**广恒合优科技高端钣金制造智能化工厂项目（一期）竣工环境保护验收监测报告表**

HXZS2505042-验收

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**编制单位： 广州华鑫检测技术有限公司**

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# 表一 项目概况、验收依据及标准

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| 建设项目名称 | 广恒合优科技高端钣金制造智能化工厂项目（一期） | | | | |
| 建设单位名称 | 中山市广恒合优科技发展有限公司 | | | | |
| 通讯地址 | 中山市小榄镇埒西一菊城沙水路 333 号 | | | | |
| 建设项目性质 | 新建（迁建）（√） 技改（） 改扩建（） | | | | |
| 行业类别及代码 | C2929 塑料零件及其他塑料制品制造、C3360 金属表面处理及热加工处理、  C3379 搪瓷日用品及其他搪瓷制品制造、C3854 家用厨房器具制造、  C3399 其他未列明金属制品制造、C2231 纸和纸板容器制造 | | | | |
| 设计生产能力 | 年产金属冲压制品4000万件、金属涂装制品3000万件、不锈钢冲压制品550万件、金属搪瓷制品450万件、烧烤炉200万套、厨卫电器200万套及塑料零件875吨 | | | | |
| 实际生产能力 | 年产塑料零件437.5吨/年，金属冲压制品2000万件/年，金属涂装制品1500万件/年，不锈钢冲压制品275万件/年，烧烤炉100万套/年、厨卫电器100万套/年 | | | | |
| 环评时间 | 2023年12月 | 开工建设日期 | 2023年12月 | | |
| 调试时间 | 2024年11月2日-2025年6月20日 | 验收监测时间 | 2025年05月28日~29日  2025年06月03日~04日 | | |
| 环评报告表审批  部门 | 中山市生态环境局 | 环评报告表  编制单位 | 中山市美斯环保节能技术有限公司 | | |
| 环保设施设计单位 | 中山市海润环保科技有限公司  广东金澳环保科技有限公司 | 环保设施  施工单位 | 中山市海润环保科技有限公司  广东金澳环保科技有限公司 | | |
| 投资总概算 | 45000 | 环保投资总概算 | 500万元 | 比例 | 1.1% |
| 实际总投资 | 1000万元 | 实际环保投资 | 82.3万元 | 比例 | 8.23% |
| 验收监测依据 | 1、中华人民共和国国务院令 第682号 《国务院关于修改<建设项目环境保护管理条例>的决定》（2017年7月16日）；  2、《建设项目竣工环境保护验收暂行办法》（原国家环境保护部 国环规环评[2017]4号，2017年11月22日）；  3、广东省环境保护厅 《关于转发环境保护部<建设项目竣工环境保护验收暂行办法>的函》（粤环函[2017]1945号，2017年12月31日）；  4、《建设项目竣工环境保护验收技术指南 污染影响类》（生态环境部 2018年5月16日）；  5、中华人民共和国主席令 《关于修改<中华人民共和国大气污染防治法>的决定》（2018年10月26日）；  6、中华人民共和国主席令 第104号 《关于修改<中华人民共和国环境噪声污染防治法>的决定》（2022年06月05日）；  7、中华人民共和国主席令 《关于修改<中华人民共和国水污染防治法>的决定》（2018年01月01日）；  8、中华人民共和国主席令 第43号 《中华人民共和国固体废物污染环境防治法》（2020年04月29号）；  9、《中山市生态环境局关于<广恒合优科技高端钣金制造智能化工厂项目环境影响报告表>的批复》（中（榄）环建表[2023]0128号，2023年12月26日）；  10、《广恒合优科技高端钣金制造智能化工厂项目环境影响报告表》（中山市美斯环保节能技术有限公司，2023年12月）。 | | | | |

# 续表一 项目概况、验收依据及标准

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| 验收监测评价标准、标号、级别、限值 | 根据该项目的环境影响报告表以及《广恒合优科技高端钣金制造智能化工厂项目环境影响报告表>的批复》（中（榄）环建表[2023]0128号，2023年12月26日），确定该项目废水、废气、噪声、固废的验收监测评价标准，如下所述：  1、废水评价标准  项目生活污水污染物排放执行广东省地方标准《水污染物排放限值》（DB 44/26-2001）第二时段三级标准.；生产废水污染物排放执行广东省地方标准《水污染物排放限值》(DB44/26-2001)(第二时段)三级标准及中山市小榄镇工业污水纳管限值标准（非食品类）的较严者。具体见表1-1~表1-2。  **表1-1 生活污水排放执行标准**   |  |  |  | | --- | --- | --- | | **污染物** | **排放浓度限值** | **标准依据** | | 化学需氧量 | 500 mg/L | 广东省地方标准《水污染物排放限值》  （DB 44/26-2001）第二时段三级标准 | | 五日生化需氧量 | 300 mg/L | | 悬浮物 | 400 mg/L | | 氨氮 | / | | pH值 | 6~9无量纲 |   **表1-2 生产废水排放执行标准**   |  |  |  | | --- | --- | --- | | **污染物** | **排放浓度限值** | **标准依据** | | pH值 | 6~9无量纲 | 广东省地方标准《水污染物排放限值》 (DB44/26-2001) (第二时 段)三级标准及中山市小榄镇工业污水纳管限值标准(非食品类)的较严者 | | 化学需氧量 | 90 mg/L | | 五日生化需氧量 | 20 mg/L | | 氨氮 | 10 mg/L | | 悬浮物 | 60 mg/L | | 石油类 | 5.0 mg/L | | 阴离子表面活性剂 | 5.0 mg/L | | 氟化物 | 20 mg/L | |

# 续表一 项目概况、验收依据及标准

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| （1）有组织废气  喷粉后固化工序、固化炉燃天然气废气中的非甲烷总烃、TVOC 排放执行广东省地方标准《固定污染源挥发性有机物综合排放标准(DB44/2367-2022)表1挥发性有机物排放限值，颗粒物、二氧化硫、氮氧化物排放执行《工业炉窑大气污染综合治理方案》(环大气[2019]56号)重点区域排放限值，烟气黑度排放执行《工业炉窑大气污染物排放标准》 (GB9078-1996) 表2干燥炉二级排放限值，臭气浓度指标排放执行《恶臭污染物排放标准》 (GB14554—93)表2恶臭污染物排放标准值；燃天然气废气中的颗粒物、二氧化硫、氮氧化物排放执行《工业炉窑大气污染综合治理方案》(环大气[2019]56号) 中的重点区域排放限值，烟气黑度排放执行《工业炉窑大气污染物排放标准》(GB9078-1996) 表2干燥炉二级排放限值；注塑工序废气中的非甲烷总烃排放执行《合成树脂工业污染物排放标准》 (GB31572-2015) 表4大气污染物排放限值，臭气浓度指标排放执行《恶臭污染物排放标准》(GB14554—93) 表2恶臭污染物排放标准值；丝印移印、烘干固化工序废气中的非甲烷总烃排放执行《印刷工业大气污染物排放标准》 (GB41616-2022) 表1大气污染物排放限值，总VOCs 排放执行广东省地方标准《印刷行业挥发性有机化合物排放标准》(DB44/815-2010)表2丝网印刷排气筒 VOCs 排放限值，臭气浓度指标排放执行《恶臭污染物排放标准》(GB14554-93)表2恶臭污染物排放标准值；金属清洁工序废气中的非甲烷总烃、TVOC 排放执行广东省地方标准《固定污染源挥发性有机物综合排放标准》(DB44/2367-2022) 表.1挥发性有机物排放限值，臭气浓度指标排放执行《恶臭污染物排放标准》 (GB14554—93) 表2恶臭污染物排放标准值；纸箱生产印刷、上光油、啤合贴合工序废气中的非甲烷总烃排放执行《印刷工业大气污染物排放标准》(GB41616-2022) 表1大气污染物排放限值，总VOCs 排放执行广东省地方标准《印刷行业挥发性有机化合物排放标准》 (DB44/815-2010) 表2排气筒VOCs排放限值(柔版 印刷),臭气浓度指标排放执行《恶臭污染物排放标准》 (GB14554—93) 表2恶臭污染物排放标准值；食堂油烟废气中的油烟排放 执行《饮食业油烟排放标准》(GB18483-2001) 表2小型饮食单位的油烟最高允许排放浓度和油烟净化设施最低去除效率要求。具体见表1-3。 |

# 续表一 项目概况、验收依据及标准

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| 验收监测评价标准、标号、级别、限值 | **表1-3 有组织废气排放执行标准**   |  |  |  |  |  | | --- | --- | --- | --- | --- | | **排气口** | **污染物** | **排放浓度限值（**mg/m3**）** | **排放速率限值** | **标准依据** | | 喷粉后固化工序废气、燃天然气废气排放口 | 非甲烷总烃 | 80 | / | 广东省地方标准《固定污染源挥发性有机物综合排放标准》  （DB44/2367-2022）表 1挥发性有机物排放限值 | | TVOC | 100 | / | | 臭气浓度  （h=45m） | 20000（无 量纲） | / | 恶臭污染物排放标准》（GB14554-93）表 2 有组织排放限值 | | 颗粒物 | 30 | / | 《工业炉窑大气污染综合治理方案》（环大气[2019]56 号）重点区域排放限值 | | 二氧化硫 | 200 | / | | 氮氧化物 | 300 | / | | 烟气黑度 | 1 级 | / | 《工业炉窑大气污染物排放标准》（GB9078-1996）表 2 中 干燥炉二级排放限值 | | 注塑工序有机废气排放口 | 非甲烷总烃 | 100 | / | 《合成树脂工业污染物排放标准》（GB31572-2015）表 4 大  气污染物排放限值 | | 臭气浓度  （h=45m） | 20000（无 量纲） | / | 恶臭污染物排放标准》  （GB14554-93）表 2 有组  织排放限值 | | 丝印移印、烘干固化、金属清洁工序有机废气排放口 | 非甲烷总烃 | 70 | / | 《印刷工业大气污染物排放标准》（GB41616-2022）表 1 大气污染物排放限值 | | 总VOCs | 120 | / | 广东省地方标准《印刷行业挥发性有机化合物排放标准》  （DB44/815-2010）表 2丝网印刷排气筒 VOCs 排放限值 | | 臭气浓度（h=45m） | 20000  (无量纲) | / | 《恶臭污染物排放标准》(GB14554-1993)表2恶臭污染物排放标准值 | | 油烟废气排放口 | 油烟 | 2.0 |  | 《饮食业油烟排放标准（试行）》  （GB18483-2001）小型饮 食单位的油烟最高允许 排放浓度和油烟净化设 施最低去除效率要求 | | 备注：h表示排气筒高度。 | | | | | |

**续表一 项目概况、验收依据及标准**

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| 验收监测评价标准、标号、级别、限值 | （2）无组织废气  厂界无组织排放的非甲烷总烃排放执行《合成树脂工业污染物排放标准》 (GB31572-2015) 表 9企业边界大气污染物浓度限值与广东省地方标准《大气污染物排放限值》 (DB44/27—2001) 第二时段无组织排放监控浓度限值中的较严值，总悬浮颗粒物（颗粒物）、二氧化硫、氮氧化物、锰及其化合物、镍及其化合物排放执行广东省地方标准《大气污染物排放限值》（DB44/27-2001）表2工艺废气大气污染物排放限值第二时段无组织排放监控浓度限值限值，总VOCs 排放执行广东省地方标准 《印刷行业挥发性有机化合物排放标准》 (DB44/815-2010)表3无组织排放监控点浓度限值，臭气浓度指标排放执行《恶臭污染物排放标准》 (GB14554-93) 表1恶臭污染物厂界标准限值。厂区内非甲烷总烃排放执行广东省地方标准《固定污染源挥发性有机物综合排放标准 》(DB44/2367-2022) 表3厂区内VOCs 无组织排放限值，总悬浮颗粒物（颗粒物）排放执行《工业炉窑大气污染物排放标准》(GB9078-1996) 表3中有车间厂房的其他炉窑无组织排放限值 ，具体见表1-4。  **表1-4 无组织废气排放执行标准**   |  |  |  |  | | --- | --- | --- | --- | | **无组织废气类别** | **污染物** | **排放浓度限值**  **（**mg/m3**）** | **标准依据** | | 厂界 | 总 VOCs | 2.0 | 广东省地方标准《印刷行业挥发性有机化合物排放标准》（DB44/815-2010）表 3  无组织排放监控点浓度限值 | | 非甲烷总烃 | 4.0 | 《合成树脂工业污染物 排放标准》  （GB31572-2015）表 9 企业边界大气污染物浓度限值与广东省地方标准  《大气污染物排放限值》（DB44/27-2001）（第二时段）厂界无组织排放限值中的较严值 | | 总悬浮颗粒物（颗粒物） | 1.0 | 广东省地方标准《大气污染物排放限值》  （DB44/27-2001）（第二时段）厂界无组织排放限值 | | 二氧化硫 | 0.40 | | 氮氧化物 | 0.12 | | 锰及其化合物 | 0.04 | | 镍及其化合物 | 0.04 | | 臭气浓度 | 20(无量纲) | 《恶臭污染物排放标准》（GB 14554-1993）表1恶臭污染物厂界标准值 | |

**续表一 项目概况、验收依据及标准**

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| 验收监测评价标准、标号、级别、限值 | **续表1-4 无组织废气排放执行标准**   |  |  |  |  | | --- | --- | --- | --- | | **无组织废气类别** | **污染物** | **排放浓度限值**  **（**mg/m3**）** | **标准依据** | | 厂区内 | 非甲烷总烃 | 6 | 广东省《固定污染源挥发性有机物综合排放标准》（DB44/2367-2022）表 3  厂区内VOCs 无组织排放限值 | | 总悬浮颗粒物（颗粒物） | 5 | 《工业炉窑大气污染物 排放标准》（GB9078-1996）表 3 中有车间厂房的其他炉窑无组织排放限值 |   3、噪声评价标准  本项目厂界噪声执行《工业企业厂界环境噪声排放标准》（GB 12348-2008）2类。具体限值见表1-5。  表1-5 噪声排放限值一览表   |  |  |  |  | | --- | --- | --- | --- | | **噪声类别** | **时段** | **标准限值 Leq[dB（A）]** | **执行标准** | | 厂界噪声 | 昼间 | 60 | 《工业企业厂界环境噪声排放标准》（GB 12348-2008）2类标准限值 |   4、固废评价标准  固体废物、危险废物的管理和贮存设施的建设执行《危险废物贮存污染控制标准》（GB 18597-2023）、《一般工业固体废物贮存和填埋污染控制标准》（GB 18599-2020）以及《关于发布<一般工业固体废物贮存、处置场污染控制标准>（GB 18599-2001）等3项国家污染物控制标准修改单的公告》（环境保护部公告2013年第36号）中相关规定。 |

# 表二 项目基本情况

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| **项目背景**  中山市广恒合优科技发展有限公司原有项目（搬迁前）位于中山市小榄镇九洲基联丰北路 148 号之一（项目所在地坐标为东经：113°13'57.630″，北纬：22°38'41.580"），用地面积 27241m2 ，建筑面积为 19845.77m2 。原有项目总投资19550万元，其中环保投资202万元，主要从事研发、生产、销售：动力电池及其配件、新能源材料及配件、五金制品、塑料制品；货物及技术进出口；投资办实业；企业管理咨询；五金喷漆加工（分支机构经营），年产金属冲压零配件3000万件、金属制品涂装件2500万件、不锈钢冲压零配件1000万件、金属丝印零配件100 万件。  由于业务发展及生产需要，项目由原厂址整体搬迁至中山市小榄镇埒西一菊城沙水路 333 号（项目所在地坐标为东经：113° 13'40.120"，北纬：22°37'38.921"）， 项目为整体搬迁，搬迁扩建后原有项目（中山市小榄镇九洲基联丰北路 148 号之一）随即停止生产。  搬迁扩建项目用地面积 47992 平方米，建筑面积 162858.58 平方米，计划总投资45000万元，其中环保投资500万元。搬迁扩建项目主要从事五金配件、塑料零件、厨卫电器的生产及销售，年产金属冲压制品4000万件、金属涂装制品3000万件、不锈钢冲压制品 550 万件、金属搪瓷制品450万件、烧烤炉200万套、厨卫电器200万套及塑料零件875吨。  2023年12月， 中山市广恒合优科技发展有限公司委托中山市美斯环保节能技术有限公司编制了《广恒合优科技高端钣金制造智能化工厂项目环境影响报告表》，并于2023年12月26日取得中山市生态环境局新建项目环境影响审查批复（中（榄）环建表[2023]0128号）。  **工程建设内容**  中山市广恒合优科技发展有限公司搬迁扩建项目位于中山市小榄镇埒西一菊城沙水路 333 号（项目所在地坐标为东经：113°13'40.120"，北纬：22°37'38.921"），项目用地面积 47992 平方米，建筑面积 162858.58 平方米，总投 资 45000 万元，其中环保投资 500 万元。搬迁扩建后项目主要从事五金配件、塑料零件、厨卫电器的生产及销售，年产金属冲压制品4000 万件、金属涂装制品 3000 万件、不锈钢冲压制品 550 万件、金属搪瓷制品450 万件、烧烤炉 200 万套、 厨卫电器 200 万套及塑料零件 875 吨。 现项目因业务关系申请分期验收，一期项目总投资1000万元，环保投资额为82.3万元，总用地面积约47992平方米，建筑面积 80759.74平方米。本项目主要从事从事五金配件、塑料零件、厨卫电器的生产及销售，塑料零件437.5吨/年，金属冲压制品2000万件/年，金属涂装制品1500万件/年，不锈钢冲压制品275万件/年，烧烤炉100万套/年、厨卫电器100万套/年。 |

# 续表二 项目基本情况

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 一期项目员工200人，在厂内食宿。全年工作300天， 每天生产约8小时，不涉夜间生产。  项目东北面为祥丰西村，东南面 为环镇南路，隔路为祥丰西村、星仔金属制造有限公司和源峰水泥制品有限公司， 西南面为中榄石油有限公司，西北面为中山市天沅园林绿化工程有限公司。  项目产品产能见表2-1，项目主要生产设备及数量见表2-2。  **表2-1 项目产品产量情况**   |  |  |  |  |  | | --- | --- | --- | --- | --- | | **序号** | **产品** | **环评审批年产量** | **一期项目实际年产量** | **备注** | | 1 | 金属冲压制品 | 4000万件 | 2000万件 | / | | 2 | 金属涂装制品 | 3000万件 | 1500万件 | / | | 3 | 金属搪瓷制品 | 450万件 | 0 | / | | 4 | 不锈钢冲压制品 | 550万件 | 275万件 | / | | 5 | 烧烤炉 | 200 万套 | 100万套 | / | | 6 | 厨卫电器 | 200 万套 | 100万套 | / | | 7 | 塑料零件 | 875 吨 | 437.5吨 | / | |

# 续表二 项目基本情况

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **表2-2 项目主要设备一览表**   | **序号** | **生产设备** | | **型号（单位：mm）** | **环评批复数量** | **一期验收设备数量** | | --- | --- | --- | --- | --- | --- | |  | 陶化涂装线 | 热水洗（40~50℃） | L2000\*W1220\*H1100 | 2 | 2 | |  | 预除油池（50~60℃） | L2000\*W1220\*H1100 | 2 | 2 | |  | 主除油池（50~60℃） | L19200\*W1220\*H1800 | 2 | 2 | |  | 陶化池 | L2000\*W1220\*H1100 | 2 | 2 | |  | 水洗池 | L2000\*W1220\*H1100 | 2 | 2 | | L9700\*W1200\*H1800 | 2 | 2 | | L2000\*W1220\*H1100 | 2 | 2 | | L9700\*W1200\*H1800 | 2 | 2 | |  | 超声波（配套） | 装在主除油 | 24 | 24 | |  | 纯水机 | 2t/h | 2 | 2 | |  | 密闭粉体喷房 | 8\*8.7\*3.6m | 8 | 8 | |  | 烘干炉 | 50万大卡热风机一套 | 2 | 2 | |  | 固化炉 | 80万大卡热风机一套 | 2 | 2 | |  | 悬挂输送线 | / | 2 | 2 | |  | 超声波清洗线（不锈钢冲压制品） | 超声波（配套） | 和除油槽配套使用 | 12 | 12 | |  | 除油浸泡线 | L1400\*W1200\*H1000 | 1 | 1 | | L1400\*W1200\*H1000 | 1 | 1 | | L1400\*W800\*H1000 | 1 | 1 | |  | 水洗浸泡线 | L1400\*W800\*H1000 | 5 | 5 | |  | 电热烘干线 | L7400\*W700\*H700 | 1 | 1 | |  | 电动葫芦 | / | 1 | 1 | |  | 冲床 | | 10T | 2 台 | 0 | | 16T | 4 台 | 0 | | 30T | 3 台 | 1 | | 40T | 20 台 | 4 | | 63T | 15 台 | 7 | | 80T | 5 台 | 0 | | 100T | 10 台 | 0 | | 110T | 40 台 | 37 | | 160T | 10 台 | 3 | | 200T | 30 台 | 17 | | 250T | 10 台 | 1 | | 300T | 12 台 | 8 | | 315T | 10 台 | 2 | | 350T | 5 台 | 1 | | 400T | 2 台 | 17 | | 600T | 2 台 | 0 | |

# 续表二 项目基本情况

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **续表2-2 项目主要设备一览表**   | **序号** | **生产设备** | | **型号（单位：mm）** | **环评批复数量** | **一期验收设备数量** | | --- | --- | --- | --- | --- | --- | |  |  | | 800T | 2 台 | 0 | | 机械手 | | / | 100 个 | 50 | |  | 振光机 | | | 5 台 | 3 | |  | 振光清洗水箱 | 水箱大小： | 1m3 | 3 个 | 2 | |  | 抛光机（焊点抛光） | | | 3 台 | 2 | |  | 打磨水帘柜 (各含手动打 磨机 1 台） | 水箱尺寸： | 1100×3000×400 | 7 台 | 3 | |  | 返修打磨柜 (各含手动打  磨机 1 台和水帘柜 1 台） | 水箱尺寸： | 1100×3000×400 | 10 台 | 5 | |  | 平面磨床 | 水箱尺寸： | 980×600×450 | 1 台 | 1 | | 800×630×400 | 1 台 | 1 | | 280×500×280 | 1 台 | 1 | | 600×300×250 | 2 台 | 1 | |  | 车床 | | | 3 台 | 2 | |  | 摇臂钻床 | | | 3 台 | 2 | |  | 拉丝机 | | | 5 台 | 3 | |  | 不锈钢环切机 | | | 2 台 | 1 | |  | 切管机 | | | 6 台 | 3 | |  | 切割机 | | | 6 台 | 3 | |  | 折弯机 | | | 2 台 | 1 | |  | 攻牙机 | | | 20 台 | 10 | |  | 电阻焊 | | / | 4 | 4 | |  | 点焊机 | | / | 12 | 12 | |  | 氩弧焊机（各含1支机械手） | | / | 5 | 5 | |  | 焊管生产线（包含1台氩弧焊机） | | / | 1 | 1 | |  | 熔接机 | | / | 5 | 5 | |  | 铆接机 | | / | 6 | 6 | |  | 热收缩包装机 | | / | 5 | 5 | |  | 半自动丝印机 | | / | 6 | 6 | |  | 移印机 | | / | 4 | 4 | |  | 隧道炉 | | / | 2 | 2 | |  | UV固化机 | | / | 1 | 1 | |  | 丝印输送线 | | / | 1 条 | 1 | |  | 电腐蚀打标机 | | / | 1 台 | 1 | |

# 续表二 项目基本情况

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **续表2-2 项目主要设备一览表**   | **序号** | **生产设备** | | **型号（单位：mm）** | **环评批复数量** | **一期验收设备数量** | | --- | --- | --- | --- | --- | --- | |  | 手工组装生产线 | | / | 8 条 | 4 | |  | 打包机 | | / | 4 台 | 2 | |  | 封口机 | | / | 10 台 | 5 | |  | 空压机（75kw ，15kw） | | / | 8 台 | 4 | |  | 冷却塔 | 水箱尺寸： | Φ1500×400 | 1 台 | 1 | | 1000×1300×1000 | 1 台 | 1 | | 2000×1000×400 | 1 台 | 1 | | 2000×1300×800 | (含 2 个水箱) | 1 | |  | 行车 | | | 10 台 | 5 | |  | 柴油罐 | 存储量 | 1t | 2 个 | 1 | |  | 搪瓷生产线 | 预除油池 | 2800\*1600\*1100 | 1 个 | 0 | |  | 主除油池 | 36000\*1600\*1100 | 1 个 | 0 | |  | 水洗池 | 2100\*1600\*1100 | 3 个 | 0 | |  | 超声波 | 配套水洗池使用 | 12 台 | 0 | |  | RO 纯水机 | 2t/h | 1 套 | 0 | |  | 烘干炉 | 60 万大卡热风机 1 套 | 1 个 | 0 | |  | 烧结炉 | 80 万大卡热风机 1 套 | 1 个 | 0 | |  | 悬挂输送线 | 2 条 |  | 0 | |  | 密闭粉体喷  房 | 每个喷房设 20 支喷枪 尺寸：13.8\*8.4\*3. 1m | 1 个 | 0 | |  | 湿搪喷柜 | 12 支喷枪  喷柜尺寸：8\*8.7\*3.6m | 6 套 | 0 | |  | 浸搪池 | 36000\*1600\*1100 | 1 个 | 0 | |  | 球磨机 | / | 5 台 | 0 | |  | 注塑 | 注塑机 | 160T | 10 台 | 5 | | 250T | 20 台 | 10 | | 350T | 5 台 | 3 | |  | 破碎机 | | 2 台 | 1 | |  | 混料机 | | 3 台 | 1 | |  | 冷却塔 | Φ1500×400 | 3 台 | 2 | |  | 烘料机 | | 3 台 | 2 | |  | 包装印刷 | 印刷机 | | 4 台 | 0 | |  | 压纸机 | | 4 台 | 0 | |  | 切纸机 | | 2 台 | 0 | |  | 裱坑机 | | 4 台 | 0 | |  | 裱纸机 | | 4 台 | 0 | |  | 压合机 | | 4 台 | 0 | |

# 续表二 项目基本情况

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **续表2-2 项目主要设备一览表**   | **序号** | **生产设备** | | **型号（单位：mm）** | **环评批复数量** | **一期验收设备数量** | | --- | --- | --- | --- | --- | --- | |  | 包装印刷 | 啤机 | | 4 台 | 0 | |  | 开槽机 | | 4 台 | 0 | |  | UV 上光机 | | 4 台 | 0 | |  | 压纹机 | | 4 台 | 0 | |  | 上胶机 | | 4 台 | 0 | |  | 覆膜机 | | 4 台 | 0 | |

