p>                                                          | <p align="center">是</p> |

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|-------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|
|                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                        | 需，暂不具备替代条件），年用量很少，且乙醇具备易分解、低毒性特征，扩散性较强。基本不会对环境空气造成影响；本项目产生的废包装按危险废物进行管理和处置，油墨和胶黏剂废包装加盖密封后分区暂存于危废贮存点，定期委托资质单位进行处置。                                                       |   |
|                                                 | 按照“应收尽收”的原则提升废气收集率。推动取消废气排放系统旁路，因安全生产等原因必须保留的，应将保留旁路清单报当地生态环境部门，旁路在非紧急情况下保持关闭，并通过铅封、安装自动监控设施、流量计等方式加强监管，开启后应及时向当地生态环境部门报告，做好台账记录。将无组织排放转变为有组织排放进行控制，优先采用密闭设备、在密闭空间中操作或采用全密闭集气罩收集方式；对于采用局部集气罩的，应根据废气排放特点合理选择收集点位，距集气罩开口面最远处的 VOCs 无组织排放位置，控制风速不低于 0.3 米/秒，达不到要求的通过更换大功率风机、增设烟道风机、增加垂帘等方式及时改造；加强生产车间密闭管理，在符合安全生产、职业卫生相关规定前提下，采用自动卷帘门、密闭性好的塑钢门窗等，在非必要时保持关闭。                                                               | 本项目使用的 UV 油墨为能量固化油墨，胶为环氧树脂类本体型胶粘剂，VOCs 含量均低于 10%，有机废气初始产生量较低，按要求可不采取无组织排放收集和处理措施。此外，本项目在生产过程需使用少量的无水乙醇作为清洗剂（因工艺生产所需，暂不具备替代条件），年用量很少，且乙醇具备易分解、低毒性特征，扩散性较强。基本不会对环境空气造成影响。 | 是 |
| <b>《关于加快解决当前挥发性有机物治理突出问题的通知》（环大气〔2021〕65 号）</b> |                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                         |   |
|                                                 | 各地要以石油炼制、石油化工、合成树脂等石化行业，有机化工、煤化工、焦化（含兰炭）、制药、农药、涂料、油墨、胶粘剂等化工行业，涉及工业涂装的汽车、家具、零部件、钢结构、彩涂板等行业，包装印刷行业以及油品储运销为重点，并结合本地特色产业，组织企业针对挥发性有机液体储罐、装卸、敞开液面、泄漏检测与修复（LDAR）、废气收集、废气旁路、治理设施、加油站、非正常工况、产品 VOCs 含量等 10 个关键环节，认真对照大气污染防治法、排污许可证、相关排放标准和产品 VOCs 含量限值标准等开展排查整治，具体要求见附件。<br>大气污染防治重点区域（以下简称重点区域）于 2021 年 10 月底前、其他地区于 12 月底前，组织企业自行完成一轮排查工作。在企业自查基础上，地方生态环境部门对企业 VOCs 废气收集情况、排放浓度、治理设施去除效率、LDAR 数据质量以及储油库、加油站油气回收设施组织开展一轮检查抽测， | 本项目产品为口腔全瓷修复材料的医用陶瓷耗材和康复辅具产品，所属行业为医疗器械行业，生产过程中产生的废气污染物产生量极小，不属于石油炼制、石油化工、合成树脂等石化行业。                                                                                     | 是 |



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| 其中排污许可重点管理企业全覆盖；针对排查和检查抽测中发现的问题，指导企业统筹环保和安全生产要求，制定整改方案，明确具体措施、完成时限和责任人，在此基础上形成行政区域内企业排查清单和治理台账。能立行立改的，要督促企业抓紧整改到位；对其他问题，重点区域力争 2022 年 6 月底前基本完成整治，其他区域 2022 年 12 月底前基本完成；确需一定整改周期的，最迟在相关设备下次停车（工）大修期间完成整改。重点区域省级生态环境部门于 2021 年 12 月底前、其他地区于 2022 年 6 月底前将企业排查清单和治理台账报送生态环境部；整治基本完成后报送工作总结。 |                                                                                                            |                                                                                                                                      |   |
| <b>《工业炉窑大气污染综合治理方案》（环大气〔2019〕56 号）</b>                                                                                                                                                                                                                                                     |                                                                                                            |                                                                                                                                      |   |
| （一）加大产业结构调整力度。<br>加大落后产能和不达标工业炉窑淘汰力度。                                                                                                                                                                                                                                                      |                                                                                                            | 本项目位于产业园内，涉及非金属加热炉窑，不属于《产业结构调整指导目录》淘汰类工业炉窑。                                                                                          | 是 |
| （二）加快燃料清洁低碳化替代。加大煤气发生炉淘汰力度。加快淘汰燃煤工业炉窑。                                                                                                                                                                                                                                                     |                                                                                                            | 本项目涉及非金属加热炉窑，所用能源为电，不属于《产业结构调整指导目录》淘汰类工业炉窑。                                                                                          | 是 |
| （三）实施污染深度治理。推进重点行业污染深度治理。加大煤气发生炉 VOCs 治理力度。                                                                                                                                                                                                                                                |                                                                                                            | 项目涉及非金属加热炉窑，所用能源为电，不属于重点行业，不涉及煤气发生炉，废气主要以粉尘为主，以无组织形式排放。                                                                              | 是 |
| （四）开展工业园区和产业集群综合整治。加强涉工业炉窑企业运输结构调整。涉工业炉窑类产业集群主要包括陶瓷、玻璃、砖瓦、耐火材料、石灰、矿物棉、铸造、独立轧钢、铁合金、再生有色金属、炭素、化工等行业。                                                                                                                                                                                         |                                                                                                            | 本项目建设符合“三线一单”（生态保护红线、环境质量底线、资源利用上线和生态环境准入清单）、规划环评等要求，符合沈本新城的发展定位，不涉及工业炉窑类产业集群。                                                       | 是 |
| <b>《辽宁省空气质量持续改善行动实施方案》（辽政发〔2024〕11 号）</b>                                                                                                                                                                                                                                                  |                                                                                                            |                                                                                                                                      |   |
| 二、优化产业结构，促进产业产品绿色升级                                                                                                                                                                                                                                                                        | （一）推动优化产业结构和布局。坚决遏制高耗能、高排放、低水平项目盲目上马，新改本项目必须落实国家产业规划、生态环境分区管控方案、碳排放达峰目标等相关要求。                              | 本项目的建设满足国家现行产业政策要求，从事的行业属于医药行业范畴，不属于“两高一低”行业，满足所在单元规划产业定位、生态环境分区管控等相关要求。                                                             | 是 |
|                                                                                                                                                                                                                                                                                            | （三）实施低 VOCs 原辅材料源头替代。开展部门联合监督检查，确保生产、销售、进口、使用等环节严格执行 VOCs 含量限值标准。以工业涂装、包装印刷和胶粘剂使用等为重点，实施低 VOCs 原辅材料源头替代工程。 | 本项目采用的 UV 油墨为能量固化油墨，胶为环氧树脂类本体型胶粘剂，根据其 MSDS 报告，VOCs 含量均低于 10%，属于低 VOCs 含量溶剂。项目清洗固化工序运行过程中需用到无水乙醇，用量很少。因运行工艺条件所需，不具备替代条件。乙醇废气低毒、扩散性强，以 | 是 |

|                                               |                                                                                                                                                               |                                                                            |   |
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|                                               |                                                                                                                                                               | 无组织形式排放，对周围环境空气影响较小。                                                       |   |
| 三、优化能源结构，加速能源清洁低碳高效发展                         | （四）大力发展新能源和清洁能源。原则上不再新增自备燃煤机组，支持自备燃煤机组实施清洁能源替代。                                                                                                               | 本项目不涉及燃煤锅炉建设，使用的能源为电、水等，均为清洁能源。                                            | 是 |
|                                               | （五）积极开展燃煤锅炉关停整合。县级及以上城市建成区原则上不再新建 35 蒸吨/小时及以下燃煤锅炉。                                                                                                            | 本项目生产采用电加热，冬季供暖采用集中供暖，不涉及燃煤锅炉建设。                                           | / |
|                                               | （六）持续推进清洁取暖。因地制宜整村、整屯推进民用、农散煤替代。纳入中央财政支持北方地区清洁取暖范围的城市，保质保量完成改造任务。                                                                                             | 本项目生产采用电加热，冬季供暖采用集中供暖，不涉及燃煤锅炉建设。                                           | 是 |
| 五、强化扬尘污染防治和精细化管理                              | （十一）加强工地和道路扬尘污染治理。持续强化施工场地、工业企业堆场料场和城市道路、裸地扬尘污染治理。                                                                                                            | 本项目利用工业园区内闲置工业厂房进行建设，施工期仅为设备安装、工程扫尾等工作，产尘量很少，环评已提出相应措施，可有效控制扬尘污染。          | 是 |
| 六、降低污染物排放强度                                   | （十四）强化 VOCs 全流程、全环节综合治理。定期开展储罐密封性检测，污水处理场所高浓度有机废气要单独收集处理，含 VOCs 有机废水储罐、装置区集水井（池）有机废气要密闭收集处理。企业开停工、检维修期间，及时收集处理退料、清洗、吹扫等作业产生的 VOCs 废气。企业不得将火炬燃烧装置作为日常大气污染处理设施。 | 本项目新建口腔全瓷修复材料的医用陶瓷耗材和康复辅具产品生产线，所属行业为医疗器械行业，属于医药行业范畴，不涉及 VOCs 储罐及装置区集水井（池）。 | 是 |
| <b>《辽宁省工业炉窑大气污染综合治理实施方案》（2020 年 2 月 21 日）</b> |                                                                                                                                                               |                                                                            |   |
|                                               | （一）加大涉工业炉窑产业结构调整力度<br>1.严格建设项目环境准入。<br>2.加大落后产能和不达标工业炉窑淘汰力度。                                                                                                  | 本项目位于产业园内，涉及非金属加热炉窑，不属于《产业结构调整指导目录》淘汰类工业炉窑。                                | 是 |
|                                               | （二）加快工业炉窑燃料清洁低碳化替代。加大煤气发生炉淘汰力度。加快淘汰燃煤工业炉窑。                                                                                                                    | 本项目涉及非金属加热炉窑，所用能源为电，不属于《产业结构调整指导目录》淘汰类工业炉窑。                                | 是 |
|                                               | （三）实施污染深度治理，推进工业炉窑全面达标排放。加大煤气发生炉 VOCs 治理力度。                                                                                                                   | 涉及非金属加热炉窑，所用能源为电，不属于重点行业，不涉及煤气发生炉，废气主要以粉尘为主，以无组织形式排放。                      | 是 |
|                                               | （四）开展工业园区和产业集群综合整治。                                                                                                                                           | 本项目建设符合“三线一单”（生态保护红线、环境质量底线、资源利用上线和生态环境准入清单）、规划环                           | 是 |

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|                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                    | 评等要求，符合沈本新城的发展定位，不涉及工业炉窑类产业集群。                                             |   |
| (五) 加强环境监测监控体系。加强重点污染源自动监控体系建设。强化监测数据质量控制。自动监控设施应与生态环境主管部门联网。                                                                                                                                                                                                                                                                                                       |                                                                                                                    | 本项目不涉及重点工业炉窑。                                                              | 是 |
| 《本溪市十四五生态环境保护规划》                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                    |                                                                            |   |
| 发展目标                                                                                                                                                                                                                                                                                                                                                                | 综合实力跃上新台阶。全市地区生产总值增速高于全省平均水平，各项主要指标增速在全省实现位次前移，发展质效优于全省平均水平，经济结构和产业结构持续改善，产业基础高级化和产业链现代化水平显著提高，数字经济比重提升，产业竞争力不断增强。 | 本项目新建口腔全瓷修复材料的医用陶瓷耗材和康复辅具产品生产线，建成后可促进本溪市经济社会发展。                            | 是 |
|                                                                                                                                                                                                                                                                                                                                                                     | 城乡协调发展取得新成效。城市布局进一步优化，老城区品质进一步提升，城市承载能力全面增强，与沈阳现代化都市圈融合更加紧密，基本形成高质量发展的经济布局，县域经济发展壮大，新型城镇化建设不断加快，城乡差距进一步缩小。         | 本项目新建口腔全瓷修复材料的医用陶瓷耗材和康复辅具产品生产线，建成后有利于当地经济社会的发展，促进城乡协调发展，减小城乡差距。            | 是 |
|                                                                                                                                                                                                                                                                                                                                                                     | 民生福祉达到新水平。实现更加充分更高质量就业，居民收入增长速度力争高于经济增长速度，基本公共服务均等化水平明显提高，人民受教育程度不断提升，社会保障体系更加健全，卫生健康体系更加完善，脱贫攻坚成果巩固拓展，乡村振兴战略全面推进。 | 本项目新建口腔全瓷修复材料的医用陶瓷耗材和康复辅具产品生产线，建成后有利于当地经济社会的发展，提高了当地居民的收入，有利于推进乡村振兴战略全面推进。 | 是 |
| <p>根据表 1-6 分析结果，本项目的建设满足《重点行业挥发性有机物综合治理方案》（环大气〔2019〕53 号）、《2020 年挥发性有机物治理攻坚方案》（环大气〔2020〕33 号）、《关于加快解决当前挥发性有机物治理突出问题的通知》（环大气〔2021〕65 号）、《工业炉窑大气污染综合治理方案》（环大气〔2019〕56 号）、《辽宁省空气质量持续改善行动实施方案》（辽政发〔2024〕11 号）、《辽宁省工业炉窑大气污染综合治理实施方案》（2020 年 2 月 21 日）、《本溪市十四五生态环境保护规划》中相关要求。</p> <p>(二) 选址合理性分析</p> <p>本项目位于辽宁省本溪市经济技术开发区仙榆路 5-15 栋 1-5 层 1 号，位于石桥子片区生物制药及疫苗产业园内，利用工</p> |                                                                                                                    |                                                                            |   |

业园区内闲置工业厂房进行建设，无新增用地，用地性质为工业用地，符合沈本新城总体规划要求，符合石桥子片区生物制药及疫苗产业园的规划要求。本项目利用工业园区内闲置工业厂房建设氧化锆瓷块、玻璃陶瓷、陶瓷件、定制义齿、矫治器、种植导板等口腔全瓷修复材料的医用陶瓷耗材和康复辅具产品生产线，所属行业为医疗器械行业，为医药行业范畴，符合沈本新城产业发展规划要求。经分析，本项目选址满足所处单元功能定位要求，满足沈本新城规划环评环境准入要求，满足区域“三线一单”分区管控要求。

经调查，本项目评价范围内无自然保护区、文物古迹、风景名胜、饮用水源保护地等特殊敏感区，厂界外 500m 范围内大气环境保护目标为康家沟村村民和御龙仙语湾小区居民，厂界外 50m 范围内无声环境保护目标。本项目实施后，废气污染物产生量极少，采取相应的污染防治措施，加强污染物达标排放与监控，废气、废水、噪声等经治理后可做到稳定达标排放，固体废物可得到合理、妥善处置，不会对周围环境敏感目标造成大的影响，不会降低周边环境空气、声、地表水等环境质量现状等级，不会引发厂区周边环境质量恶化降级。本项目区域基础设施条件完善，给排水、供电等基础设施完善。交通便利。

综上，本项目选址基本合理。

二、建设项目工程分析

|      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |      |                                                                                                                                                                                                                           |          |
|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| 建设内容 | <b>2.1.1 工程组成</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |      |                                                                                                                                                                                                                           |          |
|      | <p>辽宁新爱特科技有限公司位于辽宁省本溪市经济技术开发区仙榆路 5-15 栋 1-5 层 1 号,厂区中心地理位置为东经 123° 41′ 24.879″ ,北纬 41° 26′ 2.758″ ,主要从事第二类医疗器械生产和销售,日用陶瓷制品销售,特种陶瓷制品制造和销售,第一类医疗器械生产和销售,新型陶瓷材料销售等。</p> <p>本项目属于新建项目,建设单位利用工业园区内闲置工业厂房进行建设,该工业厂房为本溪市筑华置业有限公司产权自有,建筑面积 4768.48m<sup>2</sup>,产权证号辽(2021)本溪市不动产权第 0063106 号,无偿提供给辽宁新爱特科技有限公司作为经营场所使用,使用期限 2 年,自 2025 年 10 月 1 日至 2027 年 9 月 30 日。</p> <p>厂区占地面积 1000m<sup>2</sup>,建筑面积 4768.48m<sup>2</sup>,厂区西侧为本溪朗峰药业有限公司厂房,北、南侧均为工业园内闲置工业厂房,东侧为健云(辽宁)生物科技有限公司厂房,具体位置关系详见附图 2。</p> <p>辽宁新爱特科技有限公司拟总投资 500.00 万元,利用工业园区内闲置工业厂房建设氧化锆瓷块、玻璃陶瓷、陶瓷件、定制义齿、矫治器、种植导板等口腔全瓷修复材料的医用陶瓷耗材和康复辅具产品生产线,所属行业为医疗器械行业,属于医药行业范畴。</p> <p>具体工程组成见表 2-1。</p> |      |                                                                                                                                                                                                                           |          |
|      | <b>表 2-1 主要工程组成一览表</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |      |                                                                                                                                                                                                                           |          |
|      | 工程类别                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 名称   | 本项目建设内容与规模                                                                                                                                                                                                                | 备注       |
|      | 主体工程                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 生产车间 | 钢筋混凝土结构,位于 1~4 层,建筑面积 3987.12m <sup>2</sup> ,内设氧化锆瓷块、玻璃陶瓷、陶瓷件、定制义齿、矫治器、种植导板等口腔全瓷修复材料的医用陶瓷耗材和康复辅具产品生产线。                                                                                                                    | 利用闲置工业厂房 |
|      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |      | 1 层,建筑面积 996.78m <sup>2</sup> ,主要设称料区、半成品区、成品区和预留区,其中称料区建筑面积 109.20m <sup>2</sup> ,半成品区建筑面积 52.20m <sup>2</sup> ,成品区建筑面积 68.70m <sup>2</sup> ,其余区域为预留区和公共设施占地;                                                            | 利用闲置工业厂房 |
|      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |      | 2 层,建筑面积 996.78m <sup>2</sup> ,主要设加工区、烧结膏扫描抛光膏生产区、检验室、热工区、称料区、混料区、丝印、包装区、推板炉窑烧结车间、检验区、办公区及会议室等。其中加工区面积 109.20m <sup>2</sup> ,烧结膏扫描抛光膏生产区面积 50.74m <sup>2</sup> ,检验室面积 26.80m <sup>2</sup> ,热工区面积 116.96m <sup>2</sup> ,称料 | 利用闲置工业厂房 |

|  |                                                                                        |         |                                                                                                                                                                                         |               |
|--|----------------------------------------------------------------------------------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
|  |                                                                                        |         | 区面积 26.80m <sup>2</sup> ，混料区面积 28.40m <sup>2</sup> ，推板窑炉烧制车间面积 200.70m <sup>2</sup> ，丝印、包装区面积 51.62m <sup>2</sup> ，检验区、办公区面积 65.86m <sup>2</sup> ，会议室面积 38.27m <sup>2</sup> ；其余为公共设施占地； |               |
|  |                                                                                        |         | 3 层，建筑面积 996.78m <sup>2</sup> ，预留区；                                                                                                                                                     | 利用闲置工业厂房      |
|  |                                                                                        |         | 4 层，建筑面积 996.78m <sup>2</sup> ，主要设医院门诊、设备间、办公区及预留区。医院门诊面积 25.00m <sup>2</sup> ，主要进行义齿镶贴；办公区面积 81.00m <sup>2</sup> ，设备间面积 69.22m <sup>2</sup> ，预留区面积 650m <sup>2</sup> ，其余为公共设施占地。       | 利用闲置工业厂房      |
|  | 辅助工程                                                                                   | 办公室     | 钢筋混凝土结构，位于 5 层，建筑面积 781.36m <sup>2</sup> ，用于员工的日常办公及休息、办公库房。                                                                                                                            | 利用闲置工业厂房      |
|  | 公用工程                                                                                   | 供水工程    | 新鲜水水源由市政自来水供水管网供给。                                                                                                                                                                      | /             |
|  |                                                                                        | 排水工程    | 雨污分流，生活污水依托工业园区现有公用防渗化粪池预处理后，通过市政污水管网排入石桥子污水处理厂处理，无生产废水产生。                                                                                                                              | 依托现有市政污水管网    |
|  |                                                                                        | 供电工程    | 由当地电网接入低压电源（630KVA）至各建筑物配电装置，经配电后接至各用电设备，全厂用电量为 150 万 kWh/a。                                                                                                                            | 依托现有市政供电设施    |
|  |                                                                                        | 供热和供气工程 | 生产采用电加热，冬季供暖采用集中供热。                                                                                                                                                                     | 依托工业园现有集中供暖设施 |
|  | 环保工程                                                                                   | 废气      | 定制式义齿生产线切削工艺设备自带 3 级过滤收集系统收集粉尘，未被收集的粉尘以无组织形式排放；玻璃陶瓷生产球磨工序产生的粉尘采取设备密闭，湿法球磨；玻璃陶瓷和陶瓷件生产过程中采取湿式机加工艺，过程中产生的粉尘大多数被拦截下来，少量未被拦截的粉尘以无组织形式排放。除以上工艺外的其他工艺粉尘、有机废气等由于产生量较小，均以无组织形式在车间排放。             | /             |
|  |                                                                                        | 废水      | 雨污分流，生活污水依托工业园区现有公用防渗化粪池预处理后，通过市政污水管网排入石桥子污水处理厂处理，无生产废水产生。                                                                                                                              | /             |
|  |                                                                                        | 噪声      | 合理布局，选用低噪声设备；产噪设备置于厂房内；并安装基础减振装置。                                                                                                                                                       | /             |
|  |                                                                                        | 固体废物    | 各生产线产生的不合格品、下脚料、废料、收尘灰等分类回收，回用于生产；废滤料不在厂区暂存，定期更换，返回厂家。<br>新建 1 间 10m <sup>2</sup> 的一般固废暂存间，用于暂存一般固废。                                                                                    | /             |
|  |                                                                                        |         | 废油墨及包装桶、废胶及包装桶、废机油及包装桶、废液压油及包装桶、废紫外线灯管、废无水乙醇及包装桶、废树脂残渣、废釉膏包装桶等暂存于危险废物贮存点，定期委托有资质单位处置。新建 1 间 10m <sup>2</sup> 的危险废物贮存点，用于暂存危险废物。                                                         | /             |
|  |                                                                                        |         | 生活垃圾分类收集后，交由环卫部门统一清运。                                                                                                                                                                   | /             |
|  | 根据《国民经济行业分类》（GB/T4754-2017）及其 2019 年第一号修改单的通知（国统字〔2019〕66 号），本项目所属行业为 C2770 卫生材料及医药用品制 |         |                                                                                                                                                                                         |               |

造、C3586 康复辅具制造。经对照《建设项目环境影响评价分类管理名录（2021 年版）》，本项目属“二十四、医药制造业 27-49、卫生材料及医药用品制造 277；药用辅料及包装材料制造 278-卫生材料及医药用品制造（仅组装、分装的除外）；含有机合成反应的药用辅料制造；含有机合成反应的包装材料制造”，应编制环境影响报告表。

### 2.1.2 产品方案

本项目主要生产氧化锆瓷块、玻璃陶瓷、陶瓷件、定制义齿、矫治器、种植导板等口腔全瓷修复材料的医用陶瓷耗材和康复辅具产品，所属行业为医疗器械行业，属于医药行业范畴。项目建成后，产品方案如表 2-2 所示。

表 2-2 产品方案表

| 名称     | 规格                        | 产量（/年） | 用途       | 产品执行标准           |
|--------|---------------------------|--------|----------|------------------|
| 氧化锆瓷块  | 98mm 圆盘                   | 30 万块  | 口腔义齿修复材料 | 辽械注准 20152170102 |
| 玻璃陶瓷   | 18×15×13mm，<br>40×15×15mm | 200 万块 | 口腔义齿修复材料 | 辽械注准 20232170027 |
| 陶瓷件    | 定制                        | 30 吨   | 饰品       | /                |
| 定制义齿   | 定制                        | 100 万颗 | 口腔义齿修复   | /                |
| 矫治器    | 定制                        | 50 万个  | 口腔正畸     | /                |
| 牙科种植导板 | 定制                        | 2 万个   | 口腔种植辅助   | /                |

### 2.1.3 原辅材料及能源消耗

本项目原辅材料消耗主要为氧化锆瓷块、玻璃陶瓷、陶瓷件、定制义齿、矫治器、种植导板等口腔全瓷修复材料的医用陶瓷耗材和康复辅具产品生产线所需的原辅料，以及水、电等能源消耗。原辅材料及能源消耗见表 2-3。

表 2-3 主要原辅材料消耗表

| 分类        | 原辅料名称 | 年消耗量/<br>（/a） | 状态 | 最大贮存量 | 存储<br>周期 | 存储位置 | 备注 |
|-----------|-------|---------------|----|-------|----------|------|----|
| 氧化锆<br>瓷块 | 氧化锆粉  | 22.3t         | 粉末 | 7t    | 4 月      | 原材料库 | /  |
|           | 液压油   | 200L          | 液体 | 200L  | 12 月     | 原材料库 | /  |
| 玻璃陶<br>瓷  | 二氧化硅  | 20t           | 粉末 | 10t   | 6 月      | 原材料库 | /  |
|           | 碳酸锂   | 10t           | 粉末 | 3t    | 4 月      | 原材料库 | /  |
|           | 碳酸钾   | 1.5t          | 粉末 | 300Kg | 2.4 月    | 原材料库 | /  |
|           | 氢氧化铝  | 1t            | 粉末 | 200Kg | 2.4 月    | 原材料库 | /  |
|           | 偏磷酸铝  | 1t            | 粉末 | 200Kg | 2.4 月    | 原材料库 | /  |
|           | 硼酸    | 1.2t          | 粉末 | 250Kg | 2.5 月    | 原材料库 | /  |
|           | 碳酸钠   | 0.5t          | 粉末 | 90Kg  | 2 月      | 原材料库 | /  |
|           | 碱式碳酸锌 | 0.25t         | 粉末 | 50Kg  | 2.4 月    | 原材料库 | /  |
|           | 氧化铈   | 0.25t         | 粉末 | 50Kg  | 2.4 月    | 原材料库 | /  |

|  |            |         |                     |    |               |       |      |                   |
|--|------------|---------|---------------------|----|---------------|-------|------|-------------------|
|  |            | 五氧化二钒   | 0.020t              | 粉末 | 5Kg           | 3 月   | 原材料库 | /                 |
|  |            | 氧化钼     | 0.1t                | 粉末 | 12Kg          | 1.5 月 | 原材料库 | /                 |
|  |            | 氧化铽     | 0.1t                | 粉末 | 15Kg          | 1.7 月 | 原材料库 | /                 |
|  |            | 氧化镁     | 0.070t              | 粉末 | 10Kg          | 1.7 月 | 原材料库 | /                 |
|  |            | 胶       | 200 支               | 液体 | 50 支          | 3 月   | 原材料库 | 50mL/支            |
|  | 陶瓷件        | 氧化锆粉    | 11t                 | 粉末 | 4t            | 4 月   | 原材料库 | /                 |
|  |            | 氧化铝粉    | 22t                 | 粉末 | 7t            | 4 月   | 原材料库 | /                 |
|  |            | 机油      | 200L                | 液体 | 200L          | 12 月  | 原材料库 | /                 |
|  | 定制义齿       | 氧化锆粉    | 2.5t                | 粉末 | 0.8t          | 4 月   | 原材料库 | /                 |
|  |            | 氧化铝粉    | 2.5t                | 粉末 | 0.8t          | 4 月   | 原材料库 | /                 |
|  |            | 瓷粉      | 0.050t              | 膏状 | 20Kg          | 3 月   | 原材料库 | /                 |
|  |            | 釉膏      | 0.2t                | 膏状 | 50Kg          | 3 月   | 原材料库 | /                 |
|  |            | 凡士林     | 0.02t               | 膏状 | 20Kg          | 12 月  | 原材料库 | /                 |
|  | 矫治器、牙科种植导板 | 牙科树脂膜片  | 50 万片               | 固体 | 5 万片          | 1.2 月 | 原材料库 | 0.75×125mm, 20g/片 |
|  |            | 3D 打印树脂 | 10t                 | 固体 | 1.5t          | 3 月   | 原材料库 | /                 |
|  |            | 无水乙醇    | 0.040t (50L)        | 液体 | 0.0079t (10L) | 3 月   | 原材料库 | 球磨及清洗固化工序使用       |
|  | 玻璃陶瓷、氧化锆瓷块 | UV 油墨   | 0.02t               | 液体 | 6Kg           | 3 月   | 原材料库 | 喷码机及 UV 打印机消耗     |
|  | 能源消耗       | 水       | 361.2m <sup>3</sup> | /  | /             | /     | /    | 自来水管网             |
|  |            | 电       | 150 万 kWh           | /  | /             | /     | /    | 市政电网              |

表 2-4 原辅材料理化性质

| 名称   | 理化性质                                                                                                                                                                                  | 急性毒性                                             | 燃爆危险 |
|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|------|
| 氧化锆粉 | 天然有机斜锆石、锆氧石及绿锆石，主要成分为羟磷灰石或长石。斜锆石型为带黄白色的单斜晶体。相对密度：5.89，熔点：2700°C，沸点（常压）：4300°C，闪点：5000°C，不溶于水，能溶于热浓硫酸、氢氟酸。锆氧石型的，在 1000°C 以上为等轴晶系的无色晶体，相对密度：5.6，熔点：2715°C，能溶于水、硫酸、氢氟酸。于碱共熔生产锆酸盐，化学性质稳定。 | /                                                | 不燃。  |
| 二氧化硅 | 俗名白炭黑，透明无味的晶体或无定形粉末。熔点：1710°C，相对密度（水=1）：2.2（无定形），沸点：2230°C，饱和蒸气压：1.33kPa（1732°C）。溶解性：不溶于水、酸，溶于氢氟酸。                                                                                    | /                                                | 不燃。  |
| 碳酸锂  | 无色单斜晶体或白色粉末。熔点：618°C，相对密度（水=1）：2.11，分解，溶解性：溶于水，溶于酸，不溶于乙醇、丙酮。不燃。                                                                                                                       | LD <sub>50</sub> : 525mg/Kg（大鼠经口）；531mg/Kg（小鼠经口） | /    |



|       |                                                                                                                                                                                                                                                                       |                                                                                         |                     |
|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|---------------------|
| 碳酸钾   | 白色粉末状或细颗粒状结晶，有很强的吸湿性。熔点：891℃，相对密度（水=1）：2.43，溶解性：易溶于水，不溶于乙醇、醚。                                                                                                                                                                                                         | LD <sub>50</sub> : 1870mg/Kg（大鼠经口）                                                      | 不燃，具腐蚀性、刺激性，可致人体灼伤。 |
| 氢氧化铝  | 无臭无味的白色单斜晶体。相对密度（水=1）：2.42，溶解性：不溶于水和乙醇。溶于热盐酸、硫酸和碱类。                                                                                                                                                                                                                   | /                                                                                       | /                   |
| 硼酸    | 无色微带珍珠光泽的三斜晶体或白色粉末，有滑腻手感，无臭味。熔点：185℃（分解），相对密度（水=1）：1.44（15℃），沸点：300℃，溶解性：溶于水，溶于乙醇、乙醚和甘油。                                                                                                                                                                              | /                                                                                       | 不燃，具刺激性。            |
| 碳酸钠   | 白色粉末或细颗粒（无水纯品），味涩。熔点：851℃，相对密度（水=1）：2.53，溶解性：易溶于水，不溶于乙醇、乙醚等。                                                                                                                                                                                                          | LD <sub>50</sub> : 4090mg/Kg（大鼠经口），LC <sub>50</sub> : 2300mg/m <sup>3</sup> ，2 小时（大鼠吸入） | 不燃，具腐蚀性、刺激性，可致人体灼伤。 |
| 碱式碳酸锌 | 白色细微无定形粉末，无臭无味。相对密度（水=1）：4.42~4.45，溶解性：不溶于水和醇，微溶于氨，能溶于烯酸和氢氧化钠。                                                                                                                                                                                                        | /                                                                                       | /                   |
| 氧化铈   | 淡黄色粉末。熔点：约 2600℃，相对密度（水=1）：7.3，溶解性：溶于盐酸和硫酸。                                                                                                                                                                                                                           | /                                                                                       | /                   |
| 五氧化二钒 | 橙黄色或红棕色结晶粉末。熔点：690℃，相对密度（水=1）：3.35，分解，溶解性：微溶于水，不溶于乙醇，溶于浓酸、碱。                                                                                                                                                                                                          | LD <sub>50</sub> : 10mg/Kg（大鼠经口）                                                        | 不燃，高毒。              |
| 氧化铟   | 粉红色粉末。熔点：2387℃，相对密度（水=1）：8.64，沸点：3000℃，溶解性：不溶于水，溶于酸。                                                                                                                                                                                                                  | /                                                                                       | /                   |
| 氧化铋   | 棕褐色无定形粉末。熔点：2337℃，相对密度（水=1）：8.33，溶解性：不溶于水，溶于热浓酸。                                                                                                                                                                                                                      | /                                                                                       | /                   |
| 氧化镁   | 白色粉末。熔点：2800℃，相对密度（水=1）：3.58，沸点：3600℃，溶解性：微溶于水。                                                                                                                                                                                                                       | /                                                                                       | 不燃，具刺激性。            |
| 氧化铝粉  | 白色粉末。熔点：2010~2050℃，相对密度（水=1）：3.97~4.0，沸点：2980℃，溶解性：不溶于水，微溶于无机酸、碱液。                                                                                                                                                                                                    | /                                                                                       | 不燃，具刺激性。            |
| UV 油墨 | 组成物质：K、C、M、Y、W、LC、LM 等 7 种配方中，改性环氧树脂，含量均为 86%—94.9%；1,6-己二醇二丙烯酸酯，含量均为 1%—4%；四氢呋喃丙烯酸酯，含量均为 1%—4%；三羟甲基丙烷三丙烯酸酯，含量均为 0.5%—1%；（2,4,6-三甲基苯甲酰基）-二苯基氧化膦，含量均为 0.5%—1%；添加剂，含量均为 0.1%—1%。K 配方中炭黑含量 2%—3%，其他配方无；C 配方中铜酞青蓝含量 2%—3%，LC 配方中铜酞青蓝含量 0.4%—0.6%，其他配方无；M 配方中颜料红 122 含量 2% | 老鼠口服<br>LD <sub>50</sub> >2000mg/kg，经皮兔子 LD <sub>50</sub> >2000mg/kg。                   | 可燃，可能会引起刺激性反应。      |

|     |                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |          |
|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
|     | <p>—3%，LM 配方中颜料红 122 含量 0.4%—0.6%，其他配方无；Y 配方中颜料黄 150 含量 2%—3%，其他配方无；W 配方中 TiO<sub>2</sub>（二氧化钛）含量 10%—20%，其他配方无。</p> <p>性状：25℃下，K 配方呈黑色液体，C 配方呈青色液体，M 配方呈红色液体，Y 配方呈黄色液体，W 配方呈白色液体，LC 配方呈浅青色液体，LM 配方呈浅红色液体。7 种配方气味均为特殊的臭味，25℃下粘度均为 5—7mPa，燃点均大于 130℃，溶解度均不溶于水，溶于大多数有机溶剂。7 种配方中，25℃下，K 配方比重（密度）为 1.06，C 配方比重（密度）为 1.03，M 配方比重（密度）为 1.05，Y 配方比重（密度）为 1.04，W 配方比重（密度）为 1.09，LC 配方比重（密度）为 1.01，LM 配方比重（密度）为 1.01。</p>                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |          |
| 胶   | <p>3M 环氧胶粘剂。双组份胶。A 组分成分及含量：改性环氧树脂，质量百分比 40%—80%；4,7,10—三氧-1,13—十三烷二胺，质量百分比 1%—5%；2,4,6—三〔（二甲基氨基）甲基〕苯酚，质量百分比 1%—3%；无定形二氧化硅，质量百分比 1%—5%；三氟甲磺酸钙，质量百分比 1%—5%。性状：液体膏状，琥珀色，轻微刺激性气味。沸点：≥175℃，闪点：≥340°F（测试方法：闭杯法），密度：1.12g/mL，相对密度：1.12（水=1），水溶性：略溶（&lt;10%），黏度：8000—14000mPa（73.4°F）。</p> <p>B 组分成分及含量：环氧树脂，质量百分比 80%—95%；丙烯酸聚合物，质量百分比 5%—20%。性状：液体，膏状，白色，轻微气味。沸点≥260℃，闪点 480°F（测试方法：闭杯）。密度 1.14g/mL，相对密度：1.14（水=1），不溶于水。粘度 20000-50000mPa（73.4°F）。</p> | <p>A 组分：4,7,10—三氧-1,13—十三烷二胺，皮肤接触，兔子，LD<sub>50</sub>&gt;2500mg/kg；口服，大鼠，LD<sub>50</sub>&gt;3160mg/kg。无定形二氧化硅，皮肤接触，兔子，LD<sub>50</sub>&gt;5000mg/kg；吸入—粉尘/烟雾（4 小时），大鼠 LC<sub>50</sub>&gt;0.691mg/L。2,4,6—三〔（二甲基氨基）甲基〕苯酚，皮肤接触，大鼠，LD<sub>50</sub>&gt;1280mg/kg；口服，大鼠，LD<sub>50</sub>&gt;1000mg/kg；三氟甲磺酸钙，口服，大鼠，LD<sub>50</sub>&gt;2000mg/kg。</p> <p>B 组分：环氧树脂，皮肤接触，大鼠，LD<sub>50</sub>&gt;1600mg/kg；食入，大鼠，LD<sub>50</sub>&gt;1000mg/kg；丙烯酸聚合物，皮肤接触，兔，LD<sub>50</sub>&gt;5000mg/kg；食入，大鼠，LD<sub>50</sub>&gt;5000mg/kg。</p> | 可燃。具刺激性。 |
| 液压油 | 淡黄色液体。密度（20℃）：0.85—0.95g/cm <sup>3</sup> ，相对密度（水=1）：0.8710；闪点：224℃；引燃温度：220-500℃；运动粘度（40℃）：10-100mm <sup>2</sup> /s。禁配物：酸、碱及强氧化剂。                                                                                                                                                                                                                                                                                                                | /                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 可燃。      |
| 机油  | 性状：油状液体，淡黄色至褐色，无气味或略带异味。相对密度（水=1）：<1，闪点：76℃，引燃温度：248℃，禁配物：强氧化剂。                                                                                                                                                                                                                                                                                                                                                                                  | /                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 可燃，具刺激性。 |

|      |                                                                                                                                                   |                                                                                                                  |           |
|------|---------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|-----------|
| 釉膏   | VITA VMK 95 膏状遮色剂：有机溶剂含量 9.2%。流体，特征性气味。沸点：290℃，闪点：160℃，不溶或难溶于水。                                                                                   | /                                                                                                                | 不自燃。      |
|      | VITA 建模液：无机混合物。无色液体，特征性气味。熔点/凝固点：0℃，沸点：100℃，pH 值：3.4，蒸气压：≤1100hPa（50℃），密度：0.997g/cm <sup>3</sup> ，化学性质稳定。                                         | 经口，ATE>2000mg/kg；<br>经皮，ATE>200mg/kg；<br>吸入蒸气，ATE>20mg/L；<br>吸入粉尘/雾，ATE>5mg/L。                                   | 不易燃。      |
|      | VITA 遮色液：危险成分及含量：无水硫酸钠，含量 1%—5%；乙醇，含量 1%—5%。无色液体，特征性气味。沸点：100℃，pH 值：9，蒸气压：≤1100hPa（50℃），密度：1g/cm <sup>3</sup> 。                                   | 经口，ATE>2000mg/kg；<br>经皮，ATE>200mg/kg；<br>吸入蒸气，ATE>20mg/L；<br>吸入粉尘/雾，ATE>5mg/L；乙醇，经皮，LD <sub>50</sub> >7060mg/kg。 | 不易燃。      |
|      | VITA VM 遮色液：危险成分及含量：乙醇，含量 1%—5%，氢氧化钠，含量<1%。无色液体，特征性气味。沸点：100℃，pH 值：12.7，蒸气压：≤1100hPa（50℃），密度：1g/cm <sup>3</sup> 。化学性质稳定。                          | /                                                                                                                | 不易燃。      |
|      | VITA VM 9：固体，特征性气味。密度（20℃）：2.4g/cm <sup>3</sup> ，不溶于水，有机溶剂含量 0。                                                                                   | /                                                                                                                | 不易燃。      |
|      | VITA VM 9 特效粘结膏：甘油，含量 2.5%—10%；次氨基三乙酸，含量 2.5%—10%。膏状，特征性气味。点燃温度：375℃，密度（20℃）：2.4g/cm <sup>3</sup> ，不溶于水，有机溶剂含量 0。                                 | /                                                                                                                | 不自燃。      |
|      | VITA VMK 95 边缘瓷：粉末，特征性气味。熔点：900℃；不溶于水，有机溶剂含量 0。                                                                                                   | /                                                                                                                | 不自燃。      |
|      | VITA VMK 95 金属陶瓷：固体，特征性气味。密度（20℃）：2.4g/cm <sup>3</sup> ，不溶于水，有机溶剂含量 0。                                                                            | /                                                                                                                | 不易燃。      |
| 无水乙醇 | 无色液体，有酒香。相对密度（水=1）：0.7893；沸点：78.5℃；熔点：-114.1℃；临界温度：243.1℃；临界压力：6.38MPa；相对密度（空气=1）：1.59；闪点：12℃；引燃温度：33℃；爆炸极限（V：V%）：3.3—19.0。禁配物：强氧化剂、酸类、酸酐、碱金属、胺类。 | /                                                                                                                | 易燃，具有刺激性。 |

表 2-5 VOCs 含量合标分析表

| 名称 | VOCs 组分及占比 | VOCs 组分占比（取各组分含量的最大值） | 配比 | VOCs 含量 | 标准   |      |     |      | 达标分析 |
|----|------------|-----------------------|----|---------|------|------|-----|------|------|
|    |            |                       |    |         | 产品类别 | 产品类型 | 标准值 | 标准来源 |      |

|       |                                                                                                                                                                                                                                                                                                                                                                                 |    |   |    |        |        |      |              |    |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|---|----|--------|--------|------|--------------|----|
| UV 油墨 | K、C、M、Y、W、LC、LM 等 7 种配方中，改性环氧树脂，含量均为 86%—94.9%；1,6-己二醇二丙烯酸酯，含量均为 1%—4%；四氢呋喃丙烯酸酯，含量均为 1%—4%；三羟甲基丙烷三丙烯酸酯，含量均为 0.5%—1%；（2,4,6-三甲基苯甲酰基）-二苯基氧化膦，含量均为 0.5%—1%；添加剂，含量均为 0.1%—1%。K 配方中炭黑含量 2%—3%，其他配方无；C 配方中铜酞青蓝含量 2%—3%，LC 配方中铜酞青蓝含量 0.4%—0.6%，其他配方无；M 配方中颜料红 122 含量 2%—3%，LM 配方中颜料红 122 含量 0.4%—0.6%，其他配方无；Y 配方中颜料黄 150 含量 2%—3%，其他配方无；W 配方中 TiO <sub>2</sub> （二氧化钛）含量 10%—20%，其他配方无。 | 9% | / | 9% | 能量固化油墨 | 喷墨印刷油墨 | ≤10% | GB38507-2020 | 达标 |
| 胶     | 3M 环氧胶粘剂。双组份胶。A 组分成分及含量：改性环氧树脂，质量百分比 40%—80%；4,7,10—三氧-1,13—十三烷二胺，质量百分比 1%—5%；2,4,6—三[（二甲氨基）甲基]苯酚，质量百分比 1%—3%；无定形二氧化硅，质量百分比 1%—5%；三氟甲磺酸钙，质量百分比 1%—5%。<br>B 组分成分及含量：环氧树脂，质量百分比 80%—95%；丙烯酸聚合物，质量百分比 5%—20%。                                                                                                                                                                      | 8% | 1 | 8% | 本体型胶粘剂 | 环氧树脂类  | -    | GB33372-2020 | 达标 |

综上，本项目使用的 UV 油墨和胶均符合《油墨中可挥发性有机化合物（VOCs）含量的限值》（GB38507-2020）、《胶粘剂挥发性有机化合物限量》（GB33372-2020）的要求。

### 2.1.4 设备情况

本项目为新建项目，设备主要为各车间生产线的生产设备及其辅助设备，具体内容见表 2-6。

表 2-6 主要设备情况一览表 单位：台

| 设备类型 | 设备名称 | 规格型号 | 数量 | 工作位置   | 备注     |
|------|------|------|----|--------|--------|
| 生产及辅 | 干压机  | Y41  | 10 | 一楼成型车间 | 陶瓷件、氧化 |

|     |         |                     |    |        |                  |
|-----|---------|---------------------|----|--------|------------------|
| 助设备 | 压片机     |                     | 1  | 一楼成型车间 | 锆瓷块生产            |
|     | 等静压机    |                     | 2  | 一楼成型车间 |                  |
|     | 推板窑炉    | ZTE-100-13<br>电加热   | 2  | 一楼热工车间 |                  |
|     | 数控车床    | CK6130              | 6  | 一楼加工车间 |                  |
|     | 喷码机     |                     | 1  | 二楼加工车间 |                  |
|     | 平磨机床    | MY250, 配套湿<br>式加工设施 | 2  | 二楼加工车间 |                  |
|     | 卧式干法球磨机 | WGM-30L             | 3  | 二楼成型车间 | 玻璃陶瓷生产           |
|     | 升降电阻炉   | RS-5-16, 电加热        | 30 | 二楼热工车间 |                  |
|     | 热处理炉    | RXF-12-12           | 6  | 二楼热工车间 |                  |
|     | 平磨机床    | MY250, 配套湿<br>式加工设施 | 2  | 二楼加工车间 |                  |
|     | 切割机     | 自制, 配套湿式加<br>工设施    | 2  | 二楼加工车间 |                  |
|     | 超声波清洗机  | HX28K-15A           | 2  | 二楼加工车间 |                  |
|     | UV 打印机  | /                   | 2  | 二楼加工车间 |                  |
|     | 抛光机     | /                   | 3  | 二楼加工车间 |                  |
|     | 升降电炉    | GWL-1700S, 电<br>加热  | 10 | 二楼热工车间 | 定制义齿生产           |
|     | 模型扫描仪   |                     | 1  | 二楼加工车间 |                  |
|     | 打磨工作台   |                     | 1  | 二楼加工车间 |                  |
|     | 打磨手机    | 手动                  | 1  | 二楼加工车间 |                  |
|     | 研磨仪     |                     | 1  | 二楼加工车间 |                  |
|     | 义齿加工机   | 自带 3 级过滤收<br>集系统    | 20 | 三楼生产车间 |                  |
|     | 紫外线消毒柜  | 含 UV 灯管             | 1  | 二楼生产车间 |                  |
|     | 3D 打印机  |                     | 5  | 三楼生产车间 | 矫治器、牙科<br>种植导板生产 |
|     | 超声波清洗机  | HX28K-15A           | 1  | 三楼生产车间 |                  |
|     | 光固化机    |                     | 1  | 三楼生产车间 |                  |
|     | 压膜机     |                     | 5  | 三楼生产车间 |                  |
|     | 激光打标设备  |                     | 1  | 三楼生产车间 |                  |
|     | 打磨手机    | 手动                  | 1  | 三楼生产车间 |                  |
|     | 紫外线消毒柜  |                     | 1  | 三楼生产车间 |                  |

## 2.1.5 公用工程

### (1) 给水工程

本项目给水由市政自来水管网提供, 用水主要为职工生活用水和工艺用水, 新鲜水用量为 361.2m<sup>3</sup>/a。

#### ①生活用水

本项目劳动定员 12 人, 年工作 300 天, 不设食堂和宿舍, 参照《辽宁省行业用水定额》(DB21T1237-2015), 生活用水定额取 100L/(人天), 则生活用水

