

Chemical Raw and Auxiliary Materials Management

化工原辅材料管理细则

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Issued by: Jiang Xiang Ming Luo Xin
编 写: 蒋翔明 罗欣

Checked by: Yang Fan Yang Shi Hai
审 核: 杨帆 杨仕海


Approved by: Sun Jianhuai
批 准: 孙建怀

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 HENGYI	Hengyi Industries Sdn Bhd 恒逸实业（文莱）有限公司				
	Chemical Raw and Auxiliary Materials Management 化工原辅材料管理细则				
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1 Purpose 目的

This regulation stipulates the management content and requirements for the procurement, storage, and usage processes of chemical raw and auxiliary materials (including “chemical inhibitors” and auxiliary materials) within the scope of various units in No.2 Refinery Department. The term "chemical raw and auxiliary materials" in this regulation refers to auxiliary chemical materials required during the production process (excluding chemical materials for maintenance and equipment upkeep, and excluding raw materials). The "chemical inhibitors" collectively refer to catalysts, product additives, desulfurization agents, auxiliary drying agents, and similar substances.

本细则规定了炼油二部各装置范围内化工原辅材料（包括“三剂”、辅助材料）的进货、储存、使用过程中的管理内容与要求。本制度所指的“化工原辅材料”指生产过程中所需的辅助化工材料（不含检修和设备维护用化工材料，不含原料）；“三剂”指催化剂、产品添加剂、脱硫剂、助剂干燥剂等统称。

2 Scope of Application 适用范围

This regulation applies to all units within No.2 Refinery Department.

本细则适用于炼油二部各装置。

3 Terms and Definitions 术语和定义

None

无

4 Management Responsibilities 管理职责

4.1 The process engineer is responsible for revising the chemical raw and auxiliary materials management system.

工艺工程师负责化工原辅材料管理制度的修订。

4.2 Based on the workshop's chemical raw and auxiliary materials usage plan and actual production conditions, the process engineer is responsible for preparing the monthly and annual

demand plans for chemical raw and auxiliary materials.

工艺工程师根据车间化工原辅材料用量计划和生产实际情况，负责编制化工原辅材料的月度、年度需求计划。

4.3 The process engineer is responsible for managing the procurement, usage, and storage of chemical raw and auxiliary materials.

工艺工程师负责化工原辅材料领用，使用过程和存放的管理。

4.4 The process engineer is responsible for the consumption quota planning, consumption statistics, and analysis of chemical raw and auxiliary materials, and for reporting them in a timely manner as per regulations.

工艺工程师负责化工原辅材料消耗定额计划、消耗统计和分析等工作，并按规定及时上报。

4.5 The process engineer is responsible for analyzing the consumption and evaluating the effectiveness of the chemical raw and auxiliary materials in use.

工艺工程师负责对在用化工原辅材料使用情况进行消耗分析和效果评价。

4.6 The safety engineer is responsible for managing and overseeing the HSE aspects of the chemical raw and auxiliary materials management process. The safety engineer shall assist in the disposal of solid waste generated by chemical raw and auxiliary materials and the regeneration of waste agents.

安全工程师负责化工原辅材料管理过程中的 HSE 方面内容的管理和监督检查，协助进行化工原辅材料产生的固废处理和废剂再生。

4.7 The management of chemical raw and auxiliary materials should adhere to the principle of minimizing usage costs and maximizing benefits, provided that the quality meets the required standards and the materials meet the operational needs of the units.

化工原辅材料管理应遵循在质量符合要求、满足装置使用的前提下，化工原辅材料使用成本最低、效益最大化原则。

5 Management Content 管理内容

5.1 Project Management 计划管理

The process engineer prepares a monthly and annual chemical raw and auxiliary material consumption plan declaration form based on the production needs of the unit and the amount of chemical raw and auxiliary materials. This form shall then be reviewed and approved by the Head of Department and submitted to the Scheduling and Dispatch Department.

工艺工程师根据装置生产需求，化工原辅材料的用量来编制月度、年度化工原辅材料消耗计划申报表，经部门主管领导审核后报计划调度部。

The process engineer shall submit the procurement plan based on the actual chemical material consumption and inventory of the unit to ensure that the minimum chemical material inventory is

maintained at no less than 4 months.

工艺工程师根据根据装置实际化材消耗和库存，上报采购计划，确保化材最低库存不小于 4 个月。

5.2 Requisition 领用

Material requisition must be completed using the 《Material Requisition Form for Chemical Raw and Auxiliary Materials》 and submitted to the Materials and Equipment Department for receiving chemical raw and auxiliary materials after approval and confirmation by the department leader. When requisitioning chemical raw and auxiliary materials, actual usage and storage conditions must be comprehensively considered, and the on-site stock of chemical materials must not be interrupted.