# 续表二 项目基本情况

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| **其他变动情况说明**  经现场调查，项目建设情况与环评批复基本一致，项目变动情况见表2-3。  **表2-3 项目变动情况一览表**   |  |  |  |  | | --- | --- | --- | --- | | **环评阶段** | | | **一期验收实际**  **情况** | | **类别** | **项目名称** | **工程内容和规模** | | 主体工程 | 1#厂房 | 一栋7层厂房，楼房高度约38.85m ，钢筋混凝土结构， 占 地面积为12638.87m2 ，建筑面积70549. 14m2 。其中，1F主 要作为冲压车间；2F为办公室、车库；3F设有注塑生产 区、喷涂生产区（设有2条陶化涂装线）、搪瓷生产区（设 有1条搪瓷生产线）、不锈钢超声波清洗线、丝印区域、 机加工焊接区域、办公室等；4F为仓库；5F~7F均设有机 加工区域、组装生产线、焊接区域。 | 4F为办公区，2F为车库 | | 2#厂房 | 一栋8层厂房，楼房高度约49.35m ，钢筋混凝土结构， 占 地面积为2234.40m2 ，建筑面积17058.00m2。暂时作为空 置厂房。 | 未建成，本次不验收 | | 3#厂房 | 一栋8层厂房，楼房高度约49.35m ，钢筋混凝土结构， 占 地面积为2205.90m2 ，建筑面积17947.20m2 。暂时作为空 置厂房。 | 未建成，本次不验收 | | 4#厂房 | 一栋 8 层厂房，楼房高度约 49.35m ，钢筋混凝土结构，占地面积为 2246. 16m2 ，建筑面积 17146.20m2 。暂时作为 空置厂房。 | 未建成，本次不验收 | | 5#厂房 | 一栋 8 层厂房，楼房高度约 49.35m ，钢筋混凝土结构，占地面积为 2226.46m2 ，建筑面积 18111.68m2 。暂时作为 空置厂房。 | 未建成，本次不验收 | | 6#厂房 | 一栋 8 层厂房，楼房高度约 49.35m ，钢筋混凝土结构，占地面积为 1441.97m2 ，建筑面积 11835.76m2 。暂时作为 空置厂房。 | 未建成，本次不验收 | | 辅助工程 | 办公区 | 位于 1#厂房内部 4F、5F，供行政、技术、销售人员办公。 | 不变 | | 宿舍楼 | 一栋 13 层楼房，高度为 49.50m ，钢筋混凝土结构，占地 面积为 839.87m2 ，建筑面积 10210.60m2 ，作为员工宿舍。 | 不变 | | 储运工程 | 仓库 | 位于 1#厂房内，主要存放原料和产品。 | 不变 | | 公用工程 | 供水系统 | 由市政供水公司供给 | 不变 | | 供电系统 | 由市政电网供给，500 万度/年 | 250 万度/年 | | 供热工程 | 年消耗天然气 138.53 万立方米/年 | 69.265万立方米/年 | | 环保工程 | 废水处理  措施 | 生活污水经三级化粪池处理后经市政管网排入中山市小 榄水务有限公司污水处理分公司处理达标后，排放至横 琴海；产生生产废水 37169.76t/a 排入生产废水预处理系 统处理达标后，排入中山市小榄水务有限公司污水处理 分公司处理达标后，最终排放至横琴海；丝印清洗废水 54t/a 委托有处理能力的废水处理机构转移 | 生活污水产生量为6840t/a，  生产废水（清洗废水、振光后清洗废水、水喷淋废水）产生量为18593.88t/a，  丝印清洗废水产生量为27t/a。 | | 废气处理措施 | 焊接废气通过车间无组织排放 | 不变 | | 打磨抛光废气通过车间无组织排放 | 不变 | | 喷粉工序粉尘废气通过喷房密闭收集后经二级滤芯除尘 处理后车间无组织排放 | 不变 | | 喷粉后固化工序废气经固化炉密闭收集后经水喷淋+ 除  雾+活性炭吸附装置处理达标后通过 45m排气筒 G1 高空 排放 | 不变 | | 陶化涂装线烘干炉采取低氮燃烧，燃天然气废气经 45m 排气筒 G2 排放 | 本次不验收 | | 搪瓷生产线原料配制过程投料粉尘通过车间无组织排放 | 本次不验收 | | 搪瓷生产线烧结烟尘通过车间无组织排放 | 本次不验收 | | 搪瓷生产线烘干炉采取低氮燃烧，燃天然气废气经 45m 排气筒 G3 排放 | 本次不验收 | | 搪瓷生产线烧结炉采取低氮燃烧，燃天然气废气经 45m 排气筒 G4 排放 | 本次不验收 | | 搪瓷生产线喷搪粉尘废气通过喷房密闭收集后经二级滤 芯除尘处理后车间无组织排放 | 本次不验收 | | 注塑工序有机废气经挤出机设备密封收集后经一套水喷 淋+ 除雾+活性炭吸附装置处理，最后由 45m 排气筒 G5 排放 | 不变 | | 丝印移印工序有机废气经集气罩收集、烘干固化工序有机废、金属清洁工序有机废气经箱体管道收集，进出口采取集气罩有效收集， 最后通过楼顶 45m排气筒 G6 高空排放 | 不变 | | 组装工序熔接废气通过车间无组织排放 | 不变 | | 纸箱生产过程印刷、上光油、啤合贴合工序废气经集气 罩收集后由楼顶 45m排气筒 G8 排放 | 本次不验收 | | 纸箱生产过程裱制恶臭废气车间无组织排放 | 本次不验收 | | 包装工序热收缩膜打包工序废气通过车间无组织排放 | 本次不验收 | | 自建污水处理设施恶臭废气通过厂区无组织排放 | 不变 | | 厨房油烟废气经集气罩收集后通过静电式油烟净化器处 理，最后通过 15m 排气筒 G9 排放 | 不变 | | 噪声处理 措施 | 对噪声源采取适当隔音、降噪措施 | 不变 | | 固废处理 措施 | 生活垃圾交环卫部门处理；一般固体废物交由有一般工 业固废处理能力的单位处理；危险废物交由具有相关危 险废物经营许可证的单位处理 | 不变 | |

# 续表二 项目基本情况

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 原辅材料消耗及水平衡：  （1）原辅材料消耗  项目主要原材料用量见表2-4。  **表2-4 项目主要原辅材料及用量一览表**   |  |  |  |  | | --- | --- | --- | --- | | **序号** | **名称** | **环评审批数量（t/a）** | **一期项目实际年用量（t/a）** | |  | 镀锌钢板 | 20000 | 20000 | |  | 冷轧钢板 | 9000 | 9000 | |  | 不锈钢 | 19000 | 19000 | |  | 模具钢 | 10 | 10 | |  | 不锈钢光亮剂 | 2.5 | 2.5 | |  | 金属防锈剂 | 8 | 8 | |  | 金属清洗剂 | 8 | 8 | |  | 金属研磨剂 | 10 | 10 | |  | 无铅焊丝 | 0.8 | 0.8 | |  | 氩气 | 1000 瓶 | 1000 瓶 | |  | 无氧铜棒 | 1 | 1 | |  | 乙炔 | 150 瓶 | 150 瓶 | |  | 氧气 | 150 瓶 | 150 瓶 | |  | 除油剂 | 88.86 | 88.86 | |  | 高效除油助剂 | 40 | 40 | |  | 陶化剂 | 11.17 | 11.17 | |  | 粉末涂料 | 540.6 | 540.6 | |  | 水性油墨 | 0.10 | 0.1 | |  | UV 油墨 | 0.07 | 0.07 | |  | 丝印网版 | 0.05 | 0.05 | |  | 移印钢板 | 0.05 | 0.05 | |  | 移印胶头 | 0.001 | 0 | |  | 电解液 | 0. 1 | 0.1 | |  | 电印模版 | 0.02 | 0.02 | |  | 脱胶剂 | 4.5 | 4.5 | |  | 机油 | 3 | 3 | |  | 乳化液 | 0.5 | 0.5 | |

# 续表二 项目基本情况

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **续表2-4 项目主要原辅材料及用量一览表**   |  |  |  |  | | --- | --- | --- | --- | | **序号** | **名称** | **环评审批数量（t/a）** | **一期项目实际年用量（t/a）** | |  | 五金件 | 400 万套 | 400 | |  | 塑料件 | 400 万套 | 0 | |  | 模具配件 | 0.6 | 0.6 | |  | 包装物（热收  缩膜、布袋、  纸箱等） | 400 万套 | 400 | |  | 搪瓷粉末 | 200 | 0 | |  | 搪瓷釉 | 270 | 0 | |  | 高岭土 | 15. 1 | 0 | |  | PA 塑料粒 | 500 | 250 | |  | PC 塑料粒 | 120 | 60 | |  | PO 塑料粒 | 55 | 28 | |  | PP 塑料粒 | 150 | 75 | |  | TPE 颗粒 | 50 | 25 | |  | 纸板 | 200 | 0 | |  | 淀粉胶 | 0.25 | 0 | |  | 白乳胶 | 0.35 | 0 | |  | 水性油墨 | 0.22 | 0 | |  | 大豆油墨 | 0.06 | 0 | |  | 水性光油 | 0.33 | 0 | |  | 印版 | 0.05 | 0 | |  | 覆膜胶膜 | 2 | 0 | |

# 续表二 项目基本情况

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| （2）水平衡 C:/Users/hp/AppData/Local/Temp/wps.LIfQfGwps 图2-1 项目水平衡图（t/a） |

# 续表二 项目基本情况

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| 一期项目主要工艺流程及产物环节  **1 、镀锌钢板、冷轧钢生产金属冲压制品、金属涂装制品**   工艺说明：原料镀锌钢板或冷轧钢板进行冲压成型、机加工得到五金配件。冲压：利用冲床冲压得出指定形状的配件。机加工：机加工设备包括车床、钻床、拉丝机、环切机、切管机、切割机、折弯机、 攻牙机等，根据客户和产品需求，进行不同的机加工处理，主要工艺包括车削、钻孔、切割、折弯、攻牙，机加工使用乳化液，属于湿式加工，过程无生产性废气产生。 项目机加工工序生产时间为2400h。金属冲压制品   工艺说明：  项目部分镀锌钢板、冷轧板经冲压、机加工后，一部分振光处理后委外热处 理或电镀加工，一部分零部件经过焊接，一部分不再进行加工处理，最后这三种 零部件搭配外购五金配件和塑料件进行组装、包装即为成品，金属冲压制品年生 产时间2400h。  振光：振光前加入不锈钢光亮剂、金属清洗剂和金属研磨剂润湿磨料，振光 后工件在清洗水箱进行清洗，清洗完工件返回振光机，加入金属防锈剂，通过振 光机使工件表面均匀沾上防锈剂。项目主要通过加入配制好的不锈钢光亮剂、金 属防锈剂、金属清洗剂、金属研磨剂溶液对振光磨料进行润湿，各试剂与水配比 均为1:1 。振光工序产生振光废液，振光后清洗工序产生振光清洗废水。  焊接：项目使用电阻焊、点焊机和氩弧焊机，焊接过程使用无铅焊丝和无氧 铜棒会产生少量焊接烟尘，主要为颗粒物，少量锰及其化合物、镍及其化合物。  组装：根据客户需要，项目工件与外购五金配件、塑料件熔接组装，使用熔 接机，该过程会 |

# 续表二 项目基本情况

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| 加热熔化极少量的塑料，产生少量有机废气和臭气浓度。包装：包装形式多种，包括压纸热收缩膜封装、布袋或纸箱等。热收缩包装 机使用过程需要加热热收缩膜，过程会产生少量有机废气和臭气浓度。包装工序 作业时间为2400h。   1. 金属涂装制品     工艺说明：  镀锌钢板或冷轧钢板按尺寸进行冲压、机加工得到五金品配件后，部分进入陶化 涂装线进行加工处理。  热水洗：工件在除油前先经过一道热水洗工序，通过电加热将温度控制在 40~50℃之间。  除油：除油剂、除油助剂与自来水混合配制成除油液储存于除油池中，用于 清除工件表面油脂。项目陶化涂装线预除油池采用喷淋方式，主除油池采取浸泡方 式，将工件上的油污深度清理掉，通过电加热将温度控制在50~60℃左右。除油后进 行清洗两次水洗，采取逆流水洗，去除工件表面残留的除油液，第一道水洗采用 后一道水洗槽的溢流水，第二道水洗采用纯水制备系统产生的浓水。除油池槽液 循环使用，每日补充损耗量，每年更换1次，浓度较高作为废液，委托具有相关危险 废物经营许可证的单位处理。  陶化：陶化剂与水混合配置成陶化液储存于陶化池，将工件吊入陶化池上方 通道，采用陶化液对工件进行喷淋，陶化液可在工件表面生成一层纳米级含锆难 溶保护膜，该保护膜不含有害重金属、磷酸盐，具有耐腐蚀性，可增加油漆和树 脂粉末在工件表面的附着力。陶化后进行两次水洗，采取逆流水洗，第一道水洗 采用后一道水洗槽的溢流水，第二道水洗采用纯水制备系统产生的纯水清洗。陶 化槽液循环使用，每日补充损耗量，每年更换1次，浓度较高作为废液，委托具有相 关危险废物经营许可证的单位处理。  吹水、烘干：工件经前处理后进入吹水区，人工用吹干机将半成品上积水角落吹 干，进入烘干炉烘干，工作温度为150℃-180℃ , 烘干炉采用天然气作为燃料。  喷粉、固化：之后进入密闭的喷粉房喷粉、固化炉固化，工作温度为150℃-200℃。 固化炉 |

# 续表二 项目基本情况

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| 采用天然气作为燃料。  组装：根据客户需要，项目工件与外购五金配件、塑料件熔接组装，使用熔接机，该过程会加热熔化极少量的塑料，产生少量有机废气和臭气浓度。  包装：包装形式多种，包括压纸热收缩膜封装、布袋或纸箱等。热收缩包装 机使用过程需要加热热收缩膜，过程会产生少量有机废气和臭气浓度。金属涂装 制品生产时间为2400h 。包装工序作业时间为2400h。  **2 、不锈钢冲压制品生产工艺**    工艺说明：  不锈钢按不同尺寸进行冲压，部分冲压件经振光处理后发外无铬钝化加工， 最后包装即为成品；部分冲压工件则进行焊接、焊点抛光、拉丝处理，焊接、抛 光过程产生粉尘颗粒，拉丝产生金属边角料。再经过除油和清洗，不锈钢超声波 清洗线除油槽采取浸泡方式，经过三道除油后进行五道水洗，水洗槽用水逆流使 用，不锈钢超声波清洗线不设置纯水机，最后一道水洗采用自来水，前一道水性 用水为后一道水洗槽的溢流水。水洗后在150℃-180℃温度下烘干，锈钢冲压件 烘干工序采用电加热烘干，烘干后的工件经组装、包装即为成品。不锈钢冲压制 品生产时间为2400h。  **3 、金属丝印制品生产工艺** |

# 续表二 项目基本情况

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| 工艺说明：  项目生产出来的部分金属涂装制品和不锈钢冲压制品进行丝印、移印或电腐 蚀打标加工，生成金属丝印制品。工件先进行打磨抛光处理，人工使用脱胶剂进 行清洁，丝印使用水性油墨或UV油墨，在150℃-200℃温度下热烘干，UV固化温 度为50~60℃ , 热烘干工序采取电加热方式；电腐蚀打标是利用金属在电解液中 发生的电化学反应，通过控制外加电压和电解液的成分，使金属表面产生腐蚀和 氧化反应，从而在金属表面形成所需的图案或文字，电腐蚀打标过程实际是金属 产品发生氧化，电解液发生还原反应，最终有氮气产生。最后经组装、包装成品。 项目不涉及丝印、移印网版的制作，所使用网版属于直接购入。丝印网版定期清 洗，移印钢板，采用湿抹布擦拭，丝印台和移印机人工用湿抹布进行擦拭；电腐蚀 打标电印模版用湿抹布进行擦拭，无废液或清洗废水产生。金属丝印制品生产时 间为2400h。  **4 、塑料零件生产工艺**    工艺说明：  塑料原料前经过烘料，温度约80~ 100℃ , 去除多余的水分，烘料过程不达到 物料熔点，不会产生挥发性废气，仅有少量臭气产生。在投料过程中，由人工加 料，投料后在密封状态下进行混合，在注塑机料斗中进行搅拌，项目用塑料原材 料主要是颗粒状固体，在此过程中，不会产生粉尘污染；注塑采用电源，工作温度在160℃~290℃之间，不超过300℃ , 根据加热的原料决定温度。项目使用冷却塔间接冷却。项目所用塑胶料均为新料，作业期间不涉及清洗，无清洗废水产生。项目不合格产品破碎后回用于生产，项目破碎和混料工序都是在密闭的设备里进行的，且物料破 |

# 续表二 项目基本情况

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| 碎成为碎成为 颗粒状即可碎成为 颗粒状即可回用于生产，故不产生粉尘。项目注塑工序每天工作时间为8h ，年生 产时间为2400h。产生粉尘。项目注塑工序每天工作时间为8h ，年生 产时间为2400h。  **5 、模具制作、维修工艺**    模具钢经过钻、车、磨等机加工后进行组装成模具。模具若出现损坏则同样 采取钻、车、磨等机加工后完成维修。磨具打磨为湿式水磨，无粉尘废气产生。  **6 、烧烤炉、厨卫电器生产工艺**    工艺说明：  烧烤炉、厨卫电器为人工组装线，原料为外购的五金件和塑料件，项目仅进 行组装，组装后即为成品。人工组装线生产时间为2400h。 |

# 续表二 项目基本情况

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| **2 项目产生的污染源及主要的污染工序**  （1）废水  一期项目运营期产生的废水主要为员工生活污水和生产废水，生产废水主要有包括除油用水、陶化工序用水、 清洗用水、水帘柜用水、丝印工序网版清洗用水、冷却塔用水、振光废水、废气治理设施喷淋塔用水，生活污水主要污染物为化学需氧量、五日生化需氧量、悬浮物、氨氮、pH值。  （2）废气  一期项目运营期产生的废气主要为焊接废气、打磨抛光废气，喷粉后固化工序废气、燃天然气，注塑工序有机废气，丝印移印、烘干固化、金属清洁工序有机废气，油烟废气，组装工序熔接废气、污水处理设施恶臭废气。  焊接、打磨抛光废气主要污染物为颗粒物；喷粉后固化工序废气、燃天然气主要污染物为非甲烷总烃、颗粒物、臭气浓度；注塑工序有机废气主要污染物为非甲烷总烃、臭气浓度；丝印移印、烘干固化、金属清洁工序有机废气主要污染物总VOCs、非甲烷总烃、臭气浓度；油烟废气主要污染物为油烟；组装工序熔接废气主要污染物为非甲烷总烃、臭气浓度；水处理设施恶臭废气主要污染物为臭气浓度。  （3）噪声  项目运营期产生的主要噪声源为机械设备噪声。  （4）固（液）体废物  一期项目运营期产生的主要固体废物为生活垃圾、一般固体废物及危险废物。一般固体废物包括废金属边角料、一般原料包装物、喷粉工序废弃粉尘、打磨抛光金属粉尘、水帘柜金属捞渣、废滤芯及 RO 膜、滤芯除尘装置废滤芯。  危险废物包括废活性炭，废乳化液，废机油，机油废包装桶，含油废抹布及手套，废化学品包装物，废水处理产生的污泥，除油槽沉渣，除油废液，陶化废液，振光废液，废丝印网版，废移印胶头，含油墨、电解液废抹布。 |

# 表三 主要污染源、污染物处理和排放

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| **主要污染源、污染物处理和排放**  本项目的主要污染源及污染物处理情况如下：  **1 废水**  一期项目运营期产生的废水主要为员工生活污水和生产废水，生产废水主要有清洗废水、振光后清洗废水、水喷淋废水以及丝印清洗废水，生活污水主要污染物为化学需氧量、五日生化需氧量、悬浮物、氨氮、pH值。  生活污水产生量为6840t/a，生活污水经三级化粪池预处理后经市政管网进入中山市小榄水务有限公司污水处理分公司处理。  生产废水（清洗废水、振光后清洗废水、水喷淋废水）产生量为18593.88t/a，经预处理后小榄水务有限公司污水处理分公司处理。  丝印清洗废水产生量为27t/a，收集后委托给中山市黄圃食品工业园污水处理有限公司处理。 C:/Users/hp/AppData/Local/Temp/wps.hxbKxWwps 备注：★1#表示生活污水排放口，★2#表示生产废水预处理前排放口，★3#生产废水预处理后排放口。  **图3-1 废水处理工艺流程图**  **2 废气**  一期项目运营期产生的废气主要为焊接废气、打磨抛光废气，喷粉后固化工序废气、燃天然气，注塑工序有机废气，丝印移印、烘干固化、金属清洁工序有机废气，油烟废气，组装工序熔接废气、污水处理设施恶臭废气。  喷粉后固化工序废气、燃天然气废气低氮燃烧，经固化炉密闭收集后经水喷淋+ 除雾+活性炭吸附装置处理达标后通过 45m排气筒高空排放；丝印移印、烘干固化、金属清洁工序有机废气经箱体管道收集，采取集气罩有效收集经活性炭吸附装置处理， 最后通过楼顶 45m排气筒高空排放；注塑工序有机废气密封收集后经一套水喷 淋+ 除雾+活性炭吸附装置处理，最后由 45m 排 |

# 表三 主要污染源、污染物处理和排放

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| 气筒高空排放。  焊接、打磨抛光废气，组装工序熔接废气无组织排放，污水处理设施恶臭废气定期对生产废水处理系统区域喷洒除臭剂做无组织排放。 C:/Users/hp/AppData/Local/Temp/wps.vsHcmuwps 备注：◎1#、2# 喷粉后固化工序废气、燃天然气废气进气口  ◎3# 喷粉后固化工序废气、燃天然气废气排放口  ◎4# 注塑工序有机废气进气口  ◎5#注塑工序有机废气排放口  ◎6#丝印移印、烘干固化、金属清洁工序有机废气进气口  ◎7#丝印移印、烘干固化、金属清洁工序有机废气排放口  **图3-2 废气处理工艺流程图** |

# 续表三 主要污染源、污染物处理和排放

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| **3 噪声**  一期项目运营期主要噪声源为机械设备噪声。  项目采取的防治措施包括：  （1）优化选择生产设备，尽量选择低噪声设备工艺，合理安排生产计划，严格控制生产时间；  （2）加强设备的维修保养，妥善按照生产设备，并做好减震，消声和隔声等降噪措施；  （3）加强设备的维修保养，保证设备正常工作，加强管理，减少不必要的噪声产生。  （4）在严格按照上述治理措施的实施下，项目所产生的噪声不会对周围声环境质量产生明显影响。  **4 固（液）体废物**  一期项目运营期产生的主要固体废物为生活垃圾、一般固体废物及危险废物。一般固体废物包括废金属边角料、一般原料包装物、喷粉工序废弃粉尘、打磨抛光金属粉尘、水帘柜金属捞渣、废滤芯及 RO 膜、滤芯除尘装置废滤芯。危险废物包括废活性炭，废乳化液，废机油，机油废包装桶，含油废抹布及手套，废化学品包装物，废水处理产生的污泥，除油槽沉渣，除油废液，陶化废液，振光废液，废丝印网版，废移印胶头，含油墨、电解液废抹布。  生活垃圾产生量为30t/a，交由环卫部门处理；一般固体废物产生量废金属边角料100t/a、一般原料包装物2.57t/a、喷粉工序废弃粉尘14.119t/a、打磨抛光金属粉尘0.354t/a、水帘柜金属捞渣2.219t/a、废滤芯及 RO 膜0.025t/a、滤芯除尘装置废滤芯0.1t/a，交给有一般固废处理能力单位处置。  危险废物产生量包括废活性炭6.528t/a，废乳化液0.225t/a，废机油1.35t/a，机油废包装桶0.012t/a，含油废抹布及手套0.005t/a，废化学品包装物0.77t/a，废水处理产生的污泥23.225t/a，除油槽沉渣4.71t/a，除油废液128.86t/a，陶化废液17.18t/a，振光废液51.3t/a，废丝印网版0.085t/a，废移印胶头0.0005t/a，含油墨、电解液废抹布0.01t/a，交由中山市宝绿工业固体危险废物储运管理有限公司处理。  项目各固体废物产生量及去向、处置措施见表3-1。 |

# 续表三 主要污染源、污染物处理和排放

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| **表3-1 固体废物产生量及去向、处置措施**   |  |  |  |  | | --- | --- | --- | --- | | **固废名称** | **产生量（吨/年）** | **固废性质** | **处置措施** | | 生活垃圾 | 30 | 生活垃圾 | 交由环卫部门处理 | | 废金属边角料 | 100t/a | 一般固体废物 | 由一般固废处理能力单位处置 | | 一般原料包装物 | 2.57t/a | | 喷粉工序废弃粉尘 | 14.119t/a | | 打磨抛光金属粉尘 | 0.354t/a | | 水帘柜金属捞渣 | 2.219t/a | | 废滤芯及 RO 膜 | 0.025t/a | | 滤芯除尘装置废滤芯 | 0.1t/a | | 废活性炭 | 6.528t/a | 危险废物 | 均交由中山市宝绿工业固体危险废物储运管理有限公司处理 | | 废乳化液 | 0.225t/a | | 废机油 | 1.35t/a | | 机油废包装桶 | 0.012t/a | | 含油废抹布及手套 | 0.005t/a | | 废化学品包装物 | 0.77t/a | | 废水处理产生的污泥 | 23.225t/a | | 除油槽沉渣 | 4.71t/a | | 除油废液 | 128.86t/a | | 陶化废液 | 17.18t/a | | 振光废液 | 51.3t/a | | 废丝印网版 | 0.085t/a | | 废移印胶头 | 0.0005t/a | | 油墨、电解液废抹布 | 0.01t/a | |

# 表四 建设项目环境影响报告表主要结论及审批部门审批决定

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| **建设项目环境影响报告表主要结论及审批部门审批决定：**  （1）环评主要结论  广恒合优科技高端钣金制造智能化工厂项目位于中山市小榄镇埒西一菊城沙水路333 号，该项目不在地表水饮用水源保护区、风景名胜区、农田保护区、生态保护区、堤外用地等区域保护范围内，选址合理。若项目能严格按照上述建议和环保主管部门的要求 做好污染防治工作，对生产过程中所产生的“三废”作严格处理处置，确保达标排放，将污染物对周围环境的影响降到最低，则该项目的建设从环境保护的角度来看是可行的。   1. 审批部门审批意见 2. 严格落实水污染防治措施。   施工期水污染防治措施须符合《报告表》提出的要求，禁止施工废水未经有效处理直接排放。  该搬迁扩建项目营运期产生生活污水29700吨/年，经预处理后达到广东省《水污染物排放限值》 (DB44/26-2001) 第二时段三级标准，通过市政管网排入中山市小榄水务有限公司污水处理分公司处理；生产废水(清洗废水、振光后清 洗废水、水喷淋废水)37169.76吨/年，经预处理满足广东省地方标准《水污染物排放限值》 (DB44/26-2001) (第二时 段)三级标准及中山市小榄镇工业污水纳管限值标准(非食品类)的较严者后经市政管道排入中山市小榄水务有限公司 污水处理分公司；丝印清洗废水54吨/年，收集后委托有处理能力的废水处理机构处理。   1. 严格落实大气污染防治措施。   施工过程的大气污染防治措施须符合《中华人民共和国大气污染防治法》的规定及《报告表》提出的要求。扬尘防治措施须符合《防治城市扬尘污染技术规范》及《中山市扬尘污染防治管理办法》的规定。使用的工程机械用柴油机须 符合《非道路移动机械用柴油机排气污染物排放限值及测量方法(中国第三、四阶段)》(GB20891-2014) 有关要求。施工期加强管理，落实《报告表》提出的各项污染防治措施，减少对周边环境的影响。  营运期各工序产生的废气应有效收集处理，各排气筒高度不低于《报告表》建议值。喷粉后固化工序、固化炉燃天然气废气中的非甲烷总烃、TVOC 排放执行广东省地方标准《固定污染源挥发性有机物综合排放标准(DB44/2367-2022)表1挥发性有机物排放限值，颗粒物、二氧化硫、氮氧化物排放执行《工业炉窑大气污染综合治理方案》(环大气[2019]56号)重点区域排放限值，烟气黑度排放执行《工业炉窑大气污染物排放标准》 (GB9078-1996) 表2干燥炉二级排放限值， |