量 1.2m<sup>3</sup>/d（360m<sup>3</sup>/a）。

②工艺用水

玻璃陶瓷和陶瓷件生产过程中，加工工艺采用湿式机加工艺，切割机及平磨机床设备均自带湿式机加工循环管路、喷嘴及自带水箱，水箱容积均为 50L，采取湿式除尘。工艺用水循环使用，定期补充损耗，每月补水量 100L，则用水量为 1.20m<sup>3</sup>/a。

（2）排水工程

本项目产生废水主要为职工日常生活产生的生活污水，依托工业园区现有公用防渗化粪池预处理后，通过市政污水管网排入石桥子污水处理厂处理。

生活用水产污系数按 85%计，则生活污水产生量为 1.02m<sup>3</sup>/d（即 306m<sup>3</sup>/a）。本项目水平衡详见图 2-1。

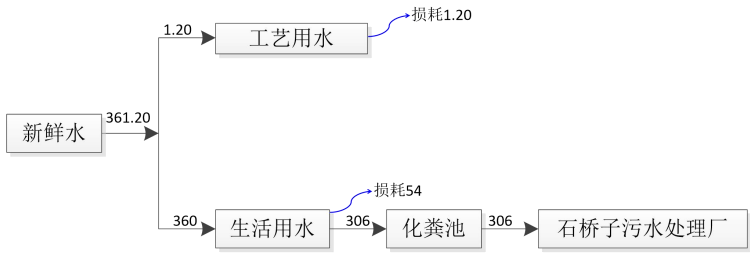


图 2-1 项目水平衡图

（3）供电工程

本项目用电由当地电网接入低压电源（630KVA）至各厂房配电装置，经配电后接至各用电设备，用电量为 150 万 kWh/a。

（4）供热工程

本项目生产采用电加热，冬季供暖采用集中供热。

2.1.6 劳动定员及工作制度

本项目劳动定员 12 人，1 班制，全年生产 300 天，每天工作 12 小时（白班）。

2.1.7 厂区平面布置

本项目位于辽宁省本溪市经济技术开发区仙榆路 5-15 栋 1-5 层 1 号，利用工业园区内闲置工业厂房进行建设，建设氧化锆瓷块、玻璃陶瓷、陶瓷件、定制义齿、矫治器、种植导板等口腔全瓷修复材料的医用陶瓷耗材和康复辅具产品生产线。

钢筋混凝土结构，位于 1~4 层，建筑面积 3987.12m<sup>2</sup>，内设氧化锆瓷块、玻

|            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|            | <p>璃陶瓷、陶瓷件、定制义齿、矫治器、种植导板等口腔全瓷修复材料的医用陶瓷耗材和康复辅具产品生产线。其中 1 层，建筑面积 996.78m<sup>2</sup>，主要设称料区、半成品区、成品区和预留区，其中称料区建筑面积 109.20m<sup>2</sup>，半成品区建筑面积 52.20m<sup>2</sup>，成品区建筑面积 68.70m<sup>2</sup>，其余区域为预留区和公共设施占地。2 层，建筑面积 996.78m<sup>2</sup>，主要设加工区、烧结膏扫描抛光膏生产区、检验室、热工区、称料区、混料区、丝印、包装区、推板炉窑烧结车间、检验区、办公区及会议室等。其中加工区面积 109.20m<sup>2</sup>，烧结膏扫描抛光膏生产区面积 50.74m<sup>2</sup>，检验室面积 26.80m<sup>2</sup>，热工区面积 116.96m<sup>2</sup>，称料区面积 26.80m<sup>2</sup>，混料区面积 28.40m<sup>2</sup>，推板窑炉烧结车间面积 200.70m<sup>2</sup>，丝印、包装区面积 51.62m<sup>2</sup>，检验区、办公区面积 65.86m<sup>2</sup>，会议室面积 38.27m<sup>2</sup>；其余为公共设施占地。3 层，建筑面积 996.78m<sup>2</sup>，预留区。4 层，建筑面积 996.78m<sup>2</sup>，主要设医院门诊、设备间、办公区及预留区。医院门诊面积 25.00m<sup>2</sup>，主要进行义齿镶贴；办公区面积 81.00m<sup>2</sup>，设备间面积 69.22m<sup>2</sup>，预留区面积 650m<sup>2</sup>，其余为公共设施占地。5 层主要为办公区及办公库房，钢筋混凝土结构，建筑面积 781.36m<sup>2</sup>，用于员工的日常办公和休息。从总体来看，本项目平面布置合理，厂区总平面布置图详见附图 3。</p> |
| 工艺流程和产排污环节 | <p><b>2.2.1 施工期</b></p> <p>本项目利用工业园区内闲置工业厂房进行建设，本次仅为新购设备的安装调试等，不涉及土建工程。施工期工艺流程及产排污节点见图 2-2。</p> <pre> graph LR     A([设备/设施运输进场]) --&gt; B([设备/设施安装调试])     B --&gt; C([工程扫尾])     C --&gt; D([竣工])     A -.-&gt; A1[噪声]     B -.-&gt; B1[扬尘、噪声、建筑垃圾]     C -.-&gt; C1[扬尘、清扫废水、建筑垃圾]   </pre> <p style="text-align: center;"><b>图 2-2 施工期工艺流程及排污节点图</b></p> <p><b>工艺流程及产污节点简述：</b></p> <p>（一）设备/设施运输进场</p> <p>根据工程设计内容，通过汽运方式将设备/设施运输进场。</p> <p>此过程中主要产生运输车辆尾气、噪声等。</p> <p>（二）设备/设施安装、调试</p>                                                                                                                                                                                                                                                                                                                                                                                                                   |

按照工艺布局要求，由专业人员负责各类设备/设施的安装调试工作。

此过程涉及设备/设施拆封、设备地基钻孔、设备基座紧固、水电路连接、设备调试等工作，主要产生扬尘、噪声和建筑垃圾。

（三）工程扫尾

由专业保洁人员或公司在职职工进行一次彻底的收尾清洁工作。

清扫过程中主要产生扬尘、清扫废水和建筑垃圾等。

（四）竣工

完成收尾清洁工作后，施工期基本结束，择定日期正式进入运行调试阶段。

2.2.2 运营期

2.2.2.1 生产工艺流程

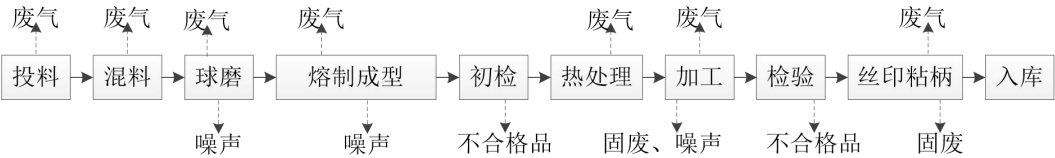


图 2-3 玻璃陶瓷生产工艺流程及产污节点图

工艺流程及产污节点简述：

（1）投料

按照要求称取二氧化硅、碳酸钾、碳酸锂等原料，投入卧式干法球磨机中。  
此工序伴随粉尘的产生，以无组织形式排放。

（2）混料

按照工艺要求按比例将无水乙醇加入到称取的原料中，在球磨机中均匀混合。  
此工序伴随粉尘的产生，以无组织形式排放。

（3）球磨

将混合均匀的原料放入卧式干法球磨机中球磨，操作过程设备密闭，采用湿法球磨。

此工序伴随粉尘、噪声的产生，粉尘采用湿法球磨。

（4）熔制成型

将原料投入升降电阻炉坩埚中熔制，电加热，1550℃下熔制 20~60 分钟后倒入成型模具，自然冷却至室温。



此工序伴随粉尘的产生，以无组织形式排放。

（5）初检

成型的半成品经初检外观，检查外观是否有瑕疵，合格品投入下一工序，不合格品回收。

此工序伴随不合格品的产生，回收，回用于生产。

（6）热处理

初检后将合格的半成品放入热处理炉 650℃~850℃ 下热处理晶化 2~4 小时，得到可加工 CAD/CAM 瓷块。

此工序伴随粉尘的产生，以无组织形式排放。

（7）加工

将热处理后的半成品按照要求采用湿式机加工艺，设备自带水箱，利用切割机切割或平面磨及抛光机抛光，使工件尺寸合规、外表光滑。

此工序伴随粉尘、下脚料和噪声的产生。采取湿式机加工艺，大多数粉尘被拦截下来，少量未被拦截的以无组织形式排放；下脚料回收，回用于生产。

（8）检验

加工后的工件经人工检验外观，检查外观是否有瑕疵，合格品投入下一工序。

此工序伴随不合格品的产生。不合格品回收，回用于生产。

（9）丝印粘柄

检验合格的工件采用 UV 打印机打印产品信息，采用胶粘手柄，自然晾干。

此工序伴随有机废气和废胶及包装桶、废油墨及包装桶的产生。有机废气以无组织形式排放，废油墨及包装桶暂存在危险废物贮存点内，定期委托有资质单位处置。

（10）入库

成品入库待售。

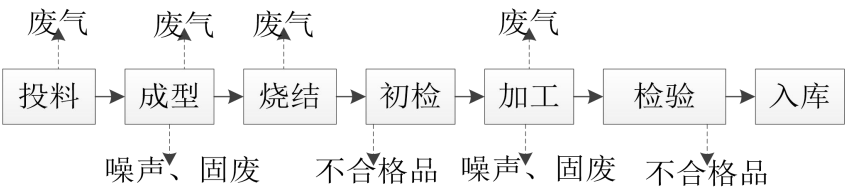


图 2-4 陶瓷件生产工艺流程及产污节点图

**工艺流程及产污节点简述:**

**(1) 投料**

将按照比例称量好的氧化锆粉人工手动投料至模具中。

此工序伴随粉尘的产生，以无组织形式排放。

**(2) 成型**

采用干压机、压片机、等静压机等设备将粉料成型。

此工序伴随粉尘、废机油及包装桶、废料和噪声的产生。粉尘以无组织形式排放。废机油及包装桶暂存于危险废物贮存点内，定期委托有资质单位处置。废料回收，回用于生产。

**(3) 烧结**

将成型的坯体放入推板窑炉中烧结，电加热，温度 900℃~1600℃ 烧结 24~90 小时。

此工序伴随粉尘的产生，以无组织形式排放。

**(4) 初检**

烧结后的产品经人工检验，主要检查尺寸、外观等是否符合要求，合格品入库，不合格品回收。

此工序伴随不合格品的产生，回收，回用于生产。

**(5) 加工**

烧结后的工件采取湿式机加工艺，利用数控车床、平磨机床等设备进行机加修正。

此工序伴随粉尘、废机油及包装桶、下脚料和噪声的产生。项目采取湿式机加工艺，大多数粉尘被拦截下来，少量未被拦截的粉尘以无组织形式排放。废机油及包装桶暂存于危险废物贮存点，定期委托有资质单位处置。下脚料回收，回用于生产。

**(6) 检验**

加工后的产品经检验，主要检查尺寸、外观等是否符合要求，合格品入库待售，不合格品回收。

此工序伴随不合格品的产生，回收，回用于生产。

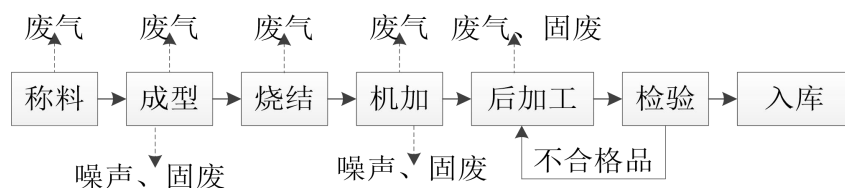


图 2-5 氧化锆瓷块生产工艺流程及产污节点图

### 工艺流程及产污节点简述：

#### （1）称料

按照比例称量氧化锆粉体。

此工序伴随粉尘的产生，以无组织形式排放。

#### （2）成型

在模具中干压或等静压成型，制成基本形状，出模后加工至需要的尺寸。

此工序伴随粉尘、噪声和废液压油及包装桶的产生。粉尘以无组织形式排放。

废液压油及包装桶暂存于危险废物贮存点，定期委托有资质单位处置。

#### （3）烧结

在升降电阻炉或推板窑炉（电加热）中经过 900℃~1100℃固化 40~90 小时，达到可以进行机械加工强度要求。

此工序伴随粉尘的产生，以无组织形式排放。

#### （4）机加

烧结后的工件经过数控车床、平磨机床等机加修整。

此工序伴随粉尘、噪声和废机油及包装桶、下脚料的产生。

#### （5）后加工

机加后的工件在经后加工，使用 UV 油墨喷码、人工修饰。

此工序伴随有机废气、废油墨及包装桶的产生，有机废气以无组织形式排放。

废油墨及包装桶暂存于危险废物贮存点，定期委托有资质单位处置。

#### （6）检验、入库

完成后加工工序的工件经人工检验外观，合格品入库待售，不合格品返回后加工环节。

此工序伴随不合格品的产生，回收，回用于生产。

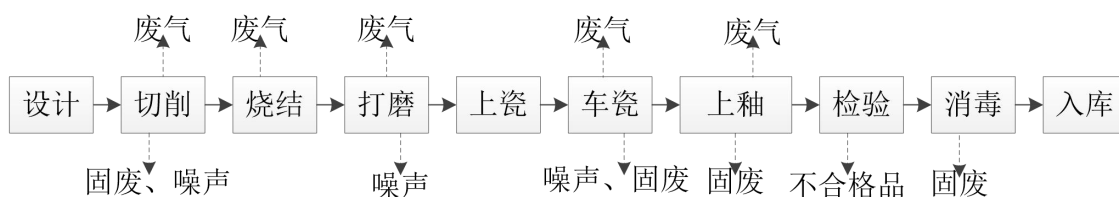


图 2-6 定制式义齿生产工艺流程及产污节点图

#### 工艺流程及产污节点简述：

##### （1）设计

模型扫描仪扫描的口内扫描数据或 CAD 经电脑设计修改后进入下一步工序。

##### （2）切削

将氧化锆盘或玻璃陶瓷瓷块在固定研磨仪的卡具上，将设计数据导入后启动义齿加工机研磨，研磨过程在封闭设备中进行，研磨产生的粉尘由一体化收尘设备收集后，经由设备自带的 3 级过滤收集系统收集至设备内部，未被收集的以无组织形式排放。

此工序伴随粉尘（主要成分为氧化锆）、噪声和废滤料的产生。收尘灰回收，回用于生产；废滤料不在厂区暂存，定期更换，返回厂家。

##### （3）烧结

此过程主要用于牙冠的结晶，通过结晶使牙冠通透性、一致性更好。主要采用升降电炉（电加热）对切削后的产品进行结晶。玻璃陶瓷结晶温度在 800~1000℃ 之间，氧化锆结晶温度在 1350~1550℃。

此工序伴随少量粉尘产生，以无组织形式排放。

##### （4）打磨

完成结晶后的氧化锆义齿表面需打磨使其厚度达到标准要求，且表面光滑，打磨工序在技工桌（打磨工作台）完成，采用手动打磨手机。

此工序伴随噪声、打磨粉尘的产生。粉尘以无组织形式排放。

##### （5）上瓷

在义齿上堆砌瓷粉，把上好瓷粉的义齿放入真空炉内烤瓷。先把瓷粉和凡士林拌成膏糊状，据每颗牙齿的特征堆砌，把堆砌好的瓷粉的义齿放入真空炉内烤瓷。时间约 40 分钟，最高温度根据不同厂家瓷粉要求，在 700~1000℃。

##### （6）车瓷

车瓷是对初期形态的烤瓷牙进行人工修整打磨，使其表面平整、光滑。完成后的瓷牙，能与模型紧密贴合，做到上下左右协调。

此工序伴随噪声和打磨粉尘的产生。打磨粉尘以无组织形式排放。

(7) 上釉

氧化锆义齿的上釉是为了模仿出更加逼真的效果，人工采用毛笔蘸取专用的釉膏均匀涂抹在牙体的表面上，放在烤瓷炉上烘烤，时间为 20~40min，工艺温度设为 700~1000℃。

此工序伴随有机废气、粉尘、废釉膏包装桶的产生。有机废气、粉尘均以无组织形式排放。废釉膏包装桶暂存于危险废物贮存点，定期委托有资质单位处置。

(8) 检验

采用放大镜和卡尺等对成品义齿的颜色、大小等进行检验。不合格的产品进行修复，无法修复的产品作为不合格品。

此工序伴随不合格品的产生，回收，回用于生产。

(9) 消毒

将制作合格的成品采用紫外线消毒柜进行消毒，时间为 30min。

此工序伴随废紫外线灯管的产生，收集暂存于危险废物贮存点，定期委托有资质单位处置。

(10) 入库

成品包装，入库待售。

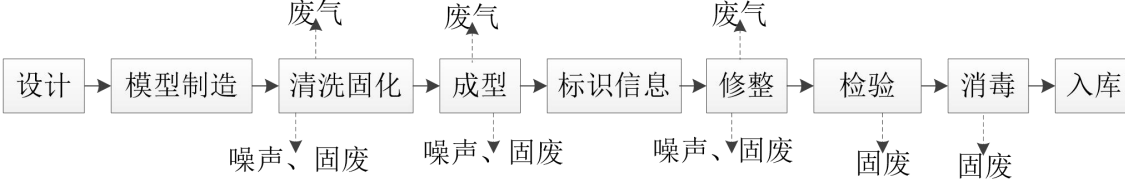


图 2-7 定制式矫治器生产工艺流程及产污节点图

工艺流程及产污节点简述：

(1) 设计

运用设计软件进行设计，依据患者正畸矫正方案生成的分步牙齿模型，进行每一步上下颌模型进行模型编辑，生成打印排版文件准备进行模型打印。

(2) 模型制造

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>3D 打印机将液体的 3D 打印树脂层层堆叠，根据确定的轨迹打印出确定的形状，最终打印出设计好的产品形状。3D 打印树脂的成分主要为氧化双酚 A 二甲基丙烯酸酯、苯基双(2,4,6-三甲基苯甲酰基)氧化磷。此过程不进行加热，常温状态下达不到原材料的熔点温度。因此，此过程无有机废气产生。</p> <p>(3) 清洗固化</p> <p>将 3D 打印完成的牙模从打印网板中卸下后，将模型一并放在盛有无水乙醇的超声波清洗机中进行超声波震荡清洗约为 5min。清洗后将超声波清洗完的分布牙齿模型放置第二级及第三级的无水乙醇容器中进行清洗。清洗后沥干酒精，采用高压空气将压模表面残留的酒精吹干。</p> <p><u>此工序伴随有机废气、噪声、废无水乙醇及包装桶、废树脂残渣的产生。有机废气以无组织形式排放，废无水乙醇及包装桶、废树脂残渣暂存于危险废物贮存点，定期委托有资质单位处置。</u></p> <p>将酒精清洗后的完成品放入光固化机内，利用一定波长的紫外光照射，完成固化。此过程不进行加热，在常温条件下进行。根据供应商提供的 3D 打印树脂成分说明，3D 打印树脂的成分主要为氧化双酚 A 二甲基丙烯酸酯、苯基双(2,4,6-三甲基苯甲酰基)氧化磷。此过程不进行加热，常温状态下达不到原材料的熔点温度。因此，此过程有机废气仅为挥发的乙醇废气。此部分废气以无组织形式排放。</p> <p>(4) 成型</p> <p>将牙科膜片放入压膜机内，控制温度 160℃ 以内热压成型，温度小于牙科膜片（熔点 250—255℃）的熔点温度。因此，此过程产生的有机废气主要是挥发的乙醇气体，以无组织形式排放。</p> <p>(5) 标识信息</p> <p>在激光打标设备上设置批号信息、患者信息以及每个矫治器的步骤信息。将成型的矫治器产品放置在激光烧结打标的工作台上，启动电源，激光烧结上矫治器的信息。此过程有激光烧结的过程，激光高温烧结矫治器表面产生的主要污染物为 PETG 烧结后产生的碳和氢气，生成的气体是二氧化碳，因此无废气产生。</p> <p>(6) 修整</p> <p>使用打磨手机沿着牙龈颈缘线，将多余的膜片位置切割下来。将羊毛轮装载</p> |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

到打磨手机上，将矫治器边缘打磨光滑。

此工序伴随下脚料、粉尘和噪声的产生。粉尘以无组织形式排放。下脚料回收，回用于生产。

（7）检验

对矫治器的外观和就为贴合等外观指标进行检验。不合格的产品进行修复，无法修复的产品作为不合格品。

此工序伴随不合格品的产生，回收，回用于生产。

（8）消毒

将制作合格的成品采用紫外线消毒柜进行消毒，时间为 30min。

此工序伴随废紫外线灯管的产生，收集暂存于危险废物贮存点，定期委托有资质单位处置。

（9）成品

合格品包装，入库待售。

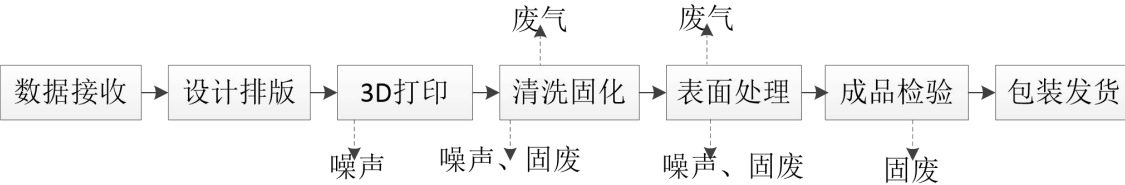


图 2-8 牙科种植导板生产工艺流程及产污节点图

（1）数据接收

根据客户设计的牙科种植导板数据文件模型，进行数据接收，并检查模型质量。

（2）设计排版

根据客户的牙科种植导板排版文件，进行打印工件的排版设计。

（3）3D 打印

3D 打印机将液体的 3D 打印树脂层层堆叠，根据确定的轨迹打印出确定的形状，最终打印出设计好的产品形状。3D 打印树脂的成分主要为氧化双酚 A 二甲基丙烯酸酯、苯基双（2,4,6-三甲基苯甲酰基）氧化膦。此过程不进行加热，常温状态下达不到原材料的熔点温度。因此，此过程无有机废气产生。

（4）清洗固化

将 3D 打印完成的牙模从打印网板中卸下后,将模型一并放在盛有浓度为 95% 的无水乙醇的超声波清洗机中进行超声波震荡清洗约为 5min。清洗后将超声波清洗完的分布牙齿模型放置第二级及第三级的无水乙醇容器中进行清洗。清洗后沥干酒精,采用高压空气将压模表面残留的酒精吹干。过程中 20%的废无水乙醇被收集,按照危险废物处置。

此工序伴随有机废气、噪声、废无水乙醇及包装桶、废树脂残渣的产生。有机废气以无组织形式排放。废无水乙醇及包装桶、废树脂残渣暂存在危险废物贮存点,定期委托有资质单位处置。

将酒精清洗后的完成品放入光固化机内,利用一定波长的紫外光照射,完成固化。根据供应商提供的 3D 打印树脂成分说明,3D 打印树脂的成分主要为氧化双酚 A 二甲基丙烯酸酯、苯基双(2,4,6-三甲基苯甲酰基)氧化磷。此过程不进行加热,常温状态下达不到原材料的熔点温度。因此,此过程有机废气仅为挥发的乙醇废气。

(5) 表面处理

使用打磨手机将牙科种植导板表面的支撑杆打磨掉,并对表面进行抛光处理。  
此工序伴随下脚料、粉尘和噪声的产生。粉尘以无组织形式排放。下脚料回收,回用于生产。

(6) 成品检验

对牙科导板的外观和就为贴合等外观指标进行检验。不合格的产品进行修复,无法修复的产品作为不合格品。  
此工序伴随不合格品的产生,回收,回用于生产。

(7) 包装发货

合格品包装,发货。

2.2.2.3 产污环节及污染物

本项目运营期产污环节及污染物详见表 2-6。

表 2-6 运营期产污环节及污染物

| 类别 | 产污环节   |                      | 污染物  | 污染因子 |
|----|--------|----------------------|------|------|
| 废气 | 玻璃陶瓷生产 | 投料、混料、球磨、熔制成型、热处理、加工 | 粉尘   | 颗粒物  |
|    |        | 丝印粘柄                 | 有机废气 | TVOC |



|  |    |                 |             |                |                                                     |
|--|----|-----------------|-------------|----------------|-----------------------------------------------------|
|  |    | 陶瓷件生产           | 投料、成型、加工、烧结 | 粉尘             | 颗粒物                                                 |
|  |    | 氧化锆瓷块生产         | 称料、成型、烧结、机加 | 粉尘             | 颗粒物                                                 |
|  |    |                 | 后加工         | 有机废气           | TVOC                                                |
|  |    | 定制式义齿生产         | 切削、烧结、打磨、车瓷 | 粉尘             | 颗粒物                                                 |
|  |    |                 | 上釉          | 有机废气、粉尘        | TVOC、颗粒物                                            |
|  |    | 定制式矫治器、牙根种植导板生产 | 清洗固化、成型     | 有机废气           | TVOC                                                |
|  |    |                 | 修整、表面处理     | 粉尘             | 颗粒物                                                 |
|  | 废水 | 员工日常生活          |             | 生活污水           | pH、COD、NH <sub>3</sub> -N、SS、BOD <sub>5</sub> 、动植物油 |
|  | 噪声 | 生产车间            | 生产设备及辅助设备   | 机械噪声           | Leq (A)                                             |
|  | 固废 | 玻璃陶瓷生产          | 初检、检验       | 不合格品           | 一般工业固体废物                                            |
|  |    |                 | 加工          | 下脚料            | 一般工业固体废物                                            |
|  |    |                 | 丝印粘柄        | 废油墨及包装桶、废胶及包装桶 | 危险废物                                                |
|  |    | 陶瓷件生产           | 成型          | 废机油及包装桶        | 危险废物                                                |
|  |    |                 |             | 废料             | 一般工业固体废物                                            |
|  |    |                 | 初检、检验       | 不合格品           | 一般工业固体废物                                            |
|  |    |                 | 加工          | 下脚料            | 一般工业固体废物                                            |
|  |    | 氧化锆瓷块生产         | 成型          | 废液压油及包装桶       | 危险废物                                                |
|  |    |                 |             | 下脚料            | 一般工业固体废物                                            |
|  |    |                 | 机加          | 废机油及包装桶        | 危险废物                                                |
|  |    |                 | 后加工         | 废油墨及包装桶        | 危险废物                                                |
|  |    | 定制式义齿生产         | 检验          | 不合格品           | 一般工业固体废物                                            |
|  |    |                 | 切削          | 下脚料、收尘灰、废滤料    | 一般工业固体废物                                            |
|  |    |                 | 上釉          | 废釉膏包装桶         | 危险废物                                                |
|  |    |                 | 消毒          | 废紫外线灯管         | 危险废物                                                |
|  |    | 定制式矫治器生产        | 清洗固化        | 废无水乙醇及包装桶      | 危险废物                                                |
|  |    |                 |             | 废树脂残渣          | 危险废物                                                |
|  |    |                 | 修整          | 下脚料            | 一般工业固体废物                                            |
|  |    |                 | 检验          | 不合格品           | 一般工业固体废物                                            |
|  |    | 牙科种植导板生产        | 清洗固化        | 废无水乙醇及包装桶      | 危险废物                                                |
|  |    |                 |             | 废树脂残渣          | 危险废物                                                |
|  |    |                 | 表面处理        | 下脚料            | 一般工业固体废物                                            |
|  |    |                 | 成品检验        | 不合格品           | 一般工业固体废物                                            |

|                |                                                                                                                             |
|----------------|-----------------------------------------------------------------------------------------------------------------------------|
| 与项目有关的原有环境污染问题 | <p>本项目租赁工业园区内现有闲置工业厂房，厂房现已闲置多年，此前未从事工业生产活动，无遗留生产设备、原辅材料及污染物。经现场勘查，厂房内无土壤污染、地下水污染痕迹，周边环境质量符合工业园区规划要求，不存在与本项目相关的原有环境污染问题。</p> |
|----------------|-----------------------------------------------------------------------------------------------------------------------------|

三、区域环境质量现状、环境保护目标及评价标准

区域环境  
质量现状

(一) 大气环境质量现状调查

(1) 常规环境空气质量现状调查

根据大气功能区划分，本项目所在地为二类功能区，环境空气质量执行《环境空气质量标准》（GB3095-2012）及其修改单二级标准。

本次评价优先采用《本溪市生态环境质量报告书（2023 年本）》中本溪市环境质量的相关数据进行评价，监测项目为 SO<sub>2</sub>、NO<sub>2</sub>、PM<sub>10</sub>、PM<sub>2.5</sub>、CO、O<sub>3</sub>，采用《环境空气质量标准》（GB3095-2012）二级标准评价。具体结果详见表 3-1。

表 3-1 基本污染物环境质量现状

| 污染物               | 年评价指标                     | 评价标准<br>(μg/m <sup>3</sup> ) | 现状浓度<br>(μg/m <sup>3</sup> ) | 占标率<br>(%) | 超标倍<br>数 | 达标情况 |
|-------------------|---------------------------|------------------------------|------------------------------|------------|----------|------|
| SO <sub>2</sub>   | 年平均质量浓度                   | 60                           | 12                           | 20         | 0        | 达标   |
| NO <sub>2</sub>   | 年平均质量浓度                   | 40                           | 30                           | 75         | 0        | 达标   |
| PM <sub>10</sub>  | 年平均质量浓度                   | 70                           | 62                           | 88.6       | 0        | 达标   |
| PM <sub>2.5</sub> | 年平均质量浓度                   | 35                           | 32.1                         | 91.7       | 0        | 达标   |
| CO                | 24 小时平均浓度第<br>95 百分位数     | 4000                         | 1800                         | 45         | 0        | 达标   |
| O <sub>3</sub>    | 日最大 8 小时平均浓<br>度第 90 百分位数 | 160                          | 132                          | 82.5       | 0        | 达标   |

由上表 3-1 可知，2023 年本溪市 SO<sub>2</sub>、NO<sub>2</sub>、PM<sub>10</sub>、PM<sub>2.5</sub>、CO、O<sub>3</sub> 年平均质量浓度均符合《环境空气质量标准》（GB3095-2012）二级标准及修改单限值要求，因此项目所在区域为环境空气质量达标区。

(2) 环境空气特征因子质量现状调查

根据《建设项目环境影响报告表编制技术指南（污染影响类）（试行）》：“排放国家、地方环境空气质量标准中有标准限值要求的特征污染物时，引用建设项目周边 5 千米范围内近 3 年的现有监测数据，无相关数据的选择当季主导风向下风向 1 个点位补充不少于 3 天的监测数据。”根据生态环境部环境工程评估中心 2021 年 10 月 20 日发布的《<建设项目环境影响报告表>内容、格式及编制技术指南及常见问题解答》中提到“排放国家、地方环境空气质量标准限值要求的特征污染物，其中环境空气质量标准指《环境空气质量标准》（GB3095）和地方环境空气质量标准，不包括《环境影响评价技术导则 大气环

境（HJ2.2-2008）》附录 D、《工业企业设计卫生标准》（TJ36-97）、《前苏联居住区标准》（CH245-71）、《环境影响评价技术导则 制药建设项目》（HJ611-2011）、《大气污染物综合排放标准详解》等导则或参考资料。排放的特征污染物需要在国家、地方环境空气质量标准中有限值要求才涉及现状监测，且优先引用现有监测数据。”本项目特征污染物为 TSP、TVOC，TVOC 不在《环境空气质量标准》（GB3095）和地方环境空气质量标准内，因此本次评价对其不进行补充监测，只对《环境空气质量标准》（GB3095）中 TSP 进行分析。

本次评价引用辽宁天圆检测有限责任公司对项目所在地锦尚家园小区 TSP 现状监测数据。锦尚家园小区位于本项目厂址东北侧 3.5km 处，采样时间为 2025 年 4 月 21 日至 23 日，符合《建设项目环境影响报告表编制技术指南（污染影响类）》（试行）要求。具体的监测因子、点位、频次见表 3-2，监测结果见表 3-3。

表 3-2 项目大气环境本底监测因子、点位、频次一览表

| 类别 | 监测项目 | 监测点位          | 监测频次 |
|----|------|---------------|------|
| 本底 | TSP  | 厂址东北侧 3.5km 处 | 日均值  |

表 3-3 项目总悬浮颗粒物日均值监测结果一览表

| 监测点位名称     | 监测因子 |        | 标准<br>(mg/m <sup>3</sup> ) | 监测浓度范围 (mg/m <sup>3</sup> ) | 最大浓度占标率/% | 超标频率/% | 达标情况 |
|------------|------|--------|----------------------------|-----------------------------|-----------|--------|------|
| K1: 锦尚家园小区 | TSP  | 24h 平均 | 0.3                        | 0.20~0.22                   | 73.3      | 0      | 达标   |

由表 3-3 可以看出，评价区域总悬浮颗粒物现状监测浓度满足《环境空气质量标准》（GB3095-2012）及 2018 年修改单中二级标准（0.3mg/m<sup>3</sup>）。

### （二）声环境质量现状调查

根据《建设项目环境影响报告表编制技术指南（污染影响类）（试行）》“声环境。厂界外周边 50m 范围内存在声环境保护目标的建设项目，应监测保护目标声环境质量现状并评价达标情况。各点位应监测昼夜间噪声，监测时间不少于 1 天，项目夜间不生产则仅监测昼间噪声。”经调查，本项目厂界外周边 50m 范围内无声环境保护目标，无需开展声环境质量现状监测。

### （三）地表水环境质量现状调查

本项目厂界东侧 250m 为北沙河南支。根据《2023 年本溪市环境质量状况公报》，2023 年，北沙河水质状况为良，各监测指标年均值均符合国家地表水Ⅲ类标准。1 个监测断面各监测指标年均值符合类水质评价标准。与上年相比，北沙河水质类别保持不变；高锰酸盐指数、石油类和化学需氧量年均值下降幅度分别为 6.5%、45.0%和 21.6%；氨氮、总磷和氟化物年均值上升幅度分别为 17.9%、3.7%和 17.3%；其他监测指标年均值无明显变化。

本项目地表水环境质量引用《本溪市生态环境质量报告书（2023 年度）》中北沙河断面水质监测结论，断面主要监测指标年均浓度如下表所示：

表 3-4 北沙河断面主要监测指标年均浓度

| 项目     | 高锰酸盐指数<br>(mg/L) | BOD <sub>5</sub><br>(mg/L) | 氨氮<br>(mg/L) | COD (mg/L) | TP (mg/L) |
|--------|------------------|----------------------------|--------------|------------|-----------|
| 2023 年 | 2.9              | 1.7                        | 0.33         | 12         | 0.112     |
| 标准     | 6                | 4                          | 1.0          | 20         | 0.2       |
| 是否达标   | 达标               | 达标                         | 达标           | 达标         | 达标        |

由上表可知北沙河断面水质可以满足地表水环境质量Ⅲ类标准要求，水质状况较好。

（四）生态环境

本项目利用工业园区内闲置工业厂房进行建设，不新增占地，厂址周边无生态环境保护目标，故本项目不涉及生态环境现状调查。

（五）电磁辐射

本项目不属于新建或改建、扩建广播电台、差转台、电视塔台、卫星地球上行台、电磁辐射雷达等电磁辐射类项目，故不开展电磁辐射现状调查。

（六）地下水、土壤环境

根据《建设项目环境影响报告表编制指南》（污染影响类），地下水、土壤环境原则上可不开展环境质量现状调查。本项目利用工业园区内闲置工业厂房进行建设，厂区地面全部采用水泥硬化，厂区采取分区防渗措施，危险废物贮存点采取重点防渗措施。因此，本项目正常工况下运行时，不会对地下水和土壤环境造成影响，且本项目厂界周边 500m 范围内不存在地下水和土壤环境保护目标，无土壤、地下水污染途径。故本次评价不开展地下水、土壤环境现状调查。



（一）施工期污染物排放控制标准

（1）废气

施工扬尘执行《辽宁省施工及堆料场地扬尘排放标准》（DB21/2642-2016）中表 1 城镇建成区标准要求，详见表 3-7。

表 3-7 辽宁省施工及堆料场地扬尘排放标准 单位：mg/m³

| 监测项目     | 区域    | 浓度限制（连续 5min 平均浓度） |
|----------|-------|--------------------|
| 颗粒物（TSP） | 城镇建成区 | 0.8                |

（2）噪声

施工噪声执行《建筑施工场界环境噪声排放标准》（GB12523-2011）标准，详见表 3-8。

表 3-8 建筑施工场界环境噪声排放标准 单位：dB（A）

| 执行标准                           | 昼间 | 夜间 |
|--------------------------------|----|----|
| 《建筑施工场界环境噪声排放标准》（GB12523-2011） | 70 | 55 |

（二）运营期污染物排放控制标准

（1）废气

本项目涉及工业炉窑中的非金属加热炉，执行《工业炉窑大气污染物排放标准》（GB9078-1996）表 3 无组织排放烟（粉）尘最高允许浓度限值。

除烧结工序外，其他工艺废气中的颗粒物排放执行《大气污染物综合排放标准》（GB16297-1996）表 2 新污染源大气污染物排放限值要求，TVOC 排放参照执行《大气污染物综合排放标准》（GB16297-1996）表 2 新污染源大气污染物非甲烷总烃（NMHC）排放限值，另由于本项目厂房为独栋工业厂房，无厂界。因此，不对厂区内非甲烷总烃进行管控。具体标准值详见表 3-9。

表 3-9 大气污染物排放标准

| 污染物名称 | 无组织排放监测浓度限值（mg/m³） | 执行标准                                                              |
|-------|--------------------|-------------------------------------------------------------------|
| 烟粉尘   | 工业炉窑所在厂房门窗排放口处 5.0 | 《工业炉窑大气污染物排放标准》（GB9078-1996）表 2<br>《大气污染物综合排放标准》（GB16297-1996）表 2 |
| 非甲烷总烃 | 周界外浓度最高点 4.0       |                                                                   |
| 颗粒物   | 周界外浓度最高点 1.0       |                                                                   |

（2）废水

本项目废水仅为生活污水，依托工业园区现有公用防渗化粪池预处理后，通过市政污水管网排入石桥子污水处理厂处理，属于间接排放，无生产废水产

|                    | <p>生。因此，项目废水污染物执行《辽宁省污水综合排放标准》（DB21/1627-2008）表 2 排入污水处理厂的水污染物最高允许排放浓度，未在本标准内的 pH 执行《污水综合排放标准》（GB8978-1996）表 4 三级标准，见表 3-10。</p> <p style="text-align: center;"><b>表 3-10 废水污染物排放标准</b></p> <table><tr><th>项目</th><th>浓度限值</th><th>单位</th><th>执行标准</th></tr><tr><td>pH</td><td>6~9</td><td>无量纲</td><td rowspan="2">《污水综合排放标准》（GB8978-1996）表 4</td></tr><tr><td>动植物油</td><td>100</td><td>mg/L</td></tr><tr><td>COD</td><td>300</td><td>mg/L</td><td rowspan="4">《辽宁省污水综合排放标准》（DB21/1627-2008）表 2</td></tr><tr><td>NH<sub>3</sub>-N</td><td>30</td><td>mg/L</td></tr><tr><td>SS</td><td>300</td><td>mg/L</td></tr><tr><td>BOD<sub>5</sub></td><td>250</td><td>mg/L</td></tr></table> <p><b>（3）噪声</b></p> <p>运营期噪声排放执行《工业企业厂界环境噪声排放标准》（GB12348-2008）3 类区标准，详见表 3-11。</p> <p style="text-align: center;"><b>表 3-11 厂界噪声标准 dB（A）</b></p> <table><tr><th>类别</th><th>昼间</th><th>夜间</th></tr><tr><td>3 类区标准</td><td>65</td><td>55</td></tr></table> <p><b>（4）固废</b></p> <p>一般工业固体废物参照《一般工业固体废物贮存和填埋污染控制标准》（GB18599-2020）、《关于加强全省一般工业固废环境管理工作的通知》（辽环函〔2022〕42 号）进行管理，分类执行《固体废物分类与代码目录》（生态环境部公告 2024 年第 4 号）；危险废物分类按照生态环境部、国家发展和改革委员会、公安部、交通运输部、国家卫生健康委员会令第 36 号公布的《国家危险废物名录》（2025 年版）；厂区暂存执行《危险废物贮存污染控制标准》（GB18597-2023）中的相关要求。</p> | 项目   | 浓度限值                             | 单位 | 执行标准 | pH | 6~9 | 无量纲 | 《污水综合排放标准》（GB8978-1996）表 4 | 动植物油 | 100 | mg/L | COD | 300 | mg/L | 《辽宁省污水综合排放标准》（DB21/1627-2008）表 2 | NH <sub>3</sub> -N | 30 | mg/L | SS | 300 | mg/L | BOD <sub>5</sub> | 250 | mg/L | 类别 | 昼间 | 夜间 | 3 类区标准 | 65 | 55 |
|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----------------------------------|----|------|----|-----|-----|----------------------------|------|-----|------|-----|-----|------|----------------------------------|--------------------|----|------|----|-----|------|------------------|-----|------|----|----|----|--------|----|----|
| 项目                 | 浓度限值                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 单位   | 执行标准                             |    |      |    |     |     |                            |      |     |      |     |     |      |                                  |                    |    |      |    |     |      |                  |     |      |    |    |    |        |    |    |
| pH                 | 6~9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 无量纲  | 《污水综合排放标准》（GB8978-1996）表 4       |    |      |    |     |     |                            |      |     |      |     |     |      |                                  |                    |    |      |    |     |      |                  |     |      |    |    |    |        |    |    |
| 动植物油               | 100                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | mg/L |                                  |    |      |    |     |     |                            |      |     |      |     |     |      |                                  |                    |    |      |    |     |      |                  |     |      |    |    |    |        |    |    |
| COD                | 300                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | mg/L | 《辽宁省污水综合排放标准》（DB21/1627-2008）表 2 |    |      |    |     |     |                            |      |     |      |     |     |      |                                  |                    |    |      |    |     |      |                  |     |      |    |    |    |        |    |    |
| NH <sub>3</sub> -N | 30                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | mg/L |                                  |    |      |    |     |     |                            |      |     |      |     |     |      |                                  |                    |    |      |    |     |      |                  |     |      |    |    |    |        |    |    |
| SS                 | 300                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | mg/L |                                  |    |      |    |     |     |                            |      |     |      |     |     |      |                                  |                    |    |      |    |     |      |                  |     |      |    |    |    |        |    |    |
| BOD <sub>5</sub>   | 250                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | mg/L |                                  |    |      |    |     |     |                            |      |     |      |     |     |      |                                  |                    |    |      |    |     |      |                  |     |      |    |    |    |        |    |    |
| 类别                 | 昼间                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 夜间   |                                  |    |      |    |     |     |                            |      |     |      |     |     |      |                                  |                    |    |      |    |     |      |                  |     |      |    |    |    |        |    |    |
| 3 类区标准             | 65                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 55   |                                  |    |      |    |     |     |                            |      |     |      |     |     |      |                                  |                    |    |      |    |     |      |                  |     |      |    |    |    |        |    |    |
| 总量控制指标             | <p>根据《关于做好“十四五”主要污染物总量减排工作的通知》（环办综合函〔2021〕323 号）和《主要污染物总量减排核算技术指南（2022 年修订）》、《辽宁省生态环境厅关于进一步加强建设项目主要污染物排放总量指标审核和管理的通知》（辽环综函〔2020〕380 号）等有关法律法规要求，化学需氧量、氨氮、氮氧化物、VOCs 为总量控制类污染物。</p> <p>结合本项目的排污特点，确定总量控制因子为 TVOC、COD 和 NH<sub>3</sub>-N。</p> <p><b>1.废水</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |      |                                  |    |      |    |     |     |                            |      |     |      |     |     |      |                                  |                    |    |      |    |     |      |                  |     |      |    |    |    |        |    |    |



本项目实施后新增的废水量为 306m<sup>3</sup>/a。

(1) 本项目废水中 COD、NH<sub>3</sub>-N 执行《辽宁省污水综合排放标准》(DB21/1627-2008) 表 2 标准, 其中 COD 和 NH<sub>3</sub>-N 浓度限值分别 300mg/L、30mg/L。在标准下的厂区排口污染物排放量为:

COD 厂区排口污染物排放量 (在标准下)

$$=300\text{mg/L}\times 306\text{m}^3/\text{a}\times 10^{-6}=0.092\text{t/a}$$

NH<sub>3</sub>-N 厂区排口污染物排放量 (在标准下)

$$=30\text{mg/L}\times 306\text{m}^3/\text{a}\times 10^{-6}=0.0092\text{t/a}$$

(2) 根据本项目环评预测结果, COD 排放浓度为 300mg/L, NH<sub>3</sub>-N 排放浓度为 30mg/L。环评预测下的厂区排口污染物预测排放量为:

$$\text{COD 厂区排口预测排放量}=300\text{mg/L}\times 306\text{m}^3/\text{a}\times 10^{-6}=0.092\text{t/a}$$

$$\text{NH}_3\text{-N 厂区排口预测排放量}=30\text{mg/L}\times 306\text{m}^3/\text{a}\times 10^{-6}=0.0092\text{t/a}$$

综上, 本项目 COD、NH<sub>3</sub>-N 厂区排口预测排放量均不超过《辽宁省污水综合排放标准》(DB21/1627-2008) 标准下的厂区排口污染物排放量。

(3) 依托污水处理厂出口排入外环境的排放量

受纳污水的石桥子污水处理厂出水水质执行《城镇污水处理厂污染物排放标准》(GB18918-2002) 中一级 A 标准, COD 浓度为 50mg/L, 氨氮排放浓度取 5mg/L。

$$\text{COD 排入外环境量}=50\text{mg/L}\times 306\text{m}^3/\text{a}\times 10^{-6}=0.0153\text{t/a}$$

$$\text{NH}_3\text{-N 排入外环境量}=5\text{mg/L}\times 306\text{m}^3/\text{a}\times 10^{-6}=0.00153\text{t/a}$$

## 2. 废气

(1) 废气中 TVOC 参照执行《大气污染物综合排放标准》(GB16297-1996) 表 2 新污染源大气污染物非甲烷总烃 (NMHC) 排放限值, 即界外浓度最高点限值为 4.0mg/m<sup>3</sup>。本项目各生产线产生的有机废气均以无组织形式排放。

(2) 根据本项目环评预测结果, 有机废气无组织排放量为 0.032t/a。根据估算模型预测, 厂界处有机废气排放不超过《大气污染物综合排放标准》(GB16297-1996) 表 2 新污染源大气污染物排放限值要求。

综上, 根据环评预测, 本项目拟申请总量为 COD0.0153t/a, NH<sub>3</sub>-N0.00153t/a, TVOC: 0.032t/a。

### （三）总结

本项目总量控制指标计算结果见 3-12。

表 3-12 总量控制指标计算结果

| 类别    | 总量控制因子             | 总量控制指标 (t/a) |
|-------|--------------------|--------------|
| 废水污染物 | COD                | 0.0153       |
|       | NH <sub>3</sub> -N | 0.00153      |
| 废气污染物 | TVOC               | 0.032        |