物料领用需填写《化工原辅材料物料领用单》，经本部门主管领导审批确认后交物资装备部领用化工原辅材料。领用化工原辅材料要综合考虑实际用量、堆放场所情况，现场化材实际存量不得断供。

5.3 Usage process and storage 使用过程和存放

5.3.1 The process engineers and operators shall be proficient in the key properties of chemical raw and auxiliary materials and possess knowledge of safety precautions.

工艺工程师和操作人员应熟知化工原辅材料主要性能，具备安全防护知识。

5.3.2 Chemical raw and auxiliary materials stored on-site should have clear label, including the material name, model, and safety usage instructions. The materials should be neatly arranged, with different types stored separately. Mixing different varieties of chemical raw and auxiliary materials is prohibited.

现场堆放的化工原辅材料应有明显的标识牌，标识牌内容包括化材名称、型号和安全使用提示，化材现场摆放整齐，不同化材要分开存放，禁止不同品种化工原辅材料混放。

5.3.3 Regular inspections should be conducted on the chemical raw and auxiliary materials stored on-site to check whether the packaging, placement, label, and other aspects meet the requirements.

定期对现场堆放的化工原辅材料进行检查，检查包装、摆放、标识等是否符合要求。

5.3.4 Perform daily maintenance on the chemical raw and auxiliary material dosing facilities, and parameters such as the dosing amount should be recorded in the operation log.

做好化工原辅材料加剂设施的日常维护工作，加剂量等参数应记入操作记录。

5.3.5 At the beginning of each year, an analysis and evaluation of the previous year's chemical raw and auxiliary material usage should be conducted, and the 《Chemical Raw and Auxiliary Material Usage Evaluation Form》 should be filled out.

每年初需对上一年度化工原辅材料使用情况进行分析评价，填写《化工原辅材料使用情况评价表》

5.3.6 The storage management of chemical raw and auxiliary materials that are classified as

chemical hazardous materials shall be carried out in accordance with the requirements of the HSE Management Department.

属化学危险品的化工原辅材料存放管理按 HSE 管理部的要求执行。

5.3.7 For units with planned shutdowns lasting more than 3 months, the chemical raw and auxiliary materials stored on-site should be moved to the chemical warehouse after the unit is shut down.

计划停工时间超过 3 个月的装置，应在装置停工后将现场存放的化工原辅材料搬入化学品仓库。

5.3.8 The storage of various chemical raw and auxiliary materials on-site should comply with safety and environmental requirements. When the packaging is intact, the amount stored outdoors should not exceed the usage amount for 3 months.

对于现场各种化工原辅材料的存放应符合安全、环保要求，在包装完好的情况下，露天存放量不能超过 3 个月的使用量。

5.3.9 The team is responsible for monitoring the daily preparation, dosing, and usage of chemical materials, as well as the dosing records. The dosing rate should strictly follow the process dosing requirements.

班组负责监控化材日常配制、加注和使用情况，以及加注记录，加注速度应严格按照工艺加注要求执行。

5.3.10 Operators should strictly follow the on-site dosing operation card and ensure proper personal protective measures.

操作人员应严格执行现场配剂操作卡，并做好个人防护。

5.3.11 The process engineer should promptly adjust the dosing amount of the corrosion inhibitor based on the analysis of iron ions in the acidic water at the dosing point to ensure the corrosion protection effectiveness at the dosing point.

工艺工程师根据加注点酸性水中铁离子分析情况，及时调整缓蚀剂加注量，保证加注点的防腐效果。

5.3.12 Operators should promptly adjust the phosphate dosing flow rate based on the analysis of phosphate ions in the steam drum boiler water.

操作人员根据汽包炉水中磷酸根离子分析，及时调整磷酸盐加注流量。

5.4 Consumption Statistics and Analysis 消耗统计和分析

5.4.1 The process engineer is responsible for establishing the chemical raw and auxiliary materials consumption statistics ledger, analyzing the consumption situation every month, and reporting the statistical analysis results to the Scheduling and Dispatch Department.

工艺工程师负责建立化工原辅材料消耗统计台帐，每月对消耗情况进行分析，并将统计分析结果报计划调度部。

5.4.2 If the chemical material usage exceeds the designed amount (or cycle), or if the usage effect does not meet the standards, the process engineer should conduct a technical analysis to

identify the cause.

化材使用超出设计使用量（或周期）、或者使用效果不达标，工艺工程师应进行技术分析，查找原因。

5.4.3 The process engineer should work with Materials and Equipment Department to conduct inventory counting and verification of chemical materials, ensuring that the quantities and models of chemical materials are accurately known for timely procurement.