# 续表四 建设项目环境影响报告表主要结论及审批部门审批决定

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| 臭气浓度指标排放执行《恶臭污染物排放标准》 (GB14554—93)表2恶臭污染物排放标准值；燃天然气废气中的颗粒物、二氧化硫、氮氧化物排放执行《工业炉窑大气污染综合治理方案》(环大气[2019]56号) 中的重点区域排放限值，烟气黑度排放执行《工业炉窑大气污染物排放标准》(GB9078-1996) 表2干燥炉二级排放限值；注塑工序废气中的非甲烷总烃排放执行《合成树脂工业污染物排放标准》 (GB31572-2015) 表4大气污染物排放限值，臭气浓度指标排放执行《恶臭污染物排放标准》(GB14554—93) 表2恶臭污染物排放标准值；丝印移印、烘干固化工序废气中的非甲烷总烃排放执行《印刷工业大气污染物排放标准》 (GB41616-2022) 表1大气污染物排放限值，总VOCs 排放执行广东省地方标准《印刷行业挥发性有机化合物排放标准》(DB44/815-2010)表2丝网印刷排气筒 VOCs 排放限值，臭气浓度指标排放执行《恶臭污染物排放标准》(GB14554-93)表2恶臭污染物排放标准值；金属清洁工序废气中的非甲烷总烃、TVOC 排放执行广东省地方标准《固定污染源挥发性有机物综合排放标准》(DB44/2367-2022) 表.1挥发性有机物排放限值，臭气浓度指标排放执行《恶臭污染物排放标准》 (GB14554—93) 表2恶臭污染物排放标准值；纸箱生产印刷、上光油、啤合贴合工序废气中的非甲烷总烃排放执行《印刷工业大气污染物排放标准》(GB41616-2022) 表1大气污染物排放限值，总VOCs 排放执行广东省地方标准《印刷行业挥发性有机化合物排放标准》 (DB44/815-2010) 表2排气筒VOCs排放限值(柔版 印刷)，臭气浓度指标排放执行《恶臭污染物排放标准》 (GB14554—93) 表2恶臭污染物排放标准值；食堂油烟废气中的油烟排放 执行《饮食业油烟排放标准》(GB18483-2001) 表2小型饮食单位的油烟最高允许排放浓度和油烟净化设施最低去除效率要求。  无组织排放废气中，厂界无组织排放的非甲烷总烃排放执行《合成树脂工业污染物排放标准》 (GB31572-2015) 表 9企业边界大气污染物浓度限值与广东省地方标准《大气污染物排放限值》 (DB44/27—2001) 第二时段无组织排放监 控浓度限值中的较严值，颗粒物、二氧化硫、氮氧化物、锰及其化合物、镍及其化合物、氟化物排放执行广东省地方标 准《大气污染物排放限值》 (DB44/27—2001) 第二时段无组织排放监控浓度限值，总VOCs 排放执行广东省地方标准 《印刷行业挥发性有机化合物排放标准》 (DB44/815-2010)表3无组织排放监控点浓度限值，氨和臭气浓度指标排放执行《恶臭污染物排放标准》 (GB14554-93) 表1恶臭污染物厂界标准限值。厂区内非甲烷总烃排放执行广东省地方标准《 固 定污染源挥发性有机物综合排放标准 》(DB44/2367-2022) 表3厂区内VOCs 无组织排放限值，颗粒物排放执行《工业炉窑大气污染物排放标准 》(GB9078-1996) 表3中有车间厂房的其他炉窑无组织排放限值 。   1. 严格落实噪声污染防治措施。   施工期应合理安排施工时间，选用低噪声施工机械，并结合实际情况设置围挡等设施，有效控制施工噪声对周围环境的影响；施工噪声排放执行《建筑施工场界环境噪声排放 标准》(GB12523-2011)。  营运期应落实《报告表》提出的噪声污染防治措施，厂界噪声排放执行《工业企业厂界环境噪声排放标准》 (GB12348—2008)2 类声环境功能区排放限值。   1. 严格落实固体废物分类处理处置要求。施工期及时清运、妥善处理施工产生建筑垃圾、渣土，并运至指定的场地处置；生活垃圾交由环卫部门清运。   营运期产生的废活性炭、废乳化液、废机油、机油废包装桶、含油废抹布及手套、含有毒有害物质的废化学品包装物、废水处理污泥、除油槽沉渣、除油废液、陶化废液、振光废液、废丝印网版、废移印钢板、废印刷印版、废电腐蚀打标电印模版、废移印胶头、含油墨/电解液废抹布等危险废物，交由具有相关危险废物经营许可证的单位处理；废金属边角料、一般原料包装物、喷粉沉降粉尘、打磨抛光金属粉尘、喷搪工序废釉料、水帘柜金属捞渣、废纸箱边角料、废滤芯及RO膜、滤芯除尘装置废滤芯等一般工业固体废物，交由有一般工业固废处理能力的单位处理；生活垃圾交由环卫部门清运。   1. 制订并落实有效的环境风险防范措施和应急预案，建立健全环境事故应急体系。严格控制危险废物最大暂存量，加强污染防治设施的管理和维护，设置足够容积的废水事故应急收集设施，有效防范污染事故发生。   合理划分防渗区域，并采取严格的防渗措施，防止污染土壤、地下水环境   1. 须在满足环境质量要求和实行总量控制的前提下排放污染物。根据《报告表》所列情况，该项目搬迁扩建后挥发性有机物排放量不得大于1.247吨/年，氮氧化物排放量不得大于1.295吨/年。   项目环评及批复要求的环保设施和措施的落实情况见表4-1。 |

# 续表四 建设项目环境影响报告表主要结论及审批部门审批决定

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| **表4-1 环评报告表及批复要求的环保设施和措施落实情况**   |  |  |  | | --- | --- | --- | | **序号** | **环评报告表及批复要求** | **实际建设及落实情况** | | 1 | 施工期水污染防治措施须符合《报告表》提出的要求，禁止施工废水未经有效处理直接排放。  该搬迁扩建项目营运期产生生活污水29700吨/年，经预处理后达到广东省《水污染物排放限值》 (DB44/26-2001) 第二时段三级标准，通过市政管网排入中山市小榄水务有限公司污水处理分公司处理；生产废水(清洗废水、振光后清 洗废水、水喷淋废水)37169.76吨/年，经预处理满足广东省地方标准《水污染物排放限值》 (DB44/26-2001) (第二时 段)三级标准及中山市小榄镇工业污水纳管限值标准(非食品类)的较严者后经市政管道排入中山市小榄水务有限公司 污水处理分公司；丝印清洗废水54吨/年，收集后委托有处理能力的废水处理机构处理。 | 已落实。  一期项目运营期产生的废水主要为员工生活污水和生产废水，生产废水主要有清洗废水、振光后清洗废水、水喷淋废水以及丝印清洗废水。  生活污水产生量为6840t/a，生活污水经三级化粪池预处理后经市政管网进入中山市小榄水务有限公司污水处理分公司处理。  生产废水（清洗废水、振光后清洗废水、水喷淋废水）产生量为18593.88t/a，经预处理后小榄水务有限公司污水处理分公司处理。丝印清洗废水产生量为27t/a，收集后委托给中山市黄圃食品工业园污水处理有限公司处理。  验收监测结果显示，监测期间，项目生活污水排放口的pH值、化学需氧量、五日生化需氧量、悬浮物的排放浓度均符合广东省地方标准《水污染物排放限值》（DB 44/26-2001）第二时段三级标准的要求。  项目生产废水处理后的pH值、化学需氧量、五日生化需氧量、氨氮、悬浮物、石油类、阴离子表面活性剂、氟化物的排放浓度均符合广东省地方标准《水污染物排放限值》（DB44/26-2001）（第二时段）三级标准及中山市小榄镇工业污水纳管限值标准（非食品类）的较严值的要求。 | | 2 | 施工过程的大气污染防治措施须符合《中华人民共和国大气污染防治法》的规定及《报告表》提出的要求。扬尘防治措施须符合《防治城市扬尘污染技术规范》及《中山市扬尘污染防治管理办法》的规定。使用的工程机械用柴油机须 符合《非道路移动机械用柴油机排气污染物排放限值及测量方法(中国第三、四阶段)》(GB20891-2014) 有关要求。施工期加强管理，落实《报告表》提出的各项污染防治措施，减少对周边环境的影响。  营运期各工序产生的废气应有效收集处理，各排气筒高度不低于《报告表》建议值。喷粉后固化工序、固化炉燃天然气废气中的非甲烷总烃、TVOC 排放执行广东省地方标准《固定污染源挥发性有机物综合排放标准(DB44/2367-2022)表1挥发性有机物排放限值，颗粒物、二氧化硫、氮氧化物排放执行《工业炉窑大气污染综合治理方案》(环大气[2019]56号)重点区域排放限值，烟气黑度排放执行《工业炉窑大气污染物排放标准》 (GB9078-1996) 表2干燥炉二级排放限值，臭气浓度指标排放执行《恶臭污染物排放标准》 (GB14554—93)表2恶臭污染物排放标准值；燃天然气废气中的颗粒物、二氧化硫、氮氧化物排放执行《工业炉窑大气污染综合治理方案》(环大气[2019]56号) 中的重点区域排放限值，烟气黑度排放执行《工业炉窑大气污染物排放标准》(GB9078-1996) 表2干燥炉二级排放限值；注塑工 | 已落实。  一期项目运营期产生的废气主要为焊接废气、打磨抛光废气，喷粉后固化工序废气、燃天然气，注塑工序有机废气，丝印移印、烘干固化、金属清洁工序有机废气，油烟废气，组装工序熔接废气、污水处理设施恶臭废气。  喷粉后固化工序废气、燃天然气废气低氮燃烧，经固化炉密闭收集后经水喷淋+ 除雾+活性炭吸附装置处理达标后通过 45m排气筒高空排放；丝印移印、烘干固化、金属清洁工序有机废气经箱体管道收集，采取集气罩有效收集经活性炭吸附装置处理， 最后通过楼顶 45m排气筒高空排放；注塑工序有机废气密封收集后经一套水喷 淋+ 除雾+活性炭吸附装置处理，最后由 45m 排气筒高空排放。  焊接、打磨抛光废气，组装工序熔接废气无组织排放，污水处理设施恶臭废气定期对生产废水处理系统区域喷洒除臭剂做无组织排放。  监测期间，项目喷粉后固化工序废气、燃天然气废气排放口的非甲烷总烃的排放浓度符合广东省地方标准《固定污染源挥发性有机物综合排放标准》（DB44/2367-2022）表1挥发性有机物排放限值的要求，颗粒物、二氧化硫、氮氧化物的排放浓度均符合《工业炉窑大气污染综合治理方案》（环大气[2019]56号）重点区域排放限值的要求，烟气黑度（林格曼黑度）的排放浓度符 | |
| **续表4-1 环评报告表及批复要求的环保设施和措施落实情况**   |  |  |  | | --- | --- | --- | | **序号** | **环评报告表及批复要求** | **实际建设及落实情况** | | 2 | 序废气中的非甲烷总烃排放执行《合成树脂工业污染物排放标准》 (GB31572-2015) 表4大气污染物排放限值，臭气浓度指标排放执行《恶臭污染物排放标准》(GB14554—93) 表2恶臭污染物排放标准值；丝印移印、烘干固化工序废气中的非甲烷总烃排放执行《印刷工业大气污染物排放标准》 (GB41616-2022) 表1大气污染物排放限值，总VOCs 排放执行广东省地方标准《印刷行业挥发性有机化合物排放标准》(DB44/815-2010)表2丝网印刷排气筒 VOCs 排放限值，臭气浓度指标排放执行《恶臭污染物排放标准》(GB14554-93)表2恶臭污染物排放标准值；金属清洁工序废气中的非甲烷总烃、TVOC 排放执行广东省地方标准《固定污染源挥发性有机物综合排放标准》(DB44/2367-2022) 表.1挥发性有机物排放限值，臭气浓度指标排放执行《恶臭污染物排放标准》 (GB14554—93) 表2恶臭污染物排放标准值；纸箱生产印刷、上光油、啤合贴合工序废气中的非甲烷总烃排放执行《印刷工业大气污染物排放标准》(GB41616-2022) 表1大气污染物排放限值，总VOCs 排放执行广东省地方标准《印刷行业挥发性有机化合物排放标准》 (DB44/815-2010) 表2排气筒VOCs排放限值(柔版 印刷),臭气浓度指标排放执行《恶臭污染物排放标准》 (GB14554—93) 表2恶臭污染物排放标准值；食堂油烟废气中的油烟排放 执行《饮食业油烟排放标准》(GB18483-2001) 表2小型饮食单位的油烟最高允许排放浓度和油烟净化设施最低去除效率要求。  无组织排放废气中，厂界无组织排放的非甲烷总烃排放执行《合成树脂工业污染物排放标准》 (GB31572-2015) 表 9企业边界大气污染物浓度限值与广东省地方标准《大气污染物排放限值》 (DB44/27—2001) 第二时段无组织排放监 控浓度限值中的较严值，颗粒物、二氧化硫、氮氧化物、锰及其化合物、镍及其化合物、氟化物排放执行广东省地方标 准《大气污染物排放限值》 (DB44/27  —2001) 第二时段无组织排放监控浓度限值，总VOCs 排放执行广东省地方标准 《印刷行业挥发性有机化合物排放标准》 (DB44/815-2010)表3无组织排放监控点浓度限值，氨和臭气浓度指标排放执行《恶臭污染物排放标准》 (GB14554-93) 表1恶臭污染物厂界标准限值。厂区内非甲烷总烃排放执行广东省地方标准《 固 定污染源挥发性有机物综合排放标准 》(DB44/2367-2022) 表3厂区内VOCs 无组 | 合《工业炉窑大气污染物排放标准》（GB9078-1996）表2中干燥炉二级排放限值的要求，臭气浓度的排放浓度符合《恶臭污染物排放标准》（GB14554-1993）表2恶臭污染物排放标准值的要求；注塑工序有机废气排放口G5的非甲烷总烃的排放浓度符合《合成树脂工业污染物排放标准》（GB 31572-2015）表4大气污染物排放限值的要求，臭气浓度的排放浓度符合《恶臭污染物排放标准》（GB14554-1993）表2恶臭污染物排放标准值的要求；丝印移印、烘干固化、金属清洁工序有机废气排放口G6的非甲烷总烃的排放浓度符合《印刷工业大气污染物排放标准》（GB41616-2022）表1大气污染物排放限值的要求，总VOCs的排放浓度及排放速率均符合广东省地方标准《印刷行业挥发性有机化合物排放标准》（DB44/815-2010）表2丝网印刷排气筒VOCs排放限值的要求，臭气浓度的排放浓度符合《恶臭污染物排放标准》（GB14554-1993）表2恶臭污染物排放标准值的要求；油烟废气排放口的油烟的排放浓度符合《饮食业油烟排放标准(试行)》（GB 18483-2001）表2饮食业单位的油烟最高允许排放浓度的要求。  项目厂界无组织废气下风向A2~A4监测点的非甲烷总烃的排放符合《合成树脂工业污染物排放标准》（GB 31572-2015）表9企业边界大气污染物浓度限值与广东省地方标准《大气污染物排放限值》（DB44/27-2001）表2工艺废气大气污染物排放限值 第二时段 无组织排放监控浓度限值中的较严值的要求，总VOCs的排放符合《印刷行业挥发性有机化合物排放标准》（DB44/815-2010）表3无组织排放监控点浓度限值的要求，总悬浮颗粒物（颗粒物）、二氧化硫、氮氧化物、镍及其化合物（以Ni计）、锰及其化合物（以Mn计）的排放均符合广东省地方标准《大气污染物排放限值》（DB44/27-2001）表2工艺废气大气污染物排放限值 第二时段 无组织排放监控浓度限值的要求，臭气浓度的排放符合《恶臭污染物排放标准》（GB 14554-1993）表1恶臭污染物厂界标准值的要求。厂区内监测点A5中非甲烷总烃的排放符合广东省地方标准《固定污染源挥发性有机物综合排放标准》（DB44/2367-2022）表3厂区内VOCs无组织排放限值的要求，总悬浮颗粒物（颗粒物）的排放符合《工业炉窑大气污染物排放标准》（GB9078-1996）表3中有车间厂房的其他炉窑无组织排放限值的要求。 | |

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| **续表4-1 环评报告表及批复要求的环保设施和措施落实情况**   |  |  |  | | --- | --- | --- | | **序号** | **环评报告表及批复要求** | **实际建设及落实情况** | | 2 | 织排放限值，颗粒物排放执行《工业炉窑大气污染物排放标准 》(GB9078-1996) 表3中有车间厂房的其他炉窑无组织排放限值 。 |  | | 3 | 严格落实噪声污染防治措施。  施工期应合理安排施工时间，选用低噪声施工机械，并结合实际情况设置围挡等设施，有效控制施工噪声对周围环境的影响；施工噪声排放执行《建筑施工场界环境噪声排放 标准》(GB12523-2011)。  营运期应落实《报告表》提出的噪声污染防治措施，厂界噪声排放执行《工业企业厂界环境噪声排放标准》 (GB12348—2008)2 类声环境功能区排放限值。 | 已落实。  一期项目运营期主要噪声源为机械设备噪声。  项目采取的防治措施包括：  （1）优化选择生产设备，尽量选择低噪声设备工艺，合理安排生产计划，严格控制生产时间；  （2）加强设备的维修保养，妥善按照生产设备，并做好减震，消声和隔声等降噪措施；  （3）加强设备的维修保养，保证设备正常工作，加强管理，减少不必要的噪声产生。  （4）在严格按照上述治理措施的实施下，项目所产生的噪声不会对周围声环境质量产生明显影响。  验收监测结果显示，监测期间，项目东北厂界外1m处1#、东南厂界外1m处2#、西南厂界外1m处3#、西北厂界外1m处4#的昼间噪声监测值均符合《工业企业厂界环境噪声排放标准》（GB12348-2008）2类厂界外声环境功能区限值要求。 | |

# 续表四 建设项目环境影响报告表主要结论及审批部门审批决定

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| **续表4-1 环评报告表及批复要求的环保设施和措施落实情况**   |  |  |  | | --- | --- | --- | | **序号** | **环评报告表及批复要求** | **实际建设及落实情况** | | 4 | 严格落实固体废物分类处理处置要求。  施工期及时清运、妥善处理施工产生建筑垃圾、渣土，并运至指定的场地处置；生活垃圾交由环卫部门清运。  营运期产生的废活性炭、废乳化液、废机油、机油废包装桶、含油废抹布及手套、含有毒有害物质的废化学品包装物、废水处理污泥、除油槽沉渣、除油废液、陶化废液、振光废液、废丝印网版、废移印钢板、废印刷印版、废电腐蚀打标电印模版、废移印胶头、含油墨/电解液废抹布等危险废物，交由具有相关危险废物经营许可证的单位处理；废金属边角料、一般原料包装物、喷粉沉降粉尘、打磨抛光金属粉尘、喷搪工序废釉料、水帘柜金属捞渣、废纸箱边角料、废滤芯及RO膜、滤芯除尘装置废滤芯等一般工业固体废物，交由有一般工业固废处理能力的单位处理；生活垃圾交由环卫部门清运。 | 已落实。 一期项目运营期产生的主要固体废物为生活垃圾、一般固体废物及危险废物。一般固体废物包括废金属边角料、一般原料包装物、喷粉工序废弃粉尘、打磨抛光金属粉尘、水帘柜金属捞渣、废滤芯及 RO 膜、滤芯除尘装置废滤芯。危险废物包括废活性炭，废乳化液，废机油，机油废包装桶，含油废抹布及手套，废化学品包装物，废水处理产生的污泥，除油槽沉渣，除油废液，陶化废液，振光废液，废丝印网版，废移印胶头，含油墨、电解液废抹布。生活垃圾产生量为30t/a，交由环卫部门处理；一般固体废物产生量废金属边角料100t/a、一般原料包装物2.57t/a、喷粉工序废弃粉尘14.119t/a、打磨抛光金属粉尘0.354t/a、水帘柜金属捞渣2.219t/a、废滤芯及 RO 膜0.025t/a、滤芯除尘装置废滤芯0.1t/a，交给有一般固废处理能力单位处置。危险废物产生量包括废活性炭6.528t/a，废乳化液0.225t/a，废机油1.35t/a，机油废包装桶0.012t/a，含油废抹布及手套0.005t/a，废化学品包装物0.77t/a，废水处理产生的污泥23.225t/a，除油槽沉渣4.71t/a，除油废液128.86t/a，陶化废液17.18t/a，振光废液51.3t/a，废丝印网版0.085t/a，废移印胶头0.0005t/a，含油墨、电解液废抹布0.01t/a，交由中山市宝绿工业固体危险废物储运管理有限公司处理。本项目设有危险废物、一般固废贮存间。危险废物贮存间地面做了水泥硬化处理和防渗措施，设有防雨棚，场地周边均设有围堰、拦堵墙，可防止渗漏液外溢，具备防风、防雨、防渗滤功能。固体废物、危险废物的管理和贮存设施的建设执行《危险废物贮存污染控制标准》（GB 18597-2023）、《一般工业固体废物贮存和填埋污染控制标准》（GB 18599-2020）中相关规定。 | | 5 | 制订并落实有效的环境风险防范措施和应急预案，建立健全环境事故应急体系。严格控制危险废物最大暂存量，加强污染防治设施的管理和维护，设置足够容积的废水事故应急收集设施，有效防范污染事故发生。  合理划分防渗区域，并采取严格的防渗措施，防止污染土壤、地下水环境。 | 本项目设有危险废物、一般固废贮存间。危险废物贮存间地面做了水泥硬化处理和防渗措施，设有防雨棚，场地周边均设有围堰、拦堵墙，可防止渗漏液外溢，具备防风、防雨、防渗滤功能。固体废物、危险废物的管理和贮存设施的建设执行《危险废物贮存污染控制标准》（GB 18597-2023）、《一般工业固体废物贮存和填埋污染控制标准》（GB 18599-2020）中相关规定。 | | 6 | 须在满足环境质量要求和实行总量控制的前提下排放污染物。根据《报告表》所列情况，该项目搬迁扩建后挥发性有机物排放量不得大于1.247吨/年，氮氧化物排放量不得大于1.295吨/年。 | 根据计算结果可知，项目大气污染物挥发性有机物总量为0.58046吨/年、氮氧化物0.936吨/年，符合中（榄）环建表[2023]0128号“该项目搬迁扩建后 挥发性有机物排放量不得大于1.247吨/年，氮氧化物排放量不得大于1.295吨/年”的要求。 | |

# 表五 质量控制

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| **验收监测质量保证及质量控制**  **5.1监测分析过程中的质量保证和质量控制**  1、监测过程严格按《环境监测技术规范》中有关规定进行；  2、监测人员持证上岗，监测所用仪器都经过计量部门的检定或校准并在有效期内使用；  3、监测全过程严格按照本公司《质量手册》、《程序文件》及有关质量管理程序进行，实施严谨的全过程质量保证措施，严格执行三级审核制度；  4、水质监测分析过程中的质量保证和质量控制  水样的采集、运输、保存、实验室分析和数据修约、处理的全过程均按《环境水质监测质量保证手册》（第二版）和《污水监测技术规范》（HJ 91.1-2019）的要求进行。采样过程中采集不少于10%的现场平行样分析；实验室采用不少于10%的平行样分析，能做加标回收分析的项目均做10%或以上加标回收样分析，分析过程使用标准物质、空白样试验等质控措施。  5、气体监测分析过程中的质量保证和质量控制  （1）废气采样和分析方法遵循《固定源废气监测技术规范》（HJ/T 397-2007）、《恶臭污染环境监测技术规范》（HJ 905-2017）和《大气污染物无组织排放监测技术导则》（HJ/T 55-2000）的相关要求进行。  （2）尽量避免被测排放物中有共存污染物对分析的交叉干扰。  （3）被测排放物的浓度在仪器量程的有效范围（即30%～70%之间）。  （4）烟尘采样器在进入现场前应对采样器流量计、流速计等进行校核。烟气监测（分析）仪器在测试前按监测因子分别用标准气体和流量计对其进行校核（标定），在测试时保证其采样流量的准确。  6、噪声监测分析过程中的质量保证和质量控制  （1）噪声测量前后用标准声源对噪声仪进行校准，监测前后校准值差值不得大于0.5dB（A）。  （2）测量应在无雨雪、无雷电天气，风速为5 m/s 以下时进行。测量时传声器加防风罩。 |

# 续表五 质量控制

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| **5.2检测方法、使用仪器及方法检出限如下。**  **表5-1 检测分析方法、使用仪器及检出限一览表**   | **检测项目类别** | **检测项目** | **检测方法** | **使用仪器** | **方法检出限或检测范围** | | --- | --- | --- | --- | --- | | 废水 | pH值 | 《水质 pH值的测定 电极法》HJ 1147-2020 | pH/mV计（A-1483）、（A-916） | 0~14无量纲 | | 化学需氧量 | 《水质 化学需氧量的测定 重铬酸盐法》HJ 828-2017 | Titrette瓶口滴定管50mL(A-1229)、Titrette瓶口滴定管50mL(A-1230) | 4mg/L | | 五日生化需氧量 | 《水质 五日生化需氧量(BOD₅)的测定 稀释与接种法》HJ 505-2009 | 生化培养箱LC-SPX-250B(A-2164)、LC-SPX-250B(A-2163)、溶解氧测定仪JPSJ-605F(A-181) | 0.5mg/L | | 氨氮 | 《水质 氨氮的测定 纳氏试剂分光光度法》HJ 535-2009 | 紫外可见分光光度计Agilent 8453(A-227) | 0.025mg/L | | 悬浮物 | 《水质 悬浮物的测定 重量法》GB/T 11901-1989 | 鼓风干燥箱KH-550AS( A-1474)、电子天平JJ224BC/220ｇ(A-838) | 4mg/L | | 石油类 | 《水质 石油类和动植物油类的测定 红外分光光度法》HJ 637-2018 | 红外测油仪OIL-8(A-163) | 0.06mg/L | | 阴离子表面活性剂 | 《水质 阴离子表面活性剂的测定 亚甲蓝分光光度法》GB/T 7494-1987 | 紫外可见分光光度计Agilent 8453(A-1211) | 0.05mg/L | | 氟化物 | 《水质 氟化物的测定 离子选择电极法》GB/T 7484-1987 | 离子计PXSJ-216F(A-2314) | 0.05mg/L | | 生活污水 | pH值 | 《水质 pH值的测定 电极法》HJ 1147-2020 | pH/mV计（A-1483）、（A-916） | 0~14无量纲 | | 化学需氧量 | 《水质 化学需氧量的测定 重铬酸盐法》HJ 828-2017 | Titrette瓶口滴定管50mL(A-1229)、Titrette瓶口滴定管50mL(A-1230) | 4mg/L | | 五日生化需氧量 | 《水质 五日生化需氧量(BOD₅)的测定 稀释与接种法》HJ 505-2009 | 生化培养箱LC-SPX-250B(A-2164)、溶解氧测定仪JPSJ-605F(A-181) | 0.5mg/L | | 五日生化需氧量 | 《水质 五日生化需氧量(BOD₅)的测定 稀释与接种法》HJ 505-2009 | 生化培养箱LC-SPX-250B(A-2163)、溶解氧测定仪JPSJ-605F(A-181) | 0.5mg/L | | 氨氮 | 《水质 氨氮的测定 纳氏试剂分光光度法》HJ 535-2009 | 紫外可见分光光度计Agilent 8453(A-227) | 0.025mg/L | | 悬浮物 | 《水质 悬浮物的测定 重量法》GB/T 11901-1989 | 鼓风干燥箱KH-550AS( A-1474)、电子天平JJ224BC/220ｇ(A-838) | 4mg/L | | 有组织废气 | 二氧化硫 | 《固定污染源废气 二氧化硫的测定 定电位电解法》HJ 57-2017 | 大流量低浓度自动烟尘烟气测试仪YLB-3330D(A-1050) | 3mg/m³ | | 总VOCs | 《印刷行业挥发性有机化合物排放标准》DB 44/815-2010 附录D | 气相色谱仪6890(A-1232) | 0.01mg/m³ | | 氮氧化物 | 《固定污染源废气 氮氧化物的测定 定电位电解法》HJ 693-2014) | 大流量低浓度自动烟尘烟气测试仪YLB-3330D(A-1050) | 3mg/m³ | | 油烟 | 《固定污染源废气 油烟和油雾的测定 红外分光光度法》HJ 1077-2019 | 红外测油仪OIL-8(A-163) | 0.1mg/m³ | |