## 四、主要环境影响和保护措施

|                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|----------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>施<br/>工<br/>期<br/>环<br/>境<br/>保<br/>护<br/>措<br/>施</b> | <p>本项目利用工业园区内闲置工业厂房进行建设，本次仅为新购设备设施的安装调试等，不涉及土建工程，工程量较少。因此，本项目施工期环境污染主要体现在施工噪声及建筑垃圾等对环境的影响。</p> <p><b>4.1.1 废气</b></p> <p>本项目施工内容主要为设备/设施安装、工程扫尾等工作，均在封闭厂房内进行，因此，施工产尘环节和产尘量均很少。本项目通过采取定期洒水抑尘、物料封闭储存、建筑垃圾及时清运等措施防治下，施工边界扬尘能够满足《辽宁省施工及堆料场地扬尘排放标准》（DB21/2642-2016）中表 1 城镇建成区标准要求，对本项目所在区域环境空气质量不会造成大的影响，而且这种影响极为短暂，将随着施工期的结束而完全消失。</p> <p><b>4.1.2 废水</b></p> <p>施工期污水主要为施工人员产生的生活污水和工程扫尾阶段清扫产生的废水，排放量少、浓度低。其中施工废水主要为工程扫尾阶段清扫产生的废水，主要污染物为 SS，收集沉淀后全部回用于洒水降尘，不外排，对区域水环境影响极其微小，并随着施工期的结束而完全消失。</p> <p>本项目施工现场不设施工营地、食堂及临时宿舍，施工人员自行解决住宿、就餐等问题。施工人员的生活污水主要污染物包括 COD、NH<sub>3</sub>-N、SS 等，全部排入现有市政污水管网，汇流至工业园区现有防渗化粪池预处理，处理后排入市政污水管网，对区域水环境影响极其轻微且短暂。</p> <p><b>4.1.3 噪声</b></p> <p>1.建设单位应尽量选用低噪声施工设备、施工方法和低噪声的施工工艺，同时设置专人对施工设备/机械进行定期保养和维护，定期组织对现场施工人员的培训，严格规范操作使用各类施工设备/机械；</p> <p>2.合理安排施工时间。禁止夜间（22 时至次日 6 时）施工，确需夜间施工的，应报有关部门批准，并提前在施工区周边公示，避免施工噪声扰民；</p> <p>3.对重型机动车的运输指定路线与时段，避开敏感区和交通高峰期。运输车辆敏感路段（如学校、医院等）禁止鸣笛；</p> |
|----------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                  | <p>4.加强管理。建设单位应加强对施工场地的噪声管理，文明施工，避免因施工噪声产生纠纷；</p> <p>5.加强生态环境主管部门管理、监督作用；建立“公众参与”监督制度；施工场界周围的公众有权在施工前了解施工时可能发生的噪声污染情况，施工单位应听取当地公众意见，接受公众监督，保证施工噪声污染防治措施有效实施。</p> <p>采取以上措施后，本项目施工期噪声满足《建筑施工场界环境噪声排放标准》（GB12523-2011）昼间标准要求。而且本项目位于工业园区内，厂界 50m 范围内不存在声环境保护目标，基本不会对周围环境造成影响，并且随着施工期的结束，这种影响将完全消失。</p> <p><b>4.1.4 固废</b></p> <p>本项目施工期基本无土建工程施工，施工期采取以下固体废物防治措施：</p> <p>1.施工过程中建筑材料应按规范标志清楚、分类堆放整齐，并设有明显标牌。</p> <p>2.建筑垃圾处理：钢筋、钢板、废纸壳、废塑料等可回收垃圾分类收集后统一外售。建筑垃圾可做到零排放，对环境影响较小。</p> <p>3.生活垃圾和其他废弃物应设置临时垃圾箱进行收集，并根据当地政府部门的要求定期运至指定地点消纳处理。</p> <p>综上所述，本项目施工期产生的固体废物全部得到妥善处置，不会对周围环境产生明显影响。</p> |
| 运营<br>期环<br>境影<br>响和<br>保护<br>措施 | <p><b>4.2.1 废气</b></p> <p>本项目运营期废气污染物主要为工艺粉尘和有机废气。</p> <p><b>4.2.1.1 正常工况</b></p> <p>（一）源强分析</p> <p>（1）工艺粉尘</p> <p>本项目工艺粉尘主要为玻璃陶瓷生产过程中投料、混料、球磨、熔制成型、热处理、加工工序产生的颗粒物；陶瓷件生产过程中投料、成型、加工、烧结工序产生的颗粒物；氧化锆瓷块生产过程中称料、成型、烧结、机加工序产生</p>                                                                                                                                                                                                                                                                                                                                                               |

的颗粒物；定制式义齿生产过程中切削、烧结、打磨、车瓷、上釉工序产生的颗粒物；定制式矫治器、牙根种植导板生产过程中修整工序产生的颗粒物。颗粒物的产生量参照《排放源统计调查产排污核算方法和系数手册》“33 金属制品业、34 通用设备制造业、35 专用设备制造业、36 汽车制造业、37 铁路、船舶、航空航天和其他运输设备制造业、431 金属制品修理、432 通用设备修理、433 专用设备修理、434 铁路、船舶、航空航天等运输设备修理（不包括电镀工艺）行业系数手册”：投料、混料、称料：0.192 千克/吨-原料，热处理、烧结：0.0130 千克/吨-原料；球磨、熔制成型、加工、成型、机加、打磨、车瓷、切削、上釉、修整、表面处理：2.19 千克/吨-原料。具体参数详见表 4-1。

表 4-1 工艺粉尘产污情况一览表

| 产品名称  | 工序           | 运行时间<br>(h/a) | 原料消耗量 | 产污系数<br>(kg/t-原料) | 粉尘产生量<br>(kg/a) | 粉尘产生速<br>率 (kg/h) |
|-------|--------------|---------------|-------|-------------------|-----------------|-------------------|
| 玻璃陶瓷  | 投料           | 150           | 35.99 | 0.192             | 6.91            | 0.046             |
|       | 混料           | 150           | 35.99 | 0.192             | 6.91            | 0.046             |
|       | 球磨           | 900           | 35.99 | 2.19              | 78.82           | 0.088             |
|       | 熔制成型         | 900           | 35.99 | 2.19              | 78.82           | 0.088             |
|       | 热处理（烟<br>粉尘） | 1200          | 35.99 | 0.0130            | 0.47            | 0.00039           |
|       | 加工           | 900           | 35.99 | 2.19              | 78.82           | 0.088             |
| 陶瓷件   | 投料           | 150           | 33    | 0.192             | 6.34            | 0.042             |
|       | 成型           | 900           | 33    | 2.19              | 72.27           | 0.080             |
|       | 烧结（烟粉<br>尘）  | 3600          | 33    | 0.0130            | 0.43            | 0.00012           |
|       | 加工           | 900           | 33    | 2.19              | 72.27           | 0.080             |
| 氧化钨瓷块 | 称料           | 150           | 22.3  | 0.192             | 4.28            | 0.029             |
|       | 成型           | 900           | 22.3  | 2.19              | 48.84           | 0.054             |
|       | 烧结（烟粉<br>尘）  | 3600          | 22.3  | 0.0130            | 0.29            | 0.000081          |
|       | 机加           | 900           | 22.3  | 2.19              | 48.84           | 0.054             |
| 定制义齿  | 切削           | 900           | 5.25  | 2.19              | 11.50           | 0.013             |
|       | 烧结（烟粉<br>尘）  | 3600          | 5.25  | 0.0130            | 0.068           | 0.000019          |
|       | 打磨           | 900           | 5.25  | 2.19              | 11.50           | 0.013             |
|       | 车瓷           | 900           | 5.25  | 2.19              | 11.50           | 0.013             |
|       | 上釉           | 900           | 5.25  | 2.19              | 11.50           | 0.013             |
|       | 修整、表面<br>处理  | 3600          | 20    | 2.19              | 43.8            | 0.012             |
| 合计    | 生产车间         | /             | /     | /                 | 594.18          | 0.76              |

注：项目工业炉窑产生的烟粉尘污染物为 TSP，工艺粉尘污染物为 TSP，厂界处均执行《大

气污染物综合排放标准》（GB16297-1996）表 2 标准限值，计算中将二者合并。

本项目定制式义齿生产线切削工艺设备自带 3 级过滤收集系统收集粉尘，除尘效率 90%，未被收集的粉尘以无组织形式排放；玻璃陶瓷生产球磨工序产生的粉尘采取设备密闭，湿法球磨，除尘效率 99%；玻璃陶瓷和陶瓷件生产过程中采取湿式机加工艺，设备均自带水循环管路和喷嘴装置，过程中产生的粉尘大多数被拦截下来，除尘效率 95%，少量未被拦截的粉尘以无组织形式排放。除以上工艺外的其他工艺粉尘由于产生量较小，均以无组织形式在车间排放。项目工艺粉尘排放情况详见表 4-2。

表 4-2 生产车间工艺粉尘排放情况一览表

| 车间名称 | 排放方式 | 污染物种类 | 污染物排放速率 (kg/h) | 污染物排放量 (t/a) | 污染物排放浓度 (mg/m <sup>3</sup> ) |
|------|------|-------|----------------|--------------|------------------------------|
| 生产车间 | 无组织  | 颗粒物   | 0.51           | 0.37         | /                            |

## (2) 有机废气

项目有机废气主要为玻璃陶瓷生产过程中丝印粘柄工序和喷码机使用过程中产生的挥发性有机物（NMHC）；氧化锆瓷块生产过程中后加工工序和喷码机使用过程中产生的挥发性有机物（NMHC）；定制式义齿生产过程中上釉工序产生的挥发性有机物（NMHC）；定制式矫治器、牙根种植导板生产过程中清洗固化、成型工序产生的乙醇挥发废气。上述有机废气污染物均以 TVOC 计。项目清洗固化工序中 20%的废无水乙醇被收集，按照危险废物处置，余下 30%以无组织形式挥发。则本项目有机废气产污情况详见表 4-3。

表 4-3 有机废气产污情况一览表

| 产品名称          | 工序      | 运行时间 (h/a) | 原料消耗量 (t/a)                 | VOC 含量 | 挥发量 (%)  | TVOC 产生量 (kg/a) | TVOC 产生速率 (kg/h) |
|---------------|---------|------------|-----------------------------|--------|----------|-----------------|------------------|
| 玻璃陶瓷          | 丝印粘柄    | 600        | 0.0113                      | 5g/L   | 10       | 0.0050          | 0.000083         |
| 氧化锆瓷块、玻璃陶瓷    | 后加工、喷码  | 600        | 0.02                        | 90%    | 90 (固化率) | 1.80            | 0.0030           |
| 定制式义齿         | 上釉      | 600        | 0.2                         | 25%    | 30       | 0.015           | 0.000025         |
| 定制式矫治器、牙根种植导板 | 清洗固化、成型 | 600        | 0.032<br>(0.0080 被收集，按危废处置) | 95%    | 100      | 30.4            | 0.051            |
| 合计            |         |            |                             |        |          | 32.22           | 0.054            |

本项目 VOCs 排放采取源头削减措施。项目采用的 UV 油墨为能量固化油墨，胶为环氧树脂类本体型胶粘剂，VOCs 含量均低于 10%，符合源头削减要

求。此外，本项目在生产过程需使用少量的无水乙醇作为清洗剂（因工艺生产所需，暂不具备替代条件），年用量仅为 50L。由于本项目使用的油墨和胶黏剂均为低 VOCs 原辅料，核算后有机废气初始产生量极小。且乙醇具备易分解、低毒性特征，扩散性较强。有机废气拟以无组织形式排放，可满足《挥发性有机物无组织排放控制标准》（GB37822-2019）以及其他现行 VOCs 治理技术规范文件要求。项目有机废气排放情况详见表 4-4。

表 4-4 生产车间有机废气排放情况一览表

| 车间名称 | 排放方式 | 污染物种类 | 污染物排放速率 (kg/h) | 污染物排放量 (t/a) | 污染物排放浓度 (mg/m <sup>3</sup> ) |
|------|------|-------|----------------|--------------|------------------------------|
| 生产车间 | 无组织  | 有机废气  | 0.054          | 0.032        | /                            |

### (3) 运营期废气源强小结

本项目运营期废气排污负荷汇总结果见表 4-5。

表 4-5 运营期废气排污负荷汇总表

| 排放源参数 |    |    |    |      | 污染物排放          |      |                |                 |               |            |
|-------|----|----|----|------|----------------|------|----------------|-----------------|---------------|------------|
| 名称    | 编号 | 高度 | 内径 | 排放方式 | 废气量/<br>(m³/h) | 污染物  | 浓度/<br>(mg/m³) | 排放速率/<br>(Kg/h) | 排放量/<br>(t/a) | 排放时<br>间/h |
| 生产车间  | /  | /  | /  | 无组织  | /              | 颗粒物  | /              | 0.51            | 0.37          | /          |
|       |    |    |    |      |                | 有机废气 | /              | 0.054           | 0.032         | /          |

### (二) 污染物达标分析

#### (1) 无组织废气

无组织废气达标判定采用《环境影响评价技术导则 大气环境》（HJ2.2-2018）推荐模式中的估算模式进行预测，录入参数见表 4-6，录入源强见表 4-7。

表 4-6 估算模型参数表

| 参数        |            | 取值       |
|-----------|------------|----------|
| 城市/农村选项   | 城市/农村      | 城市       |
|           | 人口数（城市选择时） | 137.97 万 |
| 最高环境温度/°C |            | 37.8     |
| 最低环境温度/°C |            | -37.9    |
| 土地利用类型    |            | 城市       |
| 区域湿度条件    |            | 中等湿度     |
| 是否考虑地形    | 考虑地形       | 否        |
|           | 地形数据分辨率/m  | /        |
| 是否        | 考虑岸线熏烟     | 否        |

|                   |         |  |                       |  |
|-------------------|---------|--|-----------------------|--|
| 考虑岸线熏烟            | 岸线距离/km |  | /                     |  |
|                   | 岸线方向/°  |  | /                     |  |
| 环境质量标准<br>(小时平均值) | TSP     |  | 0.90mg/m <sup>3</sup> |  |
|                   | TVOC    |  | 1.2mg/m <sup>3</sup>  |  |

表 4-7 面源源强参数表

| 污染源名称 | 坐标 (°)     |           | 海拔高度 (m) | 矩形面源   |        |          | 污染物排放速率 (Kg/h) |       |
|-------|------------|-----------|----------|--------|--------|----------|----------------|-------|
|       | 经度         | 纬度        |          | 长度 (m) | 宽度 (m) | 有效高度 (m) | TSP            | TVOC  |
| 生产车间  | 123.690112 | 41.434321 | 138      | 37     | 36.5   | 17.5     | 0.51           | 0.054 |

估算模式计算结果见表 4-8。

表 4-8 估算模式计算结果表

| 污染源  | 污染因子 | 评价标准 (μg/m <sup>3</sup> ) | Cmax (μg/m <sup>3</sup> ) | Dmax (m) |
|------|------|---------------------------|---------------------------|----------|
| 生产车间 | TVOC | 1200                      | 250                       | 16       |
|      | TSP  | 900                       | 234                       | 16       |

估算模式预测结果表明，颗粒物、非甲烷总烃的最大落地浓度均远低于《大气污染物综合排放标准》（GB16297-1996）表 2 新污染源大气污染物排放限值。无组织废气污染物可达标排放。

（三）污染防治措施可行性论证

（1）污染防治措施

本项目废气污染防治措施见表 4-9。

表 4-9 运营期废气污染防治措施一览表

| 产污单元     | 产污环节 | 污染物 | 收集措施 |      | 治理措施           |       |      | 排放源参数 |    |                         |       |       |      |         |
|----------|------|-----|------|------|----------------|-------|------|-------|----|-------------------------|-------|-------|------|---------|
|          |      |     | 收集方式 | 收集效率 | 治理技术           | 编号    | 去除效率 | 名称    | 编号 | 废气量 (m <sup>3</sup> /h) | 高度 /m | 内径 /m | 排放方式 | 年排放时间/h |
| 定制式义齿    | 切削   | 颗粒物 | 集气罩  | 90%  | 设备自带 3 级过滤收集系统 | TA001 | 90%  | 生产车间  | /  | /                       | /     | /     | 无组织  | 900     |
| 玻璃陶瓷     | 球磨   | 颗粒物 | 密闭收集 | 100% | 湿法球磨           | TA002 | 99%  | 生产车间  | /  | /                       | /     | /     | 无组织  | 900     |
| 玻璃陶瓷和陶瓷件 | 机加   | 颗粒物 | 密闭收集 | 100% | 湿式机加           | TA003 | 95%  | 生产车间  | /  | /                       | /     | /     | 无组   | 900     |



|  |  |  |  |  |   |  |  |  |  |  |  |   |
|--|--|--|--|--|---|--|--|--|--|--|--|---|
|  |  |  |  |  | 工 |  |  |  |  |  |  | 织 |
|--|--|--|--|--|---|--|--|--|--|--|--|---|

(2) 污染防治措施可行性论证

1) 工艺粉尘

本项目采取湿法球磨、湿式机加工工艺协同治理粉尘污染物。其工作原理如下：湿法球磨是将无水乙醇加入到原料中，球磨过程中原料水分含量较大，降低粉尘的产生量；湿式机加工是以水作为冷却降温介质，湿式加工装置均由设备自带，主要由循环管路、滤网、水槽、循环泵、喷嘴等组成。运行时喷淋后的介质通过设备底部托盘回收，自流并经滤网过滤后回流至回收槽，自然冷却后由小型循环泵打至喷嘴喷淋，循环利用。

本项目所属的行业为 C2770 卫生材料及医药用品制造、C3586 康复辅具制造，现阶段，国家并未发布与本行业配套的排污许可证申请与核发技术规范。经预测，本项目产生的颗粒物量很少，同时产污设备较为分散、工作时间不定，如采取集气收集+除尘净化的方式进行治理，不仅投资高、废气收集难度大，而且末端治理措施的利用率不高，容易出现空转状况，环境经济效益较差。而环评设计采取的“湿式加工协同治理+工作场所封闭”措施工艺简单可靠、操作方便、降尘效果较好，而且基本无环保投资、运行费用低，具有良好的环境经济效益，同时能够满足达标排放要求。综上所述，本项目采取的颗粒物污染防治措施有效、可行。

2) 有机废气

本项目与《挥发性有机物无组织排放控制标准》（GB37822-2019）相符性分析见表 4-10。

表 4-10 《挥发性有机物无组织排放控制标准》（GB37822-2019）相符性分析

| 标准要求 |                                      | 项目情况                                                                                                                                | 相符性 |
|------|--------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|-----|
| 储存要求 | VOCs 物料应储存于密闭的容器、包装袋、储罐、储库、料仓中       | 项目涉及 VOCs 物料仅为 UV 油墨、胶、釉膏和无水乙醇，其中 UV 油墨的最大储存量仅为 0.006t，釉膏的最大储存量仅为 0.050t，均于密闭包装桶储存。胶的最大储存量仅为 0.0028t，无水乙醇的最大储存量仅为 0.0079t，均于密闭包装内储存 | 符合  |
|      | 盛装 VOCs 物料的容器或包装袋应存放于室内，或存放于设置有雨棚、遮阳 | 均置于封闭的包装内，放置于原材料库内                                                                                                                  | 符合  |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                              |                                                                                 |    |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|----|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 和防渗设施的专用场地。盛装 VOCs 物料的容器或包装袋在非取用状态时应加盖、封口，保持密闭                                                               |                                                                                 |    |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | VOCs 物料储罐应密封良好，其中挥发性有机液体储罐应符合 5.2 条规定                                                                        | 不涉及                                                                             | /  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | VOCs 物料储库、料仓应满足 3.6 条对密闭空间的要求                                                                                | 原材料库满足标准对密闭空间的要求                                                                | 符合 |
| 转移<br>输送<br>要求                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 液态 VOCs 物料应采用密闭管道输送。采用非管道输送方式转移液态 VOCs 物料时，应采用密闭容器、罐车                                                        | 本项目各类 VOCs 原辅料均于密闭包装内进行转移和输送                                                    | 符合 |
| 工艺<br>过程<br>要求                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | VOCs 质量占比大于等于 10% 的含 VOCs 产品，其使用过程应采用密闭设备或在密闭空间内操作，废气应排至 VOCs 废气收集处理系统；无法密闭的，应采取局部气体收集措施，废气应排至 VOCs 废气收集处理系统 | 本项目使用的油墨和胶黏剂 VOCs 质量占比均小于 10%，且年用量极少，根据预测，在运行过程中产生的挥发性有机废气量极少，在无组织排放下均能做到稳定达标排放 | 符合 |
| 排放<br>控制<br>要求                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | VOCs 废气收集处理系统污染物排放应符合 GB16297 或相关行业排放标准的规定                                                                   | 根据源强分析及预测结果，本项目挥发性有机废气排放满足 GB16297 标准限值要求                                       | 符合 |
| 注：与项目无关事项未列入。                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                              |                                                                                 |    |
| <p>综上分析，本项目基本符合《挥发性有机物无组织排放控制标准》（GB37822-2019）要求。</p> <p>根据工程分析及源强核算结果，本项目运行工艺产生挥发性有机废气，产生量合计仅为 32.22kg/a，产生量极少。如采取收集+末端处理措施，不仅投资高，而且治理措施的利用率低，污染物削减量极少，并且容易出现空转状况，环境经济效益较差。</p> <p>本项目所属的行业为 C2770 卫生材料及医药用品制造、C3586 康复辅具制造，不属于涉 VOCs 废气治理重点行业，而且尚未发布行业排污许可证申请与核发技术规范。根据前文预测结果，本项目无组织排放的 TVOC 满足《大气污染物综合排放标准》（GB16297-1996）表 2 新污染源大气污染物排放限值，满足达标排放要求。直接排放具有良好的环境经济效益，且对区域环境空气质量的影响极其轻微。</p> <p><b>4.2.1.2 非正常工况</b></p> <p>根据工程分析内容，本项目非正常工况废气污染物排放主要为末端废气处理装置失效状态下的颗粒物排放。本次环评按除尘设施完全失效考虑，核定非正常工况废气污染物排放情况，结果见表 4-11。</p> |                                                                                                              |                                                                                 |    |

表 4-11 非正常工况污染源排污负荷

| 污染源  | 原因             | 污染物 | 排放浓度<br>(mg/m <sup>3</sup> ) | 排放速率<br>(Kg/h) | 排放量/<br>(t) | 单次持续<br>时间/h | 年发生频<br>次/次 |
|------|----------------|-----|------------------------------|----------------|-------------|--------------|-------------|
| 生产车间 | 末端治理设施<br>完全失效 | 颗粒物 | /                            | 0.76           | 0.00076     | 1            | 1           |

由上表可知，非正常工况下，颗粒物排放会对项目所在区域环境空气质量造成短期影响。因此，建设单位应加强废气处理设施的管理，加强日常巡检和自行监测工作，定期检修，确保废气处理设施正常运行。现场工作人员发现末端废气处理装置失效后应立即关停相应生产设备，待末端废气处理装置恢复正常工作后方可复工。

#### 4.2.1.3 自行监测要求

本项目营运期主要对项目运行后各类废气污染物的排放浓度和排放量进行监测和控制。根据《排污单位自行监测技术指南 总则》（HJ918-2017），结合项目排污特点及该厂实际情况，确定该项目废气自行监测计划，企业应建立健全各项监测制度并保证其实施。本项目废气监测制度具体见表 4-12。

表 4-12 本项目废气自行监测计划

| 类别 | 监测位置                      | 监测项目 | 执行标准                                                     | 监测频率       |
|----|---------------------------|------|----------------------------------------------------------|------------|
| 废气 | 厂界上风向一个点位、下风向三个点位         | 颗粒物  | 《大气污染物综合排放标准》（GB16297-1996）中新污染源大气污染物无组织排放监控浓度限值要求       | 委托监测，1次/季度 |
|    | 厂界上风向一个点位、下风向三个点位、厂区内一个点位 | TVOC | 《大气污染物综合排放标准》（GB16297-1996）表 2 新污染源大气污染物排放限值要求（按非甲烷总烃执行） | 委托监测，1次/季度 |

注：TVOC 按 NMHC 和乙醇计。

#### 4.2.2 废水

##### 4.2.2.1 环境影响分析

根据前文水平衡分析，本项目废水量为 306m<sup>3</sup>/a，主要为职工日常生活产生的生活污水。生活污水污染物主要包括 pH、COD、NH<sub>3</sub>-N、SS、BOD<sub>5</sub> 和动植物油，污染物根据《排放源统计调查产排污核算方法和系数手册》（公告 2021 年第 24 号）中“生活污染源产排污系数手册”，城镇居民（一区）产排污系数进行核定。

本项目废水污染物产污负荷详见表 4-13。

表 4-13 运营期废水污染物产污负荷表

| 废水种类 | 废水量 (m³/a) | 污染物                | 产污负荷     |          |         |
|------|------------|--------------------|----------|----------|---------|
|      |            |                    | 浓度(mg/L) | 产生量(t/a) | 浓度源强依据  |
| 生活污水 | 306        | pH                 | 7~8(无量纲) | /        | 生活污水参考值 |
|      |            | COD                | 350      | 0.11     | 产排污系数   |
|      |            | NH <sub>3</sub> -N | 36.5     | 0.011    | 产排污系数   |
|      |            | SS                 | 400      | 0.12     | 生活污水参考值 |
|      |            | BOD <sub>5</sub>   | 300      | 0.092    | 生活污水参考值 |
|      |            | 动植物油               | 200      | 0.061    | 生活污水参考值 |

本项目生活污水依托工业园区现有公用防渗化粪池预处理后，通过市政污水管网排入石桥子污水处理厂处理，无生产废水产生。本项目间接排放废水源强见表 4-14。

表 4-14 运营期废水污染物产污负荷表

| 废水种类 | 废水量 (m³/a) | 污染物                | 排污负荷情况    |          |
|------|------------|--------------------|-----------|----------|
|      |            |                    | 浓度(mg/L)  | 排放量(t/a) |
| 生活污水 | 306        | pH                 | 7~8 (无量纲) | /        |
|      |            | COD                | 300       | 0.092    |
|      |            | NH <sub>3</sub> -N | 30        | 0.0092   |
|      |            | SS                 | 300       | 0.092    |
|      |            | BOD <sub>5</sub>   | 250       | 0.077    |
|      |            | 动植物油               | 80        | 0.024    |

根据表 4-13 可知，本项目排放废水中 COD、BOD<sub>5</sub>、NH<sub>3</sub>-N、SS 满足《辽宁省污水综合排放标准》（DB21/1627-2008）表 2 标准达标排放，pH 值、动植物油满足《污水综合排放标准》（GB8978-1996）标准限值。

#### 4.2.2.2 污染防治措施可行性论证

本项目废水类别、污染物及污染治理设施见表 4-15。

表 4-15 废水类别、污染物及污染治理设施表

| 废水类别 | 污染物种类                          | 污染治理设施 |     |    | 排污口信息 |       |       |      |
|------|--------------------------------|--------|-----|----|-------|-------|-------|------|
|      |                                | 编号     | 名称  | 工艺 | 名称    | 编号    | 类型    | 方式   |
| 生活污水 | pH 值、五日生化需氧量、氨氮、化学需氧量、悬浮物、动植物油 | TW001  | 化粪池 | 沉淀 | 废水总排口 | DW001 | 一般排放口 | 间接排放 |

项目生活污水依托园区现有化粪池预处理后，排入石桥子污水处理厂，可满足《辽宁省污水综合排放标准》（DB21/1627-2008）表 2 排至城镇污水处理厂水质限值要求、《污水综合排放标准》（GB8978-1996）表 4 三级标准要求。

石桥子污水处理厂位于辽宁本溪市，于 2003 年 12 月 1 日正式建成投入运行，采取的污水处理工艺为 A<sup>2</sup>/O，其设计规模为 30.00 万立方米/日，平均日处理规模达到 22.37 万立方米/日，剩余处理能力为规划处理能力的 25%，污水经处理达到《城镇污水处理厂污染物排放标准》（GB18918-2002）中一级标准的 A 标准。本项目废水排放量为 1.02m<sup>3</sup>/d，远小于目前可处理水量，因此该污水处理厂能够满足本项目处理水量与水质要求，可接收本项目废水，项目污水依托石桥子污水处理厂处理可行。

石桥子污水处理厂进水水质见表 4-16。

表 4-16 石桥子污水处理厂进水水质要求

| 项目                 | 标准值 | 单位   |
|--------------------|-----|------|
| pH                 | 6-9 | 无量纲  |
| COD                | 300 | mg/L |
| NH <sub>3</sub> -N | 30  | mg/L |
| SS                 | 300 | mg/L |
| BOD <sub>5</sub>   | 250 | mg/L |
| 动植物油               | 100 | mg/L |

本项目废水依托现有污水处理站满足本项目废水处理量所需，处理后的水质满足间接排放废水水质要求，满足石桥子污水处理厂接水水质要求；所在地污水管网配套齐全；石桥子污水处理厂剩余处理能力能够接纳本项目废水量，废水中不含重金属等有毒有害物质，所含污染物均已纳入该集中式污水处理厂收水污染物指标中，其处理工艺能够将本项目废水达标处理后排放。综上所述，本项目采取的废水污染治理措施有效、可行。

#### 4.2.2.3 排污口设置

本项目生活污水依托工业园区现有公用防渗化粪池预处理后，通过市政污水管网排入石桥子污水处理厂处理，无生产废水产生。废水排放口设置情况见表 4-17。

表 4-17 现有废水间接排放口基本信息

| 排放口<br>编号 | 排放口地理<br>坐标    |               | 排放<br>废水<br>类别 | 排放<br>去向 | 排放<br>规律 | 间歇排<br>放时段    | 受纳污水处理厂信息 |                    |                             |
|-----------|----------------|---------------|----------------|----------|----------|---------------|-----------|--------------------|-----------------------------|
|           | 经度             | 纬度            |                |          |          |               | 名称        | 污染物<br>种类          | 国家或地方污染物排放<br>标准浓度限值/（mg/L） |
| DW<br>001 | 123.6<br>90483 | 41.43<br>4148 | 生活<br>污水       | 城镇<br>污水 | 间歇<br>排放 | 08:<br>00~17: | 石桥<br>子污  | COD                | 50                          |
|           |                |               |                |          |          |               |           | NH <sub>3</sub> -N | 5                           |

|  |  |  |  |         |  |    |          |                  |          |
|--|--|--|--|---------|--|----|----------|------------------|----------|
|  |  |  |  | 处理<br>厂 |  | 00 | 水处<br>理厂 | SS               | 10       |
|  |  |  |  |         |  |    |          | BOD <sub>5</sub> | 10       |
|  |  |  |  |         |  |    |          | 动植物<br>油         | 100      |
|  |  |  |  |         |  |    |          | pH               | 6-9（无量纲） |

本项目废水排放口设置要求如下：

（1）按照《排污口规范化整治技术要求（试行）》（环监〔1996〕470号）等文件要求设置标准采样口。

（2）环境保护图形标志设置情况应符合《环境保护图形标志实施细则（试行）》（环监〔1996〕463号）、《环境保护图形标志—排污口（源）》（GB15562.1-1995）要求，便于污染源的监督管理和常规监测工作。标志牌应设置在采样、监测点附近且醒目处，并能长久保留。废水排放口标志见表4-18。环境保护图形标志—排放口（源）的形状及颜色见表4-19。

**表 4-18 环境保护图形标志-排放口（源）**

| 序号 | 提示图形符号                                                                              | 警告图形符号                                                                              | 名 称   | 功 能        |
|----|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------|------------|
| 1  |  |  | 废水排放口 | 表示废水向水环境排放 |

**表 4-19 环境保护图形标志的形状及颜色表**

| 项 目  | 形 状   | 背景颜色 | 图形颜色 |
|------|-------|------|------|
| 警告标志 | 三角形边框 | 黄色   | 黑色   |
| 提示标志 | 正方形边框 | 绿色   | 白色   |

（3）按照《中华人民共和国规范化排污口的标志登记证》填写相关内容。

（4）根据《排污单位污染物排放口二维码标识技术规范》（HJ1297-2023），废水排放口对应设置排放口二维码标识，并包括废水污染物排放口基本信息和废水污染物排放口许可管理要求等内容，符合相关要求。

**4.2.2.4 监测计划**

根据《排污许可证申请与核发技术规范 总则》（HJ942-2018）确定本项目废水监测方案，见表4-20。

**表 4-20 项目废水监测方案**

| 项目 | 监测口位置  | 监测项目 | 执行标准 |     |            | 监测频次 | 备注 |
|----|--------|------|------|-----|------------|------|----|
|    |        |      | 标准值  | 单位  | 来源         |      |    |
| 废水 | 厂区污水总排 | pH   | 6~9  | 无量纲 | GB8978-199 | 1次/年 | /  |

|  |          |                    |     |      |                       |       |  |
|--|----------|--------------------|-----|------|-----------------------|-------|--|
|  | 口（DW001） | 动植物油               | 100 | mg/L | 6 表 4                 | 1 次/年 |  |
|  |          | COD                | 300 | mg/L | DB21/1627-2008 表 2 标准 |       |  |
|  |          | NH <sub>3</sub> -N | 30  | mg/L |                       |       |  |
|  |          | SS                 | 300 | mg/L |                       |       |  |
|  |          | BOD <sub>5</sub>   | 250 | mg/L |                       |       |  |

### 4.2.3 噪声

#### 4.2.3.1 源强分析

本项目产噪源主要为生产及辅助设备，均设置于室内。各设备单体噪声源强在 55~105dB（A）之间，噪声源统计结果见表 4-21。

| 运营<br>期环<br>境影<br>响和<br>保护<br>措施 | 表 4-21 运营期噪声源统计表（室内声源） |         |       |                |           |      |                          |          |     |    |           |              |      |               |           |          |
|----------------------------------|------------------------|---------|-------|----------------|-----------|------|--------------------------|----------|-----|----|-----------|--------------|------|---------------|-----------|----------|
|                                  | 建筑物名称                  | 声源名称    | 数量    | 型号             | 声源源强      |      | 声源控制措施                   | 空间相对位置/m |     |    | 距室内边界距离/m | 室内边界声级/dB（A） | 运行时段 | 建筑物插入损失/dB（A） | 建筑物外噪声    |          |
|                                  |                        |         |       |                | 声压级/dB（A） | 测距/m |                          | X        | Y   | Z  |           |              |      |               | 声压级/dB（A） | 建筑物外距离/m |
|                                  | 生产车间                   | 干压机     | 10    | Y41            | 85—95     | 1    | 选用低噪声设备；合理布局，厂房隔声，设基础减振等 | -8       | -6  | 1  | 2         | 89           | 8 小时 | 20            | 63        | 1        |
|                                  |                        | 压片机     | 1     |                | 95—105    | 1    |                          | -9       | -8  | 1  | 2         | 99           |      | 20            | 73        | 1        |
|                                  |                        | 等静压机    | 2     |                | 70—80     | 1    |                          | -10      | -14 | 1  | 2         | 84           |      | 20            | 58        | 1        |
|                                  |                        | 推板窑炉    | 2     | ZTE-100-13电加热  | 65—75     | 1    |                          | 18       | -35 | 4  | 3         | 65           |      | 20            | 39        | 1        |
|                                  |                        | 数控车床    | 6     | CK6130         | 75—85     | 1    |                          | 13       | -30 | 4  | 10        | 65           |      | 20            | 39        | 1        |
|                                  |                        | 喷码机     | 1     |                | 60—70     | 1    |                          | 8        | -40 | 4  | 7         | 53           |      | 20            | 27        | 1        |
|                                  |                        | 平磨机床    | 2     | MY250，配套湿式加工设施 | 80—90     | 1    |                          | 5        | -17 | 4  | 11        | 69           |      | 20            | 43        | 1        |
|                                  |                        | 卧式干法球磨机 | 3     | WGM-30L        | 85—95     | 1    |                          | 6        | -21 | 4  | 13        | 73           |      | 20            | 47        | 1        |
|                                  |                        | 升降电阻炉   | 30    | RS-5-16，电加热    | 60—70     | 1    |                          | -5       | -17 | 4  | 3         | 60           |      | 20            | 34        | 1        |
|                                  |                        | 热处理炉    | 6     | RXF-12-12      | 60—70     | 1    |                          | -3       | -17 | 4  | 3         | 60           |      | 20            | 34        | 1        |
|                                  |                        | 平磨机床    | 2     | MY250，配套湿式加工设施 | 80—90     | 1    |                          | 5        | -27 | 4  | 5         | 76           |      | 20            | 50        | 1        |
|                                  |                        | 切割机     | 2     | 自制，配套湿式加工设施    | 85—95     | 1    |                          | 2        | -24 | 4  | 3         | 85           |      | 20            | 59        | 1        |
|                                  |                        | 超声波清洗机  | 2     | HX28K-15A      | 75—85     | 1    |                          | 7        | -24 | 4  | 7         | 68           |      | 20            | 42        | 1        |
|                                  |                        | UV 打印机  | 2     | /              | 60—70     | 1    |                          | 7        | -40 | 4  | 8         | 52           |      | 20            | 26        | 1        |
|                                  |                        | 抛光机     | 3     | /              | 85—95     | 1    |                          | 3        | -22 | 4  | 4         | 83           |      | 20            | 57        | 1        |
|                                  |                        | 升降电炉    | 10    | GWL-1700S，电加热  | 60—70     | 1    |                          | -3       | -10 | 4  | 3         | 60           |      | 20            | 34        | 1        |
| 打磨工作台                            | 1                      |         | 80—90 | 1              | 4         | -16  | 4                        | 9        | 71  | 20 | 45        | 1            |      |               |           |          |



|                                                                                                                                                                   |  |        |    |            |       |   |  |    |     |   |    |    |  |    |    |   |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--------|----|------------|-------|---|--|----|-----|---|----|----|--|----|----|---|
|                                                                                                                                                                   |  | 打磨手机   | 1  | 手动         | 75—85 | 1 |  | 3  | -16 | 4 | 7  | 68 |  | 20 | 42 | 1 |
|                                                                                                                                                                   |  | 研磨仪    | 1  |            | 75—85 | 1 |  | 5  | -16 | 4 | 9  | 66 |  | 20 | 40 | 1 |
|                                                                                                                                                                   |  | 义齿加工机  | 20 | 自带3级过滤收集系统 | 70—80 | 1 |  | 10 | -3  | 7 | 10 | 60 |  | 20 | 34 | 1 |
|                                                                                                                                                                   |  | 3D 打印机 | 5  |            | 55—65 | 1 |  | 3  | -5  | 7 | 3  | 55 |  | 20 | 29 | 1 |
|                                                                                                                                                                   |  | 超声波清洗机 | 1  | HX28K-15A  | 70—80 | 1 |  | -3 | -10 | 7 | 3  | 70 |  | 20 | 44 | 1 |
|                                                                                                                                                                   |  | 压膜机    | 5  |            | 65—75 | 1 |  | -4 | -11 | 7 | 6  | 59 |  | 20 | 33 | 1 |
|                                                                                                                                                                   |  | 激光打标设备 | 1  |            | 60-70 | 1 |  | -7 | -15 | 7 | 2  | 64 |  | 20 | 38 | 1 |
|                                                                                                                                                                   |  | 打磨手机   | 1  | 手动         | 75—85 | 1 |  | 10 | -35 | 7 | 10 | 65 |  | 20 | 39 | 1 |
| 注-: 1.以项目厂区西北角（123.690112° ， 41.434335° ）为原点，东西向为 X 轴，东为正向。南北向为 Y 轴，北为正向；<br>2.基础减振降噪按 5dB（A）计，内墙隔声按 10dB（A）计，外墙隔声按 20dB（A）计，隔音房降噪效果按 20dB（A）计，减震沟降噪效果按 10dB（A）计。 |  |        |    |            |       |   |  |    |     |   |    |    |  |    |    |   |

|                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 运营<br>期环<br>境影<br>响和<br>保护<br>措施 | <p><b>4.2.3.2 污染治理措施</b></p> <p>(一) 规划防治对策</p> <p>声源远离厂房外墙。</p> <p>(二) 声源控制措施</p> <p>选用低噪声设备；固定声源安装基础减振装置；加强设备检维修，保证良好运行状态，基础减振降噪按 5dB（A）计。</p> <p>(三) 噪声传播途径控制措施</p> <p>厂房内墙、外墙隔声，内墙隔声量 10dB（A）、外墙隔声量 20dB（A）。</p> <p><b>4.2.3.3 环境影响分析</b></p> <p>(一) 预测模式</p> <p>根据噪声衰减和叠加特征，本评价首先采用《环境影响评价技术导则 声环境》（HJ2.4-2021）中推荐模式计算室内点声源至室外的污染水平。转换为室外声源后，按导则附录A式A.1计算厂界噪声贡献值，在计算过程中只考虑几何发散衰减和障碍物屏蔽引起的衰减，其中几何发散衰减按面声源衰减计算，障碍物屏蔽引起的衰减按附录A中A.3.4计算；对于室外声源，按导则附录A式A.1计算厂界噪声贡献值，在计算过程中只考虑几何发散衰减和障碍物屏蔽引起的衰减，其中几何发散衰减按点声源衰减计算，障碍物屏蔽引起的衰减按附录A中A.3.4计算；计算完成室外、室内声源至厂界处噪声贡献值后，整体厂界噪声贡献值按导则附录B工业企业噪声计算公式进行计算。</p> <p><b>(1) 室内声源等效室外声源声功率级计算方法</b></p> <p>本项目生产及配套设备等均位于室内，室内声源可采用等效室外声源声功率级法进行计算。设靠近开口处（或窗户）室内、室外某倍频带的声压级或 A 声级分别为 <math>L_{p1}</math> 和 <math>L_{p2}</math>。若声源所在室内声场为近似扩散声场，则室外的倍频带声压级可按下式近似求出：</p> $L_{p2}=L_{p1}-(T_L+6)$ <p>式中：<math>L_{p1}</math>—靠近开口处（或窗户）室内某倍频带的声压级或 A 声级，dB；<br/> <math>L_{p2}</math>—靠近开口处（或窗户）室外某倍频带的声压级或 A 声级，dB；<br/> <math>T_L</math>—隔墙（或窗户）倍频带或 A 声级的隔声量，dB。</p> <p><b>(2) 预测点噪声贡献值基本公式</b></p> |
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$$L_p(r) = L_p(r_0) + D_C - (A_{div} + A_{atm} + A_{gr} + A_{bar} + A_{misc})$$

式中：  $L_p(r)$  —预测点处声压级，dB；

$L_p(r_0)$  —参考位置  $r_0$  处的声压级，dB；

$D_C$ —指向性校正，它描述点声源的等效连续声压级与产生声功率级  $L_w$  的全向点声源在规定方向的声级的偏差程度，dB；

$A_{div}$ —几何发散引起的衰减，dB；

$A_{atm}$ —大气吸收引起的衰减，dB；

$A_{gr}$ —地面效应引起的衰减，dB；

$A_{bar}$ —障碍物屏蔽引起的衰减，dB；

$A_{misc}$ —其他多方面效应引起的衰减，dB。

### (3) 面声源几何发散衰减

一个大型机器设备的振动表面，车间透声的墙壁，均可以认为是面声源。如果已知面声源单位面积的声功率为  $W$ ，各面积元噪声的位相是随机的，面声源可看做由无数点声源连续分布组合而成，其合成声级可按能量叠加法求出。

当预测点和面声源中心距离  $r$  处于以下条件时，可按下述方法近似计算：  
 $r < a/\pi$  时，几乎不衰减 ( $A_{div} \approx 0$ )；当  $a/\pi < r < b/\pi$ ，距离加倍衰减 3dB 左右，类似线声源衰减特性 [ $A_{div} \approx 10 \lg(r/r_0)$ ]；当  $r > b/\pi$  时，距离加倍衰减趋近于 6dB，类似点声源衰减特性 [ $A_{div} \approx 20 \lg(r/r_0)$ ]。其中面声源的  $b > a$ 。

### (4) 点声源几何发散衰减

$$A_{div} = 20 \lg(r/r_0)$$

式中：  $A_{div}$ —几何发散引起的衰减，dB；

$r$ —预测点距声源的距离；

$r_0$ —参考位置距声源的距离。

### (5) 障碍物屏蔽引起的衰减 ( $A_{bar}$ )

位于声源和预测点之间的实体障碍物，如围墙、建筑物、土坡或地堑等起声屏障作用，从而引起声能量的较大衰减。在环境影响评价中，可将各种形式的屏障简化为具有一定高度的薄屏障。

S、O、P 三点在同一平面内且垂直于地面。

定义  $\delta = SO + OP - SP$  为声程差， $N = 2\delta/\lambda$  为菲涅尔数，其中  $\lambda$  为声波波长。

|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>在噪声预测中,声屏障插入损失的计算方法需要根据实际情况作简化处理。</p> <p>屏障衰减 <math>A_{\text{bar}}</math> 在单绕射(即薄屏障)情况,衰减最大取 20dB;在双绕射(即厚屏障)情况,衰减最大取 25dB。</p> <p>①有限长薄屏障在点声源声场中引起的衰减</p> <p>A.首先计算三个传播途径声程差<math>\delta_1</math>, <math>\delta_2</math>, <math>\delta_3</math>和相应菲涅尔数<math>N_1</math>、<math>N_2</math>、<math>N_3</math>。</p> <p>B.声屏障引起的衰减按下式计算:</p> $A_{\text{bar}} = -10 \lg \left( \frac{1}{3 + 20N_1} + \frac{1}{3 + 20N_2} + \frac{1}{3 + 20N_3} \right)$ <p>式中: <math>A_{\text{bar}}</math>—障碍物屏蔽引起的衰减, dB;</p> <p><math>N_1</math>、<math>N_2</math>、<math>N_3</math>—三个传播途径的声程差<math>\delta_1</math>, <math>\delta_2</math>, <math>\delta_3</math>相应的菲涅尔数。</p> <p>当屏障很长(作无限长处理)时,仅可考虑顶端绕射衰减,按下式进行计算。</p> $A_{\text{bar}} = -10 \lg \left( \frac{1}{3 + 20N_1} \right)$ <p>式中: <math>A_{\text{bar}}</math>—障碍物屏蔽引起的衰减, dB;</p> <p><math>N_1</math>—顶端绕射的声程差<math>\delta_1</math>相应的菲涅尔数。</p> <p>②双绕射计算</p> <p>对于双绕射情形,可由下计算绕射声与直达声之间的声程差<math>\delta</math>:</p> $\delta = [(d_{\text{ss}} + d_{\text{sr}} + e)^2 + a^2]^{\frac{1}{2}} - d$ <p>式中: <math>\delta</math>—声程差, m;</p> <p><math>a</math>—声源和接收点之间的距离在平行于屏障上边界的投影长度, m;</p> <p><math>d_{\text{ss}}</math>—声源到第一绕射边的距离, m;</p> <p><math>d_{\text{sr}}</math>—第二绕射边到接收点的距离, m;</p> <p><math>e</math>—在双绕射情况下两个绕射边界之间的距离, m;</p> <p><math>d</math>—声源到接收点的直线距离, m。</p> <p>屏障衰减<math>A_{\text{bar}}</math>参照GB/T17247.2计算。计算屏障衰减后,不再考虑地面效应衰减。</p> <p><b>(6) 噪声贡献值</b></p> <p>设第 <math>i</math> 个室外声源在预测点产生的 A 声级为 <math>L_{A_i}</math>, 在 T 时间内该声源工作</p> |
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时间为  $t_i$ ，第  $j$  个室外声源在预测点产生的 A 声级为  $L_{A_j}$ ，在 T 时间内该声源工作时间为  $t_j$ ，则建设工程声源对预测点产生的贡献值 ( $L_{eqg}$ ) 为：

$$L_{eqg}=10\lg\left[\frac{1}{T}\left(\sum_{i=1}^N t_i 10^{0.1L_{A_i}} + \sum_{j=1}^M t_j 10^{0.1L_{A_j}}\right)\right]$$

式中： $t_j$ —在 T 时间内 j 声源工作时间，s；

$t_i$ —在 T 时间内 i 声源工作时间，s；

T—用于计算等效声级的时间，s；

N—室外声源个数；

M—等效室外声源个数。

（二）预测分析结果

经调查，本项目厂房外 50m 范围内无声环境保护目标。因此本次环评预测至厂房外四周厂界 1m 处作为厂界噪声贡献值进行达标判定。厂界噪声贡献值预测结果见表 4-22。

表 4-22 厂界噪声贡献值预测结果 单位：dB（A）

| 厂界  | 预测值 | 达标情况 | 标准值        |
|-----|-----|------|------------|
| 东厂界 | 64  | 达标   | 昼间 65dB（A） |
| 南厂界 | 54  | 达标   | 昼间 65dB（A） |
| 西厂界 | 58  | 达标   | 昼间 65dB（A） |
| 北厂界 | 64  | 达标   | 昼间 65dB（A） |

根据预测结果，厂界噪声贡献值满足《工业企业厂界环境噪声排放标准》（GB12348-2008）中 3 类标准限值要求，即昼间 65dB（A），可达标排放，对周围声环境的影响较小。

（四）自行监测计划

根据《排污许可证申请与核发技术规范 工业噪声》（HJ1301-2023），制定本项目运营期厂界噪声监测计划，见表 4-23。

表 4-23 本项目噪声自行监测计划

| 监测点位 | 监测项目            | 监测频率   | 执行标准                                            | 备注   |
|------|-----------------|--------|-------------------------------------------------|------|
| 东厂界  | 昼间 $L_{eq}$ （A） | 1 次/季度 | 《工业企业厂界环境噪声排放标准》（GB12348-2008）3 类（昼间）标准，65dB（A） | 委托监测 |
| 南厂界  |                 |        |                                                 |      |
| 西厂界  |                 |        |                                                 |      |
| 北厂界  |                 |        |                                                 |      |

