化学品安全技术说明书（SDS）

产品：**低铝防漏镀剂（SYD）**

编制依据：GB/T 16483- 2008、GB/T 17519- 2013、GB 30000 系列 GHS 分类标准

1 化学品及企业标识

1.1 商品名称：**低铝防漏镀剂（SYD）**

1.2 别名：热镀锌低铝防漏镀助剂、防漏助镀剂

1.3 产品推荐用途：热镀锌低铝工况使用，改善工件浸润性，抑制材料缺陷漏镀

1.4 禁止用途：不得用于食品、医药、饮用水体系

1.5 生产企业：昆山光华化工材料有限公司

1.6 企业地址：江苏省昆山市巴城镇湖滨北路 341 号

1.7 联系电话：13584927325

1.8 24 小时国内应急咨询电话：13584927325

1.9 编制部门：技术工程部

1.10 编制日期：2026- 08- 20 1.11 修订版本：V2.0

2 危险性概述

2.1 GHS 危险性分类： 皮肤腐蚀类别 1B；严重眼损伤类别 1；对水生生物有害并具有长期持续影响；不燃液体，无爆炸危险。

2.2 GHS 象形图：☠腐蚀性 GHS05

2.3 信号词：**危险**

2.4 危险说明： H314：造成严重皮肤灼伤和眼损伤； H412：对水生生物有害并具有长期持续影响。

2.5 防范说明： P280：戴防护手套、防护眼镜、防护面罩； P301+P330+P331：如食入：漱口，**禁止催吐**； P303+P361+P353：如皮肤（头发）沾染，立即脱去全部污染衣物，大量清水冲洗皮肤； P305+P351+P338：如入眼睛，清水持续冲洗数分钟，取出隐形眼镜继续冲洗，立刻呼叫中毒控制中心或就医； P273：避免释放到环境中。

2.6 其他危害：本品酸性较强，避免与碱性物质接触；不含磷，不含 ODS 消耗臭氧层物质。

3 成分 / 组成信息

☑混合物 □纯品

组分名称	CAS 号	质量分数
磺酸铋（有机铋盐）	商业保密	5 %
一水柠檬酸钾	6100- 05- 6	10 %
去离子水	7732- 18- 5	85 %

备注：磺酸铋功能性组分作为商业机密，不公开 CAS；混合物整体呈强酸性；无《危险化学品目录》高浓度高危组分。

4 急救措施

4.1 吸入：转移至空气新鲜处；如出现呼吸道灼伤、不适，立刻就医。

4.2 皮肤接触：立刻脱去全部受污染衣物，流动清水冲洗皮肤至少 15 分钟，**立即就医**。

4.3 眼睛接触：立即翻开眼睑，流动清水或者生理盐水持续冲洗不少于 15 分钟，**必须立刻就医**。

4.4 食入：饮用足量温水，**严禁催吐**，禁止中和，立刻就医。

4.5 给医生提示：本品强酸性，会造成皮肤、黏膜化学灼伤，对症处理，无特异性解毒剂。

5 消防措施

5.1 合适灭火剂：雾状水、干粉、二氧化碳、砂土。

5.2 禁止灭火剂：无特殊禁忌。

5.3 燃烧有害分解产物：高温分解可产生一氧化碳、硫氧化物、氮氧化物、有机烟气。

5.4 消防员防护建议：佩戴自给式呼吸器 SCBA、全套耐酸碱消防防护服，在上风向灭火；尽可能将容器转移至空旷区域；用水冷却火场容器；容器变色、泄压发声，人员立即撤离。

6 泄漏应急处理

6.1 人员防护：疏散无关人员；处置人员穿戴耐酸碱橡胶防护服、耐酸碱手套、护面面罩，严禁皮肤眼睛直接接触泄漏液体。

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6.2 环境保护：严禁泄漏物流入下水道、雨水管网、河道，会对水生生物造成长期危害；泄漏物需要做酸碱中和处理之后方可进入废水系统。