# 续表五 质量控制

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| **续表5-1 检测分析方法、使用仪器及检出限一览表**   | **检测项目类别** | **检测项目** | **检测方法** | **使用仪器** | **方法检出限或检测范围** | | --- | --- | --- | --- | --- | | 有组织废气 | 烟气黑度（林格曼黑度） | 《固定污染源排放 烟气黑度的测定 林格曼烟气黑度图法》HJ/T 398-2007 | 林格曼烟气浓度图LB-800(A-354) | —— | | 臭气浓度 | 《环境空气和废气 臭气的测定 三点比较式臭袋法》HJ 1262-2022 | —— | 10无量纲 | | 非甲烷总烃 | 《固定污染源废气 总烃、甲烷和非甲烷总烃的测定 气相色谱法》HJ 38-2017 | 气相色谱仪6890N(A-427) | 0.07mg/m³ | | 颗粒物 | 《固定污染源废气 低浓度颗粒物的测定 重量法》HJ 836-2017 | 鼓风干燥箱KH-550AS( A-1474)、恒温恒湿称重系统HJ836-260型(A-840)、(A-1516)、十万分之一分析天平FA505N(A-201)、电子天平SQP(A-1607) | 1.0mg/m³ | | 颗粒物 | 《固定污染源排气中颗粒物测定与气态污染物采样方法》GB/T 16157-1996及其修改单(生态环境部公告 2017年第87号) | 鼓风干燥箱KH-550AS( A-1474)、电子天平JJ224BC/220ｇ(A-838) | 20mg/m³ | | 无组织废气 | 二氧化硫 | 《环境空气二氧化硫的测定 甲醛吸收-副玫瑰苯胺分光光度法》HJ 482-2009 | 紫外可见分光光度计 Agilent 8453(A-1211) | 0.007mg/m³ | | 总VOCs | 《印刷行业挥发性有机化合物排放标准》DB 44/815-2010 附录D | 气相色谱仪6890(A-1232) | 0.01mg/m³ | | 氮氧化物 | 《环境空气 氮氧化物(一氧化氮和二氧化氮)的测定 盐酸萘乙二胺分光光度法》HJ 479-2009 | 紫外可见分光光度计Agilent 8453(A-1211) | 0.005mg/m³ | | 臭气浓度 | 《环境空气和废气 臭气的测定 三点比较式臭袋法》HJ 1262-2022 | —— | 10无量纲 | | 锰及其化合物（以Mn计） | 《空气和废气 颗粒物中金属元素的测定 电感耦合等离子体发射光谱法》HJ 777-2015 | 电感耦合等离子体发射光谱仪（ICP-OES）Agilent  720(A-265) | 0.001μg/m³ | | 镍及其化合物（以Ni计） | 《空气和废气 颗粒物中金属元素的测定 电感耦合等离子体发射光谱法》HJ 777-2015 | 电感耦合等离子体发射光谱仪（ICP-OES）Agilent  720(A-265) | 0.003μg/m³ | | 非甲烷总烃 | 《环境空气总烃、甲烷和非甲烷总烃的测定 直接进样-气相色谱法》HJ 604-2017 | 气相色谱仪6890N(A-427) | 0.07mg/m³ | | 总悬浮颗粒物（颗粒物） | 《环境空气 总悬浮颗粒物的测定 重量法》HJ 1263-2022 | 恒温恒湿称重系统HJ836-260型(A-840)、十万分之一分析天平FA505N(A-201) | 7μg/m³ | | 噪声 | Leq | 《工业企业 厂界环境噪声排放标准》GB 12348-2008 | 多功能声级计AWA5688型(A-1367) | 28-133dB（A） | |

# 续表五 质量控制

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| **5.3采样、检测人员一览表**  参加本项目实验室检测人员和采样人员经过培训，考核合格，授权上岗，确保人员的专业技术能力满足项目需求。主要人员见表5-2  **表5-2 采样、检测人员一览表**   | **人员名单** | **人员类别** | **上岗证编号** | | --- | --- | --- | | 杜子望 | 采样人员 | HX8222 | | 胡智聪 | 采样人员 | HX8313 | | 何小邓 | 采样人员 | HX8177 | | 黄广通 | 采样人员 | HX8787 | | 黄恒晓 | 采样人员 | HX8932 | | 谢林昌 | 采样人员 | HX8946 | | 何剑宏 | 采样人员 | HX8442 | | 梁绮珊 | 检测人员 | HX8158 | | 黄杜英 | 检测人员 | HX8792 | | 张依琳 | 检测人员 | HX8735 | | 黄木兰 | 检测人员 | HX8465 | | 林起进 | 检测人员 | HX9157 | | 朱芳瑜 | 检测人员 | HX9009 | | 黎传娣 | 检测人员 | HX8913 | | 吴细珊 | 检测人员 | HX8418 | | 吴晓敏 | 检测人员 | HX8736 | | 廖静薇 | 检测人员 | HX8856 | | 黄海玲 | 检测人员 | HX8577 | | 禤丽灵 | 检测人员 | HX8599 | | 凌倩 | 检测人员 | HX8781 | | 周智丽 | 检测人员 | HX8325 | |

# 续表五 质量控制

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| **5.4主要仪器设备一览表**  本项目涉及到的采样仪器及实验室分析仪器均按要求进行检定或校准，且在有效期内，主要仪器见表5-3。  **表5-3 主要仪器设备一览表**   | **使用仪器设备名称、型号** | **检定/校准日期** | **到期检定/校准日期** | **仪器设备状态** | | --- | --- | --- | --- | | Titrette瓶口滴定管50mL(A-1229) | 2024.06.20 | 2025.06.19 | 合格 | | Titrette瓶口滴定管50mL(A-1230) | 2024.06.20 | 2025.06.19 | 合格 | | 生化培养箱LC-SPX-250B(A-2164) | 2025.02.24 | 2026.02.23 | 合格 | | 生化培养箱LC-SPX-250B(A-2163) | 2025.02.24 | 2026.02.23 | 合格 | | 溶解氧测定仪JPSJ-605F(A-181) | 2024.10.11 | 2025.10.10 | 合格 | | 紫外可见分光光度计 Agilent 8453(A-227) | 2025.02.24 | 2026.02.23 | 合格 | | 鼓风干燥箱KH-550AS( A-1474) | 2025.01.15 | 2026.01.14 | 合格 | | 电子天平JJ224BC/220ｇ(A-838) | 2024.06.20 | 2025.06.19 | 合格 | | 红外测油仪OIL-8(A-163) | 2024.10.11 | 2025.10.10 | 合格 | | 大流量低浓度烟尘烟气测试仪（A-1050） | 2025.05.25 | 2026.05.24 | 合格 | | 大流量低浓度烟尘烟气测试仪（A-1238） | 2024.07.08 | 2025.07.07 | 合格 | | 大流量低浓度烟尘烟气测试仪（A-1239） | 2024.07.12 | 2025.07.11 | 合格 | | 十万分之一分析天平FA505N(A-201) | 2024.12.10 | 2025.12.09 | 合格 | | 恒温恒湿称重系统HJ836-260型(A-840) | 2024.12.10 | 2025.10.09 | 合格 | | 恒温恒湿称重系统HJ836-260型(A-1516) | 2024.12.10 | 2025.12.09 | 合格 | | 气相色谱仪6890(A-1232) | 2024.12.10 | 2026.12.09 | 合格 | | 紫外可见分光光度计 Agilent 8453(A-1211) | 2025.05.26 | 2026.05.25 | 合格 | | 离子计PXSJ-216F(A-2314) | 2024.09.24 | 2025.09.23 | 合格 | | 气相色谱仪6890(A-1232) | 2024.12.10 | 2026.12.09 | 合格 | | 气相色谱仪6890N(A-427) | 2024.12.10 | 2026.12.09 | 合格 | | 林格曼烟气浓度图LB-800(A-354) | 2025.03.31 | 2026.03.30 | 合格 | | 大流量孔口校准器/智能高精度综合校准仪(A-019) | 2024.10.11 | 2025.10.10 | 合格 | | 空盒气压表（A-1413） | 2024.09.14 | 2025.09.13 | 合格 | | 便携式风向风速仪(A-1462) | 2024.09.18 | 2025.09.17 | 合格 | | 温湿度计（A-1393） | 2024.09.18 | 2025.09.17 | 合格 | |

# 续表五 质量控制

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| **续表5-3 主要仪器设备一览表**   | **使用仪器设备名称、型号** | **检定/校准日期** | **到期检定/校准日期** | **仪器设备状态** | | --- | --- | --- | --- | | 电感耦合等离子体发射光谱仪（ICP-OES）Agilent  720(A-265) | 2023.10.21 | 2025.10.20 | 合格 | | 便携式双路大气采样器（A-1808） | 2024.08.16 | 2025.08.15 | 合格 | | 便携式双路大气采样器（A-1820） | 2024.08.16 | 2025.08.15 | 合格 | | 自动烟尘（气）测试仪（新08代）（A-017） | 2024.07.12 | 2025.07.11 | 合格 | | 自动烟尘（气）测试仪（新08代）（A-101） | 2024.07.12 | 2025.07.11 | 合格 | | 声校准器(A-1361） | 2024.08.29 | 2025.08.28 | 合格 | | 多功能声级计AWA5688型(A-1367） | 2024.11.12 | 2025.11.11 | 合格 | | pH/mV计（A-916） | 2024.07.12 | 2025.07.11 | 合格 | | pH/mV计（A-1483） | 2025.01.14 | 2026.01.13 | 合格 |   总结：以上仪器设备均在检定/校准周期内使用。 |

# 续表五 质量控制

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| **5.5样品的采集**  依据HJ 91.1-2019《污水监测技术规范》、HJ/T 397-2007《固定源废气监测技术规范》、HJ/T 55-2000《大气污染物无组织排放监测技术导则》的相关要求进行采样，结果如下：  1、采样方案的内容及过程记录表完整，采样点与布点方案一致；  2、保留采样记录单及现场照片，样品采集位置、采集设备、采集方式满足相关技术规定要求；  3、样品重量和数量、样品标签、容器材质、保存条件、保护剂、采集过程现场照片等记录满足相关技术规定要求；  4、平行样品、运输空白、全程序空白等质量控制样品的采集、数量满足相关技术规定要求。  5、现场采样各环节操作满足HJ 91.1-2019《污水监测技术规范》、HJ/T 397-2007《固定源废气监测技术规范》、HJ/T 55-2000《大气污染物无组织排放监测技术导则》的相关要求。 |

# 续表五 质量控制

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| **5.6样品保存与流转**  5.6.1 水样品保存  样品采用常温、冷藏或冷冻法保存，必要时加入化学试剂保存，依据HJ 493-2009《水质采样 样品的保存和管理技术规定》和相关检测标准对样品进行保存，详见表5-4~5-5：  **表5-4 生活污水样品保存方法**   | **检测项目** | **容器** | **保存条件** | **采样时间** | **前处理时间** | **分析时间** | **样品最大保留时间** | | --- | --- | --- | --- | --- | --- | --- | | 悬浮物 | 聚乙烯瓶 | 避光，0～4℃冷藏 | 2025.06.03 | / | 2025.06.05 | 7天 | | 2025.06.04 | / | 2025.06.05 | | 化学需氧量 | 棕色玻璃瓶 | 加硫酸至pH≤2，避光，0～4℃冷藏 | 2025.06.03 | / | 2025.06.04 | 5天 | | 2025.06.04 | / | 2025.06.05 | | 氨氮 | 棕色玻璃瓶 | 加硫酸至pH≤2，避光，0～4℃冷藏 | 2025.06.03 | 2025.06.06 | 2025.06.06 | 7天 | | 2025.06.04 | 2025.06.06 | 2025.06.06 | | 五日生化需氧量 | 溶解氧瓶 | 避光，0～4℃冷藏 | 2025.06.03（09:52） | / | 2025.06.03（19:30）-2025.06.08（20:30） | 24h | | 2025.06.04（09:57） | / | 2025.06.05（09:20）-2025.06.10（10:30） |   **表5-5 生产废水样品保存方法**   | **检测项目** | **容器** | **保存条件** | **采样时间** | **前处理时间** | **分析时间** | **样品最大保留时间** | | --- | --- | --- | --- | --- | --- | --- | | 悬浮物 | 聚乙烯瓶 | 避光，0～4℃冷藏 | 2025.06.03 | / | 2025.06.05 | 7天 | | 2025.06.04 | / | 2025.06.05 | | 化学需氧量 | 棕色玻璃瓶 | 加硫酸至pH≤2，避光，0～4℃冷藏 | 2025.06.03 | / | 2025.06.04 | 5天 | | 2025.06.04 | / | 2025.06.05 | | 氨氮 | 棕色玻璃瓶 | 加硫酸至pH≤2，避光，0～4℃冷藏 | 2025.06.03 | 2025.06.06 | 2025.06.06 | 7天 | | 2025.06.04 | 2025.06.06 | 2025.06.06 | | 五日生化需氧量 | 溶解氧瓶 | 避光，0～4℃冷藏 | 2025.06.03（09:46） | / | 2025.06.03（19:30）-2025.06.08（20:30） | 24h | | 2025.06.04（09:51） | / | 2025.06.05（09:20）-2025.06.10（10:30） | | 阴离子表面活性剂 | 棕色玻璃瓶 | 加入1%的甲醛溶液，避光，0～4℃冷藏 | 2025.06.03 | 2025.06.04 | 2025.06.04 | 4天 | | 2025.06.04 | 2025.06.05 | 2025.06.05 | |

# 续表五 质量控制

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| **续表5-5 生产废水样品保存方法**   | **检测项目** | **容器** | **保存条件** | **采样时间** | **前处理时间** | **分析时间** | **样品最大保留时间** | | --- | --- | --- | --- | --- | --- | --- | | 石油类 | 棕色玻璃瓶 | 用HCl 酸化，pH≤2，4℃以下冷藏 | 2025.06.03 | / | 2025.06.05 | 3天 | | 2025.06.04 | / | 2025.06.06 | | 氟化物 | 棕色玻璃瓶 | 避光，0～4℃冷藏 | 2025.06.03 | 2025.06.05 | 2025.06.05 | 14天 | | 2025.06.04 | 2025.06.05 | 2025.06.05 |   5.6.2 废气样品保存  样品采用常温、冷藏或冷冻法保存，详见表5-6~5-7：  **表5-6 有组织废气样品保存方法**   | **检测项目** | **容器** | **保存条件** | **采样时间** | **前处理时间** | **分析时间** | **样品最大保留时间** | | --- | --- | --- | --- | --- | --- | --- | | 非甲烷总烃 | 气袋 | 密封 | 2025.05.28 | / | 2025.05.29 | 48h | | 2025.05.29 | / | 2025.05.30 | | 颗粒物 | 采样头 | 密封 | 2025.05.28 | / | 2025.05.29-2025.05.30 | / | | 2025.05.29 | / | 2025.05.30-2025.05.31 | | 臭气浓度 | 气袋 | 密封 | 2025.05.28 | / | 2025.05.29 | 24h | | 2025.05.29 | / | 2025.05.30 | | 总VOCs | Tenax管 | 密封、冷藏 | 2025.05.28 | / | 2025.06.03 | 7天 | | 2025.05.29 | / | 2025.06.03 | | 油烟 | 滤筒 | 密封、冷藏 | 2025.05.28 | / | 2025.05.30 | 7天 | | 2025.05.29 | / | 2025.05.30 | |

# 续表五 质量控制

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **表5-7无组织废气样品保存方法**   | **检测项目** | **容器** | **保存条件** | **采样时间** | **前处理时间** | **分析时间** | **样品最大保留时间** | | --- | --- | --- | --- | --- | --- | --- | | 臭气浓度 | 气袋 | 密封 | 2025.06.03 | / | 2025.06.04 | 24h | | 2025.06.04 | / | 2025.06.05 | | 总悬浮颗粒物 | 滤膜 | 密封 | 2025.06.03 | / | 2025.06.04-2025.06.05 | / | | 2025.06.04 | / | 2025.06.05-2025.06.06 | | 氮氧化物 | 吸收液 | （0-4）℃，密封 | 2025.06.03 | / | 2025.06.05 | 3天 | | 2025.06.04 | / | 2025.06.05 | | 二氧化硫 | 吸收液 | 密封 | 2025.06.03 | / | 2025.06.04 | / | | 2025.06.04 | / | 2025.06.05 | | 非甲烷总烃 | 气袋 | 密封 | 2025.06.03 | / | 2025.06.04 | 48h | | 2025.06.04 | / | 2025.06.05 | | 锰及其化合物（以Mn计） | 滤筒 | 密封 | 2025.06.03 | 2025.06.10 | 2025.06.11 | 180天 | | 2025.06.04 | 2025.06.10 | 2025.06.11 | | 镍及其化合物（以Ni计） | 滤筒 | 密封 | 2025.06.03 | 2025.06.10 | 2025.06.11 | 180天 | | 2025.06.04 | 2025.06.10 | 2025.06.11 | | 总VOCs | 滤膜 | 密封 | 2025.06.03 | / | 2025.06.06 | 7天 | | 2025.06.04 | / | 2025.06.06 | |

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| **5.7质控数据**  为保证样品分析测试结果的精密度与准确度，实验室开展了以下质量控制手段。  5.7.1 空白试验  按检测要求，本项目运输、分析过程中均有空白试验，以验证运输、分析过程中是否受到污染。空白分析结果统计见表5-8~5-11。  **表5-8 生活污水样品空白结果**   | **检测项目** | **单位** | **实验室空白** | | **空白要求** | **质控结果判定** | | --- | --- | --- | --- | --- | --- | | **批次** | **结果** | | 悬浮物 | mg/L | 4 | ND | ND | 合格 | | 化学需氧量 | mg/L | 8 | ND | ND | 合格 | | 氨氮 | mg/L | 8 | ND | ND | 合格 | | / | 4 | 0.01355-0.01689（吸光度） | ≤0.030  (吸光度) | 合格 | | 五日生化需氧量 | mg/L | 4 | 0.20-0.22 | ≤0.5 | 合格 | | 4 | 1.18-1.26 | ≤1.5 | 合格 |   注：ND表示检测结果低于方法检出限。  **表5-9废水样品空白结果**   | **检测项目** | **单位** | **样品空白** | | **实验室空白** | | **空白要求** | **质控结果判定** | | --- | --- | --- | --- | --- | --- | --- | --- | | **批次** | **结果** | **批次** | **结果** | | 悬浮物 | mg/L | 2 | ND | 4 | ND | ND | 合格 | | 化学需氧量 | mg/L | 2 | ND | 8 | ND | ND | 合格 | | 阴离子表面活性剂 | mg/L | 2 | ND | 4 | ND | ND | 合格 | | 石油类 | mg/L | / | | 2 | ND | ND | 合格 | | 氨氮 | mg/L | 2 | ND | 8 | ND | ND | 合格 | | / | / | | 4 | 0.01355-0.01689（吸光度） | ≤0.030  (吸光度) | 合格 | | 五日生化需氧量 | mg/L | 2 | ND | 4 | 0.20-0.22 | ≤0.5 | 合格 | | 4 | 1.18-1.26 | ≤1.5 | 合格 | | 氟化物 | mg/L | 2 | ND | 2 | ND | ND | 合格 |   注：ND表示检测结果低于方法检出限。 |

# 续表五 质量控制

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| **表5-10有组织废气样品空白结果**   | **检测项目** | **单位** | **样品空白** | | **实验室空白** | | **空白要求** | **质控结果判定** | | --- | --- | --- | --- | --- | --- | --- | --- | | **批次** | **结果** | **批次** | **结果** | | 非甲烷总烃 | mg/m3 | 2 | ND | 12 | ND | ND | 合格 | | 颗粒物 | mg/m3 | 4 | ND | / | / | ND | 合格 | | 臭气浓度 | 无量纲 | 2 | ND | / | / | ND | 合格 | | 总VOCs | mg/m3 | 2 | ND | 1 | ND | ND | 合格 | | 油烟 | mg/m3 | / | / | 2 | ND | ND | 合格 |   注：ND表示检测结果低于方法检出限。  **表5-11无组织废气样品空白结果**   | **检测项目** | **单位** | **样品空白** | | **实验室空白** | | **空白要求** | **质控结果判定** | | --- | --- | --- | --- | --- | --- | --- | --- | | **批次** | **结果** | **批次** | **结果** | | 颗粒物 | mg/m3 | 2 | ND | / | / | ND | 合格 | | 臭气浓度 | 无量纲 | 2 | ND | / | / | ND | 合格 | | 氮氧化物 | mg/m3 | 2 | ND | 6 | ND | ND | 合格 | | 二氧化硫 | mg/m3 | 4 | ND | 4 | ND | ND | 合格 | | 非甲烷总烃 | mg/m3 | 2 | ND | 10 | ND | ND | 合格 | | 锰及其化合物（以Mn计） | mg/m3 | 2 | ND | 10 | ND | ND | 合格 | | 镍及其化合物（以Ni计） | mg/m3 | 2 | ND | 6 | ND | ND | 合格 | | 总VOCs | mg/m3 | 2 | ND | 2 | ND | ND | 合格 |   注：ND表示检测结果低于方法检出限。 |

# 续表五 质量控制

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 5.7.2精密度试验  参照各监测因子分析方法相关要求，现场采样及样品分析时，每个检测项目均抽取了一定比例样品进行平行双样分析，通过计算平行样的相对偏差，考察实验室精密度。  相对偏差按下式计算：  若平行双样测定值（A， B）的相对偏差（RD）在允许范围内，则该平行双样的精密度控制为合格，否则为不合格。  平行样结果统计见表5-12~表5-18。  **表5-12生活污水样品现场平行分析结果**   | **点位及样品编号** | **检测项目** | **单位** | **测定值A** | **测定值B** | **相对偏差（%）** | **允许相对**  **偏差（%）** | **质控结果**  **判定** | | --- | --- | --- | --- | --- | --- | --- | --- | | HXZS2505042FS23003 | 悬浮物 | mg/L | 35 | 35 | 0.00 | 20 | 合格 | | 允许相对偏差参考相关检测标准及HX-C-108《实验室内部质量控制》的要求。 | | | | | | | |   **表5-13废水样品现场平行分析结果**   | **点位及样品编号** | **检测项目** | **单位** | **测定值A** | **测定值B** | **相对偏差（%）** | **允许相对**  **偏差（%）** | **质控结果**  **判定** | | --- | --- | --- | --- | --- | --- | --- | --- | | 点位：生产废水处理后  HXZS2505042FS14002 | 化学需氧量 | mg/L | 26 | 24 | 4.0 | 10 | 合格 | | 点位：生产废水处理后  HXZS2505042FS14002 | 氨氮 | mg/L | 0.321 | 0.331 | 1.5 | 15 | 合格 | | 点位：生产废水处理后  HXZS2505042FS14002 | 阴离子表面活性剂 | mg/L | 0.13 | 0.12 | 4.0 | 20 | 合格 | | 点位：生产废水处理后  HXZS2505042FS14002 | 氟化物 | mg/L | 1.11 | 1.10 | 0.45 | 10 | 合格 | | 点位：生产废水处理后  HXZS2505042FS14002 | 五日生化需氧量 | mg/L | 5.9 | 5.7 | 1.7 | 20 | 合格 | | 点位：生产废水处理后  HXZS2505042FS24002 | 化学需氧量 | mg/L | 24 | 25 | 2.0 | 10 | 合格 | | 点位：生产废水处理后  HXZS2505042FS24002 | 氨氮 | mg/L | 0.311 | 0.316 | 0.80 | 15 | 合格 | | 点位：生产废水处理后  HXZS2505042FS24002 | 阴离子表面活性剂 | mg/L | 0.12 | 0.12 | 0.00 | 20 | 合格 | | 点位：生产废水处理后  HXZS2505042FS24002 | 氟化物 | mg/L | 1.13 | 1.14 | 0.44 | 10 | 合格 | | 点位：生产废水处理后  HXZS2505042FS24002 | 五日生化需氧量 | mg/L | 5.5 | 5.8 | 2.7 | 20 | 合格 | | HXZS2505042FS14002 | pH值 | 无量纲 | 7.6 | 7.6 | 0.0（绝对差值） | 0.1（绝对差值） | 合格 | | HXZS2505042FS21002 | pH值 | 无量纲 | 7.7 | 7.8 | 0.1（绝对差值） | 0.1（绝对差值） | 合格 | | 允许相对偏差参考相关检测标准及HX-C-108《实验室内部质量控制》的要求。 | | | | | | | | |