工艺工程师要与物装部做好化材库存的清点和核对工作，确保掌握化材库存数量及型号，便于及时申购。

5.4.4 The process department should establish a corrosion protection ledger and, in the monthly process technical report, analyze and summarize the usage of corrosion inhibitors.

工艺专业建立防腐蚀台账，并在每个月的工艺技术月报中，对缓蚀剂的使用情况进行分析总结。

5.5 Failure Determination and Disposal 失效判定和处置

5.5.1 Expired chemical raw and auxiliary materials should be recorded on the 《0530-Material Scrap Application Form》，approved by the Head of Department, reviewed by the Head of Scheduling and Dispatch Department, and then submitted for approval by the company's senior management.

失效的化工原辅材料应填写《0530-物资报废申请》，由部门主管领导审批，计划调度部负责人审核后报公司主管领导批准。

5.5.2 When determining the failure of fixed-bed catalysts, the failure of inert ceramic balls must be handled separately. Inert ceramic balls that are recyclable should be collected for reuse.

办理固定床催化剂失效判定时，惰性瓷球失效判定需单独办理，对可回收的惰性瓷球要加以回收。

5.5.3 Failed fixed-bed catalysts and additives must be disposed of according to waste disposal management requirements and transported to the Power Plant Department for incineration treatment.

失效的固定床催化剂，助剂需按照废弃物处置管理要求，拉运至热电厂焚烧处理。

5.6 Catalyst Regeneration and Reuse 催化剂再生回用

5.6.1 Regenerated catalysts should be stored according to the management procedures for new catalysts. During storage, care should be taken to prevent moisture, sunlight, and contamination. Transportation and stacking should be handled gently to avoid catalyst breakage.

再生后的催化剂，应按照新催化剂的管理办法，对催化剂进行存放，存放过程要注意防潮，防晒，防污染。运输和堆放要轻拿轻放，防止催化剂破碎。

5.6.2 Before dosing regenerated catalysts, they should be sieved to remove broken catalysts and catalyst powder.

再生催化剂在装剂前，应进行过筛，去除破碎的催化剂和催化剂粉末。

5.7 Antioxidant Dosing 抗氧剂加注

5.7.1 Based on the decrease in liquid level of the antioxidant dosing tank, the field operator should promptly add the dosing liquid when the level drops below 30%, and record the dosing amount in the 《Antioxidant Dosing Record Form》.

外操根据抗氧剂配剂罐现场液面下降情况，当液面低于 30%时，及时配剂补液，并将配剂数量记录在《抗氧剂配制记录表》中。

5.7.2 Based on the production of kerosene delivery flow rate, the main operator calculates the range for antioxidant dosing flow, verifies whether the actual antioxidant dosing flow (1020-FI-20901) meets the requirements, and if it exceeds the dosing range, the operator should promptly arrange for adjustments.

主操根据产品航煤外送流量，计算抗氧剂加注流量区间，核对抗氧剂实际加注流量 1020-FI-20901 是否满足要求，当超出加注区间，应及时安排外操进行调节。

5.7.3 Every week, the process engineer calculates whether the dosing consumption meets the requirements based on the kerosene output and antioxidant dosing quantity, and uses this to verify the accuracy of the flow meter.

工艺工程师每周根据航煤产量和抗氧剂加注数量，核算加注单耗是否满足要求，并以此校核流量计是否准确。

6 Supervision and Assessment 监督与考核

6.1 The management rules for chemical raw and auxiliary materials in No.2 Refinery Department shall be revised and managed by the process department.