6.3 小量泄漏：砂土、石灰石、惰性吸附材料吸附残液；使用弱碱（碳酸氢钠）做中和处理，收集进密闭容器，送入厂区废水处理系统。

6.4 大量泄漏：构筑围堤收容；使用碳酸氢钠进行中和；物料泵入专用耐酸收集容器，交由具备资质危废处置单位处置。

7 操作处置与储存

7.1 操作注意事项

1）密闭操作，车间加强通风；操作人员经过岗位培训，熟知化学品腐蚀风险，遵守作业规程。

2）全程避免皮肤、眼睛直接接触，必须穿戴全套耐酸碱个人防护用品。

3）远离热源，工作场所禁止吸烟。

4）避免与碱类、强氧化剂混配接触，会发生剧烈中和反应。

5）轻装轻卸，防止包装桶破损泄漏；现场配备洗眼器、泄漏应急物资与消防器材。

7.2 储存条件

1）储存于阴凉通风库房，环境温度 5- 35℃；耐酸容器密封完好。

2）与碱、氧化剂、食品化学品严格分开存放，严禁混储。

3）按照消防法规、危化品仓储管理要求保管。

8 接触控制 / 个体防护

8.1 职业接触限值：混合物无国家规定职业接触限值。

8.2 工程控制：岗位加强通风；现场配置洗眼器与安全淋浴装置。

8.3 呼吸防护：正常工况不需要；产生大量酸雾气雾时佩戴酸性气体防毒面具。

8.4 手部防护：耐酸碱橡胶防护手套。

8.5 眼睛防护：耐化学品护目镜 + 防护面屏。

8.6 身体防护：耐酸碱防腐蚀工作服。

9 理化特性

外观：无色至黄色透明液体

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气味：中性微弱气味

pH 值：0.1- 1（5% 水溶液，强酸性）

相对密度（15℃）：1.00±0.05 g/cm³

闪点：无闪点（不燃液体）

溶解性：可与水任意比例互溶

燃烧性：不燃

其他性能：适配高铝锌锅热镀锌工艺，改善工件浸润，降低漏镀风险；不含磷，不含 ODS。

备注：理化参数来源本产品 CMA- COA 第三方检测报告。

10 稳定性和反应性

10.1 稳定性：常温常压储存条件下稳定。

10.2 应避免接触物质：强碱、强氧化剂。

10.3 危险反应：与强碱接触发生剧烈中和放热反应；和强氧化剂可发生化学反应。

10.4 危险分解产物：高温不完全燃烧产生硫氧化物、一氧化碳、有机烟气；常温储存条件下无分解。

11 毒理学信息

11.1 急性毒性：混合物无高急性毒性数据。

11.2 皮肤腐蚀 / 刺激：类别 1B，强酸性，可造成严重化学皮肤灼伤。

11.3 眼损伤 / 眼刺激：类别 1，造成不可逆严重眼损伤。

11.4 致敏性：无明确致敏记录。

11.5 致突变、致癌、生殖毒性：组分未见相关致癌致突变证据。

12 生态学信息

12.1 水生毒性：对水生生物有害，具有长期持续毒性；原液强酸性，严禁直接排放水体。

12.2 生物降解性：有机组分生物降解率＞90%。

12.3 生物蓄积潜力：无显著生物蓄积。

12.4 其它生态效应：废水必须中和预处理达标之后排放。

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13 废弃处置

13.1 化学品残余物：原液不可直接排放；先用碳酸氢钠中和至 pH6- 9，厂区废水站预处理，或者委托具备资质危废处置单位处置。

13.2 污染包装容器：容器充分中和清洗后回收利用；残留废液按危险废物管理。

13.3 提示：处置全过程遵守国家、地方环境保护、危废管理法规。

14 运输信息

14.1 UN 编号：⚠注意：该产品强酸性，需要实测判定是否归为腐蚀性危险货物；未做分类前按腐蚀性物质管控。

14.2 运输危险类别：待腐蚀性分类判定。

14.3 包装类别：待判定。

14.4 包装方式：25kg 耐酸塑料桶包装。

14.5 运输注意事项： 运输前检查包装密封完好；防止暴晒、冷冻；禁止和碱类、氧化剂、食品类货物混运；防止容器发生泄漏。

15 法规信息

本 SDS 编制参考法规：GB/T16483- 2008、GB/T17519- 2013、GB30000 系列 GHS 分类； 《安全生产法》、《危险化学品安全管理条例》、地方环保安全生产相关规定。

说明：最终是否列入危险化学品目录，以腐蚀性实测分类结果为准。

16 其他信息

16.1 参考文献：本产品 CMA- COA 检测报告，企业 TDS 技术数据表。

16.2 修订说明：V2.0，废止旧 GB16483- 2000 旧版本 MSDS；重点更新强酸性混合物 GHS 腐蚀分类，修正旧文档健康危害描述错误，适配现行国标。