# 续表五 质量控制

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **表5-14废水样品实验室平行分析结果**   | **样品编号** | **检测项目** | **单位** | **测定值A** | **测定值B** | **相对偏差（%）** | **允许相对**  **偏差（%）** | **质控结果**  **判定** | | --- | --- | --- | --- | --- | --- | --- | --- | | HXZS2505042FS11001 | 氨氮 | mg/L | 1.65 | 1.62 | 0.92 | 10 | 合格 | | HXZS2505042FS14002 | 氨氮 | mg/L | 0.324 | 0.318 | 0.93 | 15 | 合格 | | HXZS2505042FS24002 | 氨氮 | mg/L | 0.319 | 0.303 | 2.6 | 15 | 合格 | | HXZS2505042FS11001 | 化学需氧量 | mg/L | 42 | 38 | 5.0 | 10 | 合格 | | HXZS2505042FS14002 | 化学需氧量 | mg/L | 25 | 27 | 3.8 | 10 | 合格 | | HXZS2505042FS21001 | 化学需氧量 | mg/L | 43 | 47 | 4.4 | 10 | 合格 | | HXZS2505042FS24002 | 化学需氧量 | mg/L | 25 | 23 | 4.2 | 10 | 合格 | | HXZS2505042FS11001 | 悬浮物 | mg/L | 15 | 16 | 3.2 | 20 | 合格 | | HXZS2505042FS14002 | 悬浮物 | mg/L | ND | ND | — | 20 | — | | HXZS2505042FS11002 | 五日生化需氧量 | mg/L | 5.4 | 6.2 | 6.9 | 20 | 合格 | | HXZS2505042FS13002 | 五日生化需氧量 | mg/L | 5.7 | 5.3 | 3.6 | 20 | 合格 | | HXZS2505042FS14002 | 五日生化需氧量 | mg/L | 5.6 | 6.2 | 5.1 | 20 | 合格 | | HXZS2505042FS14002-p | 五日生化需氧量 | mg/L | 5.7 | 5.3 | 3.6 | 20 | 合格 | | HXZS2505042FS14003 | 五日生化需氧量 | mg/L | ND | ND | — | 15 | — | | HXZS2505042FS22002 | 五日生化需氧量 | mg/L | 5.5 | 6.1 | 5.2 | 20 | 合格 | | HXZS2505042FS23002 | 五日生化需氧量 | mg/L | 5.3 | 5.1 | 1.9 | 20 | 合格 | | HXZS2505042FS24002 | 五日生化需氧量 | mg/L | 5.7 | 5.3 | 3.6 | 20 | 合格 | | HXZS2505042FS24002-p | 五日生化需氧量 | mg/L | 5.8 | 5.6 | 1.8 | 20 | 合格 | | HXZS2505042FS24003 | 五日生化需氧量 | mg/L | ND | ND | — | 15 | — | | HXZS2505042FS11001 | 阴离子表面活性剂 | mg/L | 1.26 | 1.25 | 0.40 | 20 | 合格 | | HXZS2505042FS21001 | 阴离子表面活性剂 | mg/L | 1.24 | 1.20 | 1.6 | 20 | 合格 | | HXZS2505042FS11001 | 氟化物 | mg/L | 1.26 | 1.25 | 0.40 | 10 | 合格 | | HXZS2505042FS21001 | 氟化物 | mg/L | 1.25 | 1.24 | 0.40 | 10 | 合格 | | 允许相对偏差参考相关检测标准及HX-C-108《实验室内部质量控制》的要求。 | | | | | | | | |

# 续表五 质量控制

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **表5-15无组织废气样品现场平行分析结果**   | **点位及样品编号** | **检测项目** | **单位** | **测定值A** | **测定值B** | **相对偏差（%）** | **允许相对**  **偏差（%）** | **质控结果**  **判定** | | --- | --- | --- | --- | --- | --- | --- | --- | | 点位：下风向A2  HXZS2505042HJ11020 | 总VOCs | mg/m³ | 0.40 | 0.35 | 6.7 | 10 | 合格 | | 点位：上风向A1  HXZS2505042HJ21010 | 总VOCs | mg/m³ | 0.28 | 0.27 | 1.8 | 10 | 合格 | | 允许相对偏差参考相关检测标准的要求。 | | | | | | | |   **表5-16无组织废气样品实验室平行分析结果**   | **样品编号** | **检测项目** | **单位** | **测定值A** | **测定值B** | **相对偏差（%）** | **允许相对**  **偏差（%）** | **质控结果**  **判定** | | --- | --- | --- | --- | --- | --- | --- | --- | | HXZS2505042HJ11005 | 非甲烷总烃 | mg/m³ | 0.24 | 0.24 | 0.00 | 20 | 合格 | | HXZS2505042HJ11025 | 非甲烷总烃 | mg/m³ | 0.33 | 0.29 | 6.5 | 20 | 合格 | | HXZS2505042HJ11045 | 非甲烷总烃 | mg/m³ | 0.41 | 0.42 | 1.2 | 20 | 合格 | | HXZS2505042HJ12025 | 非甲烷总烃 | mg/m³ | 0.32 | 0.30 | 3.2 | 20 | 合格 | | HXZS2505042HJ12045 | 非甲烷总烃 | mg/m³ | 0.40 | 0.41 | 1.2 | 20 | 合格 | | HXZS2505042HJ13025 | 非甲烷总烃 | mg/m³ | 0.30 | 0.32 | 3.2 | 20 | 合格 | | HXZS2505042HJ13052 | 非甲烷总烃 | mg/m³ | 0.43 | 0.38 | 6.2 | 20 | 合格 | | HXZS2505042HJ21005 | 非甲烷总烃 | mg/m³ | 0.17 | 0.23 | 15 | 20 | 合格 | | HXZS2505042HJ21025 | 非甲烷总烃 | mg/m³ | 0.33 | 0.33 | 0.00 | 20 | 合格 | | HXZS2505042HJ21045 | 非甲烷总烃 | mg/m³ | 0.44 | 0.46 | 2.2 | 20 | 合格 | | HXZS2505042HJ22025 | 非甲烷总烃 | mg/m³ | 0.30 | 0.28 | 3.5 | 20 | 合格 | | HXZS2505042HJ22045 | 非甲烷总烃 | mg/m³ | 0.41 | 0.39 | 2.5 | 20 | 合格 | | HXZS2505042HJ23025 | 非甲烷总烃 | mg/m³ | 0.34 | 0.32 | 3.0 | 20 | 合格 | | HXZS2505042HJ23052 | 非甲烷总烃 | mg/m³ | 0.39 | 0.39 | 0.00 | 20 | 合格 | | 允许相对偏差参考相关检测标准的要求。 | | | | | | | | |

# 续表五 质量控制

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **表5-17有组织废气样品现场平行分析结果**   | **点位及样品编号** | **检测项目** | **单位** | **测定值A** | **测定值B** | **相对偏差（%）** | **允许相对**  **偏差（%）** | **质控结果**  **判定** | | --- | --- | --- | --- | --- | --- | --- | --- | | 点位：丝印移印、烘干固化、金属清洁工序有机废气排放口G6  HXZS2505042FQ11039 | 总VOCs | mg/m³ | 1.92 | 1.81 | 2.9 | 10 | 合格 | | 点位：丝印移印、烘干固化、金属清洁工序有机废气排放口G6  HXZS2505042FQ21039 | 总VOCs | mg/m³ | 1.00 | 1.13 | 6.1 | 10 | 合格 | | 允许相对偏差参考相关检测标准的要求。 | | | | | | | |   **表5-18 有组织废气样品实验室平行分析结果**   | **样品编号** | **检测项目** | **单位** | **测定值A** | **测定值B** | **相对偏差（%）** | **允许相对**  **偏差（%）** | **质控结果**  **判定** | | --- | --- | --- | --- | --- | --- | --- | --- | | HXZS2505042FQ11001 | 非甲烷总烃 | mg/m³ | 2.62 | 2.80 | 3.3 | 15 | 合格 | | HXZS2505042FQ11014 | 非甲烷总烃 | mg/m³ | 7.73 | 9.71 | 11 | 15 | 合格 | | HXZS2505042FQ11031 | 非甲烷总烃 | mg/m³ | 6.38 | 6.68 | 2.3 | 15 | 合格 | | HXZS2505042FQ12001 | 非甲烷总烃 | mg/m³ | 2.75 | 2.95 | 3.5 | 15 | 合格 | | HXZS2505042FQ12017 | 非甲烷总烃 | mg/m³ | 9.07 | 9.06 | 0.06 | 15 | 合格 | | HXZS2505042FQ12040 | 非甲烷总烃 | mg/m³ | 0.49 | 0.55 | 5.8 | 15 | 合格 | | HXZS2505042FQ13004 | 非甲烷总烃 | mg/m³ | 2.45 | 2.37 | 1.7 | 15 | 合格 | | HXZS2505042FQ13022 | 非甲烷总烃 | mg/m³ | 0.57 | 0.71 | 11 | 15 | 合格 | | HXZS2505042FQ13040 | 非甲烷总烃 | mg/m³ | 0.70 | 0.57 | 10 | 15 | 合格 | | HXZS2505042FQ21001 | 非甲烷总烃 | mg/m³ | 0.70 | 0.64 | 4.5 | 15 | 合格 | | HXZS2505042FQ21014 | 非甲烷总烃 | mg/m³ | 6.85 | 8.66 | 12 | 15 | 合格 | | HXZS2505042FQ21031 | 非甲烷总烃 | mg/m³ | 5.86 | 5.94 | 0.68 | 15 | 合格 | | HXZS2505042FQ22001 | 非甲烷总烃 | mg/m³ | 0.58 | 0.51 | 6.4 | 15 | 合格 | | HXZS2505042FQ22017 | 非甲烷总烃 | mg/m³ | 9.20 | 9.15 | 0.27 | 15 | 合格 | | HXZS2505042FQ22040 | 非甲烷总烃 | mg/m³ | 0.58 | 0.54 | 3.6 | 15 | 合格 | | HXZS2505042FQ23004 | 非甲烷总烃 | mg/m³ | 3.12 | 3.09 | 0.48 | 15 | 合格 | | HXZS2505042FQ23022 | 非甲烷总烃 | mg/m³ | 0.59 | 0.67 | 6.4 | 15 | 合格 | | HXZS2505042FQ23037 | 非甲烷总烃 | mg/m³ | 1.88 | 2.49 | 14 | 15 | 合格 | | 允许相对偏差参考相关检测标准的要求。 | | | | | | | | |

# 续表五 质量控制

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 5.7.3实验室有证标准样品分析  具备与被测生活污水样品基体相同或类似的有证标准物质时，在每批次样品分析时均需插入有证标准物质样品进行分析测试。有证标准物质的结果统计见表5-19~5-22。  **表5-19生活污水有证标准样品分析结果**   | **检测项目** | **单位** | **标准物质编号** | **标准值控制范围** | **实测值** | **质控结果判定** | | --- | --- | --- | --- | --- | --- | | 氨氮 | mg/L | NH3-N(535)-WSTD-250606-03-02 | 5.67±0.28 | 5.65 | 合格 | | 氨氮 | mg/L | NH3-N(535)-WSTD-250606-03-02 | 5.67±0.28 | 5.77 | 合格 | | 化学需氧量 | mg/L | CODcr-WSTD-250601-01-01 | 106±7 | 109 | 合格 | | 化学需氧量 | mg/L | CODcr-WSTD-250601-02-01 | 18.2±1.9 | 19.3 | 合格 | | 化学需氧量 | mg/L | CODcr-WSTD-250601-01-01 | 106±7 | 111 | 合格 | | 化学需氧量 | mg/L | CODcr-WSTD-250601-02-01 | 18.2±1.9 | 18.6 | 合格 | | 五日生化需氧量 | mg/L | BOD₅-WSTD-250527-01-01 | 40.7±1.8 | 40.0 | 合格 | | 五日生化需氧量 | mg/L | BOD₅-WSTD-250527-01-01 | 40.7±1.8 | 39.4 | 合格 | | 有证标准样品实测值质控结果判定参考相对应检测项目标准物质标准值控制范围要求。 | | | | | |   **表5-20废水有证标准样品分析结果**   | **检测项目** | **单位** | **标准物质编号** | **标准值控制范围** | **实测值** | **质控结果判定** | | --- | --- | --- | --- | --- | --- | | 氨氮 | mg/L | NH3-N(535)-WSTD-250606-03-02 | 5.67±0.28 | 5.65 | 合格 | | 氨氮 | mg/L | NH3-N(535)-WSTD-250606-03-02 | 5.67±0.28 | 5.77 | 合格 | | 化学需氧量 | mg/L | CODcr-WSTD-250601-01-01 | 106±7 | 109 | 合格 | | 化学需氧量 | mg/L | CODcr-WSTD-250601-02-01 | 18.2±1.9 | 19.3 | 合格 | | 化学需氧量 | mg/L | CODcr-WSTD-250601-01-01 | 106±7 | 111 | 合格 | | 化学需氧量 | mg/L | CODcr-WSTD-250601-02-01 | 18.2±1.9 | 18.6 | 合格 | | 五日生化需氧量 | mg/L | BOD₅-WSTD-250527-01-01 | 40.7±1.8 | 40.0 | 合格 | | 五日生化需氧量 | mg/L | BOD₅-WSTD-250527-01-01 | 40.7±1.8 | 39.4 | 合格 | | 阴离子表面活性剂 | mg/L | LAS（7494）-WSTD-250528-03-01 | 2.50±0.13 | 2.59 | 合格 | | 阴离子表面活性剂 | mg/L | LAS（7494）-WSTD-250528-03-01 | 2.50±0.13 | 2.44 | 合格 | | 氟化物 | mg/L | 氟化物（7484）-WSTD-250525-03-01 | 1.73±0.11 | 1.68 | 合格 | | 石油类 | mg/L | 石油类(红外)-WSTD-250605-01 | 9.58±0.77 | 10.1 | 合格 | |

# 续表五 质量控制

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **表5-21废水有证标准样品分析结果**   | **检测项目** | **单位** | **标准物质编号** | **标准值控制范围** | **实测值** | **质控结果判定** | | --- | --- | --- | --- | --- | --- | | 石油类 | mg/L | 石油类(红外)-WSTD-250531-02-0605 | 9.58±0.77 | 9.41 | 合格 | | pH值 | 无量纲 | pH-WSTD-250512-05 | 7.34±0.06 | 7.36 | 合格 | | pH值 | 无量纲 | pH-WSTD-250512-05 | 7.34±0.06 | 7.31 | 合格 | | 有证标准样品实测值质控结果判定参考相对应检测项目标准物质标准值控制范围要求。 | | | | | |   **表5-22无组织废气有证标准样品分析结果**   | **检测项目** | **单位** | **标准物质编号** | **标准值控制范围** | **实测值** | **质控结果判定** | | --- | --- | --- | --- | --- | --- | | 氮氧化物 | mg/L | NOx（479）-WSTD-250506-03-01 | 1.63±0.11 | 1.66 | 合格 | | 氮氧化物 | mg/L | NOx（479）-WSTD-250506-03-01 | 1.63±0.11 | 1.67 | 合格 | | 氮氧化物 | mg/L | NOx（479）-WSTD-250506-03-01 | 1.63±0.11 | 1.70 | 合格 | | 二氧化硫 | mg/L | SO2-WSTD-250506-03-01 | 0.416±0.040 | 0.413 | 合格 | | 二氧化硫 | mg/L | SO2-WSTD-250506-03-01 | 0.416±0.040 | 0.421 | 合格 | | 有证标准样品实测值质控结果判定参考相对应检测项目标准物质标准值控制范围要求。 | | | | | | |

# 续表五 质量控制

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 5.7.4加标回收试验  依据技术规定，当没有合适的基体有证标准物质时，采用样品加标回收率试验对准确度进行控制，加标回收率统计见表5-23~5-24。  **表5-23 实验室有组织废气样品/空白加标试验结果**   | **样品编号** | **检测项目** | **回收率（%）** | **允许回收率（%）** | **质控结果判定** | | --- | --- | --- | --- | --- | | 空白加标 | 总VOCs | 111 | 60-120 | 合格 | | 空白加标 | 总VOCs | 109 | 60-120 | 合格 | | 允许回收率参考相关检测标准要求。 | | | | |   **表5-24 实验室无组织废气样品/空白加标试验结果**   | **样品编号** | **检测项目** | **回收率（%）** | **允许回收率（%）** | **质控结果判定** | | --- | --- | --- | --- | --- | | 空白加标 | 总VOCs | 107 | 60-120 | 合格 | | 空白加标 | 锰及其化合物（以Mn计） | 103 | 80-110 | 合格 | | 空白加标 | 锰及其化合物（以Mn计） | 103 | 80-110 | 合格 | | 空白加标 | 锰及其化合物（以Mn计） | 101 | 80-110 | 合格 | | 空白加标 | 锰及其化合物（以Mn计） | 102 | 80-110 | 合格 | | 空白加标 | 镍及其化合物（以Ni计） | 101 | 80-110 | 合格 | | 空白加标 | 镍及其化合物（以Ni计） | 101 | 80-110 | 合格 | | 空白加标 | 镍及其化合物（以Ni计） | 102 | 80-110 | 合格 | | 允许回收率参考相关检测标准要求。 | | | | | |

# 续表五 质量控制

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 5.8采样仪器流量校准记录  **表5-25声仪测量前后校准结果**   | **仪器型号及编号** | **测量时段** | | **校准声级[dB(A)]** | **标准声级[dB(A)]** | | **示值误差[dB(A)]** | **技术要求[dB(A)]** | **是否合格** | | --- | --- | --- | --- | --- | --- | --- | --- | --- | | 多功能声级计AWA5688型(A-1367） | 2025.06.03 | 测量前 | 93.8 | | 94.0 | 0.2 | ±0.5 | 合格 | | 测量后 | 93.8 | | 94.0 | 0.2 | | 多功能声级计AWA5688型(A-1367） | 2025.06.04 | 测量前 | 93.8 | | 94.0 | 0.2 | ±0.5 | 合格 | | 测量后 | 93.8 | | 94.0 | 0.2 |   **表5-26大气采样器流量校准结果**   | **仪器型号/编号** | **校准**  **时间** | **表观流量(L/min)** | | | | **实测流量(L/min)** | | | | **相对偏差范围(%)** | **允许相对**  **偏差（%）** | **合格 与否** | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | **1** | **2** | **3** | **4** | | YLB-3330D/  A-1238 | 采样前 | 20.0 | 30.0 | 40.0 | 50.0 | 19.8 | 29.8 | 39.6 | 50.8 | 0.33-0.79 | ±5 | 合格 | | 采样后 | 20.0 | 30.0 | 40.0 | 50.0 | 19.6 | 29.3 | 40.2 | 50.3 | 0.25-1.2 | ±5 | 合格 | | YLB-3330D/  A-1050 | 采样前 | 20.0 | 30.0 | 40.0 | 50.0 | 20.4 | 29.1 | 39.5 | 51.2 | 0.63-1.5 | ±5 | 合格 | | 采样后 | 20.0 | 30.0 | 40.0 | 50.0 | 20.1 | 29.0 | 39.4 | 49.4 | 0.25-1.7 | ±5 | 合格 | | YLB-3330D/  A-1239 | 采样前 | 20.0 | 30.0 | 40.0 | 50.0 | 19.8 | 29.2 | 40.0 | 50.9 | 0.00-1.4 | ±5 | 合格 | | 采样后 | 20.0 | 30.0 | 40.0 | 50.0 | 19.7 | 30.1 | 39.9 | 49.7 | 0.13-0.76 | ±5 | 合格 | | 3012H/  A-017 | 采样前 | 20.0 | 30.0 | 40.0 | 50.0 | 20.4 | 29.7 | 41.0 | 49.8 | 0.20-1.2 | ±5 | 合格 | | 采样后 | 20.0 | 30.0 | 40.0 | 50.0 | 20.0 | 29.9 | 39.1 | 49.5 | 0.00-1.1 | ±5 | 合格 | | 3012H/  A-101 | 采样前 | 20.0 | 30.0 | 40.0 | 50.0 | 19.6 | 30.3 | 40.6 | 49.7 | 0.30-1.0 | ±5 | 合格 | | 采样后 | 20.0 | 30.0 | 40.0 | 50.0 | 20.5 | 30.0 | 40.2 | 49.1 | 0.00-1.2 | ±5 | 合格 | | 校准日期：2025.05.28；校准仪器名称：大流量孔口校准器/智能高精度综合校准仪；校准器编号：A-019 | | | | | | | | | | | | | |

# 续表五 质量控制

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **表5-27大气采样器流量校准结果**   | **仪器型号/编号** | **校准**  **时间** | **表观流量(L/min)** | | | | **实测流量(L/min)** | | | | **相对偏差范围(%)** | **允许相对**  **偏差（%）** | **合格 与否** | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | **1** | **2** | **3** | **4** | | YLB-3330D/  A-1238 | 采样前 | 20.0 | 30.0 | 40.0 | 50.0 | 20.3 | 30.2 | 40.3 | 49.2 | 0.33-0.81 | ±5 | 合格 | | 采样后 | 20.0 | 30.0 | 40.0 | 50.0 | 20.3 | 29.4 | 40.1 | 49.8 | 0.12-1.0 | ±5 | 合格 | | YLB-3330D/  A-1050 | 采样前 | 20.0 | 30.0 | 40.0 | 50.0 | 20.1 | 29.3 | 39.7 | 49.8 | 0.20-1.2 | ±5 | 合格 | | 采样后 | 20.0 | 30.0 | 40.0 | 50.0 | 19.7 | 29.4 | 39.8 | 49.6 | 0.25-1.0 | ±5 | 合格 | | YLB-3330D/  A-1239 | 采样前 | 20.0 | 30.0 | 40.0 | 50.0 | 19.9 | 28.9 | 40.0 | 51.0 | 0.00-1.9 | ±5 | 合格 | | 采样后 | 20.0 | 30.0 | 40.0 | 50.0 | 19.5 | 29.5 | 39.1 | 50.4 | 0.40-1.2 | ±5 | 合格 | | 3012H/  A-017 | 采样前 | 20.0 | 30.0 | 40.0 | 50.0 | 19.7 | 29.1 | 40.1 | 51.1 | 0.12-1.5 | ±5 | 合格 | | 采样后 | 20.0 | 30.0 | 40.0 | 50.0 | 19.8 | 29.1 | 39.4 | 50.4 | 0.40-1.5 | ±5 | 合格 | | 3012H/  A-101 | 采样前 | 20.0 | 30.0 | 40.0 | 50.0 | 20.4 | 29.8 | 40.1 | 49.8 | 0.12-0.99 | ±5 | 合格 | | 采样后 | 20.0 | 30.0 | 40.0 | 50.0 | 20.0 | 28.8 | 40.2 | 50.3 | 0.00-2.0 | ±5 | 合格 | | 校准日期：2025.05.29；校准仪器名称：大流量孔口校准器/智能高精度综合校准仪；校准器编号：A-019 | | | | | | | | | | | | |   **表5-28 大气采样器流量校准结果**   | **仪器型号/编号** | **表观流量(mL/min)** | **校准**  **时间** | **实测流量(mL/min)** | | | | | **允许偏差(mL/min)** | **合格与否** | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | **1** | **2** | **3** | **4** | **5** | | YLB-2710/A-1808 | 100 | 采样前 | 101 | 100 | 100 | 100 | 101 | ≤5 | 合格 | | 100 | 采样后 | 102 | 100 | 102 | 100 | 101 | ≤5 | 合格 | | YLB-2710/A-1820 | 100 | 采样前 | 101 | 103 | 101 | 102 | 98 | ≤5 | 合格 | | 100 | 采样后 | 98 | 102 | 102 | 102 | 100 | ≤5 | 合格 | | 校准日期：2025.05.28；校准仪器名称：大流量孔口校准器/智能高精度综合校准仪；校准器编号：A-019 | | | | | | | | | | |

# 续表五 质量控制

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **表5-29大气采样器流量校准结果**   | **仪器型号/编号** | **表观流量(mL/min)** | **校准**  **时间** | **实测流量(mL/min)** | | | | | **允许偏差(mL/min)** | **合格与否** | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | **1** | **2** | **3** | **4** | **5** | | ADS2062E/A-458 | 100 | 采样前 | 101 | 102 | 98 | 100 | 101 | ≤5 | 合格 | | 100 | 采样后 | 100 | 102 | 99 | 99 | 99 | ≤5 | 合格 | | YLB-2700S/A-1530 | 100 | 采样前 | 99 | 102 | 101 | 100 | 102 | ≤5 | 合格 | | 100 | 采样后 | 98 | 102 | 100 | 101 | 99 | ≤5 | 合格 | | YLB-2700S/A-1524 | 100 | 采样前 | 101 | 100 | 100 | 100 | 99 | ≤5 | 合格 | | 100 | 采样后 | 101 | 101 | 103 | 100 | 101 | ≤5 | 合格 | | YLB-2700S/A-1134 | 100 | 采样前 | 99 | 102 | 100 | 103 | 101 | ≤5 | 合格 | | 100 | 采样后 | 100 | 103 | 99 | 99 | 100 | ≤5 | 合格 | | ADS2062E/A-114 | 400 | 采样前 | 408 | 401 | 395 | 405 | 397 | ≤20 | 合格 | | 400 | 采样后 | 409 | 405 | 404 | 403 | 403 | ≤20 | 合格 | | ADS2062E/A-109 | 400 | 采样前 | 406 | 391 | 395 | 406 | 405 | ≤20 | 合格 | | 400 | 采样后 | 401 | 405 | 402 | 402 | 392 | ≤20 | 合格 | | ADS2062E/A-110 | 400 | 采样前 | 396 | 410 | 406 | 408 | 409 | ≤20 | 合格 | | 400 | 采样后 | 394 | 406 | 393 | 407 | 399 | ≤20 | 合格 | | ADS2062E/A-113 | 400 | 采样前 | 392 | 407 | 398 | 396 | 399 | ≤20 | 合格 | | 400 | 采样后 | 403 | 407 | 408 | 403 | 410 | ≤20 | 合格 | | ADS2062E/A-114 | 500 | 采样前 | 512 | 511 | 508 | 506 | 514 | ≤25 | 合格 | | 500 | 采样后 | 504 | 511 | 507 | 500 | 494 | ≤25 | 合格 | | ADS2062E/A-109 | 500 | 采样前 | 495 | 514 | 513 | 494 | 491 | ≤25 | 合格 | | 500 | 采样后 | 511 | 498 | 503 | 508 | 513 | ≤25 | 合格 | | ADS2062E/A-110 | 500 | 采样前 | 509 | 511 | 493 | 495 | 505 | ≤25 | 合格 | | 500 | 采样后 | 508 | 497 | 498 | 502 | 504 | ≤25 | 合格 | | ADS2062E/A-113 | 500 | 采样前 | 513 | 514 | 515 | 500 | 506 | ≤25 | 合格 | | 500 | 采样后 | 504 | 503 | 504 | 498 | 491 | ≤25 | 合格 | | 校准日期：2025.06.03；校准仪器名称：大流量孔口校准器/智能高精度综合校准仪；校准器编号：A-019 | | | | | | | | | | |

# 续表五 质量控制

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **表5-30 大气采样器流量校准结果**   | **仪器型号/编号** | **表观流量(mL/min)** | **校准**  **时间** | **实测流量(mL/min)** | | | | | **允许偏差(mL/min)** | **合格与否** | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | **1** | **2** | **3** | **4** | **5** | | YLB-2710/A-1808 | 100 | 采样前 | 103 | 102 | 103 | 103 | 99 | ≤5 | 合格 | | 100 | 采样后 | 99 | 100 | 99 | 101 | 98 | ≤5 | 合格 | | YLB-2710/A-1820 | 100 | 采样前 | 99 | 99 | 102 | 99 | 98 | ≤5 | 合格 | | 100 | 采样后 | 103 | 99 | 101 | 99 | 98 | ≤5 | 合格 | | 校准日期：2025.05.29；校准仪器名称：大流量孔口校准器/智能高精度综合校准仪；校准器编号：A-019 | | | | | | | | | | |