4.2.4 固废

|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
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|  | <p><b>4.2.4.1 源强核算</b></p> <p>根据工程分析，本项目产生的固体废物主要为一般固废、危险废物及生活垃圾。</p> <p><b>（一）危险废物</b></p> <p><b>（1）废油墨及包装桶</b></p> <p>来源于氧化锆瓷块生产过程中后加工、玻璃陶瓷生产过程中丝印粘柄工序，产生量为 0.05t/a。根据《国家危险废物名录》（2025 年版），废油墨及包装桶废物类别为 HW49 其他废物，废物代码为 900-041-49。</p> <p><b>（2）废胶及包装桶</b></p> <p>来源于玻璃陶瓷生产过程中丝印粘柄工序，产生量为 0.02t/a。根据《国家危险废物名录》（2025 年版），废胶及包装桶废物类别为 HW49 其他废物，废物代码为 900-041-49。</p> <p><b>（3）废机油及包装桶</b></p> <p>来源于陶瓷件生产过程中成型、加工及氧化锆瓷块生产过程中机加工工序，产生量为 0.12t/a。根据《国家危险废物名录》（2025 年版），废机油及包装桶废物类别为 HW08 废矿物油与含矿物油废物，废机油废物代码为 900-214-08，其废包装桶废物代码为 900-249-08。</p> <p><b>（4）废液压油及包装桶</b></p> <p>来源于氧化锆瓷块生产过程中成型工序，产生量为 0.08t/a。根据《国家危险废物名录》（2025 年版），废液压油及包装桶废物类别为 HW08 废矿物油与含矿物油废物，废液压油废物代码为 900-218-08，其废包装桶废物代码为 900-249-08。</p> <p><b>（5）废紫外线灯管</b></p> <p>来源于定制义齿、矫治器生产过程中消毒工序，产生量为 0.005t/a。根据《国家危险废物名录》（2025 年版），废紫外线灯管废物类别为 HW29 废含汞灯管，废物代码为 900-023-29。</p> <p><b>（6）废无水乙醇及包装桶</b></p> <p>来源于矫治器、种植导板生产过程中清洗固化工序（清洗过程中 20%的废无水乙醇被收集），产生量为 0.058t/a。根据《国家危险废物名录》（2025 年</p> |
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版），废无水乙醇及包装桶废物类别为 HW06 废有机溶剂与含有机溶剂废物，废物代码为 900-402-06。

(7) 废树脂残渣

来源于矫治器、种植导板生产过程中清洗固化工序，产生量为 0.25t/a。根据《国家危险废物名录》（2025 年版），废树脂残渣废物类别为 HW49 其他废物，废物代码为 900-041-49。

(8) 废釉膏包装桶

来源于定制式义齿生产过程中上釉工序，产生量为 0.03t/a。根据《国家危险废物名录》（2025 年版），废釉膏包装桶废物类别为 HW49 其他废物，废物代码为 900-041-49。

以上危险废物经分类收集后分区暂存于危险废物贮存点内，定期委托有资质单位处置。

(9) 危险废物小结

本项目危险废物产生情况汇总见表 4-24。

表 4-24 项目运营期危险废物汇总表

| 危险废物名称  | 危险废物类别 | 危险废物代码     | 产生量 t/a | 产生工序及装置                       | 形态       | 主要成分  | 有害成分  | 产废周期 | 危险特性 | 污染防治措施                          |
|---------|--------|------------|---------|-------------------------------|----------|-------|-------|------|------|---------------------------------|
| 废油墨及包装桶 | HW49   | 900-041-49 | 0.05    | 氧化锆瓷块生产过程中后加工、玻璃陶瓷生产过程中丝印粘柄工序 | 液体<br>固体 | 废有机溶剂 | 废有机溶剂 | 1 年  | T/In | 经分类收集后分区暂存于危险废物贮存点内，定期委托有资质单位处置 |
| 废胶及包装桶  | HW49   | 900-041-49 | 0.02    | 玻璃陶瓷生产过程中丝印粘柄工序               | 液体<br>固体 | 废有机溶剂 | 废有机溶剂 | 1 年  | T/In |                                 |
| 废机油     | HW08   | 900-214-08 | 0.12    | 陶瓷件生产过程中成型、加工及氧化锆瓷块生产过程中机加工工序 | 液体       | 废矿物油  | 废矿物油  | 1 年  | T, I |                                 |
| 废机油包装桶  | HW08   | 900-249-08 |         |                               | 固体       | 废矿物油  | 废矿物油  | 1 年  | T, I |                                 |
| 废液压油    | HW08   | 900-218-   | 0.08    | 氧化锆瓷                          | 液体       | 废矿    | 废矿    | 1 年  | T, I |                                 |

|           |      |            |       |                     |          |       |       |     |         |  |
|-----------|------|------------|-------|---------------------|----------|-------|-------|-----|---------|--|
|           |      | 08         |       | 块生产过程中成型工序          |          | 物油    | 物油    |     |         |  |
| 废液压油包装桶   | HW08 | 900-249-08 |       |                     | 固体       | 废矿物油  | 废矿物油  | 1 年 | T, I    |  |
| 废紫外灯管     | HW29 | 900-023-29 | 0.005 | 定制义齿、矫治器生产过程中消毒工序   | 固体       | 废含汞灯管 | 废含汞灯管 | 1 年 | T       |  |
| 废无水乙醇及包装桶 | HW06 | 900-402-06 | 0.058 | 矫治器、种植导板生产过程中清洗固化工序 | 液体<br>固体 | 废有机溶剂 | 废有机溶剂 | 1 年 | T, I, R |  |
| 废树脂残渣     | HW49 | 900-041-49 | 0.25  | 矫治器、种植导板生产过程中清洗固化工序 | 固体       | 废有机溶剂 | 废有机溶剂 | 1 年 | T/In    |  |
| 废牙膏包装桶    | HW49 | 900-041-49 | 0.03  | 定制式义齿生产过程中上釉工序      | 固体       | 废有机溶剂 | 废有机溶剂 | 1 年 | T/In    |  |

## （二）一般固废

### （1）下脚料

来源于玻璃陶瓷生产过程中加工工序、陶瓷件生产过程中加工工序、氧化锆瓷块生产过程中机加工工序、定制式义齿生产过程中切削工序、定制式矫治器生产过程中修整工序、牙科种植导板生产过程中表面处理工序，产生量为 4t/a，属于一般工业固体废物。根据《固体废物分类与代码目录》（公告 2024 年第 4 号），下脚料废物种类为 SW17 可再生类废物，废物代码为 900-003-S17、900-004-S17、900-099-S17，分类回收后回用于生产。

### （2）不合格品

来源于玻璃陶瓷生产过程中初检和检验工序、陶瓷件生产过程中初检和检验工序、氧化锆瓷块生产过程中检验工序、定制式义齿生产过程中检验工序、定制式矫治器生产过程中检验工序、牙科种植导板生产过程中成品检验工序，产生量为 1.35t/a，属于一般工业固体废物。根据《固体废物分类与代码目录》（公告 2024 年第 4 号），不合格品废物种类为 SW59 其他工业固体废物，废物代码为 900-099-S59，分类回收后回用于生产。



(3) 收尘灰

来源于定制式义齿生产过程中切削工序，由设备自带 3 级过滤收集系统收集产生，产生量为 0.01035t/a，属于一般工业固体废物。根据《固体废物分类与代码目录》（公告 2024 年第 4 号），收尘灰废物种类为 SW59 其他工业固体废物，废物代码为 900-099-S59，回收后回用于生产。

(4) 废料

来源于陶瓷件生产过程中成型工序，产生量为 0.3713t/a，属于一般工业固体废物。根据《固体废物分类与代码目录》（公告 2024 年第 4 号），废料废物种类为 SW59 其他工业固体废物，废物代码为 900-099-S59，回收后回用于生产。

(5) 废滤料

来源于定制式义齿生产过程中切削工序，每年更换 1 次，产生量为 0.01t/a，属于一般工业固体废物。根据《固体废物分类与代码目录》（公告 2024 年第 4 号），废滤料废物种类为 SW17 可再生类废物，废物代码为 900-099-S17，不在厂区暂存，定期更换，返回厂家。

(6) 生活垃圾

本项目职工定员 12 人，生活垃圾产生量为 0.5kg/人·d，年工作 300 天，生活垃圾产生量为 6t/a。根据《固体废物分类与代码目录》（公告 2024 年第 4 号），生活垃圾废物种类为 SW64 其他垃圾，废物代码为 900-002-S64，分类收集，袋装后，由环卫部门统一清运。

(7) 一般固废小结

运营期一般工业固废产生及处理处置情况详见表 4-25。

表 4-25 一般工业固废产生及处理处置明细表

| 废物名称 | 废物种类     | 代码   | 产生量 t/a | 贮存      | 处置                 |
|------|----------|------|---------|---------|--------------------|
| 下脚料  | 可再生类废物   | SW17 | 4       | 一般固废暂存间 | 分类回收后回用于生产         |
| 不合格品 | 其他工业固体废物 | SW59 | 1.35    | 一般固废暂存间 |                    |
| 收尘灰  | 其他工业固体废物 | SW59 | 0.01035 | 一般固废暂存间 |                    |
| 废料   | 其他工业固体废物 | SW59 | 0.3713  | 一般固废暂存间 |                    |
| 废滤料  | 可再生类废物   | SW17 | 0.01    | /       | 不在厂区暂存，定期更换，返回厂家   |
| 生活垃圾 | 其他垃圾     | SW64 | 6       | /       | 分类收集，袋装后，由环卫部门统一清运 |

4.2.4.2 环境影响分析

## （一）一般固废

本项目各生产线产生的下脚料、不合格品、收尘灰、废料等分类收集后暂存于一般固废暂存间，回用于生产。废滤料不在厂区暂存，定期更换，返回厂家。一般固废暂存间位于 1 层东南角，建筑面积 10m<sup>2</sup>，最大贮存能力为 17.5t。本项目一般工业固体废物产生量为 11.74t/a（不含废滤料 0.01t/a），最大存储周期为 2 个月，每月转运 6 次，厂区最大暂存量 1.96t，一般固废暂存间的贮存能力可以满足本项目一般工业固体废物的暂存需要。

综上所述，本项目一般工业固体废物均可得到合理、妥善的处置，去向明确。一般固废暂存间采取封闭建筑，地面为水泥硬化地面，具备良好的防渗漏、放溢流、放扬撒性能，可有效控制储存过程中的二次污染，满足《一般工业固体废物贮存和填埋污染控制标准》（GB18599-2020），对环境影响较小。

## （二）危险废物

### （1）危险废物贮存场所环境影响分析

本项目建成后，全厂危险废物最大产生量为 0.613t/a，未超过 10t/a，厂区最大贮存量为 0.613t（最大存储周期 1 年，每年转运 1 次），则危险废物实时最大贮存量未超过 3t。根据《危险废物管理计划和管理台账制定技术导则》（HJ1259—2022），企业为危险废物登记管理单位。

综上，本项目危险废物贮存场所符合设置危险废物贮存点的条件。

本项目新建危险废物贮存点，面积 10m<sup>2</sup>，贮存能力为 12.5t，为采用仓库式危废暂存场所，设在 1 层东南角，内部分区分类暂存各类危险废物。采用防渗基础、防渗层为 2mm 厚高密度聚乙烯，渗透系数 $\leq 10^{-7}$ cm/s，内设安全照明设施及安全防护设施。综上，本项目危废贮存场所满足《危险废物贮存污染物控制标准》（GB18597-2023）相关要求。

根据《危险废物贮存污染物控制标准》（GB18597-2023），危险废物贮存点污染控制要求如下：

- 1.贮存点应具有固定的区域边界，并应采取与其他区域进行隔离的措施；
- 2.贮存点应采取防风、防雨、防晒和防止危险物流失、扬散等措施；
- 3.贮存点贮存的危险废物应置于容器或包装物中，不应直接散堆；
- 4.贮存点应根据危险废物的形态、物理化学性质、包装形式等，采取防渗、

防漏等污染防治措施或采用具有相应功能的装置；

5.贮存点应及时清运贮存的危险废物，实时贮存量不应超过 3 吨。

本项目危险废物在由危废处置单位回收前，建设单位应加强对危险废物暂时存放的管理。均储存在专用容器，存放于标有明显危险标志且严格防渗的危险废物贮存点内，专人管理，可避免对环境产生污染。因此，本项目新建危险废物贮存点符合本项目危险废物暂存要求。

贮存场所基本信息见表 4-26。

表 4-26 项目危险废物贮存场所基本情况表

| 贮存场所名称  | 危废名称      | 危险废物类别 | 危废代码       | 位置     | 占地面积             | 贮存包装方式及规格 | 贮存能力  | 贮存周期 |
|---------|-----------|--------|------------|--------|------------------|-----------|-------|------|
| 危险废物贮存点 | 废油墨及包装桶   | HW49   | 900-041-49 | 1 层东北角 | 10m <sup>2</sup> | 密闭三防容器    | 12.5t | 1 年  |
|         | 废胶及包装桶    | HW49   | 900-041-49 |        |                  |           |       |      |
|         | 废机油       | HW08   | 900-214-08 |        |                  |           |       |      |
|         | 废机油包装桶    | HW08   | 900-249-08 |        |                  |           |       |      |
|         | 废液压油      | HW08   | 900-218-08 |        |                  |           |       |      |
|         | 废液压油包装桶   | HW08   | 900-249-08 |        |                  |           |       |      |
|         | 废紫外灯管     | HW29   | 900-023-29 |        |                  |           |       |      |
|         | 废无水乙醇及包装桶 | HW06   | 900-402-06 |        |                  |           |       |      |
|         | 废树脂残渣     | HW49   | 900-041-49 |        |                  |           |       |      |
|         | 废釉膏包装桶    | HW49   | 900-041-49 |        |                  |           |       |      |

## （2）运输过程的环境影响分析

危险废物在内部转运时，采用密封桶等方式进行输送，并加盖。转移容器不得破损，不得倒置或大角度倾斜，以免造成液态物质洒落。外部运输全部由第三方资质单位负责，建设单位应对其资质进行确认。在此前提下，本项目危险废物在运输过程中不会对环境造成大的影响。

## （3）委托处置环境影响分析

本项目暂存的危险废物定期委托具备处置资质的单位进行处置。在委托处置时，需对受托方的主体资格和技术能力进行核实，依法签订书面合同，在合同中约定污染防治要求。此外还应综合考虑与受托方的运距等因素，尽量选择本地单位进行危废处置，减少运输环境风险和减轻运输过程中的环境污染。

## （4）环境影响分析小结

本项目新建危险废物贮存点，面积 10m<sup>2</sup>，贮存能力为 12.5t，位于 1 层东

|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>北角，为采用仓库式危废暂存场所，内部分区分类暂存各类危险废物，储存能力满足本项目危险废物暂存所需。危险废物贮存点防渗漏、防风、防雨、防晒、防流失、防扬撒等内容均可满足《危险废物贮存污染物控制标准》（GB18597-2023）中相关要求，暂存时由专人负责日常管理和记录，并已粘贴好警示标志。储存过程中不会对环境造成大的影响。厂内收集转运采用密封桶等方式收集输送，加盖，禁止倒置或大角度倾斜，以免在转移途中造成撒漏。暂存的危险废物定期委托资质单位进行处置。对外运输由第三方资质单位负责，转移按照国家有关规定填写、运行危险废物转移联单等。</p> <p>综上分析，本项目危险废物的贮存、转移、处置、日常管理等满足相关要求，对环境造成影响较小。</p> <p><b>（三）生活垃圾</b></p> <p>生活垃圾设置垃圾箱收集后，由环卫部门统一清运，处置方式合理，去向明确，对环境的影响较小。</p> <p><b>4.2.4.3 环境管理要求</b></p> <p><b>（一）一般固废</b></p> <p>一般固废暂存间采取封闭建筑，地面为水泥硬化地面，具备良好的防渗漏、放溢流、放扬撒性能，可有效控制储存过程中的二次污染，满足《一般工业固体废物贮存和填埋污染控制标准》（GB18599-2020），符合相关环境管理要求。</p> <p><b>（二）危险废物</b></p> <p>新建危险废物贮存点为采用仓库式危废暂存场所，设在1层东北角。采用防渗基础、防渗层为2mm厚高密度聚乙烯，渗透系数<math>\leq 10^{-7}\text{cm/s}</math>。内设安全照明设施及安全防护设施，并由生态环境主管部门对贮存设施及危险废物进行定期检查。危险废物贮存点附近无易燃、易爆危险品库。综上，新建危废贮存场所满足《危险废物贮存污染物控制标准》（GB18597-2023）相关要求，满足相关环境管理要求。危险废物暂存过程中，采用符合强度要求并完好无损，且不与盛装物料混溶或发生反应的容器盛装；禁止混合贮存性质不相容而未经安全性处置的危险废物；做好密闭、封闭等工作。</p> <p><b>（1）运输过程的污染防治措施</b></p> <p>本项目危险废物外部运输全部由受托单位负责，企业需对其经营许可进行</p> |
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|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|--|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>确认。转移时落实好转移联单制度。</p> <p><b>(2) 日常管理措施</b></p> <p>①危险废物存入危险废物贮存点前应对危险废物类别和特性与危险废物标签等危险废物识别标志的一致性进行核验，不一致的或类别、特性不明的不应存入。</p> <p>②应定期检查危险废物的贮存状况，及时清理贮存设施地面，更换破损泄漏的危险废物贮存容器和包装物，保证堆存危险废物的防雨、防风、防扬尘等设施功能完好。</p> <p>③作业设备及车辆等结束作业离开贮存设施时，应对其残留的危险废物进行清理，清理的废物或清洗废水应收集处理。</p> <p>④贮存设施运行期间，应按国家有关标准和规定建立危废管理台账并保存。</p> <p>⑤建立贮存设施环境管理制度、管理人员岗位职责制度、设施运行操作制度、人员岗位培训制度等。</p> <p>⑥应建立贮存设施全部档案，包括设计、施工、验收、运行、监测和环境应急等，应按国家有关档案管理的法律法规进行整理和归档。</p> <p>⑦委托处置危险废物时，应落实《中华人民共和国固体废物污染环境防治法》等法律法规要求，对受托方主体资格和技术能力进行核实，依法签订书面合同，在合同中约定污染防治要求。此外还应综合考虑与受托方运距等因素，尽量选择委托本地单位进行危废处置，减少运输环境风险和减轻运输过程中的环境污染。</p> <p>⑧转移危险废物时，应按照国家有关规定填写、运行危险废物转移联单等。</p> <p><b>4.2.5 地下水、土壤</b></p> <p>根据《环境影响评价技术导则 地下水环境》（HJ610-2016），本项目属于“M 医药-93、卫生材料及医药用品制造-报告表”，地下水环境影响评价项目类别为“IV 类”，因此，本项目可不开展地下水环境影响评价。根据《环境影响评价技术导则 地下水环境》（HJ610-2016）及《排污许可证申请与核发技术规范 总则》（HJ942-2018），企业无需设置地下水监测井。且本项目利用现有工业厂房建设，厂房地面均进行分区防渗及硬化处理，厂区内采取分区防渗措施，无土壤及地下水污染途径。</p> |
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按照《环境影响评价技术导则 地下水环境》（HJ610-2016）等规范要求，划分为简单防渗区、一般防渗区和重点防渗区。本项目分区防渗措施见表 4-27。

表 4-27 防渗区域及防渗内容

| 污染防控分区 | 装置单元名称    | 污染防控区域及部位 | 防渗要求                                                            |
|--------|-----------|-----------|-----------------------------------------------------------------|
| 重点防渗区  | 危险废物贮存点   | 地面        | 防渗性能不应低于 6.0m 厚渗透系数为 $1.0 \times 10^{-7} \text{cm/s}$ 的粘土层的防渗性能 |
| 一般防渗区  | 生产车间、原材料库 | 地面        | 防渗性能不应低于 1.5m 厚渗透系数为 $1.0 \times 10^{-7} \text{cm/s}$ 的粘土层的防渗性能 |
| 简单防渗区  | 其他区域      | 地面        | 地面硬化                                                            |

## 4.2.6 环境风险

### 4.2.6.1 风险识别

经对本项目原/辅材料及“三废”污染物进行分析，项目涉及的风险物质主要为液压油、机油、五氧化二钒、胶、釉膏、无水乙醇、UV油墨和危险废物。环境风险单元主要为原材料库、危险废物贮存点。风险物质识别结果见表4-28。

表 4-28 风险物质识别情况一览表

| 危险化学品名称 | CAS 号     | 分布位置    | 最大存储量 (t) | 临界量(t) | Qi       |
|---------|-----------|---------|-----------|--------|----------|
| 液压油     | /         | 原材料库    | 0.19      | 2500   | 0.000076 |
| 机油      | /         | 原材料库    | 0.18      | 2500   | 0.000072 |
| 胶       | /         | 原材料库    | 0.002825  | 50     | 0.000057 |
| 釉膏      | /         | 原材料库    | 0.05      | 50     | 0.0010   |
| 五氧化二钒   | 1314-62-1 | 原材料库    | 0.005     | 0.25   | 0.02     |
| 无水乙醇    | 64-17-5   | 原材料库    | 0.0079    | 500    | 0.000016 |
| UV 油墨   | /         | 原材料库    | 0.006     | 50     | 0.00012  |
| 危险废物    | /         | 危险废物贮存点 | 0.613     | 50     | 0.012    |
| 合计      |           |         |           |        | 0.033    |

根据风险物质最大存储量/临界量计算结果，Q 值=0.033<1，且本项目不存在重大风险源，可开展简单分析。根据风险物质的危险性特性，本项目环境风险事故类型主要为泄漏和火灾事故。

### 4.2.6.2 环境风险影响分析

#### （一）大气环境风险影响分析

本项目生产设备使用的液压油、机油、五氧化二钒、胶、釉膏、无水乙醇、UV 油墨等风险物质因设备损坏或操作不当等原因，导致泄漏，并在短时间内挥发逸出产生挥发性有机废气，对区域环境空气质量造成影响；乙醇等易燃液体遇明火或高热发生火灾事故，因燃烧不充分产生 CO 等废气会对区域环境空

|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>气质量造成一定影响。</p> <p>由于液压油、机油、五氧化二钒、胶、釉膏、无水乙醇、UV 油墨等风险物质在常温下不具备高挥发性，且单批次产品使用量较小。一旦泄漏通过及时收集处置，短期内挥发性有机废气产生量很少，通过及时通风扩散并不会对区域大气环境造成大的影响；危险废物贮存点设有围堰和应急收集装置，发生泄漏后可及时处置泄漏的风险物质。而一旦发生火灾事故，烟气中的 CO、二氧化硫、氮氧化物等会对区域环境空气质量造成一定的短期影响。因此，建设单位必须制定相关培训计划、操作规程和环境风险管理制度，加强职工防火意识，在风险区设置严禁烟火等标志，预防火灾发生。同时还需配备灭火器、消防沙、灭火毯等应急物资，以在火情初期对其进行有效切断。在采取合理、有效的环境风险防控及应急措施前提下，可将火灾事故对环境空气的影响控制在可接受范围内。</p> <p><b>（二）地下水环境风险影响分析</b></p> <p>本项目生产设备摆放区域、原材料库和危险废物贮存点存在环境风险源。而一旦发生泄漏事故未及时处置，大量的风险物质渗漏将会对区域地下水环境造成一定影响。因此，本项目需做好分区防渗和应急响应措施，防止泄漏事故状态下发生大量污染物渗漏。并制定相关操作规程和日常环境管理制度，尽量避免因人为误操作而造成的泄漏事故。加强日常维修、巡查力度，保证风险防控设施在良好状态下运行，并能够在泄漏事故发生的第一时间进行应急处置。在采取上述措施情况下，可将地下水环境风险影响控制在可接受范围内。</p> <p><b>4.2.6.3 风险防范措施</b></p> <p><b>（一）大气环境风险防范措施</b></p> <p>企业需建立一套规章制度，包括岗位责任制度、设备操作规程、运行管理规程等，并建立环境管理制度等，其中应包括环境风险单元内容，把风险单元的风险管理落到实处。具体内容包括：</p> <p>①定期对员工进行运营操作、环境风险和环境应急管理方面的宣传和培训，加强员工风险防范意识，制定明确的赏罚制度，避免因员工误操作、违规操作而引发环境风险事故，同时使职工在面对突发环境事故时规范、理性进行抢险救援；</p> |
|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>②对风险单元定期检查，原则上每天巡检 1 次，保证设备设施、风险防控设施的完好性，有效降低事故发生概率；</p> <p>③企业需按要求制定环境风险应急预案，明确事故状态下的人员疏散通道及安置等应急要求，一旦发生环境事故按规执行；</p> <p>④设置警示标识，如风险物质标签、禁止烟火等标识；</p> <p>⑤应加强对废气净化装置的巡查力度，及时更换滤袋、吸附材料等消耗品。</p> <p>生产过程中一旦发现问题立即停产检修。</p> <p><b>（二）地下水环境风险防范措施</b></p> <p><b>（1）源头控制措施</b></p> <p>不断改进工艺与设备，降低能源消耗。从源头上减少设备故障率及风险事故的发生概率；加强日常监管，指派专人定期巡视，一旦发生泄漏或防渗层老化破损现象，及时处置或修复。</p> <p><b>（2）分区防渗措施</b></p> <p>危险废物贮存点按重点防渗区建设；生产区域、原材料库按一般防渗区建设；其他区域划定为简单防渗区。</p> <p><b>（三）地表水环境风险防范措施</b></p> <p>本项目厂区设置地表水三级防控体系，逐级控制突发环境事件产生的污染物，保障水环境安全。具体如下：</p> <p>一级防控（围堰）：厂区生产车间、原材料库和危险废物贮存点均设置围堰，截留泄漏的物料；</p> <p>二级防控（装置及管线）：厂区设置污水收集管线，将事故泄漏的物料等截留在厂区内；</p> <p>三级防控（临时事故池）：厂区设有消防沙，应急时利用消防沙堆成临时事故池将事故废水和泄漏液体堵截在厂区低洼处，防止对周围地表水水体产生影响。</p> <p><b>（四）应急处置措施</b></p> <p>本单位每年至少组织一次应急演练，各级演练应按事前制定的模拟程序进行，并全程记录，获取第一手文字、影像资料及有关数据资料。演练结束后，组织人员对本次演练过程进行分析，总结经验和教训，对预案涉及的岗位、人</p> |
|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|



员、物资、资料等有不足之处的地方进行调查，如演练过程中存在的人员不及时到场、通信沟通渠道不畅等问题，仔细分析原因，明确责任人，将预案对应部分进行改进、修订，完善制定环境风险应急预案并备案，明确应急救援组织，制定应急处置规程和处置原则。并在发生突发环境风险时，按照方案内容开展救援工作；配备灭火器、消防沙、灭火毯等应急物资。在发生泄漏及火灾事故时，及时采取截流措施，将泄漏物料及消防废水控制在厂房范围内，避免外溢。

### （五）环境风险评价结论

对于本项目来说，可能产生的环境风险事故主要为液压油、机油、五氧化二钒、胶、釉膏、无水乙醇、UV 油墨、危险废物等风险物质泄漏并伴生火灾事故，风险单元主要分布在生产设备摆放区域、原材料库和危险废物贮存点。通过采取有效的大气环境风险防范、源头控制、分区防渗等措施，可有效预防事故发生，且一旦发生事故能够及时发现并启动事故应急预案，采取相应的应急处置措施。在此前提下，本项目突发环境风险影响是可以接受的。

### 4.2.7 环保投资估算

项目环保投资 7.7 万元，约占项目总投资的 1.5%。环保投资详见表 4-29。

表 4-29 环保投资估算表 单位：万元

| 项目     |                | 内容             | 规格/型号    | 数量  | 投资  | 备注     |
|--------|----------------|----------------|----------|-----|-----|--------|
| 废气     | 定制式义齿生产切削工艺    | 设备自带 3 级过滤收集系统 | 除尘效率 90% | 2 套 | 5.0 | 新建     |
|        | 玻璃陶瓷生产球磨工艺     | 设备密闭，湿法球磨      | 除尘效率 99% | 3 套 |     |        |
|        | 玻璃陶瓷、陶瓷件生产加工工艺 | 采取湿式加工工艺       | 除尘效率 95% | 6 套 |     |        |
| 废水     | 生活污水           | 依托现有园区化粪池      | /        | 1 套 | /   | 依托现有   |
| 噪声     |                | 基础减振装置         | 降噪≥5dB   | 若干  | 1.0 | 新建     |
| 固废     | 一般固废           | 一般固废暂存间        | 10m²     | 1 间 | /   | 依托现有厂房 |
|        | 危险废物           | 危险废物贮存点        | 10m²     | 1 间 | /   | 依托现有厂房 |
| 地下水、土壤 |                | 危险废物贮存点防渗      | /        | /   | 1.0 | 新建     |
| 环境风险   |                | 应急物资           | /        | 若干  | 0.5 | 新增     |
| 其他     |                | 排污口标识等         | /        | 若干  | 0.2 | 新增     |
| 合计     |                |                |          |     | 7.7 | /      |

## 五、环境保护措施监督检查清单

| 内容要素         | 排放口（编号、名称）/污染源                                                                                                                                                           | 污染物项目                                               | 环境保护措施                                                                                                                                                                   | 执行标准                                                                                                                                    |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| 大气环境         | 投料、混料、称料、切削、球磨、熔制成型、加工、成型、机加、打磨、车瓷、上釉、修整                                                                                                                                 | 颗粒物、有机废气                                            | 定制式义齿生产线切削工艺设备自带3级过滤收集系统收集粉尘，未被收集的粉尘以无组织形式排放；玻璃陶瓷生产球磨工序产生的粉尘采取设备密闭，湿法球磨；玻璃陶瓷和陶瓷件生产过程中采取湿式机加工艺，过程中产生的粉尘大多数被拦截下来，少量未被拦截的粉尘以无组织形式排放。除以上工艺外的其他工艺粉尘、有机废气等由于产生量较小，均以无组织形式在车间排放 | 有机废气、颗粒物执行《大气污染物综合排放标准》（GB16297-1996）表2新污染源大气污染物排放限值。                                                                                   |
|              | 热处理、烧结                                                                                                                                                                   | 烟（粉）尘                                               | 以无组织形式排放                                                                                                                                                                 | 执行《工业炉窑大气污染物排放标准》（GB9078-1996）表3无组织排放烟（粉）尘最高允许浓度限值。                                                                                     |
| 地表水环境        | 生活污水                                                                                                                                                                     | pH、COD、NH <sub>3</sub> -N、SS、BOD <sub>5</sub> 、动植物油 | 依托工业园区现有公用防渗化粪池预处理后，通过市政污水管网排入石桥子污水处理厂处理。                                                                                                                                | 项目排放的污水中pH值、动植物油执行《污水综合排放标准》（GB8978-1996）表4三级标准；COD、NH <sub>3</sub> -N、SS、BOD <sub>5</sub> 执行《辽宁省污水综合排放标准》（DB21/1627-2008）表2中排入污水处理厂标准。 |
| 声环境          | 设备机械噪声                                                                                                                                                                   | Leq（A）                                              | 选用低噪声设备；产噪设备全部置于厂房内；并安装基础减振装置。                                                                                                                                           | 厂界噪声执行《工业企业厂界环境噪声排放标准》（GB12348-2008）3类标准。                                                                                               |
| 电磁辐射         | 无                                                                                                                                                                        | 无                                                   | 无                                                                                                                                                                        | 无                                                                                                                                       |
| 固体废物         | 各生产线产生的不合格品、下脚料、废料、收尘灰等分类回收，回用于生产；废滤料不在厂区暂存，定期更换，返回厂家。<br>废油墨及包装桶、废胶及包装桶、废机油及包装桶、废液压油及包装桶、废紫外线灯管、废无水乙醇及包装桶、废树脂残渣、废釉膏包装桶等暂存于危险废物贮存点，定期委托有资质单位处置。<br>生活垃圾分类收集后，交由环卫部门统一清运。 |                                                     |                                                                                                                                                                          |                                                                                                                                         |
| 土壤及地下水污染防治措施 | 分区防渗措施。                                                                                                                                                                  |                                                     |                                                                                                                                                                          |                                                                                                                                         |
| 生态保护         | 无                                                                                                                                                                        |                                                     |                                                                                                                                                                          |                                                                                                                                         |

| 措施       |                                                                                                                                                                                                                                                                                                                             |
|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 环境风险防范措施 | <p>1.大气环境风险防范措施：建立安全生产规章制度，并建立环境管理制度，其中应包括环境风险单元的风险管理，把风险单元的风险管理落到实处。2.土壤及地下水环境风险防范措施：不断改进工艺与设备，降低能源消耗。从源头上减少设备故障率及风险事故的发生概率；加强日常监管，指派专人定期巡视，一旦发生泄漏或防渗层老化破损现象，及时处置或修复；分区防渗措施。3.厂区设置地表水三级防控措施，对事故泄漏物料进行截留。4.应急处置措施：按要求制定风险应急处置方案。发生突发环境风险时，按照方案内容开展救援工作。配备灭火器、消防沙、灭火毯等应急物资，在发生泄漏及火灾事故时，及时采取截流措施，将泄漏物料及消防废水控制在厂房范围内，避免外溢。</p> |
| 其他环境管理要求 | <p>1.项目主体工程完工后，其配套建设的环境保护设施必须与主体工程同时投入使用。建设单位应在项目竣工后开展竣工环境保护自主验收工作，通过验收后方可正式运行；</p> <p>2.项目环评手续履行完成后，应在竣工环境保护验收前完成排污许可证申领工作。</p>                                                                                                                                                                                            |

## 六、结论

本项目的建设符合国家产业政策，符合当地规划，在采取相应的防治措施后，可以满足当地对环境质量的要求。建设单位要切实落实本报告表中提出的污染防治措施，保证环保设施正常运转。在认真做好上述一系列污染防治措施的基础上，本项目的建设在环境保护方面是可行的。

附表

建设项目污染物排放量汇总表

| 项目<br>分类   | 污染物<br>名称          | 原有工程排放量（固体<br>废物产生量）（t/a）① | 原有工程许<br>可排放量<br>（t/a）② | 在建工程排放量<br>（固体废物产生）<br>（t/a）③ | 本项目排放量（固<br>体废物产生量）<br>（t/a）④ | 以新带老削减量<br>（新建项目不<br>填）（t/a）⑤ | 本项目建成后全厂排<br>放量（固体废物产生<br>量）（t/a）⑥ | 变化量<br>（t/a）⑦ |
|------------|--------------------|----------------------------|-------------------------|-------------------------------|-------------------------------|-------------------------------|------------------------------------|---------------|
| 废气         | 颗粒物                | /                          | /                       | /                             | 0.37                          | /                             | 0.37                               | +0.37         |
|            | TVOC               | /                          | /                       | /                             | 0.032                         | /                             | 0.032                              | +0.032        |
| 废水         | pH                 | /                          | /                       | /                             | /                             | /                             | /                                  | /             |
|            | COD                | /                          | /                       | /                             | 0.092                         | /                             | 0.092                              | +0.092        |
|            | NH <sub>3</sub> -N | /                          | /                       | /                             | 0.0092                        | /                             | 0.0092                             | +0.0092       |
|            | SS                 | /                          | /                       | /                             | 0.092                         | /                             | 0.092                              | +0.092        |
|            | BOD <sub>5</sub>   | /                          | /                       | /                             | 0.077                         | /                             | 0.077                              | +0.077        |
|            | 动植物油               | /                          | /                       | /                             | 0.024                         | /                             | 0.024                              | +0.024        |
| 一般固体<br>废物 | 下脚料                | /                          | /                       | /                             | 4                             | /                             | 4                                  | +4            |
|            | 不合格品               | /                          | /                       | /                             | 1.35                          | /                             | 1.35                               | +1.35         |
|            | 收尘灰                | /                          | /                       | /                             | 0.01035                       | /                             | 0.01035                            | +0.01035      |
|            | 废料                 | /                          | /                       | /                             | 0.3713                        | /                             | 0.3713                             | +0.3713       |
|            | 废滤料                | /                          | /                       | /                             | 0.01                          | /                             | 0.01                               | +0.01         |
| 生活垃圾       |                    | /                          | /                       | /                             | 6                             | /                             | 6                                  | +6            |
| 危险废物       | 废油墨及包装<br>桶        | /                          | /                       | /                             | 0.05                          | /                             | 0.05                               | +0.05         |
|            | 废胶及包装桶             | /                          | /                       | /                             | 0.02                          | /                             | 0.02                               | +0.02         |
|            | 废机油及包装<br>桶        | /                          | /                       | /                             | 0.12                          | /                             | 0.12                               | +0.12         |
|            | 废液压油及包<br>装桶       | /                          | /                       | /                             | 0.08                          | /                             | 0.08                               | +0.08         |
|            | 废紫外灯管              | /                          | /                       | /                             | 0.005                         | /                             | 0.005                              | +0.005        |

|  |               |   |   |   |       |   |       |        |
|--|---------------|---|---|---|-------|---|-------|--------|
|  | 废无水乙醇及<br>包装桶 | / | / | / | 0.058 | / | 0.058 | +0.058 |
|  | 废树脂残渣         | / | / | / | 0.25  | / | 0.25  | +0.25  |
|  | 废釉膏包装桶        | / | / | / | 0.03  | / | 0.03  | +0.03  |

注：⑥=①+③+④-⑤；⑦=⑥-①

## 附件 1 委托书

### 委 托 书

致诚华远（辽宁）建设工程管理咨询有限公司：

我单位的《辽宁新爱特科技有限公司建设项目》根据《中华人民共和国环境影响评价法》《建设项目环境保护管理条例》以及《建设项目环境影响评价分类管理名录》等有关法律法规，应编制环境影响报告表。现委托贵公司对该项目进行环评编制工作，并出具评价报告。

委托单位：辽宁新爱特科技有限公司

2025 年 10 月 27 日



## 附件 2 确认书

### 确认书

《辽宁新爱特科技有限公司建设项目》环境影响报告表已经由我单位确认，报告中所述内容与我单位建设情况一致。我单位对所提供材料的准确性和真实性完全负责，如存在隐瞒和假报等情况及由此导致的一切后果，我单位负全部法律责任。





统一社会信用代码

91210500MAG17HJTXK

# 营业执照

扫描二维码登录“国家企业信用信息公示系统”了解更多登记、备案、许可、监管信息。

名称 辽宁新爱特科技有限公司

类型 有限责任公司

法定代表人 张君锋

经营范围 许可项目：第二类医疗器械生产。（依法须经批准的项目，经相关部门批准后方可开展经营活动，具体经营项目以相关部门批准文件或许可证件为准）一般项目：新材料技术研发；技术服务、技术开发、技术咨询、技术交流、技术转让、技术推广；玻璃、陶瓷和搪瓷制品生产专用设备制造；电子专用材料研发；日用陶瓷制品制造；建筑陶瓷制品销售；日用陶瓷制品销售；电子元器件与机电组件设备制造；电子元器件与机电组件设备销售；模具销售；化妆品批发；化妆品零售；专业保洁、清洗、消毒服务；电子产品销售；机械设备研发；玻璃仪器制造；特种陶瓷制品销售；进出口代理；日用百货销售；互联网销售（除销售需要许可的商品）；第一类医疗器械生产；第一类医疗器械销售；第二类医疗器械销售；新型陶瓷材料销售；特种陶瓷制品制造。（除依法须经批准的项目外，凭营业执照依法自主开展经营活动）

注册资本 人民币壹仟万元整

成立日期 2025年10月17日

住所 辽宁省本溪市经济技术开发区仙榆路5-15栋1-5层1号

登记机关

2025 年 10 月 17 日

国家企业信用信息公示系统网址: <http://www.gsxt.gov.cn>

国家市场监督管理总局监制

附件 4 不动产权证及房屋无偿使用证明（辅具重点内容）

辽 ( 2021 ) 本溪市 不动产权第 0063106 号

附 记

权利人

本溪市筑华置业有限公司

共有情况

单独所有

坐 落

本溪经济技术开发区仙榆路5-15栋1-5层1号

不动产单元号

210503102005GB00009F00130002

权利类型

国有建设用地使用权/房屋（构筑物）所有权

权利性质

出让/商品非住宅

用 途

工业用地/工业用房

面 积

共有宗地面积120800㎡/房屋建筑面积4768.48㎡

使用期限

2013年10月17日起2063年10月17日止

权利其他状况

专有建筑面积：4768.48平方米  
房屋结构：钢筋混凝土结构  
房屋总层数：5层,所在层数：1-5层

业务编号：1076418  
房屋编号：532384  
持证人证件类型：营业执照  
持证人证件号码：91210500MA11CG1B5U



## 房屋无偿使用证明

本溪市筑华置业有限公司将产权自有的房屋，地址位于辽宁省本溪经济技术开发区仙榆路 5-15 栋 1-5 层 1 号，面积 4768.48 平方米，产权证号辽（2021）本溪市不动产权第 0063106 号，无偿提供给辽宁新爱特科技有限公司作为经营场所使用，使用期限 2 年，自 2025 年 10 月 1 日至 2027 年 9 月 30 日。

房屋产权人：本溪市筑华置业有限公司



2025 年 10 月 10 日



## 附件 5 引用数据监测报告

|                                                                                                   |               |
|---------------------------------------------------------------------------------------------------|---------------|
| <br>16062034M045 | <h1>监测报告</h1> |
| 报告编号: HJJC20250421002                                                                             |               |
| 项目名称: 辽宁药联制药有限公司新增医药产品及建设项目                                                                       |               |
| 委托单位: 辽宁药联制药有限公司                                                                                  |               |
| 报告日期: 2025 年 4 月 28 日                                                                             |               |
| 监测项目: 环境空气                                                                                        |               |
| 监测类别: 环境质量现状监测                                                                                    |               |
| <div>辽宁天圆检测有限责任公司</div> <div>检验检测专用章</div>                                                        |               |



## 声 明

1. 监测报告无“检验检测专用章”和“CMA 章”无效。
2. 监测报告无编制、审核、批准人签字无效。
3. 监测报告涂改或部分复印无效。
4. 对监测结果有异议，请于收到监测报告之日起十五日内向本公司提出书面复检申请，逾期不予受理。
5. 本报告只对本次采样/送检样品检测结果负责，报告中所附限值标准均由客户提供，仅供参考。
6. 本报告中监测结果及其对结果的判定结论只代表监测时污染物排放状况。
7. 除客户特别申明并支付样品管理费，所有超过标准规定时效期的样品均不再留样。

单位名称：辽宁天圆检测有限责任公司

单位地址：铁岭市铁岭县嘉陵江路 10 号

业务电话：024-72693008

E-mail: lntyjc@163.com



| 监测基本情况 |                       |     |        |
|--------|-----------------------|-----|--------|
| 项目名称   | 辽宁药联制药有限公司新增医药产品及建设项目 |     |        |
| 委托单位   | 辽宁药联制药有限公司            |     |        |
| 监测项目   | 环境空气: TSP             |     |        |
| 采样地点   | 环境空气: K1: 锦尚家园小区      |     |        |
| 监测频次   | 环境空气: 连续监测 3 天, 日均值   |     |        |
| 采样日期   | 2025 年 4 月 21 日至 23 日 | 采样人 | 赵斌、刘雨欣 |
| 样品状态   | 样品保存完好, 固体(滤膜)        |     |        |
| 以下空白   |                       |     |        |



## 一、环境空气监测

### 1. 监测分析方法及仪器设备见表 1-1

表 1-1 监测分析方法及仪器设备

| 项目  | 监测分析方法                             | 仪器名称、型号                               | 检出限                    |
|-----|------------------------------------|---------------------------------------|------------------------|
| TSP | 环境空气 总悬浮颗粒物的测定<br>重量法 HJ 1263—2022 | 电子天平 ESJ182-4<br>恒温恒流大气采样器<br>MH-1205 | 0.007mg/m <sup>3</sup> |

### 2. 环境空气监测结果见表 1-2

表 1-2 环境空气监测结果

| 监测日期     | 监测项目 | 监测点位 | 单位                | 监测结果 |
|----------|------|------|-------------------|------|
| 4 月 21 日 | TSP  | K1   | mg/m <sup>3</sup> | 0.22 |
| 4 月 22 日 |      |      |                   | 0.20 |
| 4 月 23 日 |      |      |                   | 0.21 |

## 二、附页

1. 气象参数见附页 1。
2. 监测点位示意图见附页 2。

## 三、质量控制

1. 分析方法采用国家环保部最近颁布标准方法。
2. 测试人均经考核并持证上岗。
3. 测试所用的仪器均处于计量检定/校准有效期内。
4. 本监测报告实行三级审核制度。

监测单位: 辽宁天圆检测有限责任公司

报告日期: 2025 年 4 月 28 日

批准:

李欣宇

审核:

郭莹

编制:

李昕如

报告结束



## 附页 1: 气象参数表

表 1 气象参数表

| 监测日期     | 天气状况 | 气温 (°C) | 气压 (kPa)    | 风速 (m/s)  | 风向  |
|----------|------|---------|-------------|-----------|-----|
| 4 月 21 日 | 多云   | 13~18   | 101.2~101.3 | 1.36~1.44 | 南风  |
| 4 月 22 日 | 多云   | 10~15   | 101.1~101.3 | 1.16~1.22 | 北风  |
| 4 月 23 日 | 晴    | 12~16   | 101.2~101.3 | 1.38~1.45 | 西南风 |



附页 2: 监测点位示意图



# 附件 6 UV 油墨化学物质安全资料报告

品名: UV 墨水(EPSON)  
编号: HC-WI-RD-966  
版本: A1  
生效: 2025 年 1 月 1 日



## 化学物质安全资料报告 (MSDS)

### 1. 化学物质及公司资料

|           |                             |
|-----------|-----------------------------|
| 化学物质名称    | EPSON 系列 UV 墨水              |
| 编 号       | UV-K/C/M/Y/W/LC/LM          |
| 公 司 名     | 珠海华彩新材料科技有限公司               |
| 地 址       | 广东省珠海市香洲区华宇路 311 号 A 座 5008 |
| 电 话 号 码   | 0086-760-86335998/86330818  |
| FAX 号 码   | 0086-760-86332878           |
| 紧 急 电 话   | 0086-760-86335998           |
| 推荐用途及使用限制 | UV 数字喷绘, UV 数码打印机专用         |

### 2. 危险及有害性

GHS 分类

物理化学危险性

易燃液体 : 区分外

健康危害性分类

急性毒性 (口服) : 类别 5

急性毒性 (皮肤) : 类别 5

急性毒性 (吸入) : 类别 5

皮肤腐蚀/刺激性 : 类别 1

严重眼睛损伤/眼睛刺激性 : 类别 2A

呼吸致敏物/皮肤致敏物 : 类别 2

生殖细胞突变性 : 类别 2

致癌性 : 区分外

生殖毒性 : 区分外

特定靶器官毒性(一次接触) : 区分外

特定靶器官毒性(反复接触) : 区分外

吸入性危害 : 区分外

对环境危害性

对水环境的危害 (急性): 类别 1

上述记载无的情况, 属于无法分类, 在分类类别以外。

#### GHS 标签要素

图画表示





品名：UV 墨水(EPSON)  
编号：HC-WI-RD-966  
版本：A1  
生效：2025 年 1 月 1 日



化学物质安全资料报告（MSDS）

文字表示  
警告

3. 成分信息

单一物质、混合物的区分：本品属于混合物

| 组成物质    | CAS NO.    | K       | C       | M       | Y       | W       | LC      | LM      |
|---------|------------|---------|---------|---------|---------|---------|---------|---------|
|         |            | 含量 (%)  | 含量 (%)  | 含量 (%)  | 含量 (%)  | 含量 (%)  | 含量 (%)  | 含量 (%)  |
| 改性环氧树脂  | 24969-06-0 | 86~94.9 | 86~94.9 | 86~94.9 | 86~94.9 | 86~94.9 | 86~94.9 | 86~94.9 |
| HDDA    | 13048-33-4 | 1~4     | 1~4     | 1~4     | 1~4     | 1~4     | 1~4     | 1~4     |
| THFA    | 2399-48-6  | 1~4     | 1~4     | 1~4     | 1~4     | 1~4     | 1~4     | 1~4     |
| TMPTA   | 15625-89-5 | 0.5~1   | 0.5~1   | 0.5~1   | 0.5~1   | 0.5~1   | 0.5~1   | 0.5~1   |
| TPO     | 75980-60-8 | 0.5~1   | 0.5~1   | 0.5~1   | 0.5~1   | 0.5~1   | 0.5~1   | 0.5~1   |
| 炭黑      | 1333-86-4  | 2~3     | /       | /       | /       | /       | /       | /       |
| 铜酞青蓝    | 147-14-8   | /       | 2~3     | /       | /       | /       | 0.4~0.6 | /       |
| 颜料红 122 | 980-26-7   | /       | /       | 2~3     | /       | /       | /       | 0.4~0.6 |
| 颜料黄 150 | 68511-62-6 | /       | /       | /       | 2~3     | /       | /       | /       |
| TiO2    | 13463-67-7 | /       | /       | /       | /       | 10~20   | /       | /       |
| 添加剂     | 非公开        | 0.1~1   | 0.1~1   | 0.1~1   | 0.1~1   | 0.1~1   | 0.1~1   | 0.1~1   |