炼油二部化工原辅材料管理细则由工艺专业负责修订和管理。

6.2 The department leader is responsible for supervision and inspection.

部门领导负责监督检查。

6.3 The assessment is based on the 《Performance Evaluation Rules for No.2 Refinery Department》.

考核依据《炼油二部绩效考核细则》。

7 Attachment: Relevant Information on Chemical Materials 附件：化材相关信息

Chemical Material	Filling Point 加注点	Main Properties	Assessment Indicators	Safety Requirements	Protection
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Name 化材名称		主要性能	考核指标	安全防护要求
Reaction Air-cooling Corrosion Inhibitor 反应空冷缓蚀剂	1030-A101 and 1030-C201 top 1030-A101 和 1030-C201 顶	Forms a stable chemical film inside pipelines and equipment, reducing the corrosion rate caused by H ₂ S-H ₂ O in these areas 在管道及设备内部形成稳定的化学膜，减缓此部位的H ₂ S-H ₂ O型腐蚀速率	The Fe+ content in the sulfur-containing wastewater of 1030-D104 and 1030-D201 shall not exceed 3 mg/L 1030-D104 及 1030-D201 含硫污水中 Fe+ 含量不大于 3mg/L	1.Dosing process: Wear safety goggles and rubber gloves. 加注过程佩戴护目镜，橡胶手套 2.Inhalation: Move to fresh air, oxygen can be administered. 吸入：转移至新鲜空气处，可输氧。 3.Ingestion: Rinse mouth with water, drink milk or water, do not induce vomiting. 食入：清水冲洗口腔，可饮用牛奶或水，不要催吐。 4.Skin contact: Rinse with flowing water for 15 min. 皮肤接触：流动清水冲洗 15min 5.Eye contact: Rinse eyes with flowing water, do not rub the eyes. 眼睛接触：流动清水冲洗眼睛，不要揉眼睛 6.Use mouth-to-mouth resuscitation with caution. 谨慎使用嘴对嘴人工呼吸
Fractionation corrosion inhibitor 分馏缓蚀剂	1020-C201 top 1030-C201 top 1040-C201 top 1040-C205 top 1020-C201 顶 1030-C201 顶 1040-C201 顶 1040-C205 顶	Forms a stable chemical film inside pipelines and equipment, reducing the corrosion rate caused by H ₂ S-H ₂ O in these areas	The Fe+ content in the sulfur-containing wastewater of 1020-D201, 1030-D201, 1040-D201, and 1040-D204 shall	1.Dosing process: Wear safety goggles and rubber gloves. 加注过程佩戴护目镜，橡胶手套 2.Inhalation: Move to fresh air, oxygen can be administered. 吸入：转移至新鲜空气处，可输氧。 3.Ingestion: Rinse mouth with water, drink milk or water, do

		在管道及设备内部形成稳定的化学膜，减缓此部位的H ₂ S-H ₂ O型腐蚀速率	not exceed 3 mg/L 1020-D201、1030-D201、1040-D201 及 1040-D204 含硫污水中 Fe+ 含量不大于 3mg/L	not induce vomiting. 食入：清水冲洗口腔，可饮用牛奶或水，不要催吐。 4.Skin contact: Rinse with flowing water for 15 min. 皮肤接触：流动清水冲洗 15min 5.Eye contact: Rinse eyes with flowing water, do not rub the eyes. 眼睛接触：流动清水冲洗眼睛，不要揉眼睛 6.Use mouth-to-mouth resuscitation with caution. 谨慎使用嘴对嘴人工呼吸
Antioxidant 抗氧化剂	Kerosene product line 航煤产品线	Improve the oxidative stability of jet fuel 提高喷气燃料油的氧化安定性	Chemical dosage rate of 17-24 mg/L 化剂单耗 17-24mg/L	1.Dosing process: Wear safety goggles and rubber gloves. 加注过程佩戴护目镜，橡胶手套 2.Inhalation: Provide fresh air, perform CPR (mouth-to-mouth resuscitation) 吸入：供给新鲜空气，提供人工呼吸 3.Ingestion: Rinse mouth and drink plenty of water, do not induce vomiting. 食入：冲洗口腔，和大量清水，切勿催吐 4.Skin contact: Rinse with water. 皮肤接触：清水冲洗 5.Eye contact: Rinse with water. 眼睛接触：清水冲洗
Phosphate 磷酸盐	1030-D501	As a scale dispersant, it	Steam drum chemical	1.Dosing process: Wear safety goggles and protective gloves/

		prevents scale deposition on the surface of the steam drum, preventing uneven heat distribution. 作为水垢疏松剂，防止水垢沉积在汽包表面，引起受热不均	dosage concentration control in 5-15 mg/L 汽包药剂浓度控制 5-15mg/L	加注过程佩戴护目镜，防护手套 2.Inhalation: Inhale fresh air, administer oxygen. 吸入：吸入新鲜空气，给氧 3.Ingestion: Drink a sufficient amount of warm water, induce vomiting. 食入：饮用足量温水，催吐 4.Skin contact: Remove contaminated clothing, rinse with water. 皮肤接触：脱去污染衣物，清水冲洗 5.Eye contact: Lift eyelids, rinse with flowing water. 眼睛接触：提起眼睑，流动清水冲洗
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8 Additional Clauses 附则

8.1 These regulations are managed by No.2 Refinery Department, and matters not covered herein shall be executed in accordance with the company's professional management systems and other relevant procedures.

本细则由炼油二部归口管理，未尽事宜参照公司各专业管理制度等执行。

8.2 The version preparation and approval status of these regulations are shown in Table 1.

本细则版本编制和审批情况见表 1。

Table 1 Document Version Preparation and Approval Status

表 1 文件版本编制和审批情况

3	01/01/2025	Jiang Xiangming LuoXin 蒋翔明 罗欣	Yang Fan YangShihai 杨帆 杨仕海	Sun Jian Huai 孙建怀
Version 版本	Issued Date 颁布日期	Compiler 编制人	Reviewer 审核人	Approval 批准人