# 续表五 质量控制

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| **表5-31 大气采样器流量校准结果**   | **仪器型号/编号** | **表观流量(mL/min)** | **校准**  **时间** | **实测流量(mL/min)** | | | | | **允许偏差(mL/min)** | **合格与否** | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | **1** | **2** | **3** | **4** | **5** | | ADS2062E/A-458 | 100 | 采样前 | 99 | 102 | 99 | 102 | 101 | ≤5 | 合格 | | 100 | 采样后 | 101 | 101 | 100 | 99 | 101 | ≤5 | 合格 | | YLB-2700S/A-1530 | 100 | 采样前 | 100 | 102 | 99 | 103 | 99 | ≤5 | 合格 | | 100 | 采样后 | 101 | 99 | 98 | 102 | 101 | ≤5 | 合格 | | YLB-2700S/A-1524 | 100 | 采样前 | 101 | 102 | 102 | 98 | 101 | ≤5 | 合格 | | 100 | 采样后 | 99 | 102 | 100 | 103 | 99 | ≤5 | 合格 | | YLB-2700S/A-1134 | 100 | 采样前 | 99 | 102 | 100 | 100 | 99 | ≤5 | 合格 | | 100 | 采样后 | 100 | 103 | 98 | 103 | 102 | ≤5 | 合格 | | ADS2062E/A-114 | 400 | 采样前 | 397 | 403 | 407 | 401 | 403 | ≤20 | 合格 | | 400 | 采样后 | 392 | 401 | 390 | 408 | 395 | ≤20 | 合格 | | ADS2062E/A-109 | 400 | 采样前 | 404 | 404 | 392 | 402 | 393 | ≤20 | 合格 | | 400 | 采样后 | 410 | 407 | 406 | 394 | 399 | ≤20 | 合格 | | ADS2062E/A-110 | 400 | 采样前 | 398 | 394 | 3989 | 397 | 405 | ≤20 | 合格 | | 400 | 采样后 | 408 | 392 | 407 | 406 | 391 | ≤20 | 合格 | | ADS2062E/A-113 | 400 | 采样前 | 397 | 393 | 392 | 397 | 391 | ≤20 | 合格 | | 400 | 采样后 | 397 | 400 | 392 | 408 | 397 | ≤20 | 合格 | | ADS2062E/A-114 | 500 | 采样前 | 504 | 500 | 496 | 500 | 493 | ≤25 | 合格 | | 500 | 采样后 | 492 | 500 | 494 | 496 | 503 | ≤25 | 合格 | | ADS2062E/A-109 | 500 | 采样前 | 505 | 514 | 505 | 492 | 510 | ≤25 | 合格 | | 500 | 采样后 | 515 | 499 | 512 | 495 | 501 | ≤25 | 合格 | | ADS2062E/A-110 | 500 | 采样前 | 509 | 505 | 491 | 494 | 512 | ≤25 | 合格 | | 500 | 采样后 | 493 | 509 | 509 | 496 | 495 | ≤25 | 合格 | | ADS2062E/A-113 | 500 | 采样前 | 504 | 497 | 492 | 496 | 492 | ≤25 | 合格 | | 500 | 采样后 | 493 | 495 | 509 | 513 | 512 | ≤25 | 合格 | | 校准日期：2025.06.04；校准仪器名称：大流量孔口校准器/智能高精度综合校准仪；校准器编号：A-019 | | | | | | | | | | |

# 续表五 质量控制

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| **表5-32大气采样器流量校准结果**   | **仪器型号/编号** | **表观流量(L/min)** | **校准**  **时间** | **实测流量(L/min)** | | | | | | | | | | **允许偏差(L/min)** | **合格与否** | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | | YLB-2700S/A-1530 | 100 | 采样前 | 101.5 | 100.8 | 98.9 | 98.6 | 101.7 | 99.9 | 101.7 | 99.4 | 99.6 | 99.7 | ≤2 | 合格 | | 100 | 采样后 | 99.1 | 101.7 | 100.6 | 101.7 | 100.6 | 100.6 | 99.2 | 99.4 | 99.7 | 100.6 | ≤2 | 合格 | | YLB-2700S/A-1524 | 100 | 采样前 | 99.1 | 101.1 | 100.8 | 101.2 | 99.9 | 101.5 | 98.8 | 98.9 | 100.5 | 100.0 | ≤2 | 合格 | | 100 | 采样后 | 98.8 | 101.6 | 100.8 | 99.6 | 100.5 | 100.4 | 99.5 | 100.6 | 99.9 | 99.8 | ≤2 | 合格 | | YLB-2700S/A-1134 | 100 | 采样前 | 100.7 | 98.7 | 99.1 | 98.5 | 99.7 | 100.6 | 100.0 | 101.6 | 101.6 | 99.4 | ≤2 | 合格 | | 100 | 采样后 | 99.6 | 100.8 | 100.4 | 101.1 | 99.3 | 101.6 | 99.3 | 99.2 | 100.8 | 100.6 | ≤2 | 合格 | | ADS2062E/A-114 | 100 | 采样前 | 101.5 | 101.7 | 100.6 | 98.5 | 99.3 | 98.9 | 101.3 | 100.3 | 100.4 | 99.4 | ≤2 | 合格 | | 100 | 采样后 | 99.3 | 101.5 | 98.7 | 100.6 | 99.3 | 100.9 | 100.8 | 100.1 | 101.1 | 98.8 | ≤2 | 合格 | | ADS2062E/A-458 | 100 | 采样前 | 99.7 | 99.8 | 100.4 | 100.0 | 101.5 | 99.3 | 98.2 | 98.6 | 99.7 | 101.0 | ≤2 | 合格 | | 100 | 采样后 | 98.2 | 98.8 | 98.6 | 98.2 | 99.3 | 98.3 | 101.6 | 99.8 | 101.3 | 100.9 | ≤2 | 合格 | | ADS2062E/A-109 | 100 | 采样前 | 99.1 | 99.4 | 101.5 | 98.5 | 101.6 | 99.9 | 101.1 | 99.8 | 98.5 | 98.7 | ≤2 | 合格 | | 100 | 采样后 | 100.3 | 98.7 | 101.0 | 99.7 | 101.4 | 101.2 | 100.3 | 99.1 | 100.3 | 99.7 | ≤2 | 合格 | | ADS2062E/A-110 | 100 | 采样前 | 100.6 | 98.9 | 100.8 | 98.9 | 101.3 | 98.4 | 98.9 | 98.6 | 101.4 | 99.8 | ≤2 | 合格 | | 100 | 采样后 | 100.5 | 100.1 | 100.9 | 98.2 | 99.1 | 101.0 | 99.5 | 101.3 | 100.6 | 99.8 | ≤2 | 合格 | | ADS2062E/A-113 | 100 | 采样前 | 101.4 | 100.4 | 101.3 | 98.3 | 101.1 | 100.2 | 101.4 | 100.8 | 98.7 | 101.5 | ≤2 | 合格 | | 100 | 采样后 | 101.1 | 99.1 | 98.9 | 100.0 | 99.6 | 101.5 | 100.6 | 98.8 | 100.2 | 100.2 | ≤2 | 合格 | | 校准日期：2025.06.03；校准仪器名称：大流量孔口校准器/智能高精度综合校准仪；校准器编号：A-019 | | | | | | | | | | | | | | | |  | | | | | | | | | | | | | | | |

# 续表五 质量控制

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| **表5-33 大气采样器流量校准结果**   | **仪器型号/编号** | **表观流量(L/min)** | **校准**  **时间** | **实测流量(L/min)** | | | | | | | | | | **允许偏差(L/min)** | **合格与否** | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | | YLB-2700S/A-1530 | 100 | 采样前 | 100.8 | 99.7 | 100.6 | 100.5 | 100.6 | 99.9 | 100.1 | 100.1 | 100.5 | 99.4 | ≤2 | 合格 | | 100 | 采样后 | 99.3 | 99.2 | 100.3 | 100.0 | 100.5 | 99.3 | 99.8 | 100.4 | 100.8 | 100.9 | ≤2 | 合格 | | YLB-2700S/A-1524 | 100 | 采样前 | 100.2 | 100.6 | 100.5 | 99.8 | 99.7 | 100.7 | 100.5 | 100.6 | 100.3 | 99.8 | ≤2 | 合格 | | 100 | 采样后 | 100.3 | 1100.3 | 99.7 | 100.1 | 100.2 | 99.9 | 99.8 | 100.5 | 100.8 | 100.4 | ≤2 | 合格 | | YLB-2700S/A-1134 | 100 | 采样前 | 100.5 | 99.7 | 100.6 | 100.2 | 100.3 | 99.9 | 99.7 | 99.6 | 100.3 | 100.2 | ≤2 | 合格 | | 100 | 采样后 | 100.6 | 100.2 | 100.6 | 100.3 | 99.5 | 99.6 | 100.4 | 99.8 | 100.5 | 100.3 | ≤2 | 合格 | | ADS2062E/A-114 | 100 | 采样前 | 100.5 | 100.3 | 100.2 | 99.3 | 99.6 | 99.5 | 100.2 | 100.1 | 99.2 | 99.7 | ≤2 | 合格 | | 100 | 采样后 | 100.2 | 100.3 | 100.1 | 99.1 | 99.2 | 99.7 | 100.5 | 100.3 | 100.4 | 100.5 | ≤2 | 合格 | | ADS2062E/A-458 | 100 | 采样前 | 100.1 | 100.5 | 100.2 | 99.6 | 99.7 | 100.5 | 99.1 | 99.8 | 100.3 | 100.7 | ≤2 | 合格 | | 100 | 采样后 | 100.6 | 99.7 | 99.3 | 99.2 | 100.1 | 100.2 | 100.4 | 99.8 | 99.1 | 100.5 | ≤2 | 合格 | | ADS2062E/A-109 | 100 | 采样前 | 100.6 | 99.8 | 100.6 | 99.8 | 100.8 | 100.3 | 100.4 | 100.3 | 99.2 | 99.7 | ≤2 | 合格 | | 100 | 采样后 | 100.1 | 100.2 | 99.6 | 99.4 | 99.5 | 100.3 | 100.2 | 99.7 | 99.6 | 99.8 | ≤2 | 合格 | | ADS2062E/A-110 | 100 | 采样前 | 100.6 | 100.5 | 99.2 | 99.8 | 99.9 | 100.6 | 100.3 | 99.1 | 99.5 | 100.2 | ≤2 | 合格 | | 100 | 采样后 | 100.2 | 100.3 | 99.3 | 99.1 | 99.2 | 100.5 | 100.7 | 100.3 | 99.2 | 100.1 | ≤2 | 合格 | | ADS2062E/A-113 | 100 | 采样前 | 100.5 | 99.8 | 100.2 | 99.2 | 100.3 | 100.3 | 100.6 | 100.2 | 100.5 | 99.6 | ≤2 | 合格 | | 100 | 采样后 | 100.1 | 100.5 | 99.9 | 99.2 | 99.3 | 100.5 | 100.6 | 100.2 | 100.1 | 99.3 | ≤2 | 合格 | | 校准日期：2025.06.04；校准仪器名称：大流量孔口校准器/智能高精度综合校准仪；校准器编号：A-019 | | | | | | | | | | | | | | | |

# 续表五 质量控制

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **5.9质控总结**  本批次有组织废气样品318个，废水样品16个，无组织废气样品278个，生活污水样品8个。  有组织废气采集了10个空白样，废水样品采集了2个，无组织废气采集了18个空白样，检测结果均小于方法检出限/相关空白要求，符合标准测试要求。  实验室还进行了内部质量控制活动，废水开展了样品的空白试验、实验室平行、有证物质、加标回收试验，生活污水开展了样品的空白试验、实验室平行、有证物质，有组织废气均开展了样品的空白试验，实验室平行、加标回收试验，无组织废气均开展了样品的空白试验，实验室平行、有证物质、加标回收试验，结果均符合要求。质控总结表见表5-34。  **表5-34 质控措施具体实施表**   | **项目** | | **基础样品总数（个）** | **现场平行（个）** | **室内平行（个）** | **加标回收（个）** | **质控样（个）** | | --- | --- | --- | --- | --- | --- | --- | | 废水 | 化学需氧量 | 16 | 2 | 4 | 0 | 4 | | pH值 | 16 | 2 | 0 | 0 | 2 | | 五日生化需氧量 | 16 | 2 | 10 | 0 | 2 | | 氨氮 | 16 | 2 | 3 | 0 | 2 | | 阴离子表面活性剂 | 16 | 2 | 2 | 0 | 2 | | 氟化物 | 16 | 2 | 2 | 0 | 1 | | 悬浮物 | 16 | 0 | 2 | 0 | 0 | | 石油类 | 16 | 0 | 0 | 0 | 2 | | 生活污水 | 化学需氧量 | 8 | 0 | 0 | 0 | 4 | | 五日生化需氧量 | 8 | 0 | 0 | 0 | 2 | | 氨氮 | 8 | 0 | 0 | 0 | 2 | | 悬浮物 | 8 | 0 | 1 | 0 | 0 | | 有组织废气 | 非甲烷总烃 | 168 | 0 | 18 | 0 | 0 | | 颗粒物 | 42 | 0 | 0 | 0 | 0 | | 臭气浓度 | 56 | 0 | 0 | 0 | 0 | | 总VOCs | 12 | 2 | 0 | 2 | 0 | | 油烟 | 40 | 0 | 0 | 0 | 0 | | 无组织废气 | 氮氧化物 | 24 | 0 | 0 | 0 | 3 | | 总悬浮颗粒物 | 30 | 0 | 0 | 0 | 0 | | 臭气浓度 | 32 | 0 | 0 | 0 | 0 | | 二氧化硫 | 24 | 0 | 0 | 0 | 2 | | 非甲烷总烃 | 120 | 0 | 14 | 0 | 0 | |

# 续表五 质量控制

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **续表5-34 质控措施具体实施表**   | **项目** | | **基础样品总数（个）** | **现场平行（个）** | **室内平行（个）** | **加标回收（个）** | **质控样（个）** | | --- | --- | --- | --- | --- | --- | --- | | 无组织废气 | 锰及其化合物（以Mn计） | 24 | 0 | 0 | 4 | 0 | | 镍及其化合物（以Ni计） | 24 | 0 | 0 | 3 | 0 | | 总VOCs | 24 | 2 | 0 | 1 | 0 |   综上所述，在样品采集、运输与保存、实验室分析等各个环节上，本公司均参照HJ 91.1-2019《污水监测技术规范》、HJ/T 55-2000《大气污染物无组织排放监测技术导则》、HJ/T 397-2007《固定源废气监测技术规范》、GB 12348-2008《工业企业厂界环境噪声排放标准》和其他相关标准规定进行的全流程质量控制，严格执行全过程的质量保证和质量控制工作，质量控制符合要求，出具结果准确可靠。 |

# 表六 监测内容

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **1 监测工况**  我公司于2025年05月27日~28日、06月03日~04日对广恒合优科技高端钣金制造智能化工厂项目（一期）开展了竣工环境保护验收监测工作。验收监测期间，该项目生产工况稳定，各环保处理设施运行正常，2025年05月28日~29日、06月03日~04日生产工况分别为80**%**、80**%**、82**%**、82**%**，生产负荷情况详见表6-1。  **表6-1 验收监测期间生产负荷**   |  |  |  |  |  | | --- | --- | --- | --- | --- | | **监测时间** | **产品类型** | **一期设计生产能力（天）** | **一期实际生产能力（天）** | **生产负荷（%）** | | 05月27日 | 金属冲压制品 | 6.67 | 5.33 | 80% | | 金属涂装制品 | 5.00 | 4.00 | 80% | | 不锈钢冲压制品 | 0.92 | 0.73 | 80% | | 烧烤炉 | 0.33 | 0.27 | 80% | | 厨卫电器 | 0.33 | 0.27 | 80% | | 塑料零件 | 1.46 | 1.17 | 80% | | 05月28日 | 金属冲压制品 | 6.67 | 5.33 | 80% | | 金属涂装制品 | 5.00 | 4.00 | 80% | | 不锈钢冲压制品 | 0.92 | 0.73 | 80% | | 烧烤炉 | 0.33 | 0.27 | 80% | | 厨卫电器 | 0.33 | 0.27 | 80% | | 塑料零件 | 1.46 | 1.17 | 80% | | 06月03日 | 金属冲压制品 | 6.67 | 5.47 | 82% | | 金属涂装制品 | 5.00 | 4.10 | 82% | | 不锈钢冲压制品 | 0.92 | 0.75 | 82% | | 烧烤炉 | 0.33 | 0.27 | 82% | | 厨卫电器 | 0.33 | 0.27 | 82% | | 塑料零件 | 1.46 | 1.20 | 82% | | 06月04日 | 金属冲压制品 | 6.67 | 5.47 | 82% | | 金属涂装制品 | 5.00 | 4.10 | 82% | | 不锈钢冲压制品 | 0.92 | 0.75 | 82% | | 烧烤炉 | 0.33 | 0.27 | 82% | | 厨卫电器 | 0.33 | 0.27 | 82% | | 塑料零件 | 1.46 | 1.20 | 82% | | 备注：一期项目年产金属冲压制品2000万件/年，金属涂装制品1500万件/年，不锈钢冲压制品275万件/年，烧烤炉100万套/年、厨卫电器100万套/年、塑料零件437.5吨/年，年工作天数300天。 | | | | | |

# 表六 监测内容

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **2 废水监测**  2025年06月03日~04日，我公司对该项目进行验收监测，监测点位图见图6-1。在生活污水排放口、生产废水处理前、处理后各布设1个监测点，监测因子和频次见表6-2。  **表6-2 生活污水监测内容**   |  |  |  | | --- | --- | --- | | **点位名称** | **监测项目** | **监测频次** | | 生活污水排放口 | 化学需氧量、五日生化需氧量、悬浮物、氨氮、pH值 | 1天4次共2天 | | 生产废水处理前 | pH值、化学需氧量、五日生化需氧量、氨氮、悬浮物、石油类、阴离子表面活性剂、氟化物 | 1天4次共2天 | | 生产废水处理后 |   **3 废气监测**  （1）有组织废气监测  监测期间，喷粉后固化工序废气、燃天然气废气进气口1#，喷粉后固化工序废气、燃天然气废气进气口2#，喷粉后固化工序废气、燃天然气废气排放口，注塑工序有机废气进气口，注塑工序有机废气排放口G5，丝印移印、烘干固化、金属清洁工序有机废气进气口，丝印移印、烘干固化、金属清洁工序有机废气排放口G6，油烟废气排放口，油烟废气进气口分别设置监测点，详见表6-3。  **表6-3 有组织废气监测内容**   |  |  |  | | --- | --- | --- | | **检测点位** | **检测项目** | **检测频次** | | 喷粉后固化工序废气、燃天然气废气进气口1# | 非甲烷总烃、颗粒物、臭气浓度 | 1天3次共2天  （臭气浓度1天4次共2天） | | 喷粉后固化工序废气、燃天然气废气进气口2# | | 喷粉后固化工序废气、燃天然气废气排放口 | 颗粒物、非甲烷总烃、臭气浓度、二氧化硫、氮氧化物、烟气黑度（林格曼黑度） | | 注塑工序有机废气进气口 | 非甲烷总烃、臭气浓度 | | 注塑工序有机废气排放口G5 | | 丝印移印、烘干固化、金属清洁工序有机废气进气口 | 总VOCs、非甲烷总烃、臭气浓度 | | 丝印移印、烘干固化、金属清洁工序有机废气排放口G6 | | 油烟废气排放口 | 油烟 | 1天2次共2天 | | 油烟废气进气口 | |

# 续表六 监测内容

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| （2）无组织废气监测  监测期间，在厂界上风向布设1个监测点位，下风向布设3个监测点位，厂区内布设1个监测点位，进行无组织废气的监测，详见表6-4。  **表6-4 无组织废气监测内容**   |  |  |  | | --- | --- | --- | | **点位名称** | **监测项目** | **监测频次** | | 上风向A1 | 总悬浮颗粒物（颗粒物）、锰及其化合物（以Mn计）、镍及其化合物（以Ni计）、氮氧化物、二氧化硫、非甲烷总烃、臭气浓度、总VOCs | 1天3次共2天  （臭气浓度1天4次共2天） | | 下风向A2 | | 下风向A3 | | 下风向A4 | | 厂区内监测点A5 | 总悬浮颗粒物（颗粒物）、非甲烷总烃 | 昼间1天2次共2天 | |

**续表六 监测内容**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **4 噪声监测**  厂界噪声验收监测根据《工业企业厂界环境噪声排放标准》（GB 12348-2008）中的规定，测点（即传声器位置）选在法定厂界外1米，高度距离地面1.2米以上处。本次验收监测共设5个噪声监测点，每天昼间监测2次，连续监测2天。噪声监测内容，详见表6-5。  **表6-5 噪声监测内容**   |  |  |  | | --- | --- | --- | | **监测类别** | **点位名称** | **监测频次** | | 噪声 | 东北厂界外1m处1# | 昼间1天2次共2天 | | 东南厂界外1m处2# | | 西南厂界外1m处3# | | 西北厂界外1m处4# | | 声源 | 压铸区声源点5# | |

# 续表六 监测内容

|  |
| --- |
| **图6-1 生活污水、废水、有组织废气、无组织废气、噪声检测点位示意图**  （★表示生活污水、废水检测点位、◎表示有组织废气检测点位、○表示无组织废气检测点位、  ▲表示噪声检测点位） |

# 表七 验收监测结果

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **1 废水监测结果及评价**  生活污水监测结果详见表7-1。 表7-1 生活污水监测结果  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | | **监测时间** | **监测项目** | **监测结果（mg/L）** | | | | | | **达标**  **情况** | | **生活污水排放口** | | | | | **标准**  **限值** | | **第1次** | **第2次** | **第3次** | **第4次** | **平均值**  **或范围** | | 2025.06.03 | pH值（无量纲） | 7.4（水温30.6℃） | 7.3（水温30.8℃） | 7.4（水温30.5℃） | 7.2（水温30.5℃） | 7.2-7.4 | 6~9 | 达标 | | 化学需氧量（mg/L） | 200 | 211 | 194 | 205 | 202 | 500 | 达标 | | 五日生化需氧量（mg/L） | 54.8 | 56.6 | 53.6 | 55.6 | 55.2 | 300 | 达标 | | 氨氮（mg/L） | 99.4 | 97.7 | 99.9 | 98.8 | 99.0 | / | / | | 悬浮物（mg/L） | 30 | 29 | 33 | 36 | 32 | 400 | 达标 | | 2025.06.04 | pH值（无量纲） | 7.4（水温30.2℃） | 7.4（水温30.6℃） | 7.3（水温29.7℃） | 7.3（水温30.7℃） | 7.3-7.4 | 6~9 | 达标 | | 化学需氧量（mg/L） | 233 | 221 | 240 | 231 | 231 | 500 | 达标 | | 五日生化需氧量（mg/L） | 63.9 | 60.6 | 68.6 | 61.4 | 63.6 | 300 | 达标 | | 氨氮（mg/L） | 98.5 | 98.6 | 98.2 | 98.7 | 98.5 | / | / | | 悬浮物（mg/L） | 28 | 35 | 35 | 32 | 32 | 400 | 达标 |   监测期间，项目生活污水排放口中化学需氧量、五日生化需氧量、悬浮物、pH值的排放浓度均符合广东省地方标准《水污染物排放限值》（DB 44/26-2001）第二时段三级标准的要求。 |

# 表七 验收监测结果

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 续表7-1 生产废水监测结果  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | | **监测时间** | **监测项目** | **监测结果（mg/L）** | | | | | | **达标**  **情况** | | 生产废水处理前 | | | | | **标准**  **限值** | | **第1次** | **第2次** | **第3次** | **第4次** | **平均值**  **或范围** | | 2025.06.03 | pH值（无量纲） | 8.2（水温30.1℃） | 8.1（水温30.4℃） | 8.3（水温30.5℃） | 8.3（水温31.0℃） | 8.1-8.3 | —— | —— | | 化学需氧量（mg/L） | 40 | 45 | 39 | 44 | 42 | —— | —— | | 五日生化需氧量（mg/L） | 16.0 | 17.9 | 15.6 | 18.2 | 16.9 | —— | —— | | 氨氮（mg/L） | 1.64 | 1.52 | 1.55 | 1.92 | 1.66 | —— | —— | | 悬浮物（mg/L） | 16 | 12 | 15 | 16 | 15 | —— | —— | | 石油类（mg/L） | 0.28 | 0.27 | 0.26 | 0.28 | 0.27 | —— | —— | | 阴离子表面活性剂（mg/L） | 1.26 | 1.29 | 1.27 | 1.24 | 1.26 | —— | —— | | 氟化物（mg/L） | 1.26 | 1.24 | 1.24 | 1.29 | 1.26 | —— | —— | | 2025.06.04 | pH值（无量纲） | 8.1（水温29.7℃） | 8.3（水温29.6℃） | 8.3（水温30.2℃） | 8.3（水温30.3℃） | 8.1-8.3 | —— | —— | | 化学需氧量（mg/L） | 45 | 41 | 46 | 44 | 44 | —— | —— | | 五日生化需氧量（mg/L） | 17.7 | 16.1 | 18.8 | 18.1 | 17.7 | —— | —— | | 氨氮（mg/L） | 1.94 | 1.77 | 1.56 | 1.55 | 1.70 | —— | —— | | 悬浮物（mg/L） | 14 | 17 | 12 | 14 | 14 | —— | —— | | 石油类（mg/L） | 0.27 | 0.29 | 0.32 | 0.31 | 0.30 | —— | —— | | 阴离子表面活性剂（mg/L） | 1.22 | 1.25 | 1.21 | 1.23 | 1.23 | —— | —— | | 氟化物（mg/L） | 1.24 | 1.26 | 1.28 | 1.27 | 1.26 | —— | —— | | 备注：  1、ND表示检测结果未检出或低于检出限。 | | | | | | | | | |