4. 应急措施

不同暴露途径的急救方法：

眼睛：1. 迅速用清水清洗数分钟，眼睑内侧也要完全洗干净；  
2. 如果过敏反应强烈，请立即就医处理。

皮肤：1. 尽快脱去接触部位的衣物，把附着物用布快速擦拭，用大量的清水或肥皂水立即冲洗，溶剂、稀释剂不可使用；  
2. 如果反应强烈，需尽快就医。

吸入：1. 要尽快转移到空气的新鲜的地方；  
2. 用容易呼吸的姿势休息；  
3. 如果刺激反应强烈，需尽快就医。

误食：1. 请立即就医；  
2. 请不要吃呕吐物，请不要在医生的指导下强行催吐。

品名：UV 墨水(EPSON)  
编号：HC-WI-RD-966  
版本：A1  
生效：2025 年 1 月 1 日



## 化学物质安全资料报告 (MSDS)

### 5. 消防措施

风险特性

点火可燃

适用灭火剂

雾状水、泡沫、干粉、二氧化碳、砂土

不可以用的灭火剂

水(棒状水、高压水)

有害燃烧产物

一氧化碳

灭火方法

尽快将化学品容器远离火源，并去除周围可燃物，灭火活动在上风口进行，使用指定的灭火器，不要吸入燃烧的气体。

### 6. 泄漏事故措施

对人体防护的要求

应急处置人员需穿戴正确的护具（手套、防护面罩、防护衣、风镜等），必要时穿戴自给正压式呼吸器。

周围全面封锁，除相关处置人员外其他人等禁止入内，防止二次灾害。

切断附着的火源，高温物体和附近可燃物需尽快清除。防止火灾蔓延。

在存储易燃物的地方准备恰当的灭火器

确保作业空间空气流通。

对泄漏区域应采取的措施

漏出物放在能密封的容器中进行回收，并且移动到安全的场所。

附着物以及废弃物请按照相关法规进行处理。

回收时使用不会因为碰撞，静电而引起火花的材质储存。

流出物用干燥沙或其他不燃材料进行吸附或吸收。大量流出时，请构筑围堤或挖坑存储，用泵转移到槽车或公用搜集器内，回收或运至废液处置场所处置。

对环境的注意事项

避免流入下水道、排洪沟等限制性空间

如果流入河道，请联系当地管理部门。

### 7. 使用及储存注意事项

使用

密闭操作，加强通风。注意遮光。

周围不能使用火，火花，高温物体，工作场所严禁吸烟。

作业中穿戴防静电衣物服和鞋子。

道具请使用防火花型的

品名：UV 墨水(EPSON)

编号：HC-WI-RD-966

版本：A1

生效：2025 年 1 月 1 日



## 化学物质安全资料报告 (MSDS)

请使用能防止接触皮肤，黏膜，眼睛的防具  
使用后将手和脸充分洗干净，不要把手套等被污染的防具带到休息处  
有过敏史的人群不能接触  
温度过高时会有引火性  
在密封的作业环境，安装充分的排气装置，穿戴合适的防具再作业  
使用时请不要吃东西  
使用后请充分洗手洗脸

### 储存

常温、通风、干燥处储存，远离火源、热源，  
注意避光，密封保存。

不要放在有酸化性质的物质和有机酸化物的同一场所。  
因为有聚合性，所以要保存在冷暗处，偶氮化合物、金属离子等千万不能混入。

## 8. 安全防护

### 暴露环境最高允许浓度

没有详细要求

### 工程控制

请不要让作业人员直接接触，防止被物质腐蚀。

屋内作业的场合，请把设备调整好。不要让作业者直接接触，使用全体换气装置或者局部换气装置。

使用场所旁边请不要放置高温以及能成为着火源的东西旁边。

### 防护用具

#### 呼吸防护用具

使用能有效保护来自有害性物质危害的面罩。

大量使用以及密闭空间使用的情况，推荐送气式或者自给式呼吸器。

#### 眼睛防护用具

使用时带上保护眼镜或者保护面罩

#### 身体防护用具

使用时，穿不暴露皮肤的衣服。最好是化学品不会渗透的材料。

丙烯酸酯不会蒸发，长时间停留在皮肤及衣服上，可能会引起皮肤炎症。

#### 手防护用具

穿戴不会因为有机溶剂或者化学品药品渗透材质的手套。

## 9. 物理及化学性质

品名: UV 墨水(EPSON)  
编号: HC-WI-RD-966  
版本: A1  
生效: 2025 年 1 月 1 日



化学物质安全资料报告 (MSDS)

|           | K               | C               | M               | Y               | W               | LC              | LM              |
|-----------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| 性状 (状态颜色) | 黑色液体 (25℃)      | 青色液体 (25℃)      | 红色液体 (25℃)      | 黄色液体 (25℃)      | 白色液体 (25℃)      | 浅青色液体 (25℃)     | 浅红色液体 (25℃)     |
| 气味        | 特殊的臭味           | 特殊的臭味           | 特殊的臭味           | 特殊的臭味           | 特殊的臭味           | 特殊的臭味           | 特殊的臭味           |
| 粘度(mPa)   | 5-7 (25℃)       | 5-7 (25℃)       | 5-7 (25℃)       | 5-7 (25℃)       | 5-7 (25℃)       | 5-7 (25℃)       | 5-7 (25℃)       |
| 燃点        | >130℃           | >130℃           | >130℃           | >130℃           | >130℃           | >130℃           | >130℃           |
| 比重 (密度)   | 1.06 (25℃)      | 1.03 (25℃)      | 1.05 (25℃)      | 1.04 (25℃)      | 1.09 (25℃)      | 1.01 (25℃)      | 1.01 (25℃)      |
| 溶解度       | 不溶于水, 溶于大多数有机溶剂 | 不溶于水, 溶于大多数有机溶剂 | 不溶于水, 溶于大多数有机溶剂 | 不溶于水, 溶于大多数有机溶剂 | 不溶于水, 溶于大多数有机溶剂 | 不溶于水, 溶于大多数有机溶剂 | 不溶于水, 溶于大多数有机溶剂 |

10. 稳定性及反应活性

化学稳定性  
通常的使用很稳定。光，特别是照到紫外线，会发生聚合硬化。  
应避免的环境  
  
因为会有引火性，需要避开明火，电弧等着火源。防止光，紫外线，过氧化物的混入  
聚合危害  
通常不会发生聚合反应  
有害的分解产物  
燃烧的话，有可能会产生中毒性气体，一氧化碳等有害气体  
其他危险性  
可能会融化塑料和橡胶类

11. 毒性资料

急性毒性  
老鼠口服 LD50 >2000mg/kg 区分 5，经皮兔子 LD50 >2000mg/kg 区分 5  
接触毒性  
刺激性  
可能会引起刺激性反应



品名：UV 墨水(EPSON)

编号：HC-WI-RD-966

版本：A1

生效：2025 年 1 月 1 日

## 化学物质安全资料报告 (MSDS)

致敏性

可能会引起过敏反应

亚急性和慢性毒性

致突变性

无资料

致畸性

无资料

致癌性

无资料

## 12. 生态资料

注意事项

泄露，废弃的时候，可能会影响环境。

不要让墨水和清洗液直接排放到地面，河川排水沟等。

影响生态的资料

生物效应

急性水栖毒性 L(E)C50 <1.00mg/L 区分 1

生物降解性

无资料

生物富集

无资料

环境迁移

无资料

## 13. 废弃建议

残留废弃物处理

1. 废墨，容器等废弃物请委托专业废物处理员进行处理。
2. 容器，机械装置清洗后的排水，不要直接流到地面以及排水沟中。
3. 关于排水处理，焚烧等发生的废弃物，根据最新版《废弃物清理法》及其他相关废弃物处理法规。

污染容器处理

1. 空容器请将内容物完全除去后进行处理。
2. 委托有许可的产业废弃物处理人员进行处理。

品名: UV 墨水(EPSON)  
编号: HC-WI-RD-966  
版本: A1  
生效: 2025 年 1 月 1 日



## 化学物质安全资料报告 (MSDS)

### 14. 运输信息

RID/ADR, IMDG 和 ICAO/IATA 均没有禁运条款规定

### 15. 法规信息

适用法规

危险化学品安全管理条例 (2002 年 1 月 26 日国务院发布)  
化学危险物品安全管理条例实施细则 (化劳发[1992]677 号)  
工作场所安全使用化学品规定 (劳部发[1996]423 号)  
化学品分类和危险性公示通则 (GB13690-2009)

### 16. 其他信息

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## 附件 7 胶化学物质安全资料报告

|                                                 |          |
|-------------------------------------------------|----------|
| 3M™ Scotch-Weld™ Epoxy Adhesive DP420 Off-White | 07/25/17 |
|-------------------------------------------------|----------|



### Safety Data Sheet

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|                        |           |                         |          |
|------------------------|-----------|-------------------------|----------|
| <b>Document Group:</b> | 11-2411-4 | <b>Version Number:</b>  | 17.01    |
| <b>Issue Date:</b>     | 07/25/17  | <b>Supersedes Date:</b> | 04/16/15 |

#### Product identifier

3M™ Scotch-Weld™ Epoxy Adhesive DP420 Off-White

#### ID Number(s):

62-3280-1430-3, 62-3280-1431-1, 62-3280-1435-2, 62-3280-1436-0, 62-3280-1438-6, 62-3280-3530-8, 62-3280-3830-2

#### Recommended use

Structural adhesive

#### Supplier's details

**MANUFACTURER:** 3M  
**DIVISION:** Industrial Adhesives and Tapes Division

**ADDRESS:** 3M Center, St. Paul, MN 55144-1000, USA  
**Telephone:** 1-888-3M HELPS (1-888-364-3577)

#### Emergency telephone number

1-800-364-3577 or (651) 737-6501 (24 hours)

**This product is a kit or a multipart product which consists of multiple, independently packaged components. A Safety Data Sheet (SDS), Article Information Sheet (AIS), or Article Information Letter (AIL) for each of these components is included. Please do not separate the component documents from this cover page. The document numbers for components of this product are:**

11-2409-8, 22-0528-4

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|                        |           |                         |          |
|------------------------|-----------|-------------------------|----------|
| <b>Document Group:</b> | 22-0528-4 | <b>Version Number:</b>  | 7.01     |
| <b>Issue Date:</b>     | 07/25/17  | <b>Supersedes Date:</b> | 04/16/15 |

### SECTION 1: Identification

#### 1.1. Product identifier

3M™ Scotch-Weld™ Epoxy Adhesive DP420 Off-White, Part A

#### 1.2. Recommended use and restrictions on use

##### Recommended use

Structural adhesive

#### 1.3. Supplier's details

|                      |                                         |
|----------------------|-----------------------------------------|
| <b>MANUFACTURER:</b> | 3M                                      |
| <b>DIVISION:</b>     | Industrial Adhesives and Tapes Division |
| <b>ADDRESS:</b>      | 3M Center, St. Paul, MN 55144-1000, USA |
| <b>Telephone:</b>    | 1-888-3M HELPS (1-888-364-3577)         |

#### 1.4. Emergency telephone number

1-800-364-3577 or (651) 737-6501 (24 hours)

### SECTION 2: Hazard identification

#### 2.1. Hazard classification

Serious Eye Damage/Irritation: Category 1.

Skin Corrosion/Irritation: Category 1B.

#### 2.2. Label elements

##### Signal word

Danger

##### Symbols

Corrosion |

##### Pictograms



**Hazard Statements**

Causes severe skin burns and eye damage.

**Precautionary Statements****Prevention:**

Do not breathe dust/fume/gas/mist/vapors/spray.  
Wear protective gloves, protective clothing, and eye/face protection.  
Wash thoroughly after handling.

**Response:**

IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.  
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
Immediately call a POISON CENTER or doctor/physician.  
Wash contaminated clothing before reuse.  
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

**Storage:**

Store locked up.

**Disposal:**

Dispose of contents/container in accordance with applicable local/regional/national/international regulations.

**2.3. Hazards not otherwise classified**

5% of the mixture consists of ingredients of unknown acute dermal toxicity.

**SECTION 3: Composition/information on ingredients**

| Ingredient                                         | C.A.S. No.    | % by Wt                |
|----------------------------------------------------|---------------|------------------------|
| Modified Epoxy Resin (NJTS Reg. No. 04499600-6839) | Trade Secret* | 40 - 80 Trade Secret * |
| 4,7,10-Trioxatridecane-1,13-Diamine                | 4246-51-9     | 1 - 5 Trade Secret *   |
| 2,4,6-tris((Dimethylamino)Methyl)Phenol            | 90-72-2       | 1 - 3 Trade Secret *   |
| Amorphous Silica                                   | 67762-90-7    | 1 - 5 Trade Secret *   |
| Calcium Salt                                       | 55120-75-7    | 1 - 5 Trade Secret *   |

NJTS or NJTSRN: New Jersey Trade Secret Registry Number.

\*The specific chemical identity and/or exact percentage (concentration) of this composition has been withheld as a trade secret.

**SECTION 4: First aid measures****4.1. Description of first aid measures****Inhalation:**

Remove person to fresh air. If you feel unwell, get medical attention.

**Skin Contact:**

Immediately flush with large amounts of water for at least 15 minutes. Remove contaminated clothing. Get immediate medical attention. Wash clothing before reuse.

**Eye Contact:**

Immediately flush with large amounts of water for at least 15 minutes. Remove contact lenses if easy to do. Continue rinsing. Immediately get medical attention.

**If Swallowed:**

Rinse mouth. Do not induce vomiting. Get immediate medical attention.

**4.2. Most important symptoms and effects, both acute and delayed**

See Section 11.1. Information on toxicological effects.

**4.3. Indication of any immediate medical attention and special treatment required**

Not applicable

## SECTION 5: Fire-fighting measures

**5.1. Suitable extinguishing media**

In case of fire: Use a fire fighting agent suitable for ordinary combustible material such as water or foam to extinguish.

**5.2. Special hazards arising from the substance or mixture**

None inherent in this product.

**Hazardous Decomposition or By-Products****Substance**

Aldehydes  
Carbon monoxide  
Carbon dioxide  
Irritant Vapors or Gases  
Oxides of Nitrogen

**Condition**

During Combustion  
During Combustion  
During Combustion  
During Combustion  
During Combustion

**5.3. Special protective actions for fire-fighters**

No special protective actions for fire-fighters are anticipated.

## SECTION 6: Accidental release measures

**6.1. Personal precautions, protective equipment and emergency procedures**

Evacuate area. Ventilate the area with fresh air. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapors, in accordance with good industrial hygiene practice. Refer to other sections of this SDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment.

**6.2. Environmental precautions**

Avoid release to the environment. For larger spills, cover drains and build dikes to prevent entry into sewer systems or bodies of water.

**6.3. Methods and material for containment and cleaning up**

Contain spill. Working from around the edges of the spill inward, cover with bentonite, vermiculite, or commercially available inorganic absorbent material. Mix in sufficient absorbent until it appears dry. Remember, adding an absorbent material does not remove a physical, health, or environmental hazard. Collect as much of the spilled material as possible. Place in a closed container approved for transportation by appropriate authorities. Clean up residue with an appropriate solvent selected by a qualified and authorized person. Ventilate the area with fresh air. Read and follow safety precautions on the solvent label and SDS. Seal the container. Dispose of collected material as soon as possible.

## SECTION 7: Handling and storage

**7.1. Precautions for safe handling**

For industrial or professional use only. Do not breathe dust/fume/gas/mist/vapors/spray. Do not get in eyes, on skin, or on clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Wash contaminated clothing before reuse. Avoid contact with oxidizing agents (eg. chlorine, chromic acid etc.)

**7.2. Conditions for safe storage including any incompatibilities**

Store away from acids. Store away from oxidizing agents.

**SECTION 8: Exposure controls/personal protection****8.1. Control parameters****Occupational exposure limits**

If a component is disclosed in section 3 but does not appear in the table below, an occupational exposure limit is not available for the component.

| Ingredient        | C.A.S. No. | Agency                  | Limit type                                                                    | Additional Comments |
|-------------------|------------|-------------------------|-------------------------------------------------------------------------------|---------------------|
| Calcium Salt      | 55120-75-7 | Manufacturer determined | TWA:0.1 mg/m <sup>3</sup>                                                     | SKIN                |
| SILICA, AMORPHOUS | 67762-90-7 | OSHA                    | TWA concentration:0.8 mg/m <sup>3</sup> ;TWA:20 millions of particles/cu. ft. |                     |

ACGIH : American Conference of Governmental Industrial Hygienists

AIHA : American Industrial Hygiene Association

CMRG : Chemical Manufacturer's Recommended Guidelines

OSHA : United States Department of Labor - Occupational Safety and Health Administration

TWA: Time-Weighted-Average

STEL: Short Term Exposure Limit

CEIL: Ceiling

**8.2. Exposure controls****8.2.1. Engineering controls**

Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below relevant Exposure Limits and/or control dust/fume/gas/mist/vapors/spray. If ventilation is not adequate, use respiratory protection equipment.

**8.2.2. Personal protective equipment (PPE)****Eye/face protection**

Select and use eye/face protection to prevent contact based on the results of an exposure assessment. The following eye/face protection(s) are recommended:

Full Face Shield

Indirect Vented Goggles

**Skin/hand protection**

Select and use gloves and/or protective clothing approved to relevant local standards to prevent skin contact based on the results of an exposure assessment. Selection should be based on use factors such as exposure levels, concentration of the substance or mixture, frequency and duration, physical challenges such as temperature extremes, and other use conditions. Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible gloves/protective clothing. Note: Nitrile gloves may be worn over polymer laminate gloves to improve dexterity.

Gloves made from the following material(s) are recommended: Nitrile Rubber

Polymer laminate

**Respiratory protection**

An exposure assessment may be needed to decide if a respirator is required. If a respirator is needed, use respirators as part of a full respiratory protection program. Based on the results of the exposure assessment, select from the following respirator type(s) to reduce inhalation exposure:

Half facepiece or full facepiece air-purifying respirator suitable for organic vapors and particulates

For questions about suitability for a specific application, consult with your respirator manufacturer.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

|                                |                                                                                                 |
|--------------------------------|-------------------------------------------------------------------------------------------------|
| General Physical Form:         | Liquid                                                                                          |
| Specific Physical Form:        | Paste                                                                                           |
| Odor, Color, Grade:            | Amber, very mild pungent odor.                                                                  |
| Odor threshold                 | No Data Available                                                                               |
| pH                             | Not Applicable                                                                                  |
| Melting point                  | No Data Available                                                                               |
| Boiling Point                  | >=175 °C                                                                                        |
| Flash Point                    | >=340 °F [Test Method:Closed Cup]                                                               |
| Evaporation rate               | Not Applicable                                                                                  |
| Flammability (solid, gas)      | Not Applicable                                                                                  |
| Flammable Limits(LEL)          | Not Applicable                                                                                  |
| Flammable Limits(UEL)          | Not Applicable                                                                                  |
| Vapor Pressure                 | Not Applicable                                                                                  |
| Vapor Density                  | Not Applicable                                                                                  |
| Density                        | 1.12 g/ml                                                                                       |
| Specific Gravity               | 1.12 [Ref Std:WATER=1]                                                                          |
| Solubility in Water            | Slight (less than 10%)                                                                          |
| Solubility- non-water          | No Data Available                                                                               |
| Autoignition temperature       | No Data Available                                                                               |
| Decomposition temperature      | No Data Available                                                                               |
| Viscosity                      | 8,000 - 14,000 centipoise [@ 73.4 °F ]                                                          |
| Hazardous Air Pollutants       | 0 % weight [Test Method:Calculated]                                                             |
| Molecular weight               | No Data Available                                                                               |
| VOC Less H2O & Exempt Solvents | 0 g/l [Test Method:calculated SCAQMD rule 443.1]<br>[Details:when used as intended with Part B] |
| VOC Less H2O & Exempt Solvents | 0 g/l [Test Method:calculated SCAQMD rule 443.1] [Details:as supplied]                          |
| VOC Less H2O & Exempt Solvents | 0 % [Test Method:calculated SCAQMD rule 443.1]<br>[Details:when used as intended with Part B]   |

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

This material may be reactive with certain agents under certain conditions - see the remaining headings in this section.

### 10.2. Chemical stability

Stable.

### 10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

### 10.4. Conditions to avoid

Heat is generated during cure. Do not cure a mass larger than 50 grams in a confined space to prevent a premature exothermic reaction with production of intense heat and smoke.



**10.5. Incompatible materials**

Strong oxidizing agents

**10.6. Hazardous decomposition products****Substance**

None known.

**Condition**

Refer to section 5.2 for hazardous decomposition products during combustion.

**SECTION 11: Toxicological information**

The information below may not be consistent with the material classification in Section 2 if specific ingredient classifications are mandated by a competent authority. In addition, toxicological data on ingredients may not be reflected in the material classification and/or the signs and symptoms of exposure, because an ingredient may be present below the threshold for labeling, an ingredient may not be available for exposure, or the data may not be relevant to the material as a whole.

**11.1. Information on Toxicological effects****Signs and Symptoms of Exposure**

Based on test data and/or information on the components, this material may produce the following health effects:

**Inhalation:**

Respiratory Tract Irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

**Skin Contact:**

Corrosive (Skin Burns): Signs/symptoms may include localized redness, swelling, itching, intense pain, blistering, ulceration, and tissue destruction.

**Eye Contact:**

Corrosive (Eye Burns): Signs/symptoms may include cloudy appearance of the cornea, chemical burns, severe pain, tearing, ulcerations, significantly impaired vision or complete loss of vision.

**Ingestion:**

Gastrointestinal Corrosion: Signs/symptoms may include severe mouth, throat and abdominal pain; nausea; vomiting; and diarrhea; blood in the feces and/or vomitus may also be seen.

**Toxicological Data**

If a component is disclosed in section 3 but does not appear in a table below, either no data are available for that endpoint or the data are not sufficient for classification.

**Acute Toxicity**

| Name                                | Route                          | Species | Value                                          |
|-------------------------------------|--------------------------------|---------|------------------------------------------------|
| Overall product                     | Dermal                         |         | No data available; calculated ATE >5,000 mg/kg |
| Overall product                     | Ingestion                      |         | No data available; calculated ATE >5,000 mg/kg |
| 4,7,10-Trioxatridecane-1,13-Diamine | Dermal                         | Rabbit  | LD50 2,500 mg/kg                               |
| 4,7,10-Trioxatridecane-1,13-Diamine | Ingestion                      | Rat     | LD50 3,160 mg/kg                               |
| Amorphous Silica                    | Dermal                         | Rabbit  | LD50 > 5,000 mg/kg                             |
| Amorphous Silica                    | Inhalation-Dust/Mist (4 hours) | Rat     | LC50 > 0.691 mg/l                              |

|                                                         |          |
|---------------------------------------------------------|----------|
| 3M™ Scotch-Weld™ Epoxy Adhesive DP420 Off-White, Part A | 07/25/17 |
|---------------------------------------------------------|----------|

|                                         |           |     |                    |
|-----------------------------------------|-----------|-----|--------------------|
| Amorphous Silica                        | Ingestion | Rat | LD50 > 5,110 mg/kg |
| 2,4,6-tris((Dimethylamino)Methyl)Phenol | Dermal    | Rat | LD50 1,280 mg/kg   |
| 2,4,6-tris((Dimethylamino)Methyl)Phenol | Ingestion | Rat | LD50 1,000 mg/kg   |
| Calcium Salt                            | Ingestion | Rat | LD50 > 2,000 mg/kg |

ATE = acute toxicity estimate

#### Skin Corrosion/Irritation

| Name                                    | Species | Value                     |
|-----------------------------------------|---------|---------------------------|
| 4,7,10-Trioxatridecane-1,13-Diamine     | Rabbit  | Corrosive                 |
| Amorphous Silica                        | Rabbit  | No significant irritation |
| 2,4,6-tris((Dimethylamino)Methyl)Phenol | Rabbit  | Corrosive                 |
| Calcium Salt                            | Rabbit  | Irritant                  |

#### Serious Eye Damage/Irritation

| Name                                    | Species                | Value                     |
|-----------------------------------------|------------------------|---------------------------|
| 4,7,10-Trioxatridecane-1,13-Diamine     | similar health hazards | Corrosive                 |
| Amorphous Silica                        | Rabbit                 | No significant irritation |
| 2,4,6-tris((Dimethylamino)Methyl)Phenol | Rabbit                 | Corrosive                 |
| Calcium Salt                            | Rabbit                 | Corrosive                 |

#### Skin Sensitization

| Name                                    | Species          | Value          |
|-----------------------------------------|------------------|----------------|
| Amorphous Silica                        | Human and animal | Not classified |
| 2,4,6-tris((Dimethylamino)Methyl)Phenol | Guinea pig       | Not classified |

#### Respiratory Sensitization

For the component/components, either no data are currently available or the data are not sufficient for classification.

#### Germ Cell Mutagenicity

| Name                                    | Route    | Value         |
|-----------------------------------------|----------|---------------|
| Amorphous Silica                        | In Vitro | Not mutagenic |
| 2,4,6-tris((Dimethylamino)Methyl)Phenol | In Vitro | Not mutagenic |

#### Carcinogenicity

| Name             | Route         | Species | Value                                                                        |
|------------------|---------------|---------|------------------------------------------------------------------------------|
| Amorphous Silica | Not Specified | Mouse   | Some positive data exist, but the data are not sufficient for classification |

#### Reproductive Toxicity

##### Reproductive and/or Developmental Effects

| Name             | Route     | Value                                  | Species | Test Result           | Exposure Duration    |
|------------------|-----------|----------------------------------------|---------|-----------------------|----------------------|
| Amorphous Silica | Ingestion | Not classified for female reproduction | Rat     | NOAEL 509 mg/kg/day   | 1 generation         |
| Amorphous Silica | Ingestion | Not classified for male reproduction   | Rat     | NOAEL 497 mg/kg/day   | 1 generation         |
| Amorphous Silica | Ingestion | Not classified for development         | Rat     | NOAEL 1,350 mg/kg/day | during organogenesis |

#### Target Organ(s)

**Specific Target Organ Toxicity - single exposure**

| Name                                    | Route      | Target Organ(s)        | Value                                                                        | Species | Test Result         | Exposure Duration |
|-----------------------------------------|------------|------------------------|------------------------------------------------------------------------------|---------|---------------------|-------------------|
| 4,7,10-Trioxatridecane-1,13-Diamine     | Inhalation | respiratory irritation | Some positive data exist, but the data are not sufficient for classification |         | NOAEL Not available |                   |
| 2,4,6-tris((Dimethylamino)Methyl)Phenol | Inhalation | respiratory irritation | Some positive data exist, but the data are not sufficient for classification |         | NOAEL Not available |                   |

**Specific Target Organ Toxicity - repeated exposure**

| Name                                    | Route      | Target Organ(s)                                                               | Value          | Species | Test Result         | Exposure Duration     |
|-----------------------------------------|------------|-------------------------------------------------------------------------------|----------------|---------|---------------------|-----------------------|
| Amorphous Silica                        | Inhalation | respiratory system   silicosis                                                | Not classified | Human   | NOAEL Not available | occupational exposure |
| 2,4,6-tris((Dimethylamino)Methyl)Phenol | Dermal     | skin   liver   nervous system   auditory system   hematopoietic system   eyes | Not classified | Rat     | NOAEL 125 mg/kg/day | 28 days               |

**Aspiration Hazard**

For the component/components, either no data are currently available or the data are not sufficient for classification.

Please contact the address or phone number listed on the first page of the SDS for additional toxicological information on this material and/or its components.

**SECTION 12: Ecological information****Ecotoxicological information**

Please contact the address or phone number listed on the first page of the SDS for additional ecotoxicological information on this material and/or its components.

**Chemical fate information**

Please contact the address or phone number listed on the first page of the SDS for additional chemical fate information on this material and/or its components.

**SECTION 13: Disposal considerations****13.1. Disposal methods**

Dispose of contents/ container in accordance with the local/regional/national/international regulations.

Dispose of completely cured (or polymerized) material in a permitted industrial waste facility. As a disposal alternative, incinerate uncured product in a permitted waste incineration facility. Proper destruction may require the use of additional fuel during incineration processes. Empty drums/barrels/containers used for transporting and handling hazardous chemicals (chemical substances/mixtures/preparations classified as Hazardous as per applicable regulations) shall be considered, stored, treated & disposed of as hazardous wastes unless otherwise defined by applicable waste regulations. Consult with the respective regulating authorities to determine the available treatment and disposal facilities.

**EPA Hazardous Waste Number (RCRA):** Not regulated

**SECTION 14: Transport Information**

For Transport Information, please visit <http://3M.com/Transportinfo> or call 1-800-364-3577 or 651-737-6501.

**SECTION 15: Regulatory information****15.1. US Federal Regulations**

Contact 3M for more information.

**311/312 Hazard Categories:**

Fire Hazard - No      Pressure Hazard - No      Reactivity Hazard - No      Immediate Hazard - Yes      Delayed Hazard - No

**EPCRA 311/312 Hazard Classifications (effective January 1, 2018):****Physical Hazards**

Not applicable

**Health Hazards**

Hazard Not Otherwise Classified (HNOC)

Serious eye damage or eye irritation

Skin Corrosion or Irritation

**15.2. State Regulations**

Contact 3M for more information.

**15.3. Chemical Inventories**

The components of this product are in compliance with the chemical notification requirements of TSCA.

Contact 3M for more information.

**15.4. International Regulations**

Contact 3M for more information.

**This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.**

**SECTION 16: Other information****NFPA Hazard Classification**

**Health:** 3    **Flammability:** 1    **Instability:** 0    **Special Hazards:** None

National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address the hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Hazard ratings are primarily based on the inherent physical and toxic properties of the material but also include the toxic properties of combustion or decomposition products that are known to be generated in significant quantities.

**Document Group:** 22-0528-4  
**Issue Date:** 07/25/17

**Version Number:** 7.01  
**Supersedes Date:** 04/16/15

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## Safety Data Sheet

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|                        |           |                         |          |
|------------------------|-----------|-------------------------|----------|
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| <b>Issue Date:</b>     | 05/21/18  | <b>Supersedes Date:</b> | 07/25/17 |

### SECTION 1: Identification

#### 1.1. Product identifier

3M™ Scotch-Weld™ Epoxy Adhesive DP420 Off-White, Part B

#### 1.2. Recommended use and restrictions on use

##### Recommended use

Structural adhesive

#### 1.3. Supplier's details

|                      |                                         |
|----------------------|-----------------------------------------|
| <b>MANUFACTURER:</b> | 3M                                      |
| <b>DIVISION:</b>     | Industrial Adhesives and Tapes Division |
| <b>ADDRESS:</b>      | 3M Center, St. Paul, MN 55144-1000, USA |
| <b>Telephone:</b>    | 1-888-3M HELPS (1-888-364-3577)         |

#### 1.4. Emergency telephone number

1-800-364-3577 or (651) 737-6501 (24 hours)

### SECTION 2: Hazard identification

#### 2.1. Hazard classification

Serious Eye Damage/Irritation: Category 2B.

Skin Sensitizer: Category 1.

#### 2.2. Label elements

##### Signal word

Warning

##### Symbols

Exclamation mark |

##### Pictograms



**Hazard Statements**

Causes eye irritation.  
May cause an allergic skin reaction.

**Precautionary Statements****Prevention:**

Avoid breathing dust/fume/gas/mist/vapors/spray.  
Wear protective gloves.  
Wash thoroughly after handling.  
Contaminated work clothing must not be allowed out of the workplace.

**Response:**

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
If eye irritation persists: Get medical advice/attention.  
IF ON SKIN: Wash with plenty of soap and water.  
If skin irritation or rash occurs: Get medical advice/attention.  
Wash contaminated clothing before reuse.

**Disposal:**

Dispose of contents/container in accordance with applicable local/regional/national/international regulations.

**SECTION 3: Composition/information on ingredients**

| Ingredient                                    | C.A.S. No.    | % by Wt                |
|-----------------------------------------------|---------------|------------------------|
| Epoxy Resin                                   | 25068-38-6    | 80 - 95 Trade Secret * |
| Acrylic Polymer (NJTS Reg No. 04499600-5018P) | Trade Secret* | 5 - 20 Trade Secret *  |

NJTS or NJTSRN: New Jersey Trade Secret Registry Number.

\*The specific chemical identity and/or exact percentage (concentration) of this composition has been withheld as a trade secret.

**SECTION 4: First aid measures****4.1. Description of first aid measures****Inhalation:**

Remove person to fresh air. If you feel unwell, get medical attention.

**Skin Contact:**

Immediately wash with soap and water. Remove contaminated clothing and wash before reuse. If signs/symptoms develop, get medical attention.

**Eye Contact:**

Flush with large amounts of water. Remove contact lenses if easy to do. Continue rinsing. If signs/symptoms persist, get medical attention.

**If Swallowed:**

Rinse mouth. If you feel unwell, get medical attention.

**4.2. Most important symptoms and effects, both acute and delayed**



See Section 11.1. Information on toxicological effects.

#### 4.3. Indication of any immediate medical attention and special treatment required

Not applicable

### SECTION 5: Fire-fighting measures

#### 5.1. Suitable extinguishing media

In case of fire: Use a fire fighting agent suitable for ordinary combustible material such as water or foam to extinguish.

#### 5.2. Special hazards arising from the substance or mixture

None inherent in this product.

#### Hazardous Decomposition or By-Products

| <u>Substance</u>         | <u>Condition</u>  |
|--------------------------|-------------------|
| Aldehydes                | During Combustion |
| Carbon monoxide          | During Combustion |
| Carbon dioxide           | During Combustion |
| Irritant Vapors or Gases | During Combustion |

#### 5.3. Special protective actions for fire-fighters

Wear full protective clothing, including helmet, self-contained, positive pressure or pressure demand breathing apparatus, bunker coat and pants, bands around arms, waist and legs, face mask, and protective covering for exposed areas of the head.

### SECTION 6: Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

Evacuate area. Ventilate the area with fresh air. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapors, in accordance with good industrial hygiene practice. Refer to other sections of this SDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment.

#### 6.2. Environmental precautions

Avoid release to the environment. For larger spills, cover drains and build dikes to prevent entry into sewer systems or bodies of water.

#### 6.3. Methods and material for containment and cleaning up

Contain spill. Working from around the edges of the spill inward, cover with bentonite, vermiculite, or commercially available inorganic absorbent material. Mix in sufficient absorbent until it appears dry. Remember, adding an absorbent material does not remove a physical, health, or environmental hazard. Collect as much of the spilled material as possible. Place in a closed container approved for transportation by appropriate authorities. Clean up residue with an appropriate solvent selected by a qualified and authorized person. Ventilate the area with fresh air. Read and follow safety precautions on the solvent label and SDS. Seal the container. Dispose of collected material as soon as possible in accordance with applicable local/regional/national/international regulations.

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

For industrial or professional use only. Avoid breathing dust/fume/gas/mist/vapors/spray. Do not get in eyes, on skin, or on clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Wash contaminated clothing before reuse. Avoid contact with oxidizing agents (eg. chlorine, chromic acid etc.)

#### 7.2. Conditions for safe storage including any incompatibilities

Store away from oxidizing agents.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

#### Occupational exposure limits

No occupational exposure limit values exist for any of the components listed in Section 3 of this SDS.

### 8.2. Exposure controls

#### 8.2.1. Engineering controls

Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below relevant Exposure Limits and/or control dust/fume/gas/mist/vapors/spray. If ventilation is not adequate, use respiratory protection equipment.

#### 8.2.2. Personal protective equipment (PPE)

##### Eye/face protection

Select and use eye/face protection to prevent contact based on the results of an exposure assessment. The following eye/face protection(s) are recommended:

Indirect Vented Goggles

##### Skin/hand protection

Select and use gloves and/or protective clothing approved to relevant local standards to prevent skin contact based on the results of an exposure assessment. Selection should be based on use factors such as exposure levels, concentration of the substance or mixture, frequency and duration, physical challenges such as temperature extremes, and other use conditions. Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible gloves/protective clothing. Note: Nitrile gloves may be worn over polymer laminate gloves to improve dexterity.

Gloves made from the following material(s) are recommended: Polymer laminate

##### Respiratory protection

An exposure assessment may be needed to decide if a respirator is required. If a respirator is needed, use respirators as part of a full respiratory protection program. Based on the results of the exposure assessment, select from the following respirator type(s) to reduce inhalation exposure:

Half facepiece or full facepiece air-purifying respirator suitable for organic vapors and particulates

For questions about suitability for a specific application, consult with your respirator manufacturer.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

|                           |                                  |
|---------------------------|----------------------------------|
| General Physical Form:    | Liquid                           |
| Specific Physical Form:   | Paste                            |
| Odor, Color, Grade:       | White, very mild odor.           |
| Odor threshold            | No Data Available                |
| pH                        | Not Applicable                   |
| Melting point             | No Data Available                |
| Boiling Point             | >=260 °C                         |
| Flash Point               | 480 °F [Test Method: Closed Cup] |
| Evaporation rate          | Not Applicable                   |
| Flammability (solid, gas) | Not Applicable                   |
| Flammable Limits(LEL)     | Not Applicable                   |

|                                         |                                                                                                                   |
|-----------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| Flammable Limits(UEL)                   | <i>Not Applicable</i>                                                                                             |
| Vapor Pressure                          | <i>Not Applicable</i>                                                                                             |
| Vapor Density                           | <i>Not Applicable</i>                                                                                             |
| Density                                 | 1.14 g/ml                                                                                                         |
| Specific Gravity                        | 1.14 [Ref Std:WATER=1]                                                                                            |
| Solubility in Water                     | Nil                                                                                                               |
| Solubility- non-water                   | <i>No Data Available</i>                                                                                          |
| Partition coefficient: n-octanol/ water | <i>No Data Available</i>                                                                                          |
| Autoignition temperature                | <i>No Data Available</i>                                                                                          |
| Decomposition temperature               | <i>No Data Available</i>                                                                                          |
| Viscosity                               | 20,000 - 50,000 centipoise [ @ 73.4 °F ]                                                                          |
| Hazardous Air Pollutants                | 0 % weight [ <i>Test Method</i> :Calculated]                                                                      |
| Molecular weight                        | <i>No Data Available</i>                                                                                          |
| VOC Less H2O & Exempt Solvents          | 0 g/l [ <i>Test Method</i> :calculated SCAQMD rule 443.1]<br>[ <i>Details</i> :when used as intended with Part A] |
| VOC Less H2O & Exempt Solvents          | 5 g/l [ <i>Test Method</i> :calculated SCAQMD rule 443.1] [ <i>Details</i> :as supplied]                          |
| VOC Less H2O & Exempt Solvents          | 0 % [ <i>Test Method</i> :calculated SCAQMD rule 443.1]<br>[ <i>Details</i> :when used as intended with Part A]   |

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

This material may be reactive with certain agents under certain conditions - see the remaining headings in this section.

### 10.2. Chemical stability

Stable.

### 10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

### 10.4. Conditions to avoid

Heat is generated during cure. Do not cure a mass larger than 50 grams in a confined space to prevent a premature exothermic reaction with production of intense heat and smoke.

### 10.5. Incompatible materials

Strong oxidizing agents

### 10.6. Hazardous decomposition products

#### Substance

None known.

#### Condition

Refer to section 5.2 for hazardous decomposition products during combustion.

## SECTION 11: Toxicological information

The information below may not be consistent with the material classification in Section 2 if specific ingredient classifications are mandated by a competent authority. In addition, toxicological data on ingredients may not be reflected in the material classification and/or the signs and symptoms of exposure, because an ingredient may be present below the threshold for labeling, an ingredient may not be available for exposure, or the data may not be relevant to the material as a whole.

**11.1. Information on Toxicological effects****Signs and Symptoms of Exposure**

Based on test data and/or information on the components, this material may produce the following health effects:

**Inhalation:**

This product may have a characteristic odor; however, no adverse health effects are anticipated.

**Skin Contact:**

Mild Skin Irritation: Signs/symptoms may include localized redness, swelling, itching, and dryness. Allergic Skin Reaction (non-photo induced): Signs/symptoms may include redness, swelling, blistering, and itching.

**Eye Contact:**

Moderate Eye Irritation: Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

**Ingestion:**

Gastrointestinal Irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

**Toxicological Data**

If a component is disclosed in section 3 but does not appear in a table below, either no data are available for that endpoint or the data are not sufficient for classification.

**Acute Toxicity**

| Name                                          | Route     | Species | Value                                          |
|-----------------------------------------------|-----------|---------|------------------------------------------------|
| Overall product                               | Ingestion |         | No data available; calculated ATE >5,000 mg/kg |
| Epoxy Resin                                   | Dermal    | Rat     | LD50 > 1,600 mg/kg                             |
| Epoxy Resin                                   | Ingestion | Rat     | LD50 > 1,000 mg/kg                             |
| Acrylic Polymer (NJTS Reg No. 04499600-5018P) | Dermal    | Rabbit  | LD50 > 5,000 mg/kg                             |
| Acrylic Polymer (NJTS Reg No. 04499600-5018P) | Ingestion | Rat     | LD50 > 5,000 mg/kg                             |

ATE = acute toxicity estimate

**Skin Corrosion/Irritation**

| Name                                          | Species                | Value              |
|-----------------------------------------------|------------------------|--------------------|
| Epoxy Resin                                   | Rabbit                 | Mild irritant      |
| Acrylic Polymer (NJTS Reg No. 04499600-5018P) | Professional judgement | Minimal irritation |

**Serious Eye Damage/Irritation**

| Name                                          | Species                | Value             |
|-----------------------------------------------|------------------------|-------------------|
| Epoxy Resin                                   | Rabbit                 | Moderate irritant |
| Acrylic Polymer (NJTS Reg No. 04499600-5018P) | Professional judgement | Mild irritant     |

**Skin Sensitization**

| Name        | Species          | Value       |
|-------------|------------------|-------------|
| Epoxy Resin | Human and animal | Sensitizing |

**Respiratory Sensitization**

| Name | Species | Value |
|------|---------|-------|
|------|---------|-------|

|             |       |                |
|-------------|-------|----------------|
|             |       |                |
| Epoxy Resin | Human | Not classified |

#### Germ Cell Mutagenicity

| Name        | Route    | Value                                                                        |
|-------------|----------|------------------------------------------------------------------------------|
| Epoxy Resin | In vivo  | Not mutagenic                                                                |
| Epoxy Resin | In Vitro | Some positive data exist, but the data are not sufficient for classification |

#### Carcinogenicity

| Name        | Route  | Species | Value                                                                        |
|-------------|--------|---------|------------------------------------------------------------------------------|
| Epoxy Resin | Dermal | Mouse   | Some positive data exist, but the data are not sufficient for classification |

#### Reproductive Toxicity

##### Reproductive and/or Developmental Effects

| Name        | Route     | Value                                  | Species | Test Result         | Exposure Duration    |
|-------------|-----------|----------------------------------------|---------|---------------------|----------------------|
| Epoxy Resin | Ingestion | Not classified for female reproduction | Rat     | NOAEL 750 mg/kg/day | 2 generation         |
| Epoxy Resin | Ingestion | Not classified for male reproduction   | Rat     | NOAEL 750 mg/kg/day | 2 generation         |
| Epoxy Resin | Dermal    | Not classified for development         | Rabbit  | NOAEL 300 mg/kg/day | during organogenesis |
| Epoxy Resin | Ingestion | Not classified for development         | Rat     | NOAEL 750 mg/kg/day | 2 generation         |

#### Target Organ(s)

##### Specific Target Organ Toxicity - single exposure

For the component/components, either no data are currently available or the data are not sufficient for classification.

##### Specific Target Organ Toxicity - repeated exposure

| Name        | Route     | Target Organ(s)                                                                                          | Value          | Species | Test Result           | Exposure Duration |
|-------------|-----------|----------------------------------------------------------------------------------------------------------|----------------|---------|-----------------------|-------------------|
| Epoxy Resin | Dermal    | liver                                                                                                    | Not classified | Rat     | NOAEL 1,000 mg/kg/day | 2 years           |
| Epoxy Resin | Dermal    | nervous system                                                                                           | Not classified | Rat     | NOAEL 1,000 mg/kg/day | 13 weeks          |
| Epoxy Resin | Ingestion | auditory system   heart   endocrine system   hematopoietic system   liver   eyes   kidney and/or bladder | Not classified | Rat     | NOAEL 1,000 mg/kg/day | 28 days           |

#### Aspiration Hazard

For the component/components, either no data are currently available or the data are not sufficient for classification.

Please contact the address or phone number listed on the first page of the SDS for additional toxicological information on this material and/or its components.

## SECTION 12: Ecological information

**Ecotoxicological information**

Please contact the address or phone number listed on the first page of the SDS for additional ecotoxicological information on this material and/or its components.

**Chemical fate information**

Please contact the address or phone number listed on the first page of the SDS for additional chemical fate information on this material and/or its components.

**SECTION 13: Disposal considerations****13.1. Disposal methods**

Dispose of contents/ container in accordance with the local/regional/national/international regulations.

Dispose of completely cured (or polymerized) material in a permitted industrial waste facility. As a disposal alternative, incinerate uncured product in a permitted waste incineration facility. Proper destruction may require the use of additional fuel during incineration processes. Combustion products will include halogen acid (HCl/HF/HBr). Facility must be capable of handling halogenated materials. Empty drums/barrels/containers used for transporting and handling hazardous chemicals (chemical substances/mixtures/preparations classified as Hazardous as per applicable regulations) shall be considered, stored, treated & disposed of as hazardous wastes unless otherwise defined by applicable waste regulations. Consult with the respective regulating authorities to determine the available treatment and disposal facilities.

**EPA Hazardous Waste Number (RCRA):** Not regulated

**SECTION 14: Transport Information**

For Transport Information, please visit <http://3M.com/Transportinfo> or call 1-800-364-3577 or 651-737-6501.

**SECTION 15: Regulatory information****15.1. US Federal Regulations**

Contact 3M for more information.

**EPCRA 311/312 Hazard Classifications:****Physical Hazards**

Not applicable

**Health Hazards**

Respiratory or Skin Sensitization

Serious eye damage or eye irritation

**15.2. State Regulations**

Contact 3M for more information.

**15.3. Chemical Inventories**

The components of this product are in compliance with the chemical notification requirements of TSCA. All required components of this product are listed on the active portion of the TSCA Inventory.

Contact 3M for more information.

**15.4. International Regulations**

Contact 3M for more information.

This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

## SECTION 16: Other information

### NFPA Hazard Classification

Health: 2 Flammability: 1 Instability: 0 Special Hazards: None

National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address the hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Hazard ratings are primarily based on the inherent physical and toxic properties of the material but also include the toxic properties of combustion or decomposition products that are known to be generated in significant quantities.

|                        |           |                         |          |
|------------------------|-----------|-------------------------|----------|
| <b>Document Group:</b> | 11-2409-8 | <b>Version Number:</b>  | 18.00    |
| <b>Issue Date:</b>     | 05/21/18  | <b>Supersedes Date:</b> | 07/25/17 |

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## 附件 8 釉膏化学物质安全资料报告

Page 1/6

### **Safety data sheet** according to 1907/2006/EC, Article 31

Printing date 09.05.2016

Version number 4

Revision: 09.05.2016

\*

#### **SECTION 1: Identification of the substance/mixture and of the company/undertaking**

· **1.1 Product identifier**

· **Trade name:** VITA VMK 95 PASTE OPAQUE

· **Article number:** B32

· **1.2 Relevant identified uses of the substance or mixture and uses advised against**  
No further relevant information available.