# 表七 验收监测结果

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 续表7-1 生产废水监测结果  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | | **监测时间** | **监测项目** | **监测结果（mg/L）** | | | | | | **达标**  **情况** | | 生产废水处理后 | | | | | **标准**  **限值** | | **第1次** | **第2次** | **第3次** | **第4次** | **平均值**  **或范围** | | 2025.06.03 | pH值（无量纲） | 7.7（水温28.4℃） | 7.7（水温28.5℃） | 7.6（水温28.3℃） | 7.6（水温28.8℃） | 7.6-7.7 | 6~9 | 达标 | | 化学需氧量（mg/L） | 25 | 28 | 24 | 26 | 26 | 90 | 达标 | | 去除率（%） | 37.5 | 37.8 | 38.5 | 40.9 | 38.1 | —— | —— | | 五日生化需氧量（mg/L） | 5.8 | 6.6 | 5.5 | 5.9 | 6.0 | 20 | 达标 | | 去除率（%） | 63.8 | 63.1 | 64.7 | 67.6 | 64.5 | —— | —— | | 氨氮（mg/L） | 0.311 | 0.286 | 0.342 | 0.321 | 0.315 | 10 | 达标 | | 去除率（%） | 81.0 | 81.2 | 77.9 | 83.3 | 81.0 | —— | —— | | 悬浮物（mg/L） | ND | ND | ND | ND | ND | 60 | 达标 | | 石油类（mg/L） | 0.14 | 0.12 | 0.12 | 0.12 | 0.12 | 5.0 | 达标 | | 去除率（%） | 50.0 | 55.6 | 53.8 | 57.1 | 55.6 | —— | —— | | 阴离子表面活性剂（mg/L） | 0.13 | 0.11 | 0.14 | 0.13 | 0.13 | 5.0 | 达标 | | 去除率（%） | 89.7 | 91.5 | 89.0 | 89.5 | 89.7 | —— | —— | | 氟化物（mg/L） | 1.16 | 1.12 | 1.17 | 1.11 | 1.14 | 20 | 达标 | | 去除率（%） | 7.9 | 9.7 | 5.6 | 14.0 | 9.5 | —— | —— | | 2025.06.04 | pH值（无量纲） | 7.7（水温28.2℃） | 7.7（水温28.3℃） | 7.6（水温28.8℃） | 7.6（水温28.3℃） | 7.6-7.7 | 6~9 | 达标 | | 化学需氧量（mg/L） | 26 | 25 | 23 | 24 | 24 | 90 | 达标 | | 去除率（%） | 42.2 | 39.0 | 50.0 | 45.5 | 45.5 | —— | —— | | 五日生化需氧量（mg/L） | 6.1 | 5.8 | 5.2 | 5.5 | 5.6 | 20 | 达标 | | 去除率（%） | 65.5 | 64.0 | 72.3 | 69.6 | 68.4 | —— | —— | | 氨氮（mg/L） | 0.313 | 0.295 | 0.320 | 0.311 | 0.310 | 10 | 达标 | | 去除率（%） | 83.9 | 83.3 | 79.5 | 79.9 | 81.8 | —— | —— | | 悬浮物（mg/L） | ND | ND | ND | ND | ND | 60 | 达标 | | 石油类（mg/L） | 0.22 | 0.22 | 0.22 | 0.23 | 0.22 | 5.0 | 达标 | | 去除率（%） | 18.5 | 24.1 | 31.3 | 25.8 | 26.7 | —— | —— | |

# 表七 验收监测结果

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 续表7-1 生产废水监测结果  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | | **监测时间** | **监测项目** | **监测结果（mg/L）** | | | | | | **达标**  **情况** | | 生产废水处理后 | | | | | **标准**  **限值** | | **第1次** | **第2次** | **第3次** | **第4次** | **平均值**  **或范围** | | 2025.06.04 | 阴离子表面活性剂（mg/L） | 0.11 | 0.12 | 0.11 | 0.12 | 0.12 | 5.0 | 达标 | | 去除率（%） | 91.0 | 90.4 | 90.9 | 90.2 | 90.2 | —— | —— | | 氟化物（mg/L） | 1.15 | 1.16 | 1.14 | 1.13 | 1.14 | 20 | 达标 | | 去除率（%） | 7.3 | 7.9 | 10.9 | 11.0 | 9.5 | —— | —— | | 备注：  1、ND表示检测结果未检出或低于检出限。 | | | | | | | | | |

# 续表七 验收监测结果

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **2 废气监测结果及评价**  有组织废气监测结果详见表7-2。  **表7-2 有组织废气监测结果**   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | **点位名称** | **监测项目** | | **监测结果** | | | | | | | | | | **标准限值** | **评价** | | **2025.05.28** | | | | **平均值** | **2025.05.29** | | | | **平均值** | | **第1次** | **第2次** | **第3次** | **第4次** | **第1次** | **第2次** | **第3次** | **第4次** | | 注塑工序有机废气进气口 | 标干排气流量（m3/h） | | 8850 | 9061 | 9285 | —— | 9065 | 9075 | 8952 | 9058 | —— | 9028 | —— | —— | | 非甲烷总烃 | 排放浓度（mg/m3） | 2.80 | 2.83 | 2.58 | —— | 2.74 | 0.59 | 0.55 | 3.12 | —— | 1.42 | —— | —— | | 排放速率（kg/h） | 0.025 | 0.026 | 0.024 | —— | 0.025 | 5.4×10⁻³ | 4.9×10⁻³ | 0.028 | —— | 0.013 | —— | —— | | 监测频次 | | **第1次** | **第2次** | **第3次** | **第4次** | **最大值** | **第1次** | **第2次** | **第3次** | **第4次** | **最大值** | —— | —— | | 臭气浓度（无量纲） | | 1513 | 1513 | 1513 | 1513 | 1513 | 1737 | 1737 | 1737 | 1737 | 1737 | —— | —— | |

# 续表七 验收监测结果

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **2 废气监测结果及评价**  有组织废气监测结果详见表7-2。  **表7-2 有组织废气监测结果**   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | **点位名称** | **监测项目** | | **监测结果** | | | | | | | | | | **标准限值** | **评价** | | **2025.05.28** | | | | **平均值** | **2025.05.29** | | | | **平均值** | | **第1次** | **第2次** | **第3次** | **第4次** | **第1次** | **第2次** | **第3次** | **第4次** | | 注塑工序有机废气排放口G5 | 排气筒高度（m） | | 45 | | | | | | | | | | —— | —— | | 标干排气流量（m3/h） | | 7348 | 8198 | 7785 | —— | 7777 | 7736 | 8672 | 8226 | —— | 8211 | —— | —— | | 非甲烷总烃 | 排放浓度（mg/m3） | 0.32 | 0.31 | 0.38 | —— | 0.34 | 0.36 | 0.34 | 0.30 | —— | 0.33 | 100 | 达标 | | 排放速率（kg/h） | 2.4×10⁻³ | 2.5×10⁻³ | 3.0×10⁻³ | —— | 2.6×10⁻³ | 2.8×10⁻³ | 2.9×10⁻³ | 2.5×10⁻³ | —— | 2.7×10⁻³ | —— | —— | | 去除率（%） | 90.4 | 90.4 | 87.5 | —— | 89.6 | 48.1 | 40.8 | 91.1 | —— | 79.2 | —— | —— | | 监测频次 | | **第1次** | **第2次** | **第3次** | **第4次** | 最大值 | **第1次** | **第2次** | **第3次** | **第4次** | 最大值 | —— | —— | | 臭气浓度（无量纲） | | 478 | 630 | 549 | 630 | 630 | 478 | 549 | 478 | 416 | 549 | 20000 | 达标 | |

# 续表七 验收监测结果

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **续表7-2 有组织废气监测结果**   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | **点位名称** | **监测项目** | | **监测结果** | | | | | | | | | | **标准限值** | **评价** | | 2025.05.28 | | | | **平均值** | 2025.05.29 | | | | **平均值** | | **第1次** | **第2次** | **第3次** | **第4次** | **第1次** | **第2次** | **第3次** | **第4次** | | 喷粉后固化工序废气、燃天然气废气进气口1# | 标干排气流量（m3/h） | | 11057 | 11037 | 11073 | —— | 11056 | 11171 | 11258 | 11283 | —— | 11237 | —— | —— | | 颗粒物 | 排放浓度（mg/m3） | 34 | 36 | 34 | —— | 35 | 44 | 45 | 45 | —— | 45 | —— | —— | | 排放速率（kg/h） | 0.38 | 0.40 | 0.38 | —— | 0.39 | 0.49 | 0.51 | 0.51 | —— | 0.51 | —— | —— | | 非甲烷总烃 | 排放浓度(mg/m3) | 9.58 | 9.74 | 9.04 | —— | 9.45 | 8.46 | 8.86 | 9.38 | —— | 8.90 | —— | —— | | 排放速率(kg/h) | 0.11 | 0.11 | 0.10 | —— | 0.10 | 0.095 | 0.10 | 0.11 | —— | 0.10 | —— | —— | | 监测频次 | | **第1次** | **第2次** | **第3次** | **第4次** | **最大值** | **第1次** | **第2次** | **第3次** | **第4次** | **最大值** | —— | —— | | 臭气浓度（无量纲） | | 1318 | 1513 | 1513 | 1318 | 1513 | 1318 | 1513 | 1513 | 1513 | 1513 | —— | —— | | 备注：ND表示检测结果未检出或低于检出限，其排放速率以检出限的50%进行计算。 | | | | | | | | | | | | | | | |

# 续表七 验收监测结果

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **续表7-2 有组织废气监测结果**   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | **点位名称** | **监测项目** | | **监测结果** | | | | | | | | | | **标准限值** | **评价** | | 2025.05.28 | | | | **平均值** | 2025.05.29 | | | | **平均值** | | **第1次** | **第2次** | **第3次** | **第4次** | **第1次** | **第2次** | **第3次** | **第4次** | | 喷粉后固化工序废气、燃天然气废气进气口2# | 标干排气流量（m3/h） | | 1931 | 2102 | 2112 | —— | 2048 | 2008 | 1968 | 2021 | —— | 1999 | —— | —— | | 颗粒物 | 排放浓度（mg/m3） | 38 | 33 | 32 | —— | 34 | 34 | 35 | 34 | —— | 34 | —— | —— | | 排放速率（kg/h） | 0.073 | 0.069 | 0.068 | —— | 0.070 | 0.068 | 0.069 | 0.069 | —— | 0.068 | —— | —— | | 非甲烷总烃 | 排放浓度(mg/m3) | 0.30 | 0.18 | 0.55 | —— | 0.34 | 0.69 | 0.64 | 0.58 | —— | 0.64 | —— | —— | | 排放速率(kg/h) | 5.8×10⁻⁴ | 3.8×10⁻⁴ | 1.2×10⁻³ | —— | 7.0×10⁻⁴ | 1.4×10⁻³ | 1.3×10⁻³ | 1.2×10⁻³ | —— | 1.3×10⁻³ | —— | —— | | 监测频次 | | **第1次** | **第2次** | **第3次** | **第4次** | **最大值** | **第1次** | **第2次** | **第3次** | **第4次** | **最大值** | —— | —— | | 臭气浓度（无量纲） | | 1318 | 1318 | 1318 | 1318 | 1318 | 1513 | 1513 | 1318 | 1318 | 1513 | —— | —— | | 备注：ND表示检测结果未检出或低于检出限，其排放速率以检出限的50%进行计算。 | | | | | | | | | | | | | | | |

# 续表七 验收监测结果

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **续表7-2 有组织废气监测结果**   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | **点位名称** | **监测项目** | | **监测结果** | | | | | | | | | | **标准限值** | **评价** | | 2025.05.28 | | | | **平均值** | 2025.05.29 | | | | **平均值** | | **第1次** | **第2次** | **第3次** | **第4次** | **第1次** | **第2次** | **第3次** | **第4次** | | 喷粉后固化工序废气、燃天然气废气排放口 | 排气筒高度（m） | | 45 | | | | | | | | | | —— | —— | | 标干排气流量（m3/h） | | 11053 | 10922 | 10979 | —— | 10985 | 10927 | 10952 | 10992 | —— | 10957 | —— | —— | | 颗粒物 | 排放浓度（mg/m3） | 3.2 | 3.4 | 3.0 | —— | 3.2 | 4.4 | 4.7 | 4.9 | —— | 4.7 | 30 | 达标 | | 排放速率（kg/h） | 0.035 | 0.037 | 0.033 | —— | 0.035 | 0.048 | 0.051 | 0.054 | —— | 0.051 | —— | —— | | 处理效率（%） | 92.3 | 92.1 | 92.6 | —— | 92.4 | 91.4 | 91.2 | 90.7 | —— | 91.2 | —— | —— | | 二氧化硫 | 排放浓度（mg/m3） | ND | ND | ND | —— | ND | ND | ND | ND | —— | ND | 200 | 达标 | | 排放速率（kg/h） | 0.017 | 0.016 | 0.016 | —— | 0.016 | 0.016 | 0.016 | 0.016 | —— | 0.016 | —— | —— | | 氮氧化物 | 排放浓度(mg/m3) | 35 | 36 | 36 | —— | 36 | 35 | 36 | 35 | —— | 35 | 300 | 达标 | | 排放速率(kg/h) | 0.39 | 0.39 | 0.40 | —— | 0.40 | 0.38 | 0.39 | 0.38 | —— | 0.38 | —— | —— | | 非甲烷总烃 | 排放浓度(mg/m3) | 6.20 | 6.34 | 6.65 | —— | 6.40 | 5.63 | 6.95 | 6.05 | —— | 6.21 | 80 | 达标 | | 排放速率(kg/h) | 0.069 | 0.069 | 0.073 | —— | 0.070 | 0.062 | 0.076 | 0.067 | —— | 0.068 | —— | —— | | 处理效率（%） | 37.6 | 37.5 | 27.9 | —— | 30.5 | 35.7 | 25.0 | 39.7 | —— | 32.9 | —— | —— | | 监测频次 | | **第1次** | **第2次** | **第3次** | **第4次** | **最大值** | **第1次** | **第2次** | **第3次** | **第4次** | **最大值** | —— | —— | | 臭气浓度（无量纲） | | 549 | 630 | 478 | 478 | 630 | 549 | 630 | 549 | 630 | 630 | 20000 | 达标 | | 烟气黑度（级） | | ＜1 | ＜1 | ＜1 | / | ＜1 | ＜1 | ＜1 | ＜1 | / | ＜1 | 1 | 达标 | | 备注：ND表示检测结果未检出或低于检出限，其排放速率以检出限的50%进行计算。 | | | | | | | | | | | | | | | |

# 续表七 验收监测结果

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **表7-2 有组织废气监测结果**   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | **点位名称** | **监测项目** | | **监测结果** | | | | | | | | | | **标准限值** | **评价** | | **2025.05.28** | | | | **平均值** | **2025.05.29** | | | | **平均值** | | **第1次** | **第2次** | **第3次** | **第4次** | **第1次** | **第2次** | **第3次** | **第4次** | | 丝印移印、烘干固化、金属清洁工序有机废气进气口 | 标干排气流量（m3/h） | | 11705 | 11782 | 11924 | —— | 11804 | 11933 | 11869 | 12050 | —— | 11951 | —— | —— | | 总VOCs | 排放浓度（mg/m3） | 2.78 | 3.22 | 2.41 | —— | 2.80 | 2.48 | 2.95 | 2.87 | —— | 2.77 | —— | —— | | 排放速率（kg/h） | 0.033 | 0.038 | 0.029 | —— | 0.033 | 0.030 | 0.035 | 0.035 | —— | 0.033 | —— | —— | | 非甲烷总烃 | 排放浓度（mg/m3） | 2.14 | 1.98 | 2.14 | —— | 2.09 | 2.16 | 2.20 | 1.88 | —— | 2.08 | —— | —— | | 排放速率（kg/h） | 0.025 | 0.023 | 0.026 | —— | 0.025 | 0.026 | 0.026 | 0.023 | —— | 0.025 | —— | —— | | 监测频次 | | **第1次** | **第2次** | **第3次** | **第4次** | **最大值** | **第1次** | **第2次** | **第3次** | **第4次** | **最大值** | —— | —— | | 臭气浓度（无量纲） | | 1513 | 1513 | 1513 | 1513 | 1513 | 1737 | 1737 | 1513 | 1513 | 1737 | —— | —— | |

# 续表七 验收监测结果

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **表7-2 有组织废气监测结果**   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | **点位名称** | **监测项目** | | **监测结果** | | | | | | | | | | **标准限值** | **评价** | | **2025.05.28** | | | | **平均值** | **2025.05.29** | | | | **平均值** | | **第1次** | **第2次** | **第3次** | **第4次** | **第1次** | **第2次** | **第3次** | **第4次** | | 丝印移印、烘干固化、金属清洁工序有机废气排放口G6 | 排气筒高度（m） | | 45 | | | | | | | | | | —— | —— | | 标干排气流量（m3/h） | | 10709 | 10607 | 10805 | —— | 10707 | 10684 | 10790 | 10870 | —— | 10781 | —— | —— | | 总VOCs | 排放浓度（mg/m3） | 1.92 | 1.94 | 1.59 | —— | 1.82 | 1.00 | 1.76 | 0.73 | —— | 1.16 | 120 | 达标 | | 排放速率（kg/h） | 0.021 | 0.021 | 0.017 | —— | 0.019 | 0.011 | 0.019 | 7.9×10⁻³ | —— | 0.013 | 2.55 | 达标 | | 处理效率（%） | 36.4 | 44.7 | 41.4 | —— | 42.4 | 63.3 | 45.7 | 77.4 | —— | 60.6 | —— | —— | | 非甲烷总烃 | 排放浓度（mg/m3） | 0.46 | 0.50 | 0.57 | —— | 0.51 | 0.58 | 0.56 | 0.41 | —— | 0.52 | 70 | 达标 | | 排放速率（kg/h） | 4.9×10⁻³ | 5.3×10⁻³ | 6.2×10⁻³ | —— | 5.5×10⁻³ | 6.2×10⁻³ | 6.0×10⁻³ | 4.5×10⁻³ | —— | 5.6×10⁻³ | —— | —— | | 处理效率（%） | 80.4 | 77.0 | 76.2 | —— | 78.0 | 76.2 | 76.9 | 80.4 | —— | 77.6 | —— | —— | | 监测频次 | | **第1次** | **第2次** | **第3次** | **第4次** | **最大值** | **第1次** | **第2次** | **第3次** | **第4次** | **最大值** | —— | —— | | 臭气浓度（无量纲） | | 478 | 630 | 549 | 630 | 630 | 416 | 478 | 416 | 478 | 478 | 20000 | 达标 | |

# 续表七 验收监测结果

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **续表7-2 有组织废气监测结果**   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | **点位名称** | **监测项目** | | **监测结果** | | | | | | | | | | | | | **标准限值** | **评价** | | 2025.05.28 | | | | | **平均值** | | 2025.05.29 | | | | | **平均值** | | **1** | **2** | **3** | **4** | **5** | **1** | **2** | **3** | **4** | **5** | | 油烟废气进气口 | 标干排气流量（m3/h） | | 6114 | 6132 | 6122 | 6186 | 6169 | 6145 | 6093 | | 6095 | 6154 | 6138 | 6107 | 6117 | / | / | | 油烟 | 排放浓度（mg/m3） | 0.2 | 0.3 | 0.3 | 0.3 | 0.2 | 0.3 | 0.1 | | 0.1 | 0.1 | 0.2 | 0.1 | 0.1 | / | / | | 排放速率（kg/h） | 1.2×10⁻³ | 1.8×10⁻³ | 1.8×10⁻³ | 1.9×10⁻³ | 1.2×10⁻³ | 1.8×10⁻³ | 6.1×10⁻⁴ | | 6.1×10⁻⁴ | 6.2×10⁻⁴ | 1.2×10⁻³ | 6.1×10⁻⁴ | 6.1×10⁻⁴ | / | / | | 标干排气流量（m3/h） | | 6133 | 6129 | 6148 | 6173 | 6145 | 6146 | 6105 | | 6131 | 6119 | 6173 | 6129 | 6131 | / | / | | 油烟 | 排放浓度（mg/m3） | 0.3 | 0.3 | 0.2 | 0.3 | 0.3 | 0.3 | 0.2 | | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | / | / | | 排放速率（kg/h） | 1.8×10⁻³ | 1.8×10⁻³ | 1.2×10⁻³ | 1.9×10⁻³ | 1.8×10⁻³ | 1.8×10⁻³ | 1.2×10⁻³ | | 1.2×10⁻³ | 1.2×10⁻³ | 1.2×10⁻³ | 1.2×10⁻³ | 1.2×10⁻³ | / | / | |

# 续表七 验收监测结果

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **续表7-2 有组织废气监测结果**   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | **点位名称** | **监测项目** | | **监测结果** | | | | | | | | | | | | **标准限值** | **评价** | | 2025.05.28 | | | | | **平均值** | 2025.05.29 | | | | | **平均值** | | **1** | **2** | **3** | **4** | **5** | **1** | **2** | **3** | **4** | **5** | | 油烟废气排放口 | 标干排气流量（m3/h） | | 5833 | 5799 | 5810 | 5870 | 5825 | 5827 | 6942 | 6956 | 6828 | 6818 | 6668 | 6842 | / | / | | 油烟 | 排放浓度（mg/m3） | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 2.0 | 达标 | | 排放速率（kg/h） | 2.9×10⁻⁴ | 2.9×10⁻⁴ | 2.9×10⁻⁴ | 2.9×10⁻⁴ | 2.9×10⁻⁴ | 2.9×10⁻⁴ | 3.5×10⁻⁴ | 3.5×10⁻⁴ | 3.4×10⁻⁴ | 3.4×10⁻⁴ | 3.3×10⁻⁴ | 3.4×10⁻⁴ | / | / | | 处理效率（%） | 75.8 | 83.9 | 83.9 | 84.7 | 75.8 | 83.9 | 45.3 | 42.6 | 45.2 | 71.7 | 46.8 | 44.3 | / | / | | 标干排气流量（m3/h） | | 5766 | 5791 | 5807 | 5836 | 5881 | 5816 | 6721 | 6786 | 6783 | 6691 | 6768 | 6750 | / | / | | 油烟 | 排放浓度（mg/m3） | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 2.0 | 达标 | | 排放速率（kg/h） | 2.9×10⁻⁴ | 2.9×10⁻⁴ | 2.9×10⁻⁴ | 2.9×10⁻⁴ | 2.9×10⁻⁴ | 2.9×10⁻⁴ | 3.3×10⁻⁴ | 3.4×10⁻⁴ | 3.4×10⁻⁴ | 3.3×10⁻⁴ | 3.4×10⁻⁴ | 3.4×10⁻⁴ | / | / | |  | 处理效率（%） | 83.9 | 83.9 | 75.8 | 84.7 | 83.9 | 83.9 | 72.5 | 72.5 | 71.7 | 72.5 | 71.7 | 71.7 | / | / | |

# 续表七 验收监测结果

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **3 废气监测结果及评价**  （1）无组织废气监测结果  无组织废气监测气象参数及结果见表7-3、表7-4。 表7-3 无组织废气监测气象参数  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | | 时间 | 频次 | 气温（℃） | 气压（kPa） | 湿度（%） | 风向 | 风速（m/s） | 天气状况 | | 2025.06.03 | 第1次 | 29.5 | 99.3 | 80.2 | 南 | 2.2 | 多云 | | 第2次 | 30.6 | 99.2 | 75.9 | 南 | 2.5 | 多云 | | 第3次 | 30.3 | 99.1 | 78.3 | 南 | 2.8 | 多云 | | 第4次 | 29.8 | 99.2 | 78.1 | 南 | 2.5 | 多云 | | 2025.06.04 | 第1次 | 29.5 | 99.3 | 80.2 | 南 | 2.2 | 多云 | | 第2次 | 30.6 | 99.2 | 75.9 | 南 | 2.5 | 多云 | | 第3次 | 30.3 | 99.1 | 78.3 | 南 | 2.8 | 多云 | | 第4次 | 29.8 | 99.2 | 78.1 | 南 | 2.5 | 多云 | |

# 续表七 验收监测结果

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **表7-4 无组织废气监测结果**   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | 点位名称 | 监测  项目 | 单位 | 2025.06.03 | | | | 平均值或最大值 | 2025.06.04 | | | | 平均值或最大值 | 标准  限值 | 达标  情况 | | 第1次 | 第2次 | 第3次 | 第4次 | 第1次 | 第2次 | 第3次 | 第4次 | | A1上风向 | 总悬浮颗粒物（颗粒物） | mg/m³ | 0.198 | 0.195 | 0.199 | —— | 0.197 | 0.194 | 0.191 | 0.190 | —— | 0.192 | —— | —— | | 臭气浓度 | 无量纲 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | —— | —— | | 氮氧化物 | mg/m³ | 0.032 | 0.032 | 0.026 | —— | 0.030 | 0.032 | 0.029 | 0.026 | —— | 0.029 | —— | —— | | 二氧化硫 | mg/m³ | ND | ND | ND | —— | ND | ND | ND | ND | —— | ND | —— | —— | | 非甲烷总烃 | mg/m³ | 0.21 | 0.22 | 0.20 | —— | 0.21 | 0.21 | 0.22 | 0.21 | —— | 0.21 | —— | —— | | 总VOCs | mg/m³ | 0.29 | 0.29 | 0.28 | —— | 0.29 | 0.28 | 0.30 | 0.30 | —— | 0.29 | —— | —— | | 锰及其化合物（以Mn计） | mg/m³ | ND | ND | ND | —— | ND | ND | ND | ND | —— | ND | —— | —— | | 镍及其化合物（以Ni计） | mg/m³ | ND | ND | ND | —— | ND | ND | ND | ND | —— | ND | —— | —— | | 下风向A2 | 总悬浮颗粒物（颗粒物） | mg/m³ | 0.208 | 0.216 | 0.212 | —— | 0.212 | 0.214 | 0.203 | 0.201 | —— | 0.206 | 1.0 | 达标 | | 臭气浓度 | 无量纲 | 10 | 12 | 12 | 10 | 12 | 12 | 12 | 11 | 10 | 12 | 20 | 达标 | | 氮氧化物 | mg/m³ | 0.049 | 0.045 | 0.058 | —— | 0.051 | 0.049 | 0.044 | 0.053 | —— | 0.049 | 0.12 | 达标 | | 二氧化硫 | mg/m³ | 0.013 | 0.011 | 0.014 | —— | 0.013 | 0.018 | 0.020 | 0.017 | —— | 0.018 | 0.40 | 达标 | | 非甲烷总烃 | mg/m³ | 0.30 | 0.30 | 0.32 | —— | 0.31 | 0.31 | 0.33 | 0.32 | —— | 0.32 | 4.0 | 达标 | | 总VOCs | mg/m³ | 0.40 | 0.41 | 0.66 | —— | 0.49 | 0.44 | 0.42 | 0.35 | —— | 0.40 | 2.0 | 达标 | | 锰及其化合物（以Mn计） | mg/m³ | ND | ND | ND | —— | ND | ND | ND | ND | —— | ND | 0.04 | 达标 | | 镍及其化合物（以Ni计） | mg/m³ | ND | ND | ND | —— | ND | ND | ND | ND | —— | ND | 0.04 | 达标 | | 备注：ND表示结果未检出或低于检出限。 | | | | | | | | | | | | | | | |

# 续表七 验收监测结果

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **表7-4 无组织废气监测结果**   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | 点位名称 | 监测  项目 | 单位 | 2025.06.03 | | | | 平均值或最大值 | 2025.06.04 | | | | 平均值或最大值 | 标准  限值 | 达标  情况 | | 第1次 | 第2次 | 第3次 | 第4次 | 第1次 | 第2次 | 第3次 | 第4次 | | 下风向A3 | 总悬浮颗粒物（颗粒物） | mg/m³ | 0.213 | 0.209 | 0.221 | —— | 0.214 | 0.209 | 0.210 | 0.214 | —— | 0.211 | 1.0 | 达标 | | 臭气浓度 | 无量纲 | 10 | 10 | 12 | 12 | 12 | 10 | 10 | 11 | 12 | 12 | 20 | 达标 | | 氮氧化物 | mg/m³ | 0.048 | 0.051 | 0.058 | —— | 0.052 | 0.044 | 0.050 | 0.058 | —— | 0.051 | 0.12 | 达标 | | 二氧化硫 | mg/m³ | 8×10⁻³ | 0.019 | 8×10⁻³ | —— | 0.012 | 0.013 | 0.012 | 0.013 | —— | 0.013 | 0.40 | 达标 | | 非甲烷总烃 | mg/m³ | 0.29 | 0.31 | 0.30 | —— | 0.30 | 0.32 | 0.30 | 0.32 | —— | 0.31 | 4.0 | 达标 | | 总VOCs | mg/m³ | 0.47 | 0.43 | 0.40 | —— | 0.43 | 0.35 | 0.52 | 0.47 | —— | 0.45 | 2.0 | 达标 | | 锰及其化合物（以Mn计） | mg/m³ | ND | ND | ND | —— | ND | ND | ND | ND | —— | ND | 0.04 | 达标 | | 镍及其化合物（以Ni计） | mg/m³ | ND | ND | ND | —— | ND | ND | ND | ND | —— | ND | 0.04 | 达标 | | 下风向A4 | 总悬浮颗粒物（颗粒物） | mg/m³ | 0.219 | 0.211 | 0.206 | —— | 0.212 | 0.209 | 0.212 | 0.200 | —— | 0.207 | 1.0 | 达标 | | 臭气浓度 | 无量纲 | 11 | 11 | 11 | 10 | 11 | 12 | 10 | 10 | 10 | 12 | 20 | 达标 | | 氮氧化物 | mg/m³ | 0.050 | 0.050 | 0.045 | —— | 0.048 | 0.054 | 0.056 | 0.046 | —— | 0.052 | 0.12 | 达标 | | 二氧化硫 | mg/m³ | 0.017 | 0.015 | 0.017 | —— | 0.016 | 0.010 | 0.010 | 0.011 | —— | 0.010 | 0.40 | 达标 | | 非甲烷总烃 | mg/m³ | 0.31 | 0.29 | 0.31 | —— | 0.30 | 0.30 | 0.32 | 0.32 | —— | 0.31 | 4.0 | 达标 | | 总VOCs | mg/m³ | 0.41 | 0.36 | 0.37 | —— | 0.38 | 0.40 | 0.66 | 0.36 | —— | 0.47 | 2.0 | 达标 | | 锰及其化合物（以Mn计） | mg/m³ | ND | ND | ND | —— | ND | ND | ND | ND | —— | ND | 0.04 | 达标 | | 镍及其化合物（以Ni计） | mg/m³ | ND | ND | ND | —— | ND | ND | ND | ND | —— | ND | 0.04 | 达标 | | 备注：ND表示结果未检出或低于检出限。 | | | | | | | | | | | | | | | |

# 续表七 验收监测结果

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **续表7-4 无组织废气监测结果**   |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | | **采样时间** | | 2025.06.03 | | 2025.06.04 | | **标准限值** | **达标情况** | | **点位名称** | **监测项目** | **监测频次** | **检测结果** | **监测频次** | **检测结果** | | 厂区内监测点A5 | 非甲烷总烃（mg/m3） | **第1次** | 0.74 | **第1次** | 0.74 | —— | —— | | **第2次** | 0.77 | **第2次** | 0.76 | —— | —— | | **第3次** | 0.77 | **第3次** | 0.77 | —— | —— | | **平均值** | 0.76 | **平均值** | 0.76 | 6 | 达标 | | **总悬浮颗粒物（颗粒物）（mg/m³）** | 第1次 | 0.225 | 第1次 | 0.226 | —— | —— | | 第2次 | 0.224 | 第2次 | 0.221 | —— | —— | | 第3次 | 0.228 | 第3次 | 0.233 | —— | —— | | 最大值 | 0.228 | 最大值 | 0.233 | 5 | 达标 | | 备注：现场检测及采样期间，该企业工况稳定，生产负荷达到75%以上，环境保护设施运行正常。 | | | | | | | | |

# 续表七 验收监测结果

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| 监测结果表明：监测期间，项目喷粉后固化工序废气、燃天然气废气排放口的非甲烷总烃的排放浓度符合广东省地方标准《固定污染源挥发性有机物综合排放标准》（DB44/2367-2022）表1挥发性有机物排放限值的要求，颗粒物、二氧化硫、氮氧化物的排放浓度均符合《工业炉窑大气污染综合治理方案》（环大气[2019]56号）重点区域排放限值的要求，烟气黑度（林格曼黑度）的排放浓度符合《工业炉窑大气污染物排放标准》（GB9078-1996）表2中干燥炉二级排放限值的要求，臭气浓度的排放浓度符合《恶臭污染物排放标准》（GB14554-1993）表2恶臭污染物排放标准值的要求；注塑工序有机废气排放口G5的非甲烷总烃的排放浓度符合《合成树脂工业污染物排放标准》（GB 31572-2015）表4大气污染物排放限值的要求，臭气浓度的排放浓度符合《恶臭污染物排放标准》（GB14554-1993）表2恶臭污染物排放标准值的要求；丝印移印、烘干固化、金属清洁工序有机废气排放口G6的非甲烷总烃的排放浓度符合《印刷工业大气污染物排放标准》（GB41616-2022）表1大气污染物排放限值的要求，总VOCs的排放浓度及排放速率均符合广东省地方标准《印刷行业挥发性有机化合物排放标准》（DB44/815-2010）表2丝网印刷排气筒VOCs排放限值的要求，臭气浓度的排放浓度符合《恶臭污染物排放标准》（GB14554-1993）表2恶臭污染物排放标准值的要求；油烟废气排放口的油烟的排放浓度符合《饮食业油烟排放标准(试行)》（GB 18483-2001）表2饮食业单位的油烟最高允许排放浓度的要求。  项目厂界无组织废气下风向A2~A4监测点的非甲烷总烃的排放符合《合成树脂工业污染物排放标准》（GB 31572-2015）表9企业边界大气污染物浓度限值与广东省地方标准《大气污染物排放限值》（DB44/27-2001）表2工艺废气大气污染物排放限值 第二时段 无组织排放监控浓度限值中的较严值的要求，总VOCs的排放符合《印刷行业挥发性有机化合物排放标准》（DB44/815-2010）表3无组织排放监控点浓度限值的要求，总悬浮颗粒物（颗粒物）、二氧化硫、氮氧化物、镍及其化合物（以Ni计）、锰及其化合物（以Mn计）的排放均符合广东省地方标准《大气污染物排放限值》（DB44/27-2001）表2工艺废气大气污染物排放限值 第二时段 无组织排放监控浓度限值的要求，臭气浓度的排放符合《恶臭污染物排放标准》（GB 14554-1993）表1恶臭污染物厂界标准值的要求。厂区内监测点A5中非甲烷总烃的排放符合广东省地方标准《固定污染源挥发性有机物综合排放标准》（DB44/2367-2022）表3厂区内VOCs无组织排放限值的要求，总悬浮颗粒物（颗粒物）的排放符合《工业炉窑大气污染物排放标准》（GB9078-1996）表3中有车间厂房的其他炉窑无组织排放限值的要求。 |

# 续表七 验收监测结果

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **4 噪声监测结果及评价**  噪声监测气象条件及结果详见表7-5、表7-6。  **表7-5 噪声监测气象条件**   |  |  |  |  | | --- | --- | --- | --- | | **时间** | **时段** | **天气状况** | **风速（m/s）** | | 2025.05.28 | 昼间 | 多云 | 2.3 | | 2025.05.29 | 昼间 | 多云 | 2.5 |  表7-6 噪声监测结果 单位：dB（A）  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | **类别** | **编号** | **点位名称** | **时段** | **主要声源** | **监测结果** | | | | **标准**  **限值** | **达标**  **情况** | | **2025.05.28** | | **2025.05.29** | | | **第1次** | **第2次** | **第1次** | **第2次** | | 厂界 | 1# | 东北厂界外1m处 | 昼间 | 设备  噪声 | 56 | 57 | 56 | 57 | 60 | 达标 | | 2# | 东南厂界外1m处 | 昼间 | 设备  噪声 | 58 | 57 | 57 | 58 | 60 | 达标 | | 3# | 西南厂界外1m处 | 昼间 | 设备  噪声 | 58 | 58 | 58 | 58 | 60 | 达标 | | 4# | 西北厂界外1m处 | 昼间 | 设备  噪声 | 57 | 58 | 57 | 56 | 60 | 达标 | | 声源 | 5# | 压铸区声源点 | 昼间 | 设备  噪声 | 83 | 82 | 80 | 82 | —— | / |   监测结果表明：监测期间，项目东北厂界外1m处1#、东南厂界外1m处2#、西南厂界外1m处3#、西北厂界外1m处4#的昼间噪声监测值均符合《工业企业厂界环境噪声排放标准》（GB12348-2008）2类厂界外声环境功能区限值要求。 |

# 续表七 验收监测结果

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **4污染物排放总量核算结果分析**  （1）挥发性有机物核算  根据表7-2验收监测结果，核算本项目注塑工序有机废气排放口；喷粉后固化工序废气、燃天然气废气排放口；丝印移印、烘干固化、金属清洁工序有机废气排放口非甲烷总烃、总VOCs排放总量。  有组织排放总量=排放速率\*年排放时间  无组织排放总量=(有组织处理前总量/收集效率）-有组织处理前总量。收集效率按照环评设计文件给出的参数计算。注塑工序有机废气排放口；喷粉后固化工序废气、燃天然气废气排放口；丝印移印、烘干固化、金属清洁工序有机废气排放口废气收集效率分别取90%、90%、30%，废气中污染物排放总量核算见表7-7。  **表7-7 废气污染物排放总量**   |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | | **排放口** | **污染物** | | **排放速率**  **（kg/h）** | **年工作时间（h）** | **年排放总量（t/a）** | **中（榄）环建表[2023]0128号** | **环评（t/a）** | **是否符合要求** | | 注塑工序有机废气排放口 | 非甲烷总烃 | 有组织 | 0.0027 | 2400 | 0.00636 | / | / | / | | 无组织 | / | / | 0.0051 | / | / | / | | 喷粉后固化工序废气、燃天然气废气排放口 | 非甲烷总烃 | 有组织 | 0.069 | 2400 | 0.1656 | / | / | / | | 无组织 | / | / | 0.0269 | / | / | / | | 丝印移印、烘干固化、金属清洁工序有机废气排放口 | 非甲烷总烃 | 有组织 | 0.00555 | 2400 | 0.0133 | / | / | / | | 无组织 | / | / | 0.14 | / | / | / | | 总VOCs | 有组织 | 0.016 | 2400 | 0.0384 | / | / | / | | 无组织 | / | / | 0.1848 | / | / | / | | 总计 | | | | | 0.58046 | 1.247 | 1.247 | 符合 | |

# 续表七 验收监测结果

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| （2）氮氧化物核算  根据表7-2验收监测结果，核算本项目喷粉后固化工序废气、燃天然气废气排放口氮氧化物排放总量，废气中污染物排放总量核算见表7-8。  **表7-8 废气污染物排放总量**   |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | **污染物** | **排放速率**  **（kg/h）** | **年工作时间（h）** | **年排放总量（t/a）** | **中（榄）环建表[2023]0128号（t/a）** | **环评（t/a）** | **是否符合要求** | | 氮氧化物 | 0.39 | 2400 | 0.936 | 1.295 | 1.295 | 符合 |   根据计算结果可知，项目大气污染物挥发性有机物总量为0.58046吨/年、氮氧化物0.936吨/年，符合中（榄）环建表[2023]0128号“该项目搬迁扩建后 挥发性有机物排放量不得大于1.247吨/年，氮氧化物排放 量不得大于1.295吨/年”的要求。 |

**表八 环保检查结果**

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| **1. 环境影响评价和环境保护“三同时”制度执行情况**  本项目根据《中华人民共和国环境保护法》、《建设项目环境保护管理办法》等相关法律法规的要求，进行了环境影响评价，履行了环境影响审批手续，有关档案资料齐全。工程建设中执行了环境保护“三同时”制度，做到环境保护设施和主体工程同时设计、同时施工、同时投产使用。  本项目于2023年12月由中山市美斯环保节能技术有限公司完成了《广恒合优科技高端钣金制造智能化工厂项目环境影响报告表》的编制工作，中山市生态环境局以（中（榄）环建表[2023]0128号）文给予审批意见。  项目配套的环保设施与主体工程同时设计、同时施工、同时投产使用，环保审批手续齐全。  项目建设及调试期间未收到周边公众投诉，对周边环境均未造成不良影响。  **2. 环保设施投资、建设、运行及维护情况**  项目总投资45000万元，环保设施投资共500万元，占总投资的1.1%，一期项目工程1000万元，环保设施投资共82.3万元，占总投资的8.23%，对生产过程中产生的废水、废气、噪声、固体废物进行治理。  **3.环境保护管理规章制度的建立及执行情况**  该项目制定了《环保规章制度》，并按各规章制度要求管理执行。 中山市广恒合优科技发展有限公司重视档案管理工作，设有专人管理，对环保相关文件资料进行归档，档案资料齐全。  **4. 环境风险防范、突发环境事故应急措施**  为有效防范环境风险事故发生，迅速、有效的处理可能发生的突发性环境风险事故，全面控制和消除污染，保障职工身心健康，确保环境安全，项目制定了《突发环境事件应急预案》，该预案落实了应急机构职责、预测与预警、报告方式、响应程序与协调内容。  **5. 工业固（液）废物处置和回收利用情况**  一期项目运营期产生的主要固体废物为生活垃圾、一般固体废物及危险废物。一般固体废物包括废金属边角料、一般原料包装物、喷粉工序废弃粉尘、打磨抛光金属粉尘、水帘柜金属捞渣、废滤芯及 RO 膜、滤芯除尘装置废滤芯。危险废物包括废活性炭，废乳化液，废机油，机油废包装桶，含油废抹布及手套，废化学品包装物，废水处理产生的污泥，除油槽沉渣，除油废液，陶化废液，振光废液，废丝印网版，废移印胶头，含油墨、电解液废抹布。 |

**续表八 环保检查结果**

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| 生活垃圾产生量为30t/a，交由环卫部门处理；一般固体废物产生量废金属边角料100t/a、一般原料包装物2.57t/a、喷粉工序废弃粉尘14.119t/a、打磨抛光金属粉尘0.354t/a、水帘柜金属捞渣2.219t/a、废滤芯及 RO 膜0.025t/a、滤芯除尘装置废滤芯0.1t/a，交给有一般固废处理能力单位处置。  危险废物产生量包括废活性炭6.528t/a，废乳化液0.225t/a，废机油1.35t/a，机油废包装桶0.012t/a，含油废抹布及手套0.005t/a，废化学品包装物0.77t/a，废水处理产生的污泥23.225t/a，除油槽沉渣4.71t/a，除油废液128.86t/a，陶化废液17.18t/a，振光废液51.3t/a，废丝印网版0.085t/a，废移印胶头0.0005t/a，含油墨、电解液废抹布0.01t/a，交由中山市宝绿工业固体危险废物储运管理有限公司处理。  本项目设有危险废物、一般固废贮存间。危险废物贮存间地面做了水泥硬化处理和防渗措施，设有防雨棚，场地周边均设有围堰、拦堵墙，可防止渗漏液外溢，具备防风、防雨、防晒、防扬散、防流失、防渗漏功能。危险废物、一般工业固废在厂内暂存分别符合《危险废物贮存污染控制标准》（GB18597-2023）、《一般工业固体废物贮存和填埋污染控制标准》（GB 18599-2020）的要求。  **6. 生态恢复、绿化建设落实情况及排污口规范化**  项目在非生产区域及项目边界进行了植树、种草绿化，达到美化、防污、降噪的效果。 |

# 表九 验收监测结论及建议

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| **1. 监测工况**  验收监测期间，建设项目各工序正常运行，工况稳定，2025年5月28日~29日、06月03日~07日生产工况为80%、82%。  **2. 废水**  监测期间，项目生活污水排放口的pH值、化学需氧量、五日生化需氧量、悬浮物的排放浓度均符合广东省地方标准《水污染物排放限值》（DB 44/26-2001）第二时段三级标准的要求。  项目生产废水处理后的pH值、化学需氧量、五日生化需氧量、氨氮、悬浮物、石油类、阴离子表面活性剂、氟化物的排放浓度均符合广东省地方标准《水污染物排放限值》（DB44/26-2001）（第二时段）三级标准及中山市小榄镇工业污水纳管限值标准（非食品类）的较严值的要求。  **3. 废气**  监测期间，项目喷粉后固化工序废气、燃天然气废气排放口的非甲烷总烃的排放浓度符合广东省地方标准《固定污染源挥发性有机物综合排放标准》（DB44/2367-2022）表1挥发性有机物排放限值的要求，颗粒物、二氧化硫、氮氧化物的排放浓度均符合《工业炉窑大气污染综合治理方案》（环大气[2019]56号）重点区域排放限值的要求，烟气黑度（林格曼黑度）的排放浓度符合《工业炉窑大气污染物排放标准》（GB9078-1996）表2中干燥炉二级排放限值的要求，臭气浓度的排放浓度符合《恶臭污染物排放标准》（GB14554-1993）表2恶臭污染物排放标准值的要求；注塑工序有机废气排放口G5的非甲烷总烃的排放浓度符合《合成树脂工业污染物排放标准》（GB 31572-2015）表4大气污染物排放限值的要求，臭气浓度的排放浓度符合《恶臭污染物排放标准》（GB14554-1993）表2恶臭污染物排放标准值的要求；丝印移印、烘干固化、金属清洁工序有机废气排放口G6的非甲烷总烃的排放浓度符合《印刷工业大气污染物排放标准》（GB41616-2022）表1大气污染物排放限值的要求，总VOCs的排放浓度及排放速率均符合广东省地方标准《印刷行业挥发性有机化合物排放标准》（DB44/815-2010）表2丝网印刷排气筒VOCs排放限值的要求，臭气浓度的排放浓度符合《恶臭污染物排放标准》（GB14554-1993）表2恶臭污染物排放标准值的要求；油烟废气排放口的油烟的排放浓度符合《饮食业油烟排放标准(试行)》（GB 18483-2001）表2饮食业单位的油烟最高允许排放浓度的要求。  监测期间，项目厂界无组织废气下风向A2~A4监测点的非甲烷总烃的排放符合《合成树脂工业污染物排放标准》（GB 31572-2015）表9企业边界大气污染物浓度限值与广东省地方标准《大气污染物排放限值》（DB44/27-2001）表2工艺废气大气污染物排放限值 第二时段 无组织排放 |

# 续表九 验收监测结论及建议

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| 监控浓度限值中的较严值的要求，总VOCs的排放符合《印刷行业挥发性有机化合物排放标准》（DB44/815-2010）表3无组织排放监控点浓度限值的要求，总悬浮颗粒物（颗粒物）、二氧化硫、氮氧化物、镍及其化合物（以Ni计）、锰及其化合物（以Mn计）的排放均符合广东省地方标准《大气污染物排放限值》（DB44/27-2001）表2工艺废气大气污染物排放限值 第二时段 无组织排放监控浓度限值的要求，臭气浓度的排放符合《恶臭污染物排放标准》（GB 14554-1993）表1恶臭污染物厂界标准值的要求。厂区内监测点A5中非甲烷总烃的排放符合广东省地方标准《固定污染源挥发性有机物综合排放标准》（DB44/2367-2022）表3厂区内VOCs无组织排放限值的要求，总悬浮颗粒物（颗粒物）的排放符合《工业炉窑大气污染物排放标准》（GB9078-1996）表3中有车间厂房的其他炉窑无组织排放限值的要求。  **4. 噪声**  监测期间，项目东北厂界外1m处1#、东南厂界外1m处2#、西南厂界外1m处3#、西北厂界外1m处4#的昼间噪声监测值均符合《工业企业厂界环境噪声排放标准》（GB12348-2008）2类厂界外声环境功能区限值要求。  **5. 固（液）体废物**  验收监测期间，固体废物、危险废物的管理和贮存设施的建设执行《危险废物贮存污染控制标准》（GB 18597-2023）、《一般工业固体废物贮存和填埋污染控制标准》（GB 18599-2020）。  **6. 污染物排放总量**  根据监测结果可知，项目大气污染物挥发性有机物总量为0.58046吨/年、氮氧化物0.936吨/年，符合中（榄）环建表[2023]0128号“该项目搬迁扩建后 挥发性有机物排放量不得大于1.247吨/年，氮氧化物排放 量不得大于1.295吨/年”的要求。  **7. 建议**  1、切实做好环保治理设施的日常维护和定期检查工作，维持设施的稳定运行，确保治理效果；  2、该单位必须自觉接受环保部门的监督管理和监测，完善和规范现场监测条件；  3、建议企业加强环境管理，加强工人岗位技术培训和管理，提高环保意识，完善污染治理设施，保证污染物处理效率，确保各项污染物达标排放。 |

# 表十一 附件

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| 1. 建设项目竣工环境保护“三同时”验收登记表； 2. 《中山市生态环境局关于<广恒合优科技高端钣金制造智能化工厂项目环境影响报告表>的批复》中（榄）环建表[2023]0128号； 3. 固定污染源排污登记表； 4. 工业废水转移处理服务合同书； 5. 分期验收说明； 6. 固体废物防治方案； 7. 突发环境事件应急预案； 8. 纳污证明； 9. 危险废物处理服务合同； 10. 一般固体废物处置情况说明； 11. 噪声污染防治措施； 12. 广恒合优科技高端钣金制造智能化工厂项目（一期）（HXZS2505042 ）。 |

建设项目工程竣工环境保护“三同时”验收登记表

附表1

填表单位（盖章）：广州华鑫检测技术有限公司 填表人：冯青青 项目经办人：吴焯民

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| **建设项目** | **项目名称** | | | 广恒合优科技高端钣金制造智能化工厂项目（一期） | | | | | | **项目代码** | | C2929、 C3360 、C3379、C3854 、C3399 、C2231 | | **建设地点** | | 中山市小榄镇埒西一菊城沙水路333 号 | | | |
| **行业类别（分类管理名录）** | | | 塑料零件及其他塑料制品制造、金属表面处理及热加工处理、  搪瓷日用品及其他搪瓷制品制造、家用厨房器具制造、  其他未列明金属制品制造、 纸和纸板容器制造 | | | | | | **建设性质** | | ■**新建（迁建） □改扩建 □技术改造 □技改** | | | | **项目厂区中心经度/纬度** | | 北纬：22°37'38.921"，  东经：113°13'40.120" | |
| **设计生产能力** | | | 年产金属冲压制品4000万件、金属涂装制品3000万件、不锈钢冲压制品550万件、金属搪瓷制品450万件、烧烤炉200万套、厨卫电器200万套及塑料零件875吨 | | | | | | **实际生产能力** | | 年产塑料零件437.5吨/年，金属冲压制品2000万件/年，金属涂装制品1500万件/年，不锈钢冲压制品275万件/年，烧烤炉100万套/年、厨卫电器100万套/年 | | **环评单位** | | 中山市美斯环保节能技术有限公司 | | | |
| **环评文件审批机关** | | | 中山市生态环境局 | | | | | | **审批文号** | | 中（榄）环建表[2023]0128号 | | **环评文件类型** | | 报告表 | | | |
| **开工日期** | | | 2023年12月 | | | | | | **竣工日期** | | | 2024年11月01日 | **排污许可证申领时间** | | —— | | | |
| **环保设施设计单位** | | | 中山市广恒合优科技发展有限公司 | | | | | | **环保设施施工单位** | | | 中山市广恒合优科技发展有限公司 | **本工程排污许可证编号** | | —— | | | |
| **验收单位** | | | 广州华鑫检测技术有限公司 | | | | | | **环保设施监测单位** | | | 广州华鑫检测技术有限公司 | **验收监测时工况** | | 80%~82% | | | |
| **投资总概算（万元）** | | | 45000万元 | | | | | | **环保投资总概算（万元）** | | | 500万元 | **所占比例（%）** | | 1.1 | | | |
| **实际总投资（万元）** | | | 1000万元 | | | | | | **实际环保投资（万元）** | | | 82.3万元 | **所占比例（%）** | | 8.23 | | | |
| **废水治理（万元）** | | | 24.5 | **废气治理（万元）** | 57.8 | **噪声治理（万元）** | | 0 | **固体废物治理（万元）** | | | —— | **绿化及生态（万元）** | | —— | **其他（万元）** | | —— |
| **新增废水处理设施能力** | | | —— | | | | | | **新增废气处理设施能力** | | | 8758万标立方米/年 | **年平均工作时** | | 2400 | | | |
| **运营单位** | | | | 中山市广恒合优科技发展有限公司 | | | | **运营单位社会统一信用代码（或组织机构代码）** | | | | | —— | **验收时间** | | 2025年06月03日~07日 | | | |
| **污染**  **物排**  **放达**  **标与**  **总量**  **控制（工**  **业建**  **设项**  **目详填）** | | **污染物** | | **原有排**  **放量（1）** | **本期工程实际排放浓度（2）** | **本期工程允许排放浓度（3）** | **本期工程产生量（4）** | **本期工程自身削减量（5）** | | **本期工程实际排放量（6）** | **本期工程核定排放总量（7）** | | **本期工程“以新带老”削减量（8）** | **全厂实际排放总量（9）** | **全厂核定排放总量（10）** | | **区域平衡替代削减量（11）** | | **排放增减量（12）** |
| **废水** | | —— | —— | —— | —— | —— | | —— | —— | | —— | —— | —— | | —— | | —— |
| **化学需氧量** | | —— | —— | —— | —— | —— | | —— | —— | | —— | —— | —— | | —— | | —— |
| **氨氮** | | —— | —— | —— | —— | —— | | —— | —— | | —— | —— | —— | | —— | | —— |
| **石油类** | | —— | —— | —— | —— | —— | | —— | —— | | —— | —— | —— | | —— | | —— |
| **废气** | | —— | —— | —— | —— | —— | | 8758 | —— | | —— | 8758 | —— | | —— | | +8758 |
| **二氧化硫** | | —— | —— | —— | —— | —— | | —— | —— | | —— | —— | —— | | —— | | —— |
| **烟尘** | | —— | —— | —— | —— | —— | | —— | —— | | —— | —— | —— | | —— | | —— |
| **工业粉尘** | | —— | —— | —— | —— | —— | | —— | —— | | —— | —— | —— | | —— | | —— |
| **氮氧化物** | | —— | 35.5 | 300 | 0.936 | —— | | 0.936 | —— | | —— | 0.936 | —— | | —— | | +0.936 |
| **工业固体废物** | | —— | —— | —— | —— | —— | | —— | —— | | —— | —— | —— | | —— | | —— |
| **与项目有关的其他特征污染物** | 非甲烷总烃 | —— | 0.30~6.95 | 80 | 0.5200 | 0.16274 | | 0.35726 | —— | | —— | 0.35726 | —— | | —— | | +0.35726 |
| 总VOCs | —— | 1.49 | 120 | 0.2640 | 0.0408 | | 0.2232 | —— | | —— | 0.2232 | —— | | —— | | =0.2232 |
| —— | —— | —— | —— | —— | —— | | —— | —— | | —— | —— | —— | | —— | | —— |

注： 1、排放增减量：（+）表示增加，（-）表示减少； 2、（12）=（6）-（8）-（11），（9）= （4）-（5）-（8）- （11） +（1）； 3、计量单位：废水排放量-万吨/年；废气排放量-万标立方米/年；工业固体废物排放量-万吨/年； 水污染物排放浓度-毫克/升；大气污染物排放浓度-毫克/立方米；水污染物排放量-吨/年；大气污染物排放量-吨/年；4、带“\*”表示数据来自环评报告表。