· **Application of the substance / product** Auxiliary for manufacture of dental prothesis

· **1.3 Details of the supplier of the safety data sheet**

· **Manufacturer/Supplier:**

VITA Zahnfabrik  
H. Rauter GmbH & Co. KG

Postfach 1338

D 79704 Bad Säckingen

e-mail: [info@vita-zahnfabrik.com](mailto:info@vita-zahnfabrik.com)

· **1.4 Emergency telephone number:** Tel.: ++49-(0)7761-562-0

Tel.: 07761/562-0

Fax: 07761/562299

\*

#### **SECTION 2: Hazards identification**

· **2.1 Classification of the substance or mixture**

· **Classification according to Regulation (EC) No 1272/2008**

The product is not classified according to the CLP regulation.

· **2.2 Label elements**

· **Labelling according to Regulation (EC) No 1272/2008** Void

· **Hazard pictograms** Void

· **Signal word** Void

· **Hazard statements** Void

· **2.3 Other hazards**

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

\*

#### **SECTION 3: Composition/information on ingredients**

· **3.2 Chemical characterisation: Mixtures**

· **Description:** CAS Nr. 66402-68-4 ceramic material and wares, chemicals

· **Dangerous components:** Void

· **Additional information** For the wording of the listed risk phrases refer to section 16.

#### **SECTION 4: First aid measures**

· **4.1 Description of first aid measures**

· **General information** No special measures required.

· **After inhalation** Supply fresh air; consult doctor in case of complaints.

· **After skin contact** Generally the product does not irritate the skin.

· **After eye contact** Rinse opened eye for several minutes under running water.

· **After swallowing** If symptoms persist consult doctor.

· **4.2 Most important symptoms and effects, both acute and delayed** No further relevant information available.

(Contd. on page 2)

GB

## Safety data sheet according to 1907/2006/EC, Article 31

Printing date 09.05.2016

Version number 4

Revision: 09.05.2016

Trade name: VITA VMK 95 PASTE OPAQUE

(Contd. of page 1)

- **4.3 Indication of any immediate medical attention and special treatment needed**  
No further relevant information available.

### \* SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents** Use fire extinguishing methods suitable to surrounding conditions.
- **For safety reasons unsuitable extinguishing agents** Water.
- **5.2 Special hazards arising from the substance or mixture** No further relevant information available.
- **5.3 Advice for firefighters**
- **Protective equipment:** No special measures required.

### \* SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures** Not required.
- **6.2 Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **6.3 Methods and material for containment and cleaning up:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
- **6.4 Reference to other sections**  
No dangerous substances are released.  
See Section 7 for information on safe handling  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.

### \* SECTION 7: Handling and storage

- **7.1 Precautions for safe handling** No special measures required.
- **Information about fire - and explosion protection:** No special measures required.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** None.
- **Storage class** 10
- **7.3 Specific end use(s)** No further relevant information available.

### \* SECTION 8: Exposure controls/personal protection

- **Additional information about design of technical facilities:** No further data; see item 7.
- **8.1 Control parameters**
- **Ingredients with limit values that require monitoring at the workplace:**  
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
- **Additional information:** The lists valid during the making were used as basis.
- **8.2 Exposure controls**
- **Personal protective equipment**
- **General protective and hygienic measures**  
The usual precautionary measures are to be adhered to when handling chemicals.
- **Respiratory protection:** Not required.
- **Protection of hands:**  
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

(Contd. on page 3)

GB

**Safety data sheet**  
according to 1907/2006/EC, Article 31

Printing date 09.05.2016

Version number 4

Revision: 09.05.2016

Trade name: VITA VMK 95 PASTE OPAQUE

(Contd. of page 2)

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves**

Nitrile rubber, NBR

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye protection:** Goggles recommended during refilling.

\* **SECTION 9: Physical and chemical properties**

· **9.1 Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

Form: Fluid

Colour: According to product specification

· **Odour:** Characteristic

· **Odour threshold:** Not determined.

· **pH-value:** Not determined.

· **Change in condition**

Melting point/Melting range: undetermined

Boiling point/Boiling range: 290 °C

· **Flash point:** 160 °C

· **Flammability (solid, gaseous)** Not applicable.

· **Ignition temperature:**

Decomposition temperature: Not determined.

· **Self-igniting:** Product is not selfigniting.

· **Danger of explosion:** Product does not present an explosion hazard.

· **Explosion limits:**

Lower: Not determined.

Upper: Not determined.

· **Vapour pressure:** Not determined.

· **Density:** Not determined

· **Relative density** Not determined.

· **Vapour density** Not determined.

· **Evaporation rate** Not determined.

· **Solubility in / Miscibility with**

Water: Not miscible or difficult to mix

· **Partition coefficient (n-octanol/water):** Not determined.

· **Viscosity:**

dynamic: Not determined.

kinematic: Not determined.

(Contd. on page 4)

GB

**Safety data sheet**  
according to 1907/2006/EC, Article 31

Printing date 09.05.2016

Version number 4

Revision: 09.05.2016

Trade name: VITA VMK 95 PASTE OPAQUE

(Contd. of page 3)

- **Solvent content:**
- **Organic solvents:** 9.2 %
- **9.2 Other information** No further relevant information available.

\*

**SECTION 10: Stability and reactivity**

- **10.1 Reactivity** No decomposition if used and stored according to specifications.
- **10.2 Chemical stability** No decomposition if used and stored according to specifications.
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **10.3 Possibility of hazardous reactions** No dangerous reactions known
- **10.4 Conditions to avoid** No further relevant information available.
- **10.5 Incompatible materials:** No further relevant information available.
- **10.6 Hazardous decomposition products:** No dangerous decomposition products known

**SECTION 11: Toxicological information**

- **11.1 Information on toxicological effects**
- **Acute toxicity** Based on available data, the classification criteria are not met.
- **Primary irritant effect:**
- **Skin corrosion/irritation** Based on available data, the classification criteria are not met.
- **Serious eye damage/irritation** Based on available data, the classification criteria are not met.
- **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**
- **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
- **Carcinogenicity** Based on available data, the classification criteria are not met.
- **Reproductive toxicity** Based on available data, the classification criteria are not met.
- **STOT-single exposure** Based on available data, the classification criteria are not met.
- **STOT-repeated exposure** Based on available data, the classification criteria are not met.
- **Aspiration hazard** Based on available data, the classification criteria are not met.

**SECTION 12: Ecological information**

- **12.1 Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **12.2 Persistence and degradability** No further relevant information available.
- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**  
Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water.  
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Other adverse effects** No further relevant information available.

\*

**SECTION 13: Disposal considerations**

- **13.1 Waste treatment methods**
- **Recommendation**  
Must not be disposed together with household garbage. Do not allow product to reach sewage system.

(Contd. on page 5)

GB

**Safety data sheet**  
according to 1907/2006/EC, Article 31

Printing date 09.05.2016

Version number 4

Revision: 09.05.2016

Trade name: VITA VMK 95 PASTE OPAQUE

(Contd. of page 4)

Disposal must be made according to official regulations.

· **European waste catalogue**

|           |                                                                                                                                         |
|-----------|-----------------------------------------------------------------------------------------------------------------------------------------|
| 20 00 00  | MUNICIPAL WASTES (HOUSEHOLD WASTE AND SIMILAR COMMERCIAL, INDUSTRIAL AND INSTITUTIONAL WASTES) INCLUDING SEPARATELY COLLECTED FRACTIONS |
| 20 01 00  | separately collected fractions (except 15 01)                                                                                           |
| 20 01 13* | solvents                                                                                                                                |

· **Uncleaned packaging:**· **Recommendation:** Disposal must be made according to official regulations.**SECTION 14: Transport information**· **14.1 UN-Number**· **ADR, ADN, IMDG, IATA** Void· **14.2 UN proper shipping name**· **ADR, ADN, IMDG, IATA** Void· **14.3 Transport hazard class(es)**· **ADR, ADN, IMDG, IATA**· **Class** Void· **14.4 Packing group**· **ADR, IMDG, IATA** Void· **14.5 Environmental hazards:**· **Marine pollutant:** No· **14.6 Special precautions for user** Not applicable.· **14.7 Transport in bulk according to Annex II of Marpol and the IBC Code**

Not applicable.

· **Transport/Additional information:** Not dangerous according to the above specifications.· **UN "Model Regulation":** Void**SECTION 15: Regulatory information**· **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**· **Directive 2012/18/EU**· **Named dangerous substances - ANNEX I** None of the ingredients is listed.· **National regulations**· **Technical instructions (air):**

| Class | Share in % |
|-------|------------|
| NK    | 5-<10      |

· **Waterhazard class:** Water hazard class 1 (Self-assessment): slightly hazardous for water.· **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.**SECTION 16: Other information**

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

(Contd. on page 6)

GB

**Safety data sheet**  
**according to 1907/2006/EC, Article 31**

Printing date 09.05.2016

Version number 4

Revision: 09.05.2016

**Trade name: VITA VMK 95 PASTE OPAQUE**

(Contd. of page 5)

**· Abbreviations and acronyms:***ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)**IMDG: International Maritime Code for Dangerous Goods**IATA: International Air Transport Association**GHS: Globally Harmonised System of Classification and Labelling of Chemicals**EINECS: European Inventory of Existing Commercial Chemical Substances**ELINCS: European List of Notified Chemical Substances**CAS: Chemical Abstracts Service (division of the American Chemical Society)**PBT: Persistent, Bioaccumulative and Toxic**vPvB: very Persistent and very Bioaccumulative***· \* Data compared to the previous version altered.**

GB



VITA Zahnfabrik H. Rauter GmbH & Co. KG

## Safety Data Sheet

according to UK REACH Regulation

### VITA MODELLING FLUID

Revision date: 14.08.2023

Product code: 014

Page 1 of 7

#### SECTION 1: Identification of the substance/mixture and of the company/undertaking

##### 1.1. Product identifier

VITA MODELLING FLUID

##### 1.2. Relevant identified uses of the substance or mixture and uses advised against

###### Use of the substance/mixture

Use as laboratory reagent

##### 1.3. Details of the supplier of the safety data sheet

Company name: VITA Zahnfabrik H. Rauter GmbH & Co. KG

Street: Spitalgasse 3

Place: D-79713 Bad Säckingen

Post-office box: 1338

D-79704 Bad Säckingen

Telephone: +49(0)7761-562-0

Telefax: +49(0)7761-562-299

E-mail: info@vita-zahnfabrik.com

Contact person: regulatory affairs

E-mail: info@vita-zahnfabrik.com

Internet: www.vita-zahnfabrik.com

Responsible Department: Regulatory Affairs

##### Further Information

medical device

#### SECTION 2: Hazards identification

##### 2.1. Classification of the substance or mixture

###### GB CLP Regulation

This mixture is not classified as hazardous in accordance with GB CLP Regulation.

##### 2.2. Label elements

##### 2.3. Other hazards

No information available.

#### SECTION 3: Composition/information on ingredients

##### 3.2. Mixtures

###### Chemical characterization

Mixtures Product/Substance is inorganic.

###### Hazardous components

none (according to UK REACH Regulation)

#### SECTION 4: First aid measures

##### 4.1. Description of first aid measures

###### After inhalation

Provide fresh air.

###### After contact with skin

Wash with plenty of water. Take off contaminated clothing and wash it before reuse.

###### After contact with eyes

Rinse immediately carefully and thoroughly with eye-bath or water.



**Safety Data Sheet**

according to UK REACH Regulation

**VITA MODELLING FLUID**

Revision date: 14.08.2023

Product code: 014

Page 2 of 7

**After ingestion**

Rinse mouth immediately and drink plenty of water.

**4.2. Most important symptoms and effects, both acute and delayed**

No information available.

**4.3. Indication of any immediate medical attention and special treatment needed**

Treat symptomatically.

**SECTION 5: Firefighting measures****5.1. Extinguishing media****Suitable extinguishing media**

Co-ordinate fire-fighting measures to the fire surroundings.

**5.2. Special hazards arising from the substance or mixture**

Non-flammable.

**5.3. Advice for firefighters**

In case of fire: Wear self-contained breathing apparatus.

**SECTION 6: Accidental release measures****6.1. Personal precautions, protective equipment and emergency procedures****General advice**

Use personal protection equipment.

**6.2. Environmental precautions**

No special environmental measures are necessary. Clean contaminated articles and floor according to the environmental legislation.

**6.3. Methods and material for containment and cleaning up****Other information**

Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents). Treat the recovered material as prescribed in the section on waste disposal.

**6.4. Reference to other sections**

Safe handling: see section 7

Personal protection equipment: see section 8

Disposal: see section 13

**SECTION 7: Handling and storage****7.1. Precautions for safe handling****Advice on safe handling**

No special measures are necessary.

**Advice on protection against fire and explosion**

No special fire protection measures are necessary.

**Advice on general occupational hygiene**

Take off contaminated clothing. Wash hands before breaks and after work. When using do not eat, drink, smoke, sniff.

**7.2. Conditions for safe storage, including any incompatibilities****Requirements for storage rooms and vessels**

Keep container tightly closed.

**Hints on joint storage**

No special measures are necessary.



**Safety Data Sheet**  
according to UK REACH Regulation

VITA Zahnfabrik H. Rauter GmbH & Co. KG

**VITA MODELLING FLUID**

Revision date: 14.08.2023

Product code: 014

Page 3 of 7

**7.3. Specific end use(s)**

Use as laboratory reagent

**SECTION 8: Exposure controls/personal protection**

**8.1. Control parameters**

**8.2. Exposure controls**

Individual protection measures, such as personal protective equipment

**Eye/face protection**

Wear eye/face protection.

**Hand protection**

When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves. Recommended glove articles KCL Dermatril P NBR (Nitrile rubber)

**Skin protection**

Use of protective clothing.

**Respiratory protection**

In case of inadequate ventilation wear respiratory protection. Open windows to ensure natural ventilation.

**SECTION 9: Physical and chemical properties**

**9.1. Information on basic physical and chemical properties**

|                                                           |                |
|-----------------------------------------------------------|----------------|
| Physical state:                                           | Liquid         |
| Colour:                                                   | colourless     |
| Odour:                                                    | characteristic |
| Melting point/freezing point:                             | 0 °C           |
| Boiling point or initial boiling point and boiling range: | 100 °C         |
| Flammability:                                             | not applicable |
| Lower explosion limits:                                   | not applicable |
| Upper explosion limits:                                   | not determined |
| Decomposition temperature:                                | not determined |
| pH-Value:                                                 | 3,4            |
| Solubility in other solvents                              | not determined |
| Partition coefficient n-octanol/water:                    | not determined |
| Vapour pressure:                                          | <=1100 hPa     |
| (at 50 °C)                                                |                |
| Density:                                                  | 0,99700 g/cm³  |
| Relative vapour density:                                  | not determined |

**9.2. Other information**

**Information with regard to physical hazard classes**

**Explosive properties**

The product is not: Explosive.

**Self-ignition temperature**

Solid:

not applicable

Gas:

not applicable

**Safety Data Sheet**

according to UK REACH Regulation

**VITA MODELLING FLUID**

Revision date: 14.08.2023

Product code: 014

Page 4 of 7

Oxidizing properties  
Not oxidising.

**Other safety characteristics**

Evaporation rate: not determined  
Solid content: 0,0 %

**SECTION 10: Stability and reactivity****10.1. Reactivity**

No hazardous reaction when handled and stored according to provisions.

**10.2. Chemical stability**

The product is stable under storage at normal ambient temperatures.

**10.3. Possibility of hazardous reactions**

No known hazardous reactions.

**10.4. Conditions to avoid**

none

**10.5. Incompatible materials**

No information available.

**10.6. Hazardous decomposition products**

No known hazardous decomposition products.

**SECTION 11: Toxicological information****11.1. Information on hazard classes as defined in GB CLP Regulation****Acute toxicity**

Based on available data, the classification criteria are not met.

**ATEmix calculated**

ATE (oral) > 2000 mg/kg; ATE (dermal) > 2000 mg/kg; ATE (inhalation vapour) > 20 mg/l; ATE (inhalation dust/mist) > 5 mg/l

**Irritation and corrosivity**

Based on available data, the classification criteria are not met.

**Sensitising effects**

Based on available data, the classification criteria are not met.

**Carcinogenic/mutagenic/toxic effects for reproduction**

Based on available data, the classification criteria are not met.

**STOT-single exposure**

Based on available data, the classification criteria are not met.

**STOT-repeated exposure**

Based on available data, the classification criteria are not met.

**Aspiration hazard**

Based on available data, the classification criteria are not met.

**Additional information on tests**

The mixture is classified as not hazardous according to regulation (EC) No 1272/2008 [CLP].

**SECTION 12: Ecological information****12.1. Toxicity**

The product is not: Ecotoxic.

**12.2. Persistence and degradability**

The product has not been tested.

**Safety Data Sheet**

according to UK REACH Regulation

**VITA MODELLING FLUID**

Revision date: 14.08.2023

Product code: 014

Page 5 of 7

**12.3. Bioaccumulative potential**

The product has not been tested.

**12.4. Mobility in soil**

The product has not been tested.

**12.5. Results of PBT and vPvB assessment**

The substances in the mixture do not meet the PBT/vPvB criteria according to UK REACH.

The product has not been tested.

**12.6. Endocrine disrupting properties**

This product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms as no components meets the criteria.

**12.7. Other adverse effects**

No information available.

**Further information**

Avoid release to the environment.

**SECTION 13: Disposal considerations****13.1. Waste treatment methods****Disposal recommendations**

Dispose of waste according to applicable legislation.

**Contaminated packaging**

Wash with plenty of water. Completely emptied packages can be recycled.

**SECTION 14: Transport information****Land transport (ADR/RID)****14.1. UN number or ID number:**

No dangerous good in sense of this transport regulation.

**14.2. UN proper shipping name:**

No dangerous good in sense of this transport regulation.

**14.3. Transport hazard class(es):**

No dangerous good in sense of this transport regulation.

**14.4. Packing group:**

No dangerous good in sense of this transport regulation.

**Inland waterways transport (ADN)****14.1. UN number or ID number:**

No dangerous good in sense of this transport regulation.

**14.2. UN proper shipping name:**

No dangerous good in sense of this transport regulation.

**14.3. Transport hazard class(es):**

No dangerous good in sense of this transport regulation.

**14.4. Packing group:**

No dangerous good in sense of this transport regulation.

**Marine transport (IMDG)****14.1. UN number or ID number:**

No dangerous good in sense of this transport regulation.

**14.2. UN proper shipping name:**

No dangerous good in sense of this transport regulation.

**14.3. Transport hazard class(es):**

No dangerous good in sense of this transport regulation.

**14.4. Packing group:**

No dangerous good in sense of this transport regulation.

**Air transport (ICAO-TI/IATA-DGR)****14.1. UN number or ID number:**

No dangerous good in sense of this transport regulation.

**14.2. UN proper shipping name:**

No dangerous good in sense of this transport regulation.

**14.3. Transport hazard class(es):**

No dangerous good in sense of this transport regulation.

**14.4. Packing group:**

No dangerous good in sense of this transport regulation.

**14.5. Environmental hazards**

ENVIRONMENTALLY HAZARDOUS:

No

**14.6. Special precautions for user**

No information available.



VITA Zahnfabrik H. Rauter GmbH & Co. KG

**Safety Data Sheet**  
according to UK REACH Regulation

**VITA MODELLING FLUID**

Revision date: 14.08.2023

Product code: 014

Page 6 of 7

**14.7. Maritime transport in bulk according to IMO instruments**

not applicable

**SECTION 15: Regulatory information**

**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**

**EU regulatory information**

Restrictions on use (REACH, annex XVII):

Entry 75

Information according to 2012/18/EU

Not subject to 2012/18/EU (SEVESO III)

(SEVESO III):

**National regulatory information**

Water hazard class (D):

- - non-hazardous to water

**15.2. Chemical safety assessment**

Chemical safety assessments for substances in this mixture were not carried out.

**SECTION 16: Other information**

**Changes**

This data sheet contains changes from the previous version in section(s): 1.

**Safety Data Sheet**

according to UK REACH Regulation

**VITA MODELLING FLUID**

Revision date: 14.08.2023

Product code: 014

Page 7 of 7

**Abbreviations and acronyms**

ADR: Accord européen sur le transport des marchandises dangereuses par Route  
(European Agreement concerning the International Carriage of Dangerous Goods by Road)  
IMDG: International Maritime Code for Dangerous Goods  
IATA: International Air Transport Association  
GHS: Globally Harmonized System of Classification and Labelling of Chemicals  
EINECS: European Inventory of Existing Commercial Chemical Substances  
ELINCS: European List of Notified Chemical Substances  
CAS: Chemical Abstracts Service  
LC50: Lethal concentration, 50%  
LD50: Lethal dose, 50%  
CLP: Classification, labelling and Packaging  
REACH: Registration, Evaluation and Authorization of Chemicals  
GHS: Globally Harmonised System of Classification, Labelling and Packaging of Chemicals  
UN: United Nations  
DNEL: Derived No Effect Level  
DMEL: Derived Minimal Effect Level  
PNEC: Predicted No Effect Concentration  
ATE: Acute toxicity estimate  
LL50: Lethal loading, 50%  
EL50: Effect loading, 50%  
EC50: Effective Concentration 50%  
ErC50: Effective Concentration 50%, growth rate  
NOEC: No Observed Effect Concentration  
BCF: Bio-concentration factor  
PBT: persistent, bioaccumulative, toxic  
vPvB: very persistent, very bioaccumulative  
RID: Regulations concerning the international carriage of dangerous goods by rail  
ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways  
(Accord européen relatif au transport international des marchandises dangereuses par voies de navigation  
intérieures)  
Ems: Emergency Schedules  
MFA: Medical First Aid Guide  
ICAO: International Civil Aviation Organization  
MARPOL: International Convention for the Prevention of Marine Pollution from Ships  
IBC: Intermediate Bulk Container  
SVHC: Substance of Very High Concern  
For abbreviations and acronyms, see table at <http://abbrev.esdscom.eu>

**Further Information**

The information is based on the present level of our knowledge. It does not, however, give assurance of product properties and establishes no contract legal rights. The receiver of our product is singularly responsible for adhering to existing laws and regulations.

*(The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)*





VITA Zahnfabrik H.Rauter GmbH &amp; Co.KG

**Safety Data Sheet**

according to UK REACH Regulation

**VITA OPAQUE FLUID BOF250CN**

Revision date: 15.08.2023

Product code: 2976

Page 1 of 8

**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1. Product identifier**

VITA OPAQUE FLUID BOF250CN

**1.2. Relevant identified uses of the substance or mixture and uses advised against****Use of the substance/mixture**

Use as laboratory reagent

**1.3. Details of the supplier of the safety data sheet**

Company name: VITA Zahnfabrik H.Rauter GmbH &amp; Co.KG

Street: Spitalgasse 3

Place: D-79713 Bad Säckingen

Post-office box: 1338

D-79704 Bad Säckingen

Telephone: +49(0)7761-562-0

Telefax: +49(0)7761-562-299

E-mail: info@vita-zahnfabrik.com

Contact person: regulatory affairs

E-mail: info@vita-zahnfabrik.com

Internet: www.vita-zahnfabrik.com

Responsible Department: Regulatory Affairs

**Further Information**

medical device

**SECTION 2: Hazards identification****2.1. Classification of the substance or mixture****GB CLP Regulation**

This mixture is not classified as hazardous in accordance with GB CLP Regulation.

**2.2. Label elements****GB CLP Regulation****Special labelling of certain mixtures**

EUH210

Safety data sheet available on request.

**2.3. Other hazards**

No information available.

**SECTION 3: Composition/information on ingredients****3.2. Mixtures****Hazardous components**

| CAS No    | Chemical name                         |              |                  | Quantity  |
|-----------|---------------------------------------|--------------|------------------|-----------|
|           | EC No                                 | Index No     | REACH No         |           |
|           | Classification (GB CLP Regulation)    |              |                  |           |
| 7757-82-6 | Natriumsulfat wasserfrei zur Analyse  |              |                  | 1 - < 5 % |
|           | 231-820-9                             |              | 01-2119519226-43 |           |
| 64-17-5   | ethyl alcohol                         |              |                  | 1 - < 5 % |
|           | 200-578-6                             | 603-002-00-5 | 01-2119457610-43 |           |
|           | Flam. Liq. 2, Eye Irrit. 2; H225 H319 |              |                  |           |

Full text of H and EUH statements: see section 16.





## Safety Data Sheet

VITA Zahnfabrik H.Rauter GmbH & Co.KG

according to UK REACH Regulation

### VITA OPAQUE FLUID BOF250CN

Revision date: 15.08.2023

Product code: 2976

Page 2 of 8

#### Specific Conc. Limits, M-factors and ATE

| CAS No  | EC No     | Chemical name                            | Quantity  |
|---------|-----------|------------------------------------------|-----------|
|         |           | Specific Conc. Limits, M-factors and ATE |           |
| 64-17-5 | 200-578-6 | ethyl alcohol                            | 1 - < 5 % |
|         |           | dermal: LD50 = 7060 mg/kg                |           |

#### SECTION 4: First aid measures

##### 4.1. Description of first aid measures

###### General information

not applicable

###### After inhalation

not applicable

###### After contact with skin

After contact with skin, wash immediately with plenty of water and soap.

###### After contact with eyes

In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist.

###### After ingestion

Rinse mouth immediately and drink plenty of water.

##### 4.2. Most important symptoms and effects, both acute and delayed

No information available.

##### 4.3. Indication of any immediate medical attention and special treatment needed

No information available.

#### SECTION 5: Firefighting measures

##### 5.1. Extinguishing media

###### Suitable extinguishing media

Co-ordinate fire-fighting measures to the fire surroundings.

##### 5.2. Special hazards arising from the substance or mixture

Non-flammable.

##### 5.3. Advice for firefighters

not applicable

###### Additional information

not applicable

#### SECTION 6: Accidental release measures

##### 6.1. Personal precautions, protective equipment and emergency procedures

###### General advice

Avoid contact with skin, eyes and clothes. Use personal protection equipment.

##### 6.2. Environmental precautions

Do not allow to enter into surface water or drains.

##### 6.3. Methods and material for containment and cleaning up

###### Other information

Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents). Treat the recovered material as prescribed in the section on waste disposal.

## Safety Data Sheet

according to UK REACH Regulation

### VITA OPAQUE FLUID BOF250CN

Revision date: 15.08.2023

Product code: 2976

Page 3 of 8

#### 6.4. Reference to other sections

Safe handling: see section 7

Personal protection equipment: see section 8

Disposal: see section 13

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

##### Advice on safe handling

No special measures are necessary.

##### Advice on protection against fire and explosion

No special fire protection measures are necessary.

##### Advice on general occupational hygiene

Remove contaminated, saturated clothing immediately. Draw up and observe skin protection programme. Wash hands and face before breaks and after work and take a shower if necessary. When using do not eat, drink, smoke, sniff.

#### 7.2. Conditions for safe storage, including any incompatibilities

##### Requirements for storage rooms and vessels

No special measures are necessary.

##### Hints on joint storage

No special measures are necessary.

#### 7.3. Specific end use(s)

Use as laboratory reagent

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

##### Exposure limits (EH40)

| CAS No  | Substance | ppm  | mg/m³ | fibres/ml | Category  | Origin |
|---------|-----------|------|-------|-----------|-----------|--------|
| 64-17-5 | Ethanol   | 1000 | 1920  |           | TWA (8 h) | WEL    |

#### 8.2. Exposure controls



##### Appropriate engineering controls

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe gas/fumes/vapour/spray.

##### Individual protection measures, such as personal protective equipment

##### Eye/face protection

Suitable eye protection: goggles.

##### Hand protection

When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves. Recommended glove articles KCL, Dermatril P NBR (Nitrile rubber) Breakthrough time:



## Safety Data Sheet

VITA Zahnfabrik H.Rauter GmbH & Co.KG

according to UK REACH Regulation

### VITA OPAQUE FLUID BOF250CN

Revision date: 15.08.2023

Product code: 2976

Page 4 of 8

480 min

#### Skin protection

Use of protective clothing.

#### Respiratory protection

In case of inadequate ventilation wear respiratory protection. Technical ventilation of workplace Open windows to ensure natural ventilation.

### SECTION 9: Physical and chemical properties

#### 9.1. Information on basic physical and chemical properties

|                                                           |                |                |
|-----------------------------------------------------------|----------------|----------------|
| Physical state:                                           | Liquid         |                |
| Colour:                                                   | colourless     |                |
| Odour:                                                    | characteristic |                |
| Melting point/freezing point:                             |                | not determined |
| Boiling point or initial boiling point and boiling range: |                | 100 °C         |
| Flammability:                                             |                | not applicable |
|                                                           |                | not applicable |
| Lower explosion limits:                                   |                | not determined |
| Upper explosion limits:                                   |                | not determined |
| Flash point:                                              |                | not determined |
| Decomposition temperature:                                |                | not determined |
| pH-Value:                                                 |                | 9              |
| Solubility in other solvents                              |                |                |
| not determined                                            |                |                |
| Partition coefficient n-octanol/water:                    |                | not determined |
| Vapour pressure:                                          |                | <=1100 hPa     |
| (at 50 °C)                                                |                |                |
| Density:                                                  |                | 1,00000 g/cm³  |
| Relative vapour density:                                  |                | not determined |

#### 9.2. Other information

##### Information with regard to physical hazard classes

##### Explosive properties

The product is not: Explosive.

##### Sustaining combustion:

Not sustaining combustion

##### Self-ignition temperature

Solid:

not applicable

Gas:

not applicable

##### Oxidizing properties

Not oxidising.

##### Other safety characteristics

##### Evaporation rate:

not determined

##### Solid content:

0,4 %

### SECTION 10: Stability and reactivity

#### 10.1. Reactivity

Possibility of hazardous reactions.

#### 10.2. Chemical stability

The product is stable under storage at normal ambient temperatures.

#### 10.3. Possibility of hazardous reactions

Revision No: 3 - Replaces version: 2

GB - en

Print date: 16.08.2023

**Safety Data Sheet**

according to UK REACH Regulation

**VITA OPAQUE FLUID BOF250CN**

Revision date: 15.08.2023

Product code: 2976

Page 5 of 8

none

**10.4. Conditions to avoid**

none

**10.5. Incompatible materials**

none

**10.6. Hazardous decomposition products**

No known hazardous decomposition products.

**SECTION 11: Toxicological information****11.1. Information on hazard classes as defined in GB CLP Regulation****Acute toxicity**

Based on available data, the classification criteria are not met.

**ATEmix calculated**

ATE (oral) &gt; 2000 mg/kg; ATE (dermal) &gt; 2000 mg/kg; ATE (inhalation vapour) &gt; 20 mg/l; ATE (inhalation dust/mist) &gt; 5 mg/l

| CAS No  | Chemical name  |               |         |        |        |
|---------|----------------|---------------|---------|--------|--------|
|         | Exposure route | Dose          | Species | Source | Method |
| 64-17-5 | ethyl alcohol  |               |         |        |        |
|         | dermal         | LD50<br>mg/kg | 7060    |        |        |

**Irritation and corrosivity**

Based on available data, the classification criteria are not met.

**Sensitising effects**

Based on available data, the classification criteria are not met.

**Carcinogenic/mutagenic/toxic effects for reproduction**

Based on available data, the classification criteria are not met.

**STOT-single exposure**

Based on available data, the classification criteria are not met.

**STOT-repeated exposure**

Based on available data, the classification criteria are not met.

**Aspiration hazard**

Based on available data, the classification criteria are not met.

**SECTION 12: Ecological information****12.1. Toxicity**

The product is not: Ecotoxic.

**12.2. Persistence and degradability**

The product has not been tested.

**12.3. Bioaccumulative potential**

The product has not been tested.

**12.4. Mobility in soil**

The product has not been tested.

**12.5. Results of PBT and vPvB assessment**

The substances in the mixture do not meet the PBT/vPvB criteria according to UK REACH.

The product has not been tested.

**Safety Data Sheet**

according to UK REACH Regulation

**VITA OPAQUE FLUID BOF250CN**

Revision date: 15.08.2023

Product code: 2976

Page 6 of 8

**12.6. Endocrine disrupting properties**

This product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms as no components meets the criteria.

**12.7. Other adverse effects**

No information available.

**Further information**

Avoid release to the environment.

**SECTION 13: Disposal considerations****13.1. Waste treatment methods****Disposal recommendations**

Do not allow to enter into surface water or drains. Dispose of waste according to applicable legislation. Handle contaminated packages in the same way as the substance itself.

**Contaminated packaging**

Wash with plenty of water. Completely emptied packages can be recycled.

**SECTION 14: Transport information****Land transport (ADR/RID)****14.1. UN number or ID number:**

No transport classification available. Transport carrier not used.

**14.2. UN proper shipping name:**

No transport classification available. Transport carrier not used.

**14.3. Transport hazard class(es):**

No transport classification available. Transport carrier not used.

**14.4. Packing group:**

No transport classification available. Transport carrier not used.

**Inland waterways transport (ADN)****14.1. UN number or ID number:**

No transport classification available. Transport carrier not used.

**14.2. UN proper shipping name:**

No transport classification available. Transport carrier not used.

**14.3. Transport hazard class(es):**

No transport classification available. Transport carrier not used.

**14.4. Packing group:**

No transport classification available. Transport carrier not used.

**Marine transport (IMDG)****14.1. UN number or ID number:**

No dangerous good in sense of this transport regulation.

**14.2. UN proper shipping name:**

No dangerous good in sense of this transport regulation.

**14.3. Transport hazard class(es):**

No dangerous good in sense of this transport regulation.

**14.4. Packing group:**

No dangerous good in sense of this transport regulation.

**Air transport (ICAO-TI/IATA-DGR)****14.1. UN number or ID number:**

No dangerous good in sense of this transport regulation.

**14.2. UN proper shipping name:**

No dangerous good in sense of this transport regulation.

**14.3. Transport hazard class(es):**

No dangerous good in sense of this transport regulation.

**14.4. Packing group:**

No dangerous good in sense of this transport regulation.

**14.5. Environmental hazards**

ENVIRONMENTALLY HAZARDOUS: No

**14.6. Special precautions for user**

not applicable

**14.7. Maritime transport in bulk according to IMO instruments**

not applicable

**Other applicable information**

not applicable

**SECTION 15: Regulatory information****15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**



VITA Zahnfabrik H.Rauter GmbH & Co.KG

## Safety Data Sheet

according to UK REACH Regulation

### VITA OPAQUE FLUID BOF250CN

Revision date: 15.08.2023

Product code: 2976

Page 7 of 8

#### EU regulatory information

Restrictions on use (REACH, annex XVII):

Entry 40

Information according to 2012/18/EU

Not subject to 2012/18/EU (SEVESO III)

(SEVESO III):

#### National regulatory information

Water hazard class (D):

-- non-hazardous to water

#### 15.2. Chemical safety assessment

Chemical safety assessments for substances in this mixture were not carried out.

### SECTION 16: Other information

#### Changes

This data sheet contains changes from the previous version in section(s): 1, 11.



**Safety Data Sheet**

according to UK REACH Regulation

**VITA OPAQUE FLUID BOF250CN**

Revision date: 15.08.2023

Product code: 2976

Page 8 of 8

**Abbreviations and acronyms**

ADR: Accord européen sur le transport des marchandises dangereuses par Route  
(European Agreement concerning the International Carriage of Dangerous Goods by Road)  
IMDG: International Maritime Code for Dangerous Goods  
IATA: International Air Transport Association  
GHS: Globally Harmonized System of Classification and Labelling of Chemicals  
EINECS: European Inventory of Existing Commercial Chemical Substances  
ELINCS: European List of Notified Chemical Substances  
CAS: Chemical Abstracts Service  
LC50: Lethal concentration, 50%  
LD50: Lethal dose, 50%  
CLP: Classification, labelling and Packaging  
REACH: Registration, Evaluation and Authorization of Chemicals  
GHS: Globally Harmonised System of Classification, Labelling and Packaging of Chemicals  
UN: United Nations  
DNEL: Derived No Effect Level  
DMEL: Derived Minimal Effect Level  
PNEC: Predicted No Effect Concentration  
ATE: Acute toxicity estimate  
LL50: Lethal loading, 50%  
EL50: Effect loading, 50%  
EC50: Effective Concentration 50%  
ErC50: Effective Concentration 50%, growth rate  
NOEC: No Observed Effect Concentration  
BCF: Bio-concentration factor  
PBT: persistent, bioaccumulative, toxic  
vPvB: very persistent, very bioaccumulative  
RID: Regulations concerning the international carriage of dangerous goods by rail  
ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways  
(Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieures)  
EmS: Emergency Schedules  
MFAG: Medical First Aid Guide  
ICAO: International Civil Aviation Organization  
MARPOL: International Convention for the Prevention of Marine Pollution from Ships  
IBC: Intermediate Bulk Container  
SVHC: Substance of Very High Concern  
For abbreviations and acronyms, see table at <http://abbrev.esdscom.eu>  
Flam. Liq: Flammable liquids  
Eye Irrit: Eye irritation

**Relevant H and EUH statements (number and full text)**

|        |                                         |
|--------|-----------------------------------------|
| H225   | Highly flammable liquid and vapour.     |
| H319   | Causes serious eye irritation.          |
| EUH210 | Safety data sheet available on request. |

**Further Information**

The information is based on the present level of our knowledge. It does not, however, give assurance of product properties and establishes no contract legal rights. The receiver of our product is singularly responsible for adhering to existing laws and regulations.

*(The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)*



## Safety Data Sheet

according to Regulation (EC) No 1907/2006

### VITA VM OPAQUE FLUID

Revision date: 07.08.2019

Product code: 168

Page 1 of 9

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1. Product identifier

VITA VM OPAQUE FLUID

### 1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture

Use as laboratory reagent

### 1.3. Details of the supplier of the safety data sheet

Company name: VITA Zahnfabrik H.Rauter GmbH & Co.KG

Post-office box: 1338

79704 Bad Säckingen

Telephone: +49(0)7761-562-0

Telefax: +49(0)7761-562-299

e-mail: info@vita-zahnfabrik.com

Internet: www.vita-zahnfabrik.com

### 1.4. Emergency telephone

+49-(0)761-19240

### number:

### Further Information

medical device

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

Regulation (EC) No. 1272/2008

Hazard categories:

Skin corrosion/irritation: Skin Corr. 1

Serious eye damage/eye irritation: Eye Dam. 1

Hazard Statements:

Causes severe skin burns and eye damage.

Causes serious eye damage.

### 2.2. Label elements

Regulation (EC) No. 1272/2008

Hazard components for labelling

ethyl alcohol

sodium hydroxide; caustic soda

Signal word: Danger

Pictograms:



Hazard statements

H314 Causes severe skin burns and eye damage.

Precautionary statements

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.



## Safety Data Sheet

according to Regulation (EC) No 1907/2006

## VITA VM OPAQUE FLUID

Revision date: 07.08.2019

Product code: 168

Page 2 of 9

**2.3. Other hazards**

No information available.

**SECTION 3: Composition/information on ingredients****3.2. Mixtures****Hazardous components**

| CAS No    | Chemical name                         |              |                  | Quantity  |
|-----------|---------------------------------------|--------------|------------------|-----------|
|           | EC No                                 | Index No     | REACH No         |           |
|           | GHS Classification                    |              |                  |           |
| 64-17-5   | ethyl alcohol                         |              |                  | 1 - < 5 % |
|           | 200-578-6                             | 603-002-00-5 | 01-2119457610-43 |           |
|           | Flam. Liq. 2, Eye Irrit. 2; H225 H319 |              |                  |           |
| 1310-73-2 | sodium hydroxide; caustic soda        |              |                  | < 1 %     |
|           | 215-185-5                             | 011-002-00-6 |                  |           |
|           | Skin Corr. 1A; H314                   |              |                  |           |

Full text of H and EUH statements: see section 16.

**SECTION 4: First aid measures****4.1. Description of first aid measures****General information**

First aider: Pay attention to self-protection! Remove affected person from the danger area and lay down.

**After inhalation**

Provide fresh air. Medical treatment necessary.

**After contact with skin**

After contact with skin, wash immediately with plenty of water and soap. Take off immediately all contaminated clothing and wash it before reuse. If skin irritation occurs: Get medical advice/attention.

**After contact with eyes**

In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist.

**After ingestion**

Observe risk of aspiration if vomiting occurs. Rinse mouth immediately and drink plenty of water. Do NOT induce vomiting. Adverse human health effects and symptoms: Gastric perforation. Call a physician immediately. Do not allow a neutralisation agent to be drunk.

**4.2. Most important symptoms and effects, both acute and delayed**

No information available.

**4.3. Indication of any immediate medical attention and special treatment needed**

Treat symptomatically.

**SECTION 5: Firefighting measures****5.1. Extinguishing media****Suitable extinguishing media**

Co-ordinate fire-fighting measures to the fire surroundings.

**5.2. Special hazards arising from the substance or mixture**

Non-flammable.

**5.3. Advice for firefighters**

Wear a self-contained breathing apparatus and chemical protective clothing. Full protection suit.

## Safety Data Sheet

according to Regulation (EC) No 1907/2006

### VITA VM OPAQUE FLUID

Revision date: 07.08.2019

Product code: 168

Page 3 of 9

#### Additional information

Suppress gases/vapours/mists with water spray jet. Collect contaminated fire extinguishing water separately.  
Do not allow entering drains or surface water.

#### SECTION 6: Accidental release measures

##### 6.1. Personal precautions, protective equipment and emergency procedures

Provide adequate ventilation. Do not breathe gas/fumes/vapour/spray. Avoid contact with skin, eyes and clothes. Use personal protection equipment.

##### 6.2. Environmental precautions

Do not allow to enter into surface water or drains.

##### 6.3. Methods and material for containment and cleaning up

Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents). Treat the recovered material as prescribed in the section on waste disposal.

##### 6.4. Reference to other sections

Safe handling: see section 7  
Personal protection equipment: see section 8  
Disposal: see section 13

#### SECTION 7: Handling and storage

##### 7.1. Precautions for safe handling

###### Advice on safe handling

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe gas/fumes/vapour/spray.

###### Advice on protection against fire and explosion

No special fire protection measures are necessary.

##### 7.2. Conditions for safe storage, including any incompatibilities

###### Requirements for storage rooms and vessels

Keep container tightly closed. Keep locked up. Store in a place accessible by authorized persons only. Provide adequate ventilation as well as local exhaust at critical locations.

###### Hints on joint storage

No special measures are necessary.

##### 7.3. Specific end use(s)

Use as laboratory reagent

#### SECTION 8: Exposure controls/personal protection

##### 8.1. Control parameters

###### Exposure limits (EH40)

| CAS No    | Substance        | ppm  | mg/m³ | fibres/ml | Category      | Origin |
|-----------|------------------|------|-------|-----------|---------------|--------|
| 64-17-5   | Ethanol          | 1000 | 1920  |           | TWA (8 h)     | WEL    |
| 1310-73-2 | Sodium hydroxide | -    | 2     |           | STEL (15 min) | WEL    |

##### 8.2. Exposure controls





## Safety Data Sheet

VITA Zahnfabrik H.Rauter GmbH & Co.KG

according to Regulation (EC) No 1907/2006

### VITA VM OPAQUE FLUID

Revision date: 07.08.2019

Product code: 168

Page 4 of 9

#### Appropriate engineering controls

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe gas/fumes/vapour/spray.

#### Protective and hygiene measures

Remove contaminated, saturated clothing immediately. Draw up and observe skin protection programme. Wash hands and face before breaks and after work and take a shower if necessary. When using do not eat, drink, smoke, sniff.

#### Eye/face protection

Suitable eye protection: goggles.

#### Hand protection

When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves. Recommended glove articles KCL Dermatril P Breakthrough time (maximum wearing time) 480 NBR (Nitrile rubber)

#### Skin protection

Use of protective clothing.

#### Respiratory protection

Provide adequate ventilation as well as local exhaust at critical locations. Technical ventilation of workplace

### SECTION 9: Physical and chemical properties

#### 9.1. Information on basic physical and chemical properties

|                 |                |
|-----------------|----------------|
| Physical state: | Liquid         |
| Colour:         | colourless     |
| Odour:          | characteristic |

|           |      |             |
|-----------|------|-------------|
| pH-Value: | 12,7 | Test method |
|-----------|------|-------------|

#### Changes in the physical state

|                                          |                |
|------------------------------------------|----------------|
| Melting point:                           | not determined |
| Initial boiling point and boiling range: | 100 °C         |
| Pour point:                              | NBN 52014      |
| Flash point:                             | ?              |

#### Flammability

|        |                |
|--------|----------------|
| Solid: | not applicable |
| Gas:   | not applicable |

#### Explosive properties

The product is not: Explosive.

|                         |                |
|-------------------------|----------------|
| Lower explosion limits: | not determined |
| Upper explosion limits: | not determined |

#### Auto-ignition temperature

|        |                |
|--------|----------------|
| Solid: | not applicable |
| Gas:   | not applicable |

|                            |                |
|----------------------------|----------------|
| Decomposition temperature: | not determined |
|----------------------------|----------------|

#### Oxidizing properties

Not oxidising.

|                                |            |
|--------------------------------|------------|
| Vapour pressure:<br>(at 50 °C) | <=1100 hPa |
|--------------------------------|------------|



## Safety Data Sheet

VITA Zahnfabrik H.Rauter GmbH & Co.KG

according to Regulation (EC) No 1907/2006

### VITA VM OPAQUE FLUID

Revision date: 07.08.2019

Product code: 168

Page 5 of 9

Density: 1,00000 g/cm<sup>3</sup>  
**Solubility in other solvents**  
not determined  
Partition coefficient: not determined  
Vapour density: not determined  
Evaporation rate: not determined

#### 9.2. Other information

Solid content: 0,0 %

### SECTION 10: Stability and reactivity

#### 10.1. Reactivity

Possibility of hazardous reactions.

#### 10.2. Chemical stability

The product is stable under storage at normal ambient temperatures.

#### 10.3. Possibility of hazardous reactions

Exothermic reaction with: Acid, Peroxides, Oxidizing agent.

#### 10.4. Conditions to avoid

none

#### 10.5. Incompatible materials

Keep away from: Acid, Oxidizing agent, Peroxides.

#### 10.6. Hazardous decomposition products

No known hazardous decomposition products.

### SECTION 11: Toxicological information

#### 11.1. Information on toxicological effects

##### Acute toxicity

Based on available data, the classification criteria are not met.

| CAS No  | Chemical name  |               |         |        |        |
|---------|----------------|---------------|---------|--------|--------|
|         | Exposure route | Dose          | Species | Source | Method |
| 64-17-5 | ethyl alcohol  |               |         |        |        |
|         | dermal         | LD50<br>mg/kg | 7060    |        |        |

##### Irritation and corrosivity

Causes severe skin burns and eye damage.

Causes serious eye damage.

##### Sensitising effects

Based on available data, the classification criteria are not met.

##### Carcinogenic/mutagenic/toxic effects for reproduction

Based on available data, the classification criteria are not met.

##### STOT-single exposure

Based on available data, the classification criteria are not met.

##### STOT-repeated exposure

Based on available data, the classification criteria are not met.

##### Aspiration hazard

Based on available data, the classification criteria are not met.

### VITA VM OPAQUE FLUID

Revision date: 07.08.2019

Product code: 168

Page 6 of 9

#### Additional information on tests

The mixture is classified as hazardous according to regulation (EC) No 1272/2008 [CLP].

### SECTION 12: Ecological information

#### 12.1. Toxicity

The product is not: Ecotoxic.

#### 12.2. Persistence and degradability

The product has not been tested.

#### 12.3. Bioaccumulative potential

The product has not been tested.

#### 12.4. Mobility in soil

The product has not been tested.

#### 12.5. Results of PBT and vPvB assessment

The product has not been tested.

#### 12.6. Other adverse effects

No information available.

#### Further information

Avoid release to the environment.

### SECTION 13: Disposal considerations

#### 13.1. Waste treatment methods

##### Disposal recommendations

Do not allow to enter into surface water or drains. Dispose of waste according to applicable legislation.

##### Contaminated packaging

Wash with plenty of water. Completely emptied packages can be recycled.

### SECTION 14: Transport information

#### Land transport (ADR/RID)

##### 14.1. UN number:

UN 1824

##### 14.2. UN proper shipping name:

SODIUM HYDROXIDE SOLUTION

##### 14.3. Transport hazard class(es):

8

##### 14.4. Packing group:

II

Hazard label:

8



Classification code:

C5

Limited quantity:

1 L

Excepted quantity:

E2

Transport category:

2

Hazard No:

80

Tunnel restriction code:

E

#### Inland waterways transport (ADN)

##### 14.1. UN number:

UN 1824

##### 14.2. UN proper shipping name:

SODIUM HYDROXIDE SOLUTION

##### 14.3. Transport hazard class(es):

8

##### 14.4. Packing group:

II



## Safety Data Sheet

according to Regulation (EC) No 1907/2006

|                           |                             |                   |             |
|---------------------------|-----------------------------|-------------------|-------------|
| Revision date: 07.08.2019 | <b>VITA VM OPAQUE FLUID</b> | Product code: 168 | Page 7 of 9 |
|---------------------------|-----------------------------|-------------------|-------------|

Hazard label: 8



Classification code: C5  
 Limited quantity: 1 L  
 Excepted quantity: E2

### Marine transport (IMDG)

**14.1. UN number:** UN 1824  
**14.2. UN proper shipping name:** SODIUM HYDROXIDE SOLUTION  
**14.3. Transport hazard class(es):** 8  
**14.4. Packing group:** II  
 Hazard label: 8



Special Provisions: -  
 Limited quantity: 1 L  
 Excepted quantity: E2  
 EmS: F-A, S-B

### Air transport (ICAO-TI/ATA-DGR)

**14.1. UN number:** UN 1824  
**14.2. UN proper shipping name:** SODIUM HYDROXIDE SOLUTION  
**14.3. Transport hazard class(es):** 8  
**14.4. Packing group:** II  
 Hazard label: 8



Special Provisions: A3 A803  
 Limited quantity Passenger: 0.5 L  
 Passenger LQ: Y840  
 Excepted quantity: E2  
 IATA-packing instructions - Passenger: 851  
 IATA-max. quantity - Passenger: 1 L  
 IATA-packing instructions - Cargo: 855  
 IATA-max. quantity - Cargo: 30 L

### 14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: no

### 14.6. Special precautions for user

Warning: strongly corrosive.

### 14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

not applicable

## SECTION 15: Regulatory information

### 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

#### EU regulatory information





VITA Zahnfabrik H. Rauter GmbH &amp; Co. KG

**Safety Data Sheet**

according to Regulation (EC) No 1907/2006

**VITA VM OPAQUE FLUID**

Revision date: 07.08.2019

Product code: 168

Page 8 of 9

Information according to 2012/18/EU  
(SEVESO III):

Not subject to 2012/18/EU (SEVESO III)

**National regulatory information**

Employment restrictions:

Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC).

Water hazard class (D):

1 - slightly hazardous to water

**15.2. Chemical safety assessment**

Chemical safety assessments for substances in this mixture were not carried out.

**SECTION 16: Other information****Abbreviations and acronyms**

ADR: Accord européen sur le transport des marchandises dangereuses par Route  
(European Agreement concerning the International Carriage of Dangerous Goods by Road)  
IMDG: International Maritime Code for Dangerous Goods  
IATA: International Air Transport Association  
GHS: Globally Harmonized System of Classification and Labelling of Chemicals  
EINECS: European Inventory of Existing Commercial Chemical Substances  
ELINCS: European List of Notified Chemical Substances  
CAS: Chemical Abstracts Service  
LC50: Lethal concentration, 50%  
LD50: Lethal dose, 50%  
CLP: Classification, labelling and Packaging  
REACH: Registration, Evaluation and Authorization of Chemicals  
GHS: Globally Harmonised System of Classification, Labelling and Packaging of Chemicals  
UN: United Nations  
DNEL: Derived No Effect Level  
DMEL: Derived Minimal Effect Level  
PNEC: Predicted No Effect Concentration  
ATE: Acute toxicity estimate  
LL50: Lethal loading, 50%  
EL50: Effect loading, 50%  
EC50: Effective Concentration 50%  
ErC50: Effective Concentration 50%, growth rate  
NOEC: No Observed Effect Concentration  
BCF: Bio-concentration factor  
PBT: persistent, bioaccumulative, toxic  
vPvB: very persistent, very bioaccumulative  
RID: Regulations concerning the international carriage of dangerous goods by rail  
ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways  
(Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieures)  
EmS: Emergency Schedules  
MFAG: Medical First Aid Guide  
ICAO: International Civil Aviation Organization  
MARPOL: International Convention for the Prevention of Marine Pollution from Ships  
IBC: Intermediate Bulk Container  
SVHC: Substance of Very High Concern  
For abbreviations and acronyms, see table at <http://abbrev.esdscom.eu>

**Classification for mixtures and used evaluation method according to Regulation (EC) No. 1272/2008 [CLP]**

| Classification     | Classification procedure |
|--------------------|--------------------------|
| Skin Corr. 1; H314 | On basis of test data    |
| Eye Dam. 1; H318   | On basis of test data    |

Revision No: 2

GB - EN

Print date: 20.04.2020



VITA Zahnfabrik H. Rauter GmbH & Co. KG

## Safety Data Sheet

according to Regulation (EC) No 1907/2006

### VITA VM OPAQUE FLUID

Revision date: 07.08.2019

Product code: 168

Page 9 of 9

#### Relevant H and EUH statements (number and full text)

|      |                                          |
|------|------------------------------------------|
| H225 | Highly flammable liquid and vapour.      |
| H314 | Causes severe skin burns and eye damage. |
| H318 | Causes serious eye damage.               |
| H319 | Causes serious eye irritation.           |

#### Further Information

The information is based on the present level of our knowledge. It does not, however, give assurance of product properties and establishes no contract legal rights. The receiver of our product is singularly responsible for adhering to existing laws and regulations.

---

*(The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)*

**Safety data sheet**  
according to 1907/2006/EC, Article 31

Printing date 02.06.2014

Version number 3

Revision: 02.06.2014

\*

### 1 Identification of the substance/mixture and of the company/undertaking

- **Product identifier**
- **Trade name:** VITA VM 9
- **Article number:** B42..
- **CAS Number:**  
66402-68-4
- **EC number:**  
266-340-9
- **Relevant identified uses of the substance or mixture and uses advised against**  
No further relevant information available.
- **Application of the substance / product** Auxiliary for manufacture of dental prothesis
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
VITA Zahnfabrik  
H. Rauter GmbH & Co. KG
- Postfach 1338  
D 79704 Bad Säckingen  
e-mail: info@vita-zahnfabrik.com
- **Emergency telephone number:** Tel.: ++49-(0)7761-562-0

Tel.: 07761/562-0  
Fax: 07761/562299

\*

### 2 Hazards identification

- **Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**  
The substance is not classified according to the CLP regulation.
- **Label elements**
- **Labelling according to Regulation (EC) No 1272/2008** Void
- **Hazard pictograms** Void
- **Signal word** Void
- **Hazard statements** Void
- **Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

### 3 Composition/information on ingredients

- **Chemical characterization:** Substances
- **CAS No. Description:**  
66402-68-4 Ceramics materials and wares, chemicals
- **Identification number(s):**
- **EC number:** 266-340-9

\*

### 4 First aid measures

- **Description of first aid measures**
- **General information** No special measures required.
- **After inhalation** Supply fresh air; consult doctor in case of complaints.
- **After skin contact** Generally the product does not irritate the skin.
- **After eye contact** Rinse opened eye for several minutes under running water.
- **After swallowing** If symptoms persist consult doctor.

(Contd. on page 2)

GB

## Safety data sheet according to 1907/2006/EC, Article 31

Printing date 02.06.2014

Version number 3

Revision: 02.06.2014

Trade name: VITA VM 9

(Contd. of page 1)

- **Information for doctor**
- **Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed**  
No further relevant information available.

### 5 Firefighting measures

- **Extinguishing media**
- **Suitable extinguishing agents**  
CO<sub>2</sub>, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** No special measures required.

\*

### 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures** Not required.
- **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:** Pick up mechanically.
- **Reference to other sections**  
No dangerous substances are released.  
See Section 7 for information on safe handling  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.

\*

### 7 Handling and storage

- **Handling**
- **Precautions for safe handling** No special measures required.
- **Information about fire - and explosion protection:** No special measures required.
- **Conditions for safe storage, including any incompatibilities**
- **Storage**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** None.
- **Storage class** 13
- **Specific end use(s)** No further relevant information available.

\*

### 8 Exposure controls/personal protection

- **Additional information about design of technical facilities:** No further data; see item 7.
- **Control parameters**
- **Ingredients with limit values that require monitoring at the workplace:** Not required.
- **Additional information:** The lists valid during the making were used as basis.
- **Exposure controls**
- **Personal protective equipment**
- **General protective and hygienic measures**  
The usual precautionary measures are to be adhered to when handling chemicals.
- **Respiratory protection:** In case of dust formation use respiration filter
- **Protection of hands:**  
Protective gloves and protective skin cream.

(Contd. on page 3)

GB

## Safety data sheet

### according to 1907/2006/EC, Article 31

Printing date 02.06.2014

Version number 3

Revision: 02.06.2014

Trade name: VITA VM 9

(Contd. of page 2)

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves**

Nitrile rubber, NBR

e.g. Dermatril P, KCL Nr. 743

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

· **Penetration time of glove material**

-

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye protection:** Goggles recommended during refilling.

\*

### 9 Physical and chemical properties

· **Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

Form: Solid.

Colour: Not determined.

· **Odour:** Characteristic

· **Odour threshold:** Not determined.

· **pH-value:** Not applicable.

· **Change in condition**

Melting point/Melting range: undetermined

Boiling point/Boiling range: undetermined

· **Flash point:** Not applicable

· **Flammability (solid, gaseous)** Product is not flammable.

· **Ignition temperature:**

Decomposition temperature: Not determined.

· **Self-igniting:** Not determined.

· **Danger of explosion:** Product does not present an explosion hazard.

· **Explosion limits:**

Lower: Not determined.

Upper: Not determined.

· **Oxidizing properties** None

· **Vapour pressure:** Not applicable.

· **Density at 20 °C:** 2.4 g/cm<sup>3</sup>

· **Relative density** Not determined.

· **Vapour density** Not applicable.

· **Evaporation rate** Not applicable.

· **Solubility in / Miscibility with**

Water: Insoluble

· **Partition coefficient (n-octanol/water):** Not determined.

(Contd. on page 4)

GB

**Safety data sheet**  
**according to 1907/2006/EC, Article 31**

Printing date 02.06.2014

Version number 3

Revision: 02.06.2014

Trade name: VITA VM 9

(Contd. of page 3)

- **Viscosity:**
- dynamic:** Not applicable.
- kinematic:** Not applicable.
- Organic solvents:** 0.0 %
- **Other information** No further relevant information available.

\* **10 Stability and reactivity**

- **Reactivity** No decomposition if used and stored according to specifications.
- **Chemical stability** No decomposition if used and stored according to specifications.
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known

**11 Toxicological information**

- **Information on toxicological effects**
- **Acute toxicity:**
- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** No irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**  
When used and handled according to specifications, the product does not have any harmful effects to our experience and the information provided to us.  
The substance is not subject to classification according to the latest version of the EU lists.

\* **12 Ecological information**

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behaviour in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**  
Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water.  
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

\* **13 Disposal considerations**

- **Waste treatment methods**
- **Recommendation** Disposal must be made according to official regulations.

(Contd. on page 5)

GB

**Safety data sheet**  
according to 1907/2006/EC, Article 31

Printing date 02.06.2014

Version number 3

Revision: 02.06.2014

Trade name: VITA VM 9

(Contd. of page 4)

- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.

\*

**14 Transport information**

- |                                                                                  |                                                      |
|----------------------------------------------------------------------------------|------------------------------------------------------|
| · <b>UN-Number</b>                                                               |                                                      |
| · <b>ADR, ADN, IMDG, IATA</b>                                                    | Void                                                 |
| · <b>UN proper shipping name</b>                                                 |                                                      |
| · <b>ADR, ADN, IMDG, IATA</b>                                                    | Void                                                 |
| · <b>Transport hazard class(es)</b>                                              |                                                      |
| · <b>ADR</b>                                                                     |                                                      |
| · <b>Class</b>                                                                   | Void                                                 |
| · <b>Label</b>                                                                   | -                                                    |
| · <b>ADN/R Class:</b>                                                            | Void                                                 |
| · <b>Packing group</b>                                                           |                                                      |
| · <b>ADR, IMDG, IATA</b>                                                         | Void                                                 |
| · <b>Environmental hazards:</b>                                                  |                                                      |
| · <b>Marine pollutant:</b>                                                       | No                                                   |
| · <b>Special precautions for user</b>                                            | Not applicable.                                      |
| · <b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b> | Not applicable.                                      |
| · <b>Transport/Additional information:</b>                                       | Not dangerous according to the above specifications. |
| · <b>UN "Model Regulation":</b>                                                  | -                                                    |

\*

**15 Regulatory information**

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **National regulations**
- **Waterhazard class:** Water hazard class 1 (Self-assessment): slightly hazardous for water.
- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

**16 Other information**

*This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.*

· **Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

- **\* Data compared to the previous version altered.**

GB



**Safety data sheet**  
**according to 1907/2006/EC, Article 31**

Printing date 02.06.2014

Version number 2

Revision: 02.06.2014

\*

### **1 Identification of the substance/mixture and of the company/undertaking**

- **Product identifier**
- **Trade name:** *VITA VM 9 Effect Bonder Paste*
- **Article number:** *B422../B423..*
- **Relevant identified uses of the substance or mixture and uses advised against**  
*No further relevant information available.*
- **Application of the substance / product** *Auxiliary for manufacture of dental prothesis*
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
*VITA Zahnfabrik*  
*H. Rauter GmbH & Co. KG*
- Postfach 1338*  
*D 79704 Bad Säckingen*  
*e-mail: info@vita-zahnfabrik.com*
- **Emergency telephone number:** *Tel.: ++49-(0)7761-562-0*

*Tel.: 07761/562-0*  
*Fax: 07761/562299*

\*

### **2 Hazards identification**

- **Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**  
*The product is not classified according to the CLP regulation.*
- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC not applicable**
- **Information concerning particular hazards for human and environment:**  
*The product does not have to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.*
- **Classification system:**  
*The classification is according to the latest editions of the EU-lists, and extended by company and literature data.*
- **Label elements**
- **Labelling according to EU guidelines:**  
*Observe the general safety regulations when handling chemicals*  
*The product is not subject to identification regulations under EU Directives and the Ordinance on Hazardous Materials (German GefStoffV).*
- **Safety phrases:**  
*29 Do not empty into drains.*
- **Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** *Not applicable.*
- **vPvB:** *Not applicable.*

\*

### **3 Composition/information on ingredients**

- **Chemical characterization: Substances**
- **CAS No. Description:**  
*66402-68-4 Ceramics materials and wares, chemicals*
- **Identification number(s):**
- **EC number:** *266-340-9*
- **Chemical characterization: Mixtures**
- **Description:** *Mixture of substances listed below with nonhazardous additions.*

(Contd. on page 2)

GB

## Safety data sheet according to 1907/2006/EC, Article 31

Printing date 02.06.2014

Version number 2

Revision: 02.06.2014

Trade name: VITA VM 9 Effect Bonder Paste

(Contd. of page 1)

**· Dangerous components:**

|                   |                       |                                                                                                      |         |
|-------------------|-----------------------|------------------------------------------------------------------------------------------------------|---------|
|                   | Glycerin              | substance with a Community workplace exposure limit                                                  | 2.5-10% |
| CAS: 139-13-9     | nitrilotriacetic acid |  Xn R22             | 2.5-10% |
| EINECS: 205-355-7 |                       |  Acute Tox. 4, H302 |         |

· **Additional information** For the wording of the listed risk phrases refer to section 16.**4 First aid measures**

- **Description of first aid measures**
- **General information** No special measures required.
- **After inhalation** Supply fresh air; consult doctor in case of complaints.
- **After skin contact** Generally the product does not irritate the skin.
- **After eye contact** Rinse opened eye for several minutes under running water.
- **After swallowing** If symptoms persist consult doctor.
- **Information for doctor**
- **Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed**  
No further relevant information available.

**5 Firefighting measures**

- **Extinguishing media**
- **Suitable extinguishing agents**  
CO<sub>2</sub>, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** No special measures required.

**6 Accidental release measures**

- **Personal precautions, protective equipment and emergency procedures** Not required.
- **Environmental precautions:** Do not allow product to reach sewage system or any water course.
- **Methods and material for containment and cleaning up:** Pick up mechanically.
- **Reference to other sections**  
No dangerous substances are released.  
See Section 7 for information on safe handling  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.

**7 Handling and storage**

- **Handling**
- **Precautions for safe handling** No special measures required.
- **Information about fire - and explosion protection:** No special measures required.
- **Conditions for safe storage, including any incompatibilities**
- **Storage**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** None.
- **Storage class** 11

(Contd. on page 3)

GB

**Safety data sheet**  
according to 1907/2006/EC, Article 31

Printing date 02.06.2014

Version number 2

Revision: 02.06.2014

Trade name: VITA VM 9 Effect Bonder Paste

(Contd. of page 2)

· **Specific end use(s)** No further relevant information available.**8 Exposure controls/personal protection**· **Additional information about design of technical facilities:** No further data; see item 7.· **Control parameters**· **Ingredients with limit values that require monitoring at the workplace:****Glycerin**WEL Long-term value: 10 mg/m<sup>3</sup>· **Additional information:** The lists valid during the making were used as basis.· **Exposure controls**· **Personal protective equipment**· **General protective and hygienic measures**

The usual precautionary measures are to be adhered to when handling chemicals.

· **Respiratory protection:** Not required.· **Protection of hands:**

Protective gloves and protective skin cream.

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves**

e.g. Dermatril P, KCL Nr. 743

Nitrile rubber, NBR

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye protection:** Goggles recommended during refilling.**9 Physical and chemical properties**· **Information on basic physical and chemical properties**· **General Information**· **Appearance:****Form:** Pasty**Colour:** According to product specification· **Odour:** Characteristic· **Odour threshold:** Not determined.· **pH-value:** Not applicable.· **Change in condition****Melting point/Melting range:** undetermined**Boiling point/Boiling range:** undetermined· **Flash point:** Not applicable· **Flammability (solid, gaseous)** Not determined.

(Contd. on page 4)

GB

**Safety data sheet**  
according to 1907/2006/EC, Article 31

Printing date 02.06.2014

Version number 2

Revision: 02.06.2014

Trade name: VITA VM 9 Effect Bonder Paste

(Contd. of page 3)

|                                                   |                                               |
|---------------------------------------------------|-----------------------------------------------|
| · <b>Ignition temperature:</b>                    | 375 °C                                        |
| · <b>Decomposition temperature:</b>               | Not determined.                               |
| · <b>Self-igniting:</b>                           | Product is not selfigniting.                  |
| · <b>Danger of explosion:</b>                     | Product does not present an explosion hazard. |
| · <b>Explosion limits:</b>                        |                                               |
| Lower:                                            | Not determined.                               |
| Upper:                                            | Not determined.                               |
| · <b>Vapour pressure:</b>                         | Not applicable.                               |
| · <b>Density at 20 °C:</b>                        | 2.4 g/cm <sup>3</sup>                         |
| · <b>Relative density</b>                         | Not determined.                               |
| · <b>Vapour density</b>                           | Not applicable.                               |
| · <b>Evaporation rate</b>                         | Not applicable.                               |
| · <b>Solubility in / Miscibility with</b>         |                                               |
| Water:                                            | Insoluble                                     |
| · <b>Partition coefficient (n-octanol/water):</b> | Not determined.                               |
| · <b>Viscosity:</b>                               |                                               |
| dynamic:                                          | Not applicable.                               |
| kinematic:                                        | Not applicable.                               |
| · <b>Solvent content:</b>                         |                                               |
| Organic solvents:                                 | 0.0 %                                         |
| · <b>Other information</b>                        | No further relevant information available.    |

\* **10 Stability and reactivity**

- **Reactivity** No decomposition if used and stored according to specifications.
- **Chemical stability** No decomposition if used and stored according to specifications.
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known

\* **11 Toxicological information**

- **Information on toxicological effects**
  - **Acute toxicity:**
  - **Primary irritant effect:**
  - **on the skin:** No irritant effect.
  - **on the eye:** No irritating effect.
  - **Sensitization:** No sensitizing effects known.
  - **Additional toxicological information:**
- The product is not subject to classification according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version.
- When used and handled according to specifications, the product does not have any harmful effects to our experience and the information provided to us.

GB

(Contd. on page 5)

**Safety data sheet**  
according to 1907/2006/EC, Article 31

Printing date 02.06.2014

Version number 2

Revision: 02.06.2014

Trade name: VITA VM 9 Effect Bonder Paste

(Contd. of page 4)

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| * <b>12 Ecological information</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <ul style="list-style-type: none"> <li>· <b>Toxicity</b></li> <li>· <b>Aquatic toxicity:</b> No further relevant information available.</li> <li>· <b>Persistence and degradability</b> No further relevant information available.</li> <li>· <b>Behaviour in environmental systems:</b></li> <li>· <b>Bioaccumulative potential</b> No further relevant information available.</li> <li>· <b>Mobility in soil</b> No further relevant information available.</li> <li>· <b>Additional ecological information:</b></li> <li>· <b>General notes:</b><br/>Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water.<br/>Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.</li> <li>· <b>Results of PBT and vPvB assessment</b></li> <li>· <b>PBT:</b> Not applicable.</li> <li>· <b>vPvB:</b> Not applicable.</li> <li>· <b>Other adverse effects</b> No further relevant information available.</li> </ul> |

|                                                                                                                                                                                                                                                                                                                |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| * <b>13 Disposal considerations</b>                                                                                                                                                                                                                                                                            |
| <ul style="list-style-type: none"> <li>· <b>Waste treatment methods</b></li> <li>· <b>Recommendation</b> Disposal must be made according to official regulations.</li> <li>· <b>Uncleaned packaging:</b></li> <li>· <b>Recommendation:</b> Disposal must be made according to official regulations.</li> </ul> |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| * <b>14 Transport information</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <ul style="list-style-type: none"> <li>· <b>UN-Number</b></li> <li>· <b>ADR, ADN, IMDG, IATA</b> Void</li> <li>· <b>UN proper shipping name</b></li> <li>· <b>ADR, ADN, IMDG, IATA</b> Void</li> <li>· <b>Transport hazard class(es)</b></li> <li>· <b>ADR, ADN, IMDG, IATA</b></li> <li>· <b>Class</b> Void</li> <li>· <b>Packing group</b></li> <li>· <b>ADR, IMDG, IATA</b> Void</li> <li>· <b>Environmental hazards:</b></li> <li>· <b>Marine pollutant:</b> No</li> <li>· <b>Special precautions for user</b> Not applicable.</li> <li>· <b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b> Not applicable.</li> <li>· <b>Transport/Additional information:</b> Not dangerous according to the above specifications.</li> <li>· <b>UN "Model Regulation":</b> -</li> </ul> |

GB

(Contd. on page 6)

**Safety data sheet**  
according to 1907/2006/EC, Article 31

Printing date 02.06.2014

Version number 2

Revision: 02.06.2014

Trade name: VITA VM 9 Effect Bonder Paste

(Contd. of page 5)

\*

**15 Regulatory information**

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **National regulations**
- **Technical instructions (air):**

| Class | Share in % |
|-------|------------|
| NK    | 2,5-10     |

- **Waterhazard class:** Water hazard class 1 (Self-assessment): slightly hazardous for water.
- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

**16 Other information**

*This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.*

· **Relevant phrases**

H302 Harmful if swallowed.

R22 Harmful if swallowed.

· **Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

- \* **Data compared to the previous version altered.**

GB

**Safety data sheet**  
according to 1907/2006/EC, Article 31

Printing date 09.05.2016

Version number 3

Revision: 09.05.2016

**SECTION 1: Identification of the substance/mixture and of the company/undertaking**

· **1.1 Product identifier**

· **Trade name:** VITA VMK 95 MARGIN

· **Article number:** B360012-B360612

· **1.2 Relevant identified uses of the substance or mixture and uses advised against**  
No further relevant information available.

· **Application of the substance / product** Auxiliary for manufacture of dental prothesis

· **1.3 Details of the supplier of the safety data sheet**

· **Manufacturer/Supplier:**

VITA Zahnfabrik

H. Rauter GmbH & Co. KG

Postfach 1338

D 79704 Bad Säckingen

e-mail: info@vita-zahnfabrik.com

Tel.: 07761/562-0

Fax: 07761/562299

· **1.4 Emergency telephone number:** Tel.: ++49-(0)7761-562-0

**SECTION 2: Hazards identification**

· **2.1 Classification of the substance or mixture**

· **Classification according to Regulation (EC) No 1272/2008**

The product is not classified according to the CLP regulation.

· **2.2 Label elements**

· **Labelling according to Regulation (EC) No 1272/2008** Void

· **Hazard pictograms** Void

· **Signal word** Void

· **Hazard statements** Void

· **2.3 Other hazards**

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

**SECTION 3: Composition/information on ingredients**

· **3.1 Chemical characterisation: Substances**

· **CAS No. Description:**

66402-68-4 Ceramics materials and wares, chemicals

· **Identification number(s):**

· **EC number:** 266-340-9

· **3.2 Chemical characterisation: Mixtures**

· **Description:** CAS Nr. 66402-68-4 ceramic material and wares, chemicals

· **Dangerous components:** Void

· **Additional information** For the wording of the listed risk phrases refer to section 16.

**SECTION 4: First aid measures**

· **4.1 Description of first aid measures**

· **General information** No special measures required.

· **After inhalation** Supply fresh air; consult doctor in case of complaints.

· **After skin contact** Generally the product does not irritate the skin.

· **After eye contact** Rinse opened eye for several minutes under running water.

· **After swallowing** If symptoms persist consult doctor.

(Contd. on page 2)

GB



**Safety data sheet**  
according to 1907/2006/EC, Article 31

Printing date 09.05.2016

Version number 3

Revision: 09.05.2016

Trade name: VITA VMK 95 MARGIN

(Contd. of page 1)

- **4.2 Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **4.3 Indication of any immediate medical attention and special treatment needed**  
No further relevant information available.

\*

**SECTION 5: Firefighting measures**

- **5.1 Extinguishing media**
- **Suitable extinguishing agents**  
CO<sub>2</sub>, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **For safety reasons unsuitable extinguishing agents** Water.
- **5.2 Special hazards arising from the substance or mixture** No further relevant information available.
- **5.3 Advice for firefighters**
- **Protective equipment:** No special measures required.

\*

**SECTION 6: Accidental release measures**

- **6.1 Personal precautions, protective equipment and emergency procedures** Not required.
- **6.2 Environmental precautions:**  
Do not allow product to reach sewage system or any water course.  
Do not allow to enter sewers/ surface or ground water.
- **6.3 Methods and material for containment and cleaning up:** Pick up mechanically.
- **6.4 Reference to other sections**  
No dangerous substances are released.  
See Section 7 for information on safe handling  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.

\*

**SECTION 7: Handling and storage**

- **7.1 Precautions for safe handling** No special measures required.
- **Information about fire - and explosion protection:** No special measures required.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** None.
- **Storage class** 13
- **7.3 Specific end use(s)** No further relevant information available.

\*

**SECTION 8: Exposure controls/personal protection**

- **Additional information about design of technical facilities:** No further data; see item 7.
- **8.1 Control parameters**
- **Ingredients with limit values that require monitoring at the workplace:**  
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
- **Additional information:** The lists valid during the making were used as basis.
- **8.2 Exposure controls**
- **Personal protective equipment**
- **General protective and hygienic measures**  
The usual precautionary measures are to be adhered to when handling chemicals.
- **Respiratory protection:** Not required.

(Contd. on page 3)

GB

**Safety data sheet**  
according to 1907/2006/EC, Article 31

Printing date 09.05.2016

Version number 3

Revision: 09.05.2016

**Trade name: VITA VMK 95 MARGIN**

(Contd. of page 2)

· **Protection of hands:**

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye protection:** Not required.

\*

**SECTION 9: Physical and chemical properties**· **9.1 Information on basic physical and chemical properties**· **General Information**· **Appearance:****Form:** Powder**Colour:** According to product specification· **Odour:** Characteristic**Odour threshold:** Not determined.· **pH-value:** Not applicable.· **Change in condition****Melting point/Melting range:** 900 °C**Boiling point/Boiling range:** undetermined· **Flash point:** Not applicable· **Flammability (solid, gaseous)** Not determined.· **Ignition temperature:****Decomposition temperature:** Not determined.· **Self-igniting:** Product is not selfigniting.· **Danger of explosion:** Product does not present an explosion hazard.· **Explosion limits:****Lower:** Not determined.**Upper:** Not determined.· **Vapour pressure:** Not applicable.· **Density:** Not determined· **Relative density** Not determined.· **Vapour density** Not applicable.· **Evaporation rate** Not applicable.· **Solubility in / Miscibility with****Water:** Insoluble· **Partition coefficient (n-octanol/water):** Not determined.· **Viscosity:****dynamic:** Not applicable.

(Contd. on page 4)

GB

**Safety data sheet**  
according to 1907/2006/EC, Article 31

Printing date 09.05.2016

Version number 3

Revision: 09.05.2016

Trade name: VITA VMK 95 MARGIN

(Contd. of page 3)

|                                |                                            |
|--------------------------------|--------------------------------------------|
| <b>kinematic:</b>              | Not applicable.                            |
| · <b>Solvent content:</b>      |                                            |
| <b>Organic solvents:</b>       | 0.0 %                                      |
| · <b>9.2 Other information</b> | No further relevant information available. |

\*

**SECTION 10: Stability and reactivity**

- **10.1 Reactivity** No decomposition if used and stored according to specifications.
- **10.2 Chemical stability** No decomposition if used and stored according to specifications.
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **10.3 Possibility of hazardous reactions** No dangerous reactions known
- **10.4 Conditions to avoid** No further relevant information available.
- **10.5 Incompatible materials:** No further relevant information available.
- **10.6 Hazardous decomposition products:** No dangerous decomposition products known

**SECTION 11: Toxicological information**

- **11.1 Information on toxicological effects**
- **Acute toxicity** Based on available data, the classification criteria are not met.
- **Primary irritant effect:**
- **Skin corrosion/irritation** Based on available data, the classification criteria are not met.
- **Serious eye damage/irritation** Based on available data, the classification criteria are not met.
- **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**
- **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
- **Carcinogenicity** Based on available data, the classification criteria are not met.
- **Reproductive toxicity** Based on available data, the classification criteria are not met.
- **STOT-single exposure** Based on available data, the classification criteria are not met.
- **STOT-repeated exposure** Based on available data, the classification criteria are not met.
- **Aspiration hazard** Based on available data, the classification criteria are not met.

**SECTION 12: Ecological information**

- **12.1 Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **12.2 Persistence and degradability** No further relevant information available.
- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**  
Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water.  
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Other adverse effects** No further relevant information available.

GB

(Contd. on page 5)

**Safety data sheet**  
according to 1907/2006/EC, Article 31

Printing date 09.05.2016

Version number 3

Revision: 09.05.2016

Trade name: VITA VMK 95 MARGIN

(Contd. of page 4)

\*

**SECTION 13: Disposal considerations**

- **13.1 Waste treatment methods**
- **Recommendation**  
Must not be disposed together with household garbage. Do not allow product to reach sewage system.  
Disposal must be made according to official regulations.
- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.

\*

**SECTION 14: Transport information**

- |                                                                                  |                                                      |
|----------------------------------------------------------------------------------|------------------------------------------------------|
| · <b>14.1 UN-Number</b>                                                          |                                                      |
| · <b>ADR, ADN, IMDG, IATA</b>                                                    | Void                                                 |
| · <b>14.2 UN proper shipping name</b>                                            |                                                      |
| · <b>ADR, ADN, IMDG, IATA</b>                                                    | Void                                                 |
| · <b>14.3 Transport hazard class(es)</b>                                         |                                                      |
| · <b>ADR</b>                                                                     |                                                      |
| · <b>Class</b>                                                                   | Void                                                 |
| · <b>Label</b>                                                                   | -                                                    |
| · <b>ADN/R Class:</b>                                                            | Void                                                 |
| · <b>14.4 Packing group</b>                                                      |                                                      |
| · <b>ADR, IMDG, IATA</b>                                                         | Void                                                 |
| · <b>14.5 Environmental hazards:</b>                                             |                                                      |
| · <b>Marine pollutant:</b>                                                       | No                                                   |
| · <b>14.6 Special precautions for user</b>                                       | Not applicable.                                      |
| · <b>14.7 Transport in bulk according to Annex II of Marpol and the IBC Code</b> | Not applicable.                                      |
| · <b>Transport/Additional information:</b>                                       | Not dangerous according to the above specifications. |
| · <b>UN "Model Regulation":</b>                                                  | Void                                                 |

\*

**SECTION 15: Regulatory information**

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Directive 2012/18/EU**
- **Named dangerous substances - ANNEX I** None of the ingredients is listed.
- **National regulations**
- **Waterhazard class:** Water hazard class 1 (Self-assessment): slightly hazardous for water.
- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

**SECTION 16: Other information**

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Abbreviations and acronyms:**  
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)  
IMDG: International Maritime Code for Dangerous Goods  
IATA: International Air Transport Association

(Contd. on page 6)

GB

**Safety data sheet**  
**according to 1907/2006/EC, Article 31**

Printing date 09.05.2016

Version number 3

Revision: 09.05.2016

**Trade name: VITA VMK 95 MARGIN**

(Contd. of page 5)

GHS: Globally Harmonised System of Classification and Labelling of Chemicals  
EINECS: European Inventory of Existing Commercial Chemical Substances  
ELINCS: European List of Notified Chemical Substances  
CAS: Chemical Abstracts Service (division of the American Chemical Society)  
PBT: Persistent, Bioaccumulative and Toxic  
vPvB: very Persistent and very Bioaccumulative  
· \* **Data compared to the previous version altered.**

GB

**Safety data sheet**  
according to 1907/2006/EC, Article 31

Printing date 09.05.2016

Version number 4

Revision: 09.05.2016

**SECTION 1: Identification of the substance/mixture and of the company/undertaking**

· **1.1 Product identifier**

· **Trade name:** VITA VMK 95 METAL CERAMICS

· **Article number:** B30..B33..

· **EC number:**

266-340-9

· **1.2 Relevant identified uses of the substance or mixture and uses advised against**

No further relevant information available.

· **Application of the substance / product** Manufacture of dental prothesis

· **1.3 Details of the supplier of the safety data sheet**

· **Manufacturer/Supplier:**

VITA Zahnfabrik

H. Rauter GmbH & Co. KG

Postfach 1338

D 79704 Bad Säckingen

e-mail: [info@vita-zahnfabrik.com](mailto:info@vita-zahnfabrik.com)

Tel.: 07761/562-0

Fax: 07761/562299

· **1.4 Emergency telephone number:** Tel.: ++49-(0)7761-562-0

\*

**SECTION 2: Hazards identification**

· **2.1 Classification of the substance or mixture**

· **Classification according to Regulation (EC) No 1272/2008**

The substance is not classified according to the CLP regulation.

· **2.2 Label elements**

· **Labelling according to Regulation (EC) No 1272/2008** Void

· **Hazard pictograms** Void

· **Signal word** Void

· **Hazard statements** Void

· **2.3 Other hazards**

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

**SECTION 3: Composition/information on ingredients**

· **3.1 Chemical characterisation: Substances**

· **CAS No. Description:**

ceramic materials and frits

· **Identification number(s):**

· **EC number:** 266-340-9

**SECTION 4: First aid measures**

· **4.1 Description of first aid measures**

· **General information** No special measures required.

· **After inhalation** Supply fresh air; consult doctor in case of complaints.

· **After skin contact** Generally the product does not irritate the skin.

· **After eye contact** Rinse opened eye for several minutes under running water.

· **After swallowing** If symptoms persist consult doctor.

· **4.2 Most important symptoms and effects, both acute and delayed** No further relevant information available.

(Contd. on page 2)

GB

**Safety data sheet**  
according to 1907/2006/EC, Article 31

Printing date 09.05.2016

Version number 4

Revision: 09.05.2016

Trade name: VITA VMK 95 METAL CERAMICS

(Contd. of page 1)

- **4.3 Indication of any immediate medical attention and special treatment needed**  
No further relevant information available.

\*

**SECTION 5: Firefighting measures**

- **5.1 Extinguishing media**
- **Suitable extinguishing agents**  
CO<sub>2</sub>, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **For safety reasons unsuitable extinguishing agents** Water.
- **5.2 Special hazards arising from the substance or mixture** No further relevant information available.
- **5.3 Advice for firefighters**
- **Protective equipment:** No special measures required.

\*

**SECTION 6: Accidental release measures**

- **6.1 Personal precautions, protective equipment and emergency procedures** Not required.
- **6.2 Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **6.3 Methods and material for containment and cleaning up:** Pick up mechanically.
- **6.4 Reference to other sections**  
No dangerous substances are released.  
See Section 7 for information on safe handling  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.

\*

**SECTION 7: Handling and storage**

- **7.1 Precautions for safe handling** No special measures required.
- **Information about fire - and explosion protection:** No special measures required.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** None.
- **Storage class** 13
- **7.3 Specific end use(s)** No further relevant information available.

**SECTION 8: Exposure controls/personal protection**

- **Additional information about design of technical facilities:** No further data; see item 7.
- **8.1 Control parameters**
- **Ingredients with limit values that require monitoring at the workplace:** Not required.
- **Additional information:** The lists valid during the making were used as basis.
- **8.2 Exposure controls**
- **Personal protective equipment**
- **General protective and hygienic measures**  
The usual precautionary measures are to be adhered to when handling chemicals.
- **Respiratory protection:** Not required.
- **Protection of hands:**  
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.  
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

(Contd. on page 3)

GB



**Safety data sheet**  
according to 1907/2006/EC, Article 31

Printing date 09.05.2016

Version number 4

Revision: 09.05.2016

Trade name: VITA VMK 95 METAL CERAMICS

(Contd. of page 2)

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

· **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye protection:** Not required.

\*

**SECTION 9: Physical and chemical properties**

· **9.1 Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

Form: Solid.

Colour: According to product specification

· **Odour:** Characteristic

· **Odour threshold:** Not determined.

· **pH-value:** Not applicable.

· **Change in condition**

Melting point/Melting range: undetermined

Boiling point/Boiling range: undetermined

· **Flash point:** Not applicable

· **Flammability (solid, gaseous)** Product is not flammable.

· **Ignition temperature:**

Decomposition temperature: Not determined.

· **Self-igniting:** Not determined.

· **Danger of explosion:** Product does not present an explosion hazard.

· **Explosion limits:**

Lower: Not determined.

Upper: Not determined.

· **Oxidising properties** None

· **Vapour pressure:** Not determined

· **Density at 20 °C:** 2.4 g/cm<sup>3</sup>

· **Relative density** Not determined.

· **Vapour density** Not applicable.

· **Evaporation rate** Not applicable.

· **Solubility in / Miscibility with**

Water: Insoluble

· **Partition coefficient (n-octanol/water):** Not determined.

· **Viscosity:**

dynamic: Not applicable.

kinematic: Not applicable.

Organic solvents: 0.0 %

· **9.2 Other information** No further relevant information available.

GB

(Contd. on page 4)

**Safety data sheet**  
according to 1907/2006/EC, Article 31

Printing date 09.05.2016

Version number 4

Revision: 09.05.2016

Trade name: VITA VMK 95 METAL CERAMICS

(Contd. of page 3)

\*

**SECTION 10: Stability and reactivity**

- **10.1 Reactivity** No decomposition if used and stored according to specifications.
- **10.2 Chemical stability** No decomposition if used and stored according to specifications.
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **10.3 Possibility of hazardous reactions** No dangerous reactions known
- **10.4 Conditions to avoid** No further relevant information available.
- **10.5 Incompatible materials:** No further relevant information available.
- **10.6 Hazardous decomposition products:** No dangerous decomposition products known

**SECTION 11: Toxicological information**

- **11.1 Information on toxicological effects**
- **Acute toxicity** Based on available data, the classification criteria are not met.
- **Primary irritant effect:**
- **Skin corrosion/irritation** Based on available data, the classification criteria are not met.
- **Serious eye damage/irritation** Based on available data, the classification criteria are not met.
- **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**
- **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
- **Carcinogenicity** Based on available data, the classification criteria are not met.
- **Reproductive toxicity** Based on available data, the classification criteria are not met.
- **STOT-single exposure** Based on available data, the classification criteria are not met.
- **STOT-repeated exposure** Based on available data, the classification criteria are not met.
- **Aspiration hazard** Based on available data, the classification criteria are not met.

**SECTION 12: Ecological information**

- **12.1 Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **12.2 Persistence and degradability** No further relevant information available.
- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**  
Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water.  
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Other adverse effects** No further relevant information available.

\*

**SECTION 13: Disposal considerations**

- **13.1 Waste treatment methods**
- **Recommendation**  
Must not be disposed together with household garbage. Do not allow product to reach sewage system.  
Disposal must be made according to official regulations.

(Contd. on page 5)

GB

**Safety data sheet**  
according to 1907/2006/EC, Article 31

Printing date 09.05.2016

Version number 4

Revision: 09.05.2016

Trade name: VITA VMK 95 METAL CERAMICS

(Contd. of page 4)

- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.

**SECTION 14: Transport information**

- |                                                                                  |                                                      |
|----------------------------------------------------------------------------------|------------------------------------------------------|
| · <b>14.1 UN-Number</b>                                                          | Void                                                 |
| · <b>ADR, ADN, IMDG, IATA</b>                                                    | Void                                                 |
| · <b>14.2 UN proper shipping name</b>                                            | Void                                                 |
| · <b>ADR, ADN, IMDG, IATA</b>                                                    | Void                                                 |
| · <b>14.3 Transport hazard class(es)</b>                                         |                                                      |
| · <b>ADR</b>                                                                     | Void                                                 |
| · <b>Class</b>                                                                   | Void                                                 |
| · <b>Label</b>                                                                   | -                                                    |
| · <b>ADN/R Class:</b>                                                            | Void                                                 |
| · <b>14.4 Packing group</b>                                                      | Void                                                 |
| · <b>ADR, IMDG, IATA</b>                                                         | Void                                                 |
| · <b>14.5 Environmental hazards:</b>                                             |                                                      |
| · <b>Marine pollutant:</b>                                                       | No                                                   |
| · <b>14.6 Special precautions for user</b>                                       | Not applicable.                                      |
| · <b>14.7 Transport in bulk according to Annex II of Marpol and the IBC Code</b> | Not applicable.                                      |
| · <b>Transport/Additional information:</b>                                       | Not dangerous according to the above specifications. |
| · <b>UN "Model Regulation":</b>                                                  | Void                                                 |

\*

**SECTION 15: Regulatory information**

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Directive 2012/18/EU**
- **Named dangerous substances - ANNEX I** Substance is not listed.
- **National regulations**
- **Waterhazard class:** Water hazard class 1 (Self-assessment): slightly hazardous for water.
- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

**SECTION 16: Other information**

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Abbreviations and acronyms:**  
 ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)  
 IMDG: International Maritime Code for Dangerous Goods  
 IATA: International Air Transport Association  
 GHS: Globally Harmonised System of Classification and Labelling of Chemicals  
 EINECS: European Inventory of Existing Commercial Chemical Substances  
 CAS: Chemical Abstracts Service (division of the American Chemical Society)  
 PBT: Persistent, Bioaccumulative and Toxic  
 vPvB: very Persistent and very Bioaccumulative
- **\* Data compared to the previous version altered.**

GB

**Safety data sheet**  
according to 1907/2006/EC, Article 31

Printing date 09.05.2016

Version number 4

Revision: 09.05.2016

\*

**SECTION 1: Identification of the substance/mixture and of the company/undertaking**

· **1.1 Product identifier**

· **Trade name:** VITA VMK 95 PASTE OPAQUE

· **Article number:** B32

· **1.2 Relevant identified uses of the substance or mixture and uses advised against**

No further relevant information available.

· **Application of the substance / product** Auxiliary for manufacture of dental prothesis

· **1.3 Details of the supplier of the safety data sheet**

· **Manufacturer/Supplier:**

VITA Zahnfabrik

H. Rauter GmbH & Co. KG

Postfach 1338

D 79704 Bad Säckingen

e-mail: [info@vita-zahnfabrik.com](mailto:info@vita-zahnfabrik.com)

Tel.: 07761/562-0

Fax: 07761/562299

· **1.4 Emergency telephone number:** Tel.: ++49-(0)7761-562-0

\*

**SECTION 2: Hazards identification**

· **2.1 Classification of the substance or mixture**

· **Classification according to Regulation (EC) No 1272/2008**

The product is not classified according to the CLP regulation.

· **2.2 Label elements**

· **Labelling according to Regulation (EC) No 1272/2008** Void

· **Hazard pictograms** Void

· **Signal word** Void

· **Hazard statements** Void

· **2.3 Other hazards**

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

\*

**SECTION 3: Composition/information on ingredients**

· **3.2 Chemical characterisation: Mixtures**

· **Description:** CAS Nr. 66402-68-4 ceramic material and wares, chemicals

· **Dangerous components:** Void

· **Additional information** For the wording of the listed risk phrases refer to section 16.

**SECTION 4: First aid measures**

· **4.1 Description of first aid measures**

· **General information** No special measures required.

· **After inhalation** Supply fresh air; consult doctor in case of complaints.

· **After skin contact** Generally the product does not irritate the skin.

· **After eye contact** Rinse opened eye for several minutes under running water.

· **After swallowing** If symptoms persist consult doctor.

· **4.2 Most important symptoms and effects, both acute and delayed** No further relevant information available.

(Contd. on page 2)

GB

**Safety data sheet**  
according to 1907/2006/EC, Article 31

Printing date 09.05.2016

Version number 4

Revision: 09.05.2016

Trade name: VITA VMK 95 PASTE OPAQUE

(Contd. of page 1)

- **4.3 Indication of any immediate medical attention and special treatment needed**  
No further relevant information available.

\* **SECTION 5: Firefighting measures**

- **5.1 Extinguishing media**
- **Suitable extinguishing agents** Use fire extinguishing methods suitable to surrounding conditions.
- **For safety reasons unsuitable extinguishing agents** Water.
- **5.2 Special hazards arising from the substance or mixture** No further relevant information available.
- **5.3 Advice for firefighters**
- **Protective equipment:** No special measures required.

\* **SECTION 6: Accidental release measures**

- **6.1 Personal precautions, protective equipment and emergency procedures** Not required.
- **6.2 Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **6.3 Methods and material for containment and cleaning up:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
- **6.4 Reference to other sections**  
No dangerous substances are released.  
See Section 7 for information on safe handling  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.

\* **SECTION 7: Handling and storage**

- **7.1 Precautions for safe handling** No special measures required.
- **Information about fire - and explosion protection:** No special measures required.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** None.
- **Storage class** 10
- **7.3 Specific end use(s)** No further relevant information available.

\* **SECTION 8: Exposure controls/personal protection**

- **Additional information about design of technical facilities:** No further data; see item 7.
- **8.1 Control parameters**
- **Ingredients with limit values that require monitoring at the workplace:**  
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
- **Additional information:** The lists valid during the making were used as basis.
- **8.2 Exposure controls**
- **Personal protective equipment**
- **General protective and hygienic measures**  
The usual precautionary measures are to be adhered to when handling chemicals.
- **Respiratory protection:** Not required.
- **Protection of hands:**  
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

(Contd. on page 3)

GB

**Safety data sheet**  
according to 1907/2006/EC, Article 31

Printing date 09.05.2016

Version number 4

Revision: 09.05.2016

**Trade name: VITA VMK 95 PASTE OPAQUE**

(Contd. of page 2)

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves**

Nitrile rubber, NBR

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye protection:** Goggles recommended during refilling.

\*

**SECTION 9: Physical and chemical properties**

· **9.1 Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

Form: Fluid

Colour: According to product specification

· **Odour:** Characteristic

· **Odour threshold:** Not determined.

· **pH-value:** Not determined.

· **Change in condition**

Melting point/Melting range: undetermined

Boiling point/Boiling range: 290 °C

· **Flash point:** 160 °C

· **Flammability (solid, gaseous)** Not applicable.

· **Ignition temperature:**

Decomposition temperature: Not determined.

· **Self-igniting:** Product is not selfigniting.

· **Danger of explosion:** Product does not present an explosion hazard.

· **Explosion limits:**

Lower: Not determined.

Upper: Not determined.

· **Vapour pressure:** Not determined.

· **Density:** Not determined

· **Relative density** Not determined.

· **Vapour density** Not determined.

· **Evaporation rate** Not determined.

· **Solubility in / Miscibility with**

Water: Not miscible or difficult to mix

· **Partition coefficient (n-octanol/water):** Not determined.

· **Viscosity:**

dynamic: Not determined.

kinematic: Not determined.

(Contd. on page 4)

GB



## Safety data sheet

### according to 1907/2006/EC, Article 31

Printing date 09.05.2016

Version number 4

Revision: 09.05.2016

Trade name: **VITA VMK 95 PASTE OPAQUE**

(Contd. of page 3)

- **Solvent content:**
- **Organic solvents:** 9.2 %
- **9.2 Other information** No further relevant information available.

\*

#### SECTION 10: Stability and reactivity

- **10.1 Reactivity** No decomposition if used and stored according to specifications.
- **10.2 Chemical stability** No decomposition if used and stored according to specifications.
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **10.3 Possibility of hazardous reactions** No dangerous reactions known
- **10.4 Conditions to avoid** No further relevant information available.
- **10.5 Incompatible materials:** No further relevant information available.
- **10.6 Hazardous decomposition products:** No dangerous decomposition products known

#### SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity** Based on available data, the classification criteria are not met.
- **Primary irritant effect:**
- **Skin corrosion/irritation** Based on available data, the classification criteria are not met.
- **Serious eye damage/irritation** Based on available data, the classification criteria are not met.
- **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**
- **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
- **Carcinogenicity** Based on available data, the classification criteria are not met.
- **Reproductive toxicity** Based on available data, the classification criteria are not met.
- **STOT-single exposure** Based on available data, the classification criteria are not met.
- **STOT-repeated exposure** Based on available data, the classification criteria are not met.
- **Aspiration hazard** Based on available data, the classification criteria are not met.

#### SECTION 12: Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **12.2 Persistence and degradability** No further relevant information available.
- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**
- Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water.
- Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Other adverse effects** No further relevant information available.

\*

#### SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**
- **Recommendation**
- Must not be disposed together with household garbage. Do not allow product to reach sewage system.

(Contd. on page 5)

GB



**Safety data sheet**  
according to 1907/2006/EC, Article 31

Printing date 09.05.2016

Version number 4

Revision: 09.05.2016

Trade name: VITA VMK 95 PASTE OPAQUE

(Contd. of page 4)

Disposal must be made according to official regulations.

· **European waste catalogue**

|           |                                                                                                                                         |
|-----------|-----------------------------------------------------------------------------------------------------------------------------------------|
| 20 00 00  | MUNICIPAL WASTES (HOUSEHOLD WASTE AND SIMILAR COMMERCIAL, INDUSTRIAL AND INSTITUTIONAL WASTES) INCLUDING SEPARATELY COLLECTED FRACTIONS |
| 20 01 00  | separately collected fractions (except 15 01)                                                                                           |
| 20 01 13* | solvents                                                                                                                                |

· **Uncleaned packaging:**· **Recommendation:** Disposal must be made according to official regulations.**SECTION 14: Transport information**· **14.1 UN-Number**· **ADR, ADN, IMDG, IATA** Void· **14.2 UN proper shipping name**· **ADR, ADN, IMDG, IATA** Void· **14.3 Transport hazard class(es)**· **ADR, ADN, IMDG, IATA**· **Class** Void· **14.4 Packing group**· **ADR, IMDG, IATA** Void· **14.5 Environmental hazards:**· **Marine pollutant:** No· **14.6 Special precautions for user** Not applicable.· **14.7 Transport in bulk according to Annex II of Marpol and the IBC Code**

Not applicable.

· **Transport/Additional information:** Not dangerous according to the above specifications.· **UN "Model Regulation":** Void

\*

**SECTION 15: Regulatory information**· **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**· **Directive 2012/18/EU**· **Named dangerous substances - ANNEX I** None of the ingredients is listed.· **National regulations**· **Technical instructions (air):**

| Class | Share in % |
|-------|------------|
| NK    | 5-<10      |

· **Waterhazard class:** Water hazard class I (Self-assessment): slightly hazardous for water.· **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.**SECTION 16: Other information**

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

(Contd. on page 6)

GB

**Safety data sheet**  
**according to 1907/2006/EC, Article 31**

Printing date 09.05.2016

Version number 4

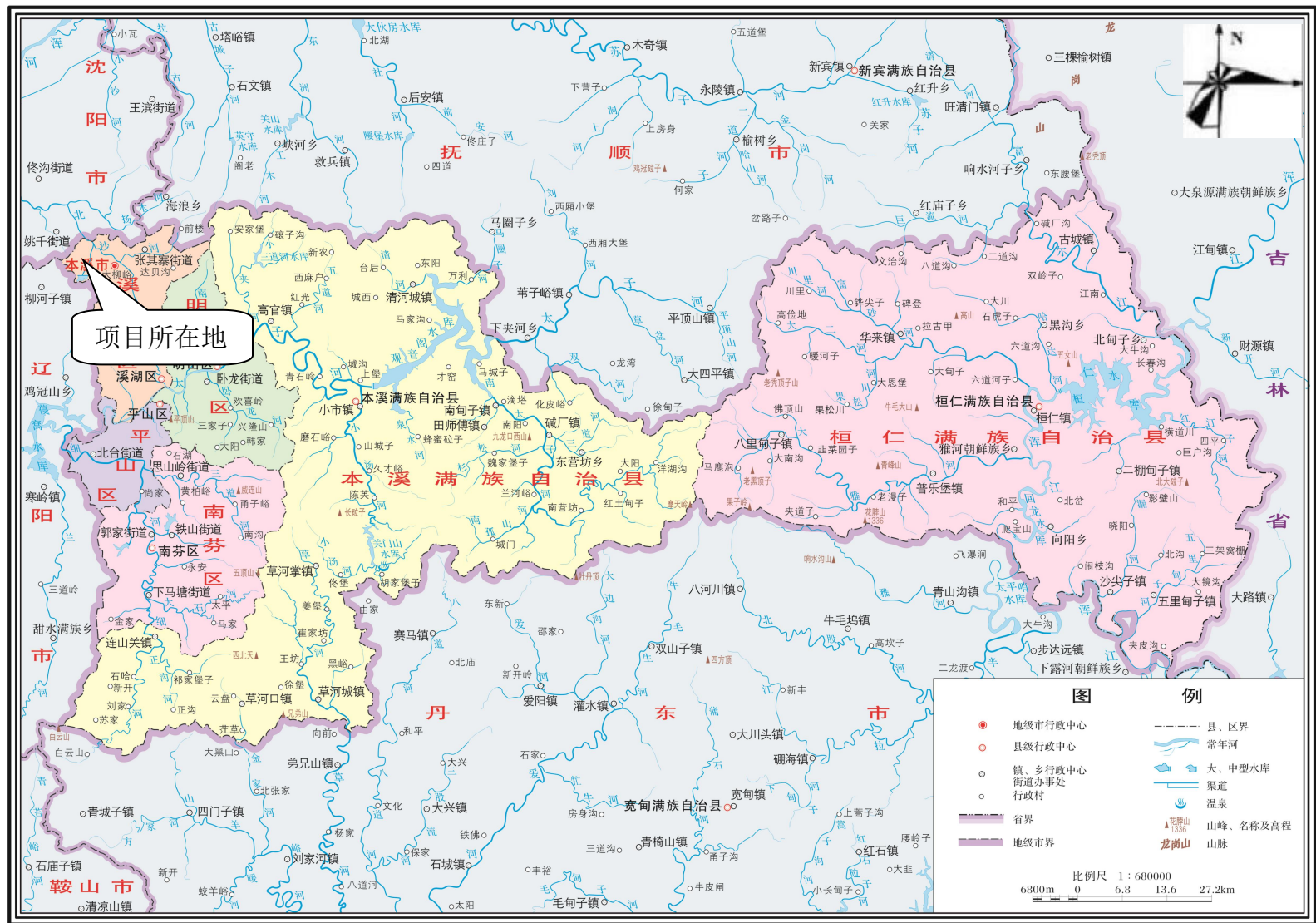
Revision: 09.05.2016

**Trade name: VITA VMK 95 PASTE OPAQUE**

(Contd. of page 5)

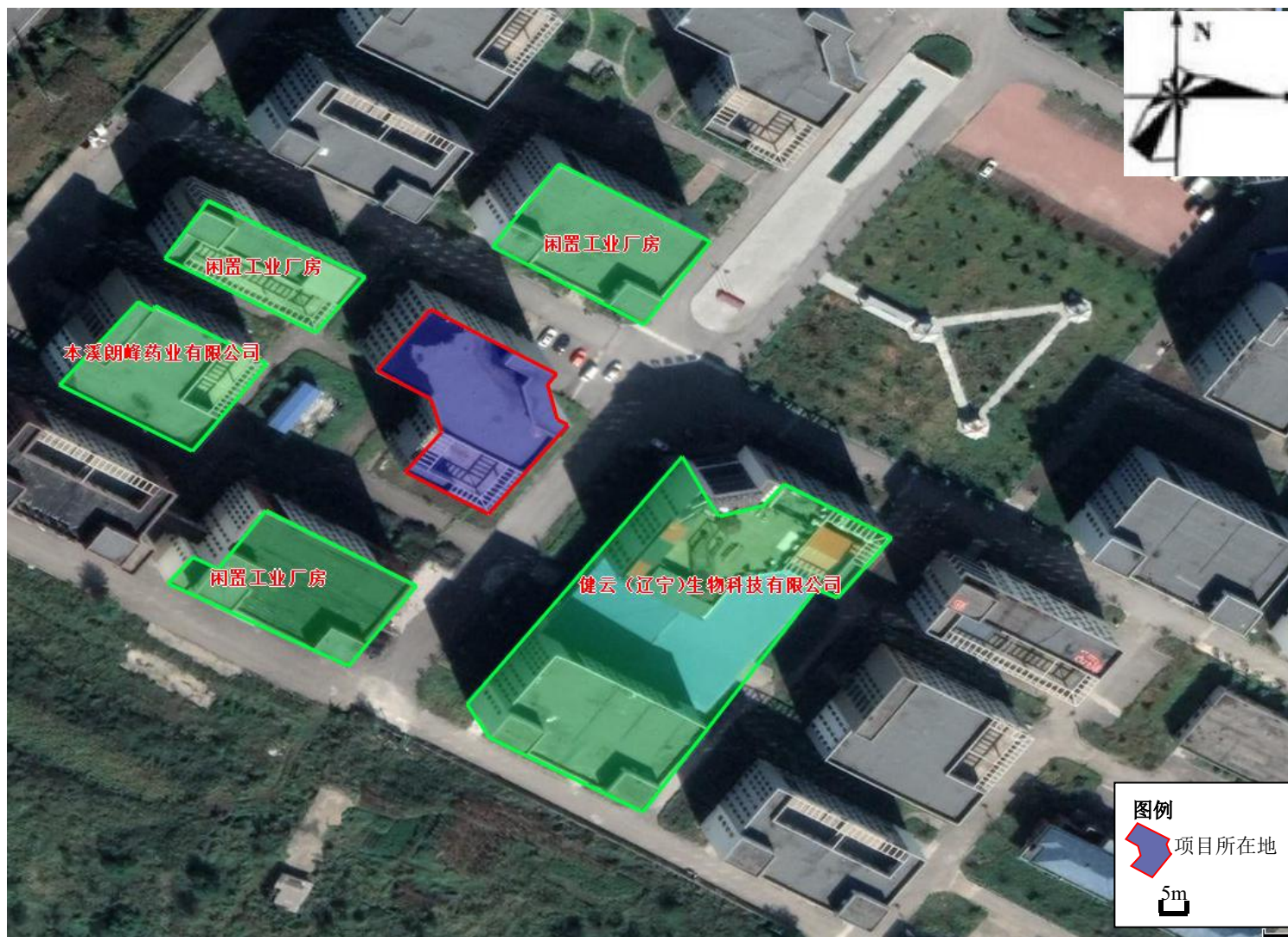
**· Abbreviations and acronyms:***ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)**IMDG: International Maritime Code for Dangerous Goods**IATA: International Air Transport Association**GHS: Globally Harmonised System of Classification and Labelling of Chemicals**EINECS: European Inventory of Existing Commercial Chemical Substances**ELINCS: European List of Notified Chemical Substances**CAS: Chemical Abstracts Service (division of the American Chemical Society)**PBT: Persistent, Bioaccumulative and Toxic**vPvB: very Persistent and very Bioaccumulative***· \* Data compared to the previous version altered.**

GB

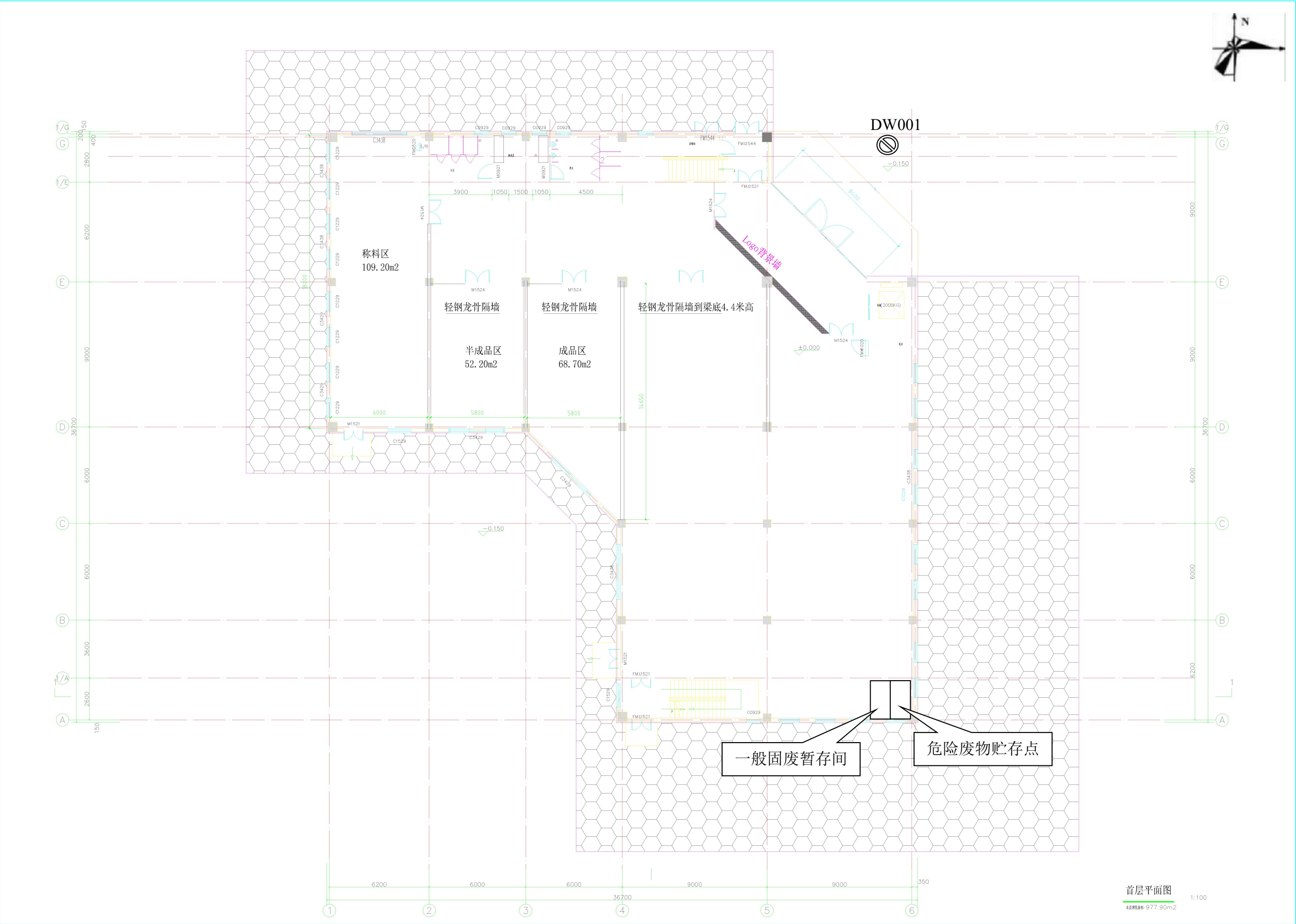


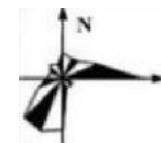
附图 1 项目地理位置图





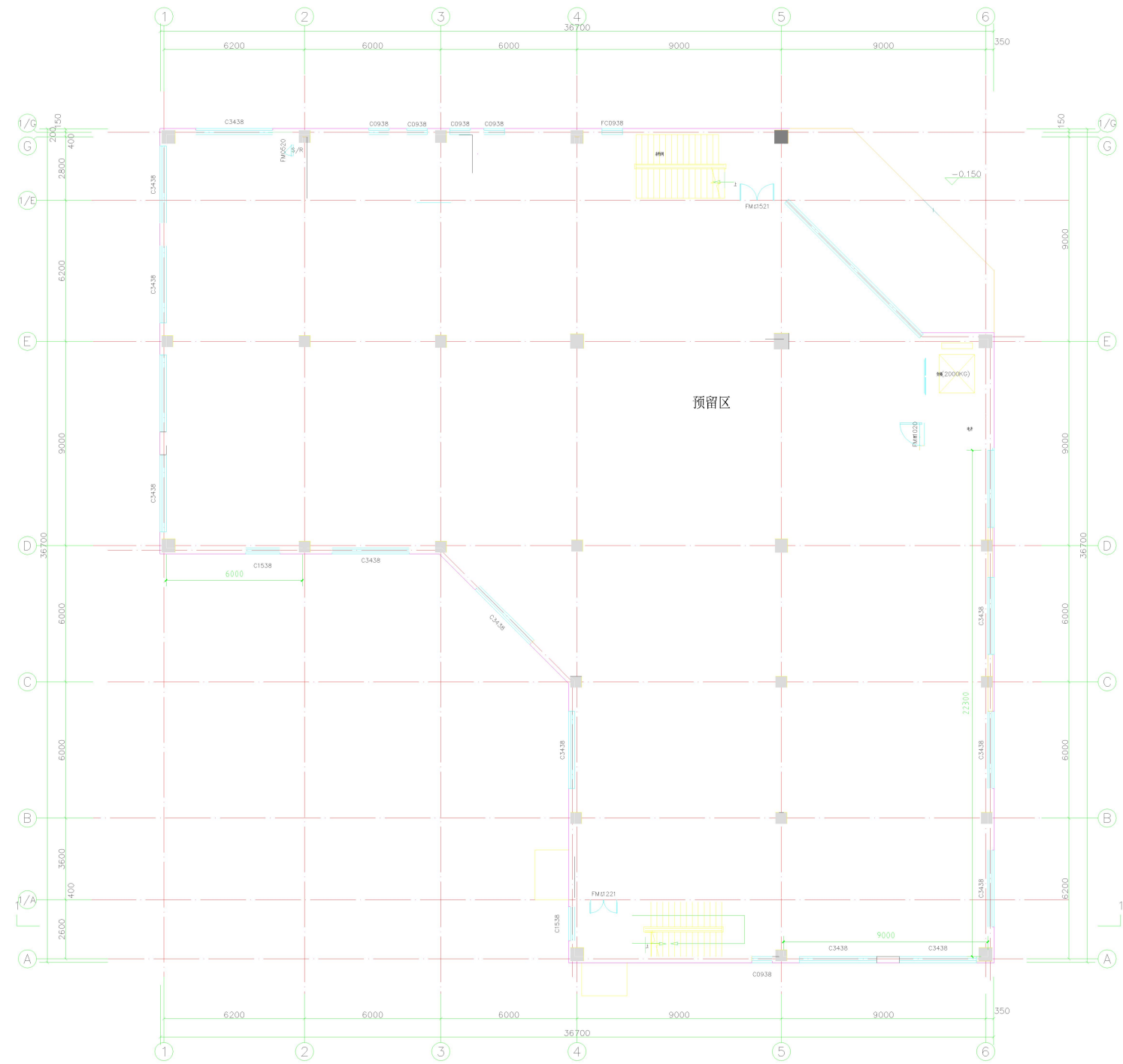
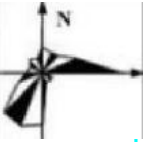
附图 2 项目周边环境图





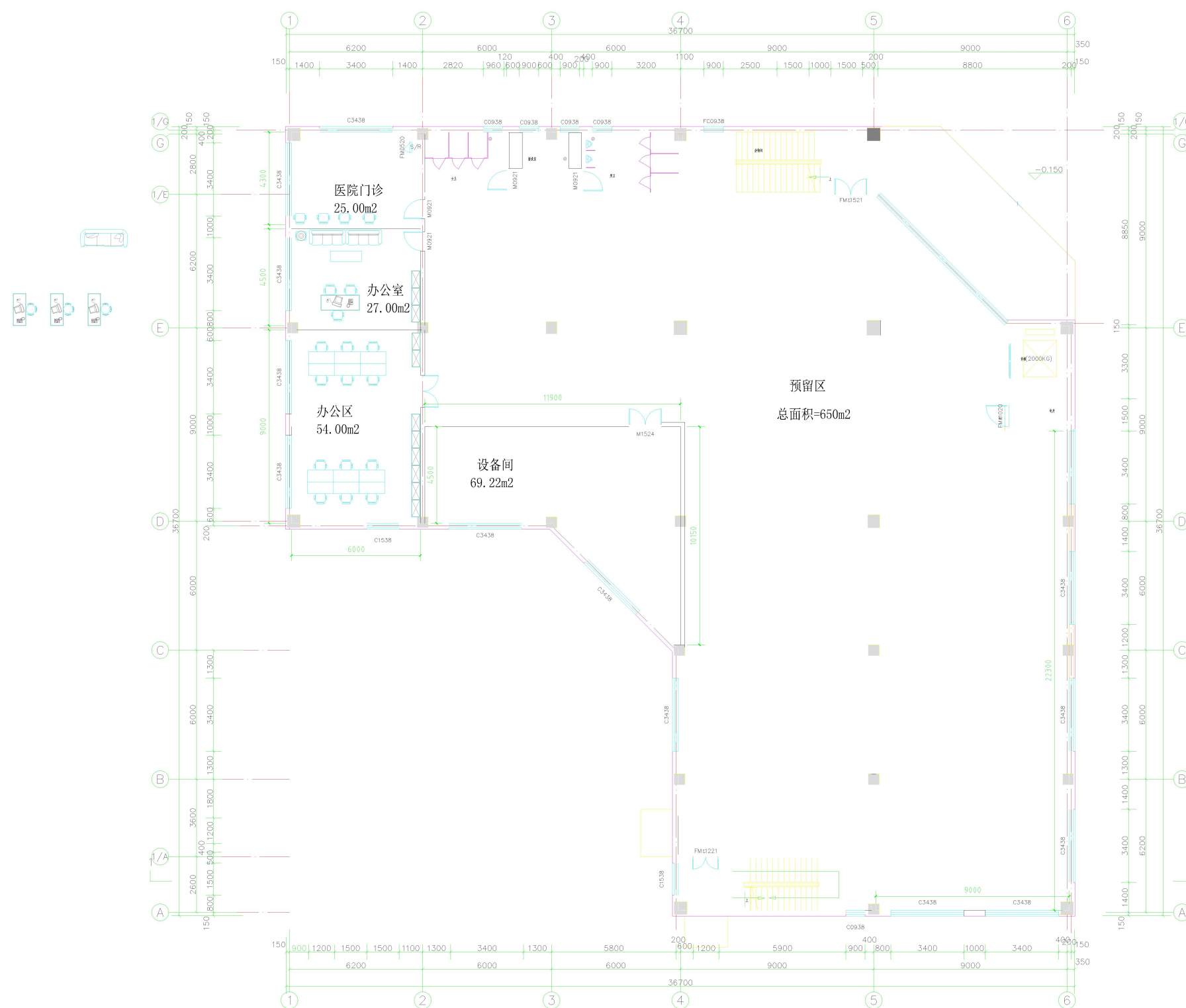
1:100

门窗表



三层平面图  
1:100  
本页建筑面积: 977.90m<sup>2</sup>



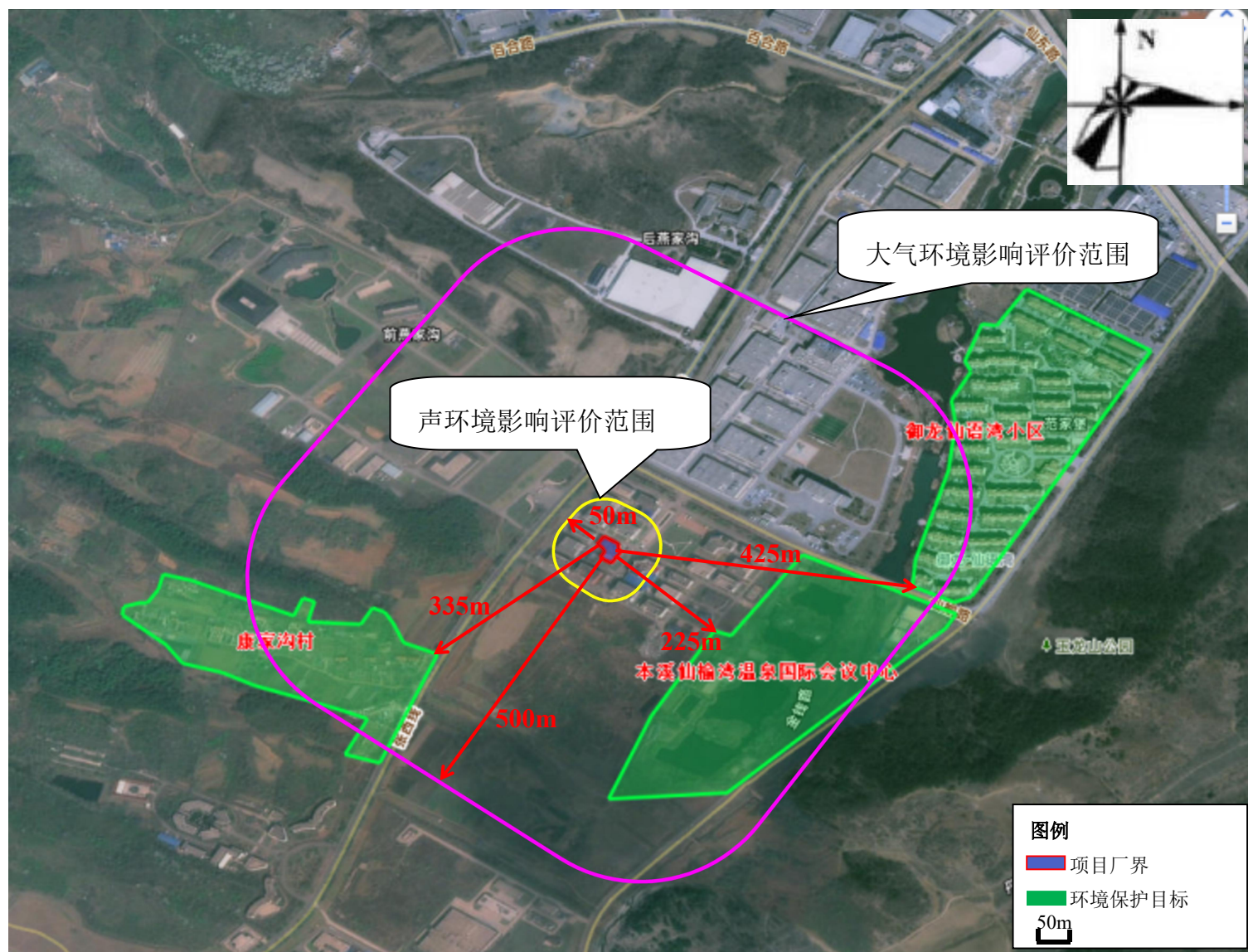


四层平面图

1:100

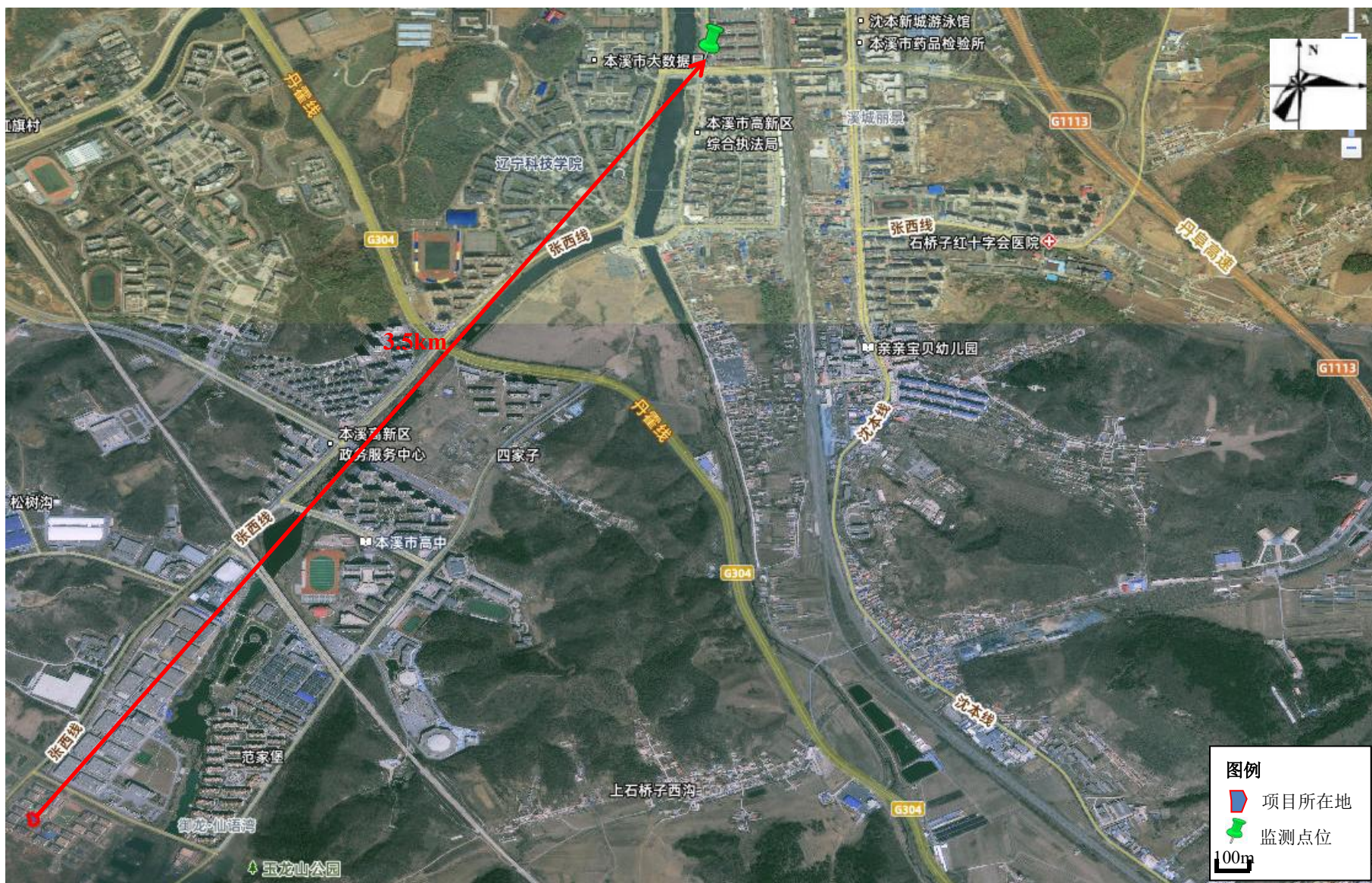
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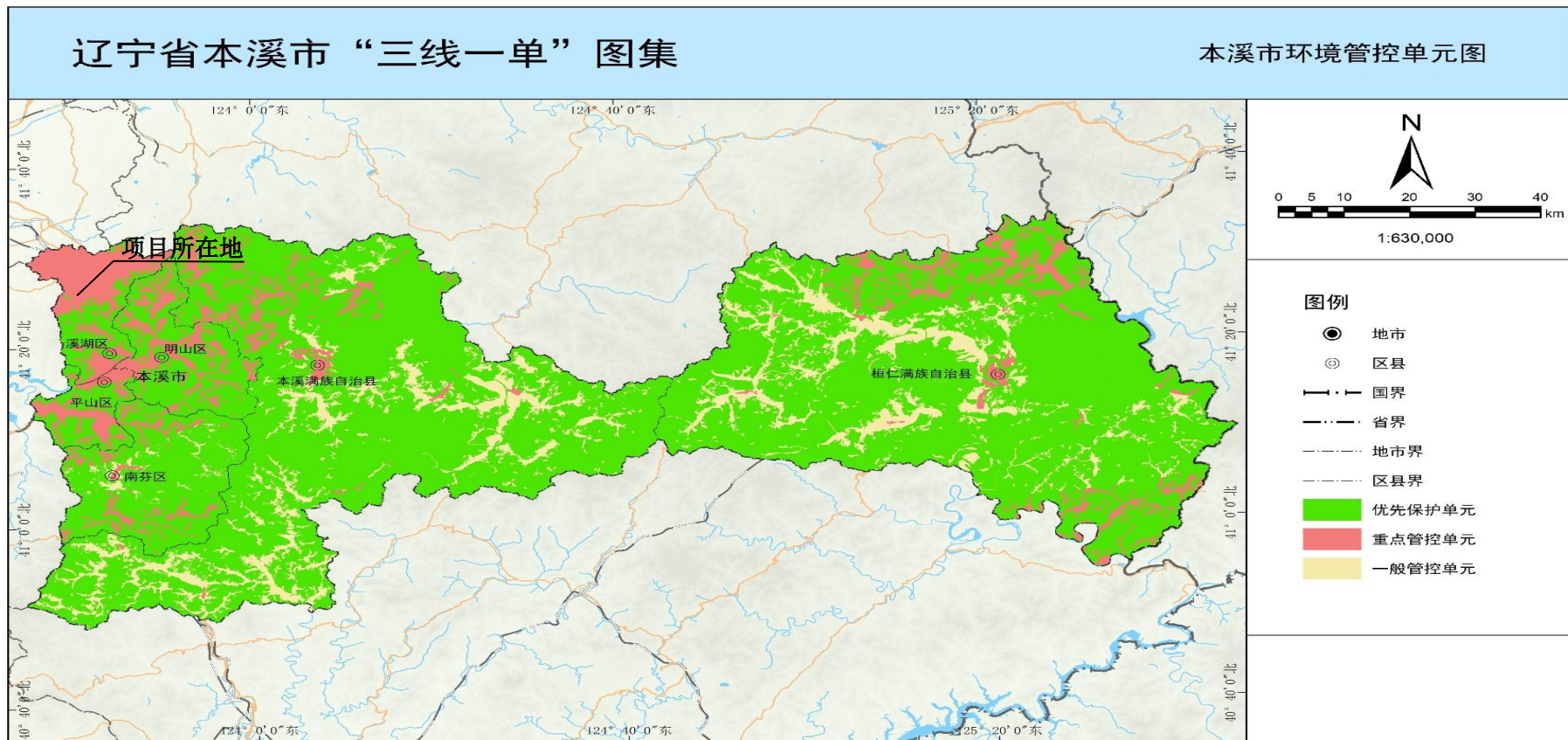
附图 4 环境保护目标位置关系图



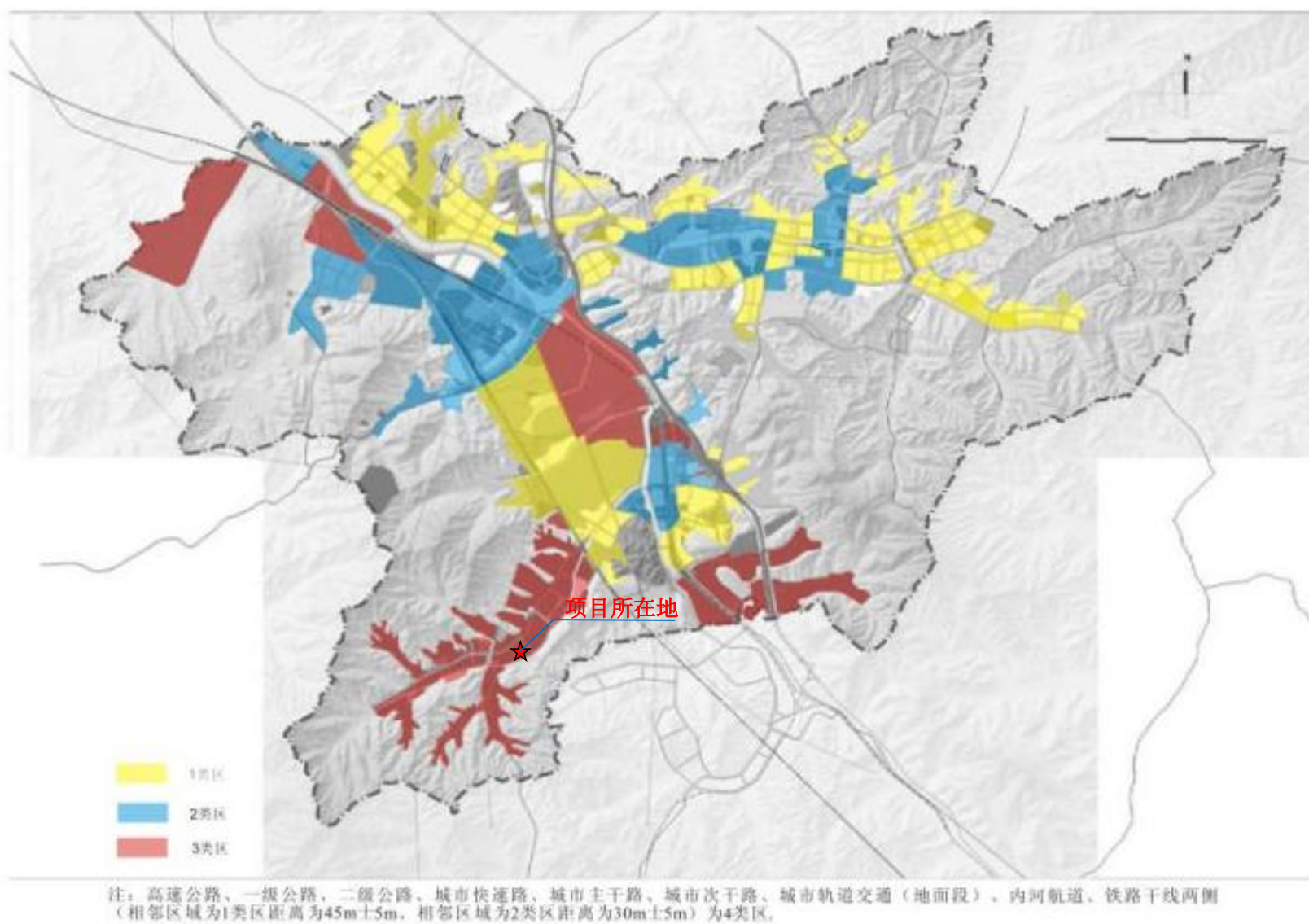


附图 5 项目监测点位图



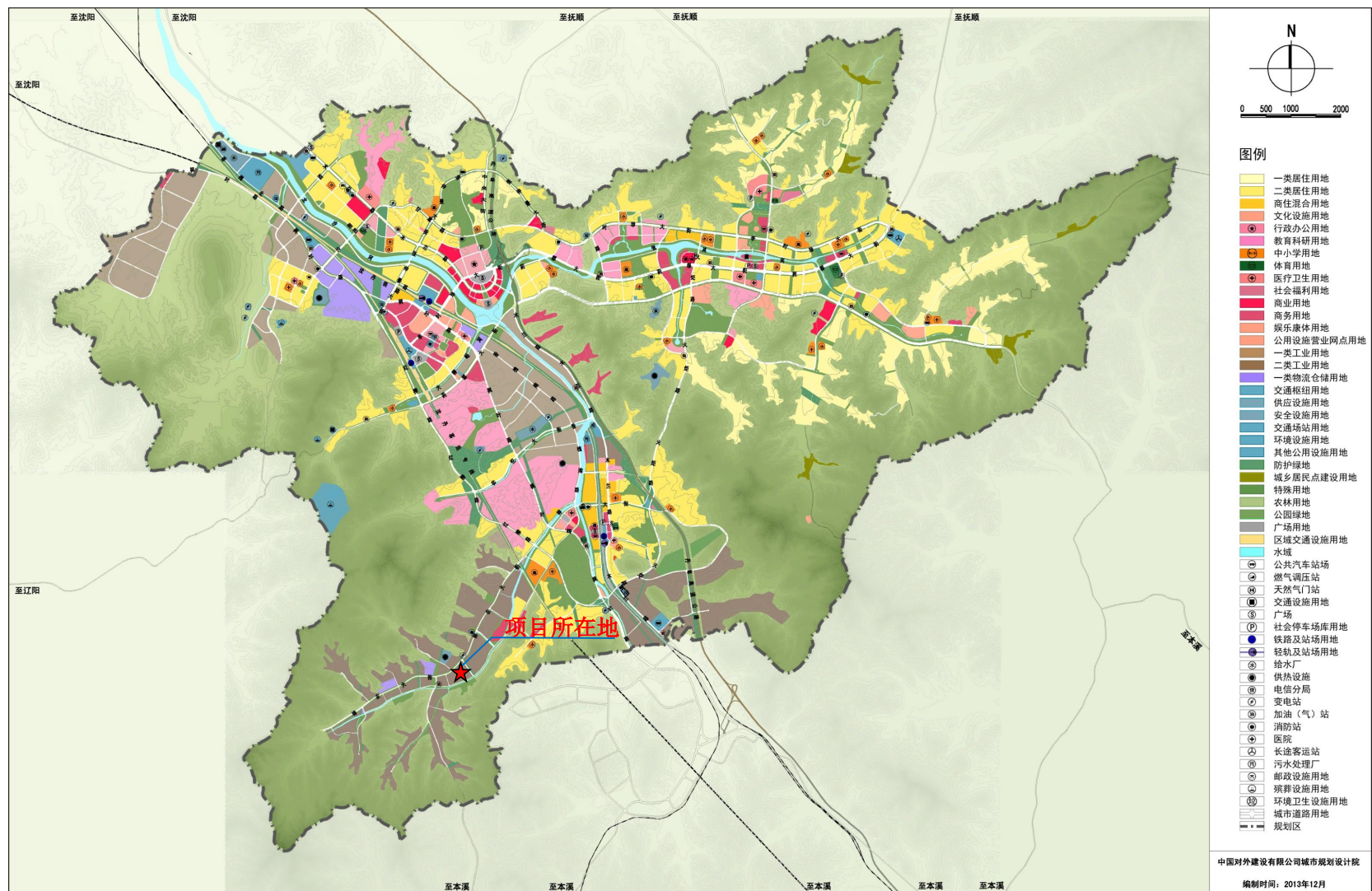


附图 6 本溪市“三线一单”生态环境分区管控图



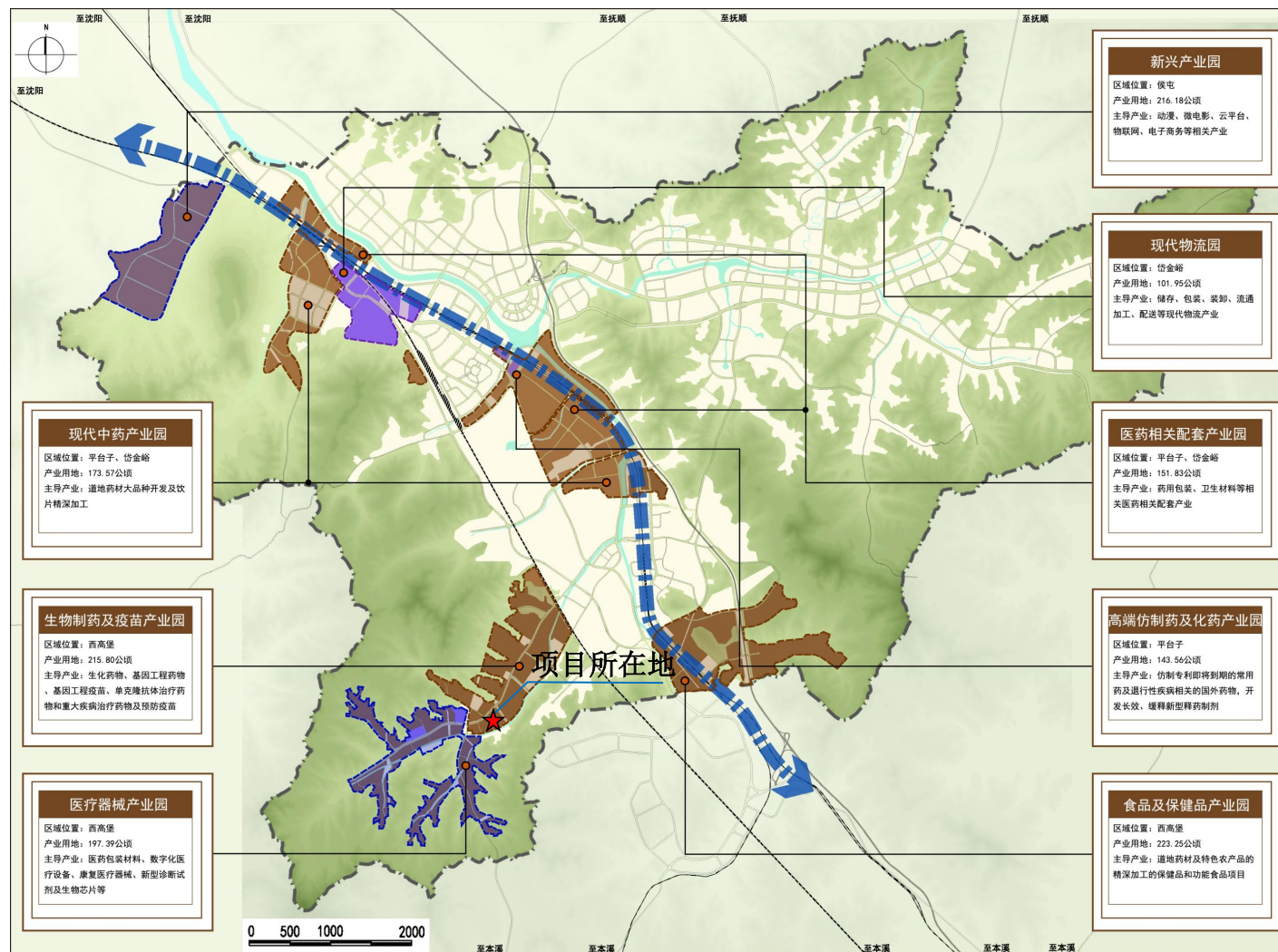
附图 7 沈本新城噪声环境功能区划图





附图 8 沈本新城土地利用规划图





附图 9 沈本新城空间布局图

## “三线一单” 符合性分析

按照相关管理要求，本系统查询结果仅供参考

地图查询

点位查询

123.690240066

41.434132907

区域查询

请输入经纬度 例: x y,x y

立即分析

重置信息

### 分析结果

成果数据

| # | 单元编码          | 管控单元名称       | 所属城市 | 所属区县 | 管控单元类型 | 要素属性   | 准入清单                                                                                 | 定位                                                                                   |
|---|---------------|--------------|------|------|--------|--------|--------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| 1 | ZH21050320002 | 本溪高新区技术产业开发区 | 本溪市  | 溪湖区  | 重点管控区  | 环境管控单元 |  |  |



附图 10 辽宁省三线一单数据应用系统（lnsthj.cn）查询截图