16.3 编制部门：昆山光华化工材料有限公司- 技术工程部。

16.4 免责声明：本 SDS 依据现有测试、文献资料编制，仅供安全操作参考；使用者结合现场工况，自行评估使用安全风险。

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Safety Data Sheet (SDS)

Product: Low-Aluminum Anti-Leak Plating Agent（SYD）

Regulatory reference: OSHA Hazard Communication Standard 29 CFR 1910.1200 (HazCom 2012, aligned with UN GHS Revision 7)

Version: V2.0

Date of preparation: 2026-08-20

SECTION 1: IDENTIFICATION

1.1 Product identifier: Low-Aluminum Anti-Leak Plating Agent（SYD）

1.2 Synonym: High-Al zinc bath auxiliary agent for hot-dip galvanizing

1.3 Recommended use: Improve substrate wettability, reduce leak-plating defect for high-aluminum hot-dip galvanizing zinc bath.

1.4 Restrictions on use: Not for food, pharmaceutical or potable-water systems.

1.5 Manufacturer information:

Company: Kunshan Guanghua Chemical Materials Co., Ltd.

Address: No.341 Hubin North Road, Bacheng Town, Kunshan City, Jiangsu Province, P.R.China

Telephone: 13584927325

1.6 US-local 24-hour emergency telephone: 13584927325

1.7 Prepared by: Engineering Department, Kunshan Guanghua Chemical Materials Co., Ltd.

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SECTION 2: HAZARD(S) IDENTIFICATION

2.1 GHS Hazard Classification (per 29 CFR 1910.1200):

Skin Corrosion Category 1B; Serious Eye Damage Category 1; Hazardous to aquatic environment, chronic hazard Category 4. Non-flammable liquid.

2.2 GHS Pictogram: Corrosion ⚠ GHS05

2.3 Signal word: **Danger**

2.4 Hazard Statements:

H314: Causes severe skin burns and eye damage.

H412: Harmful to aquatic life with long lasting effects.

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2.5 Precautionary Statements:

P280: Wear protective gloves, eye-protection and face-shield.

P273: Avoid release to the environment.

P301+P330+P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

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

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

2.6 Other hazards: Strong-acid mixture. Avoid contact with alkaline substances. Contains no phosphorus, no ODS ozone-depleting substances.

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

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☑ Mixture ☐ Substance

Chemical name	CAS-No.	Concentration (wt-%)
Bismuth sulfonate	Trade secret	5
Tripotassium citrate monohydrate	6100-05-6	10
De-ionized water	7732-18-5	85

Remarks: Bismuth sulfonate is protected as trade-secret component.

SECTION 4: FIRST-AID MEASURES

4.1 Inhalation: Remove victim to fresh air. If respiratory burn or discomfort persists, seek medical attention immediately.

4.2 Skin contact: Take off all contaminated clothing. Rinse skin thoroughly with running water for minimum 15 minutes. Obtain medical help immediately.

4.3 Eye contact: Rinse eyes continuously with plenty of running water or normal saline for minimum 15 minutes. Seek medical care immediately.

4.4 Ingestion: Give large quantities of water to drink. **Do NOT induce vomiting**. Do NOT neutralize. Call a physician.

4.5 Notes to physician: Strong-acid agent, causes chemical burns to skin and mucosa; treat symptomatically, no specific antidote.

SECTION 5: FIRE-FIGHTING MEASURES

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5.1 Suitable extinguishing media: Water spray, dry chemical, carbon dioxide, sand.

5.2 Unsuitable extinguishing media: None known.

5.3 Hazardous decomposition products under fire-conditions: Carbon monoxide, sulfur oxides, nitrogen oxides, organic fumes.

5.4 Advice for fire-fighters: Wear self-contained breathing apparatus (SCBA) and full acid-resistant protective turnout gear. Fight fire from up-wind side. Move intact containers to safe open area if without risk. Cool exposed containers with water spray. Withdraw immediately if container shows discoloration or venting noise.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions: Evacuate non-essential personnel. Responders shall wear acid-resistant suit, rubber gloves and full face shield. Avoid any direct skin-eye contact.

6.2 Environmental precautions: Prevent spill from entering sewers, storm drains and surface watercourses. Spill must be neutralized before entering waste-water system.

6.3 Small spill: Neutralize with sodium bicarbonate, absorb spill with sand / limestone / inert absorbents. Collect waste into sealed containers, send to on-site waste-water pre-treatment facility.

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6.4 Large spill: Dike for containment; neutralize with sodium bicarbonate. Pump material into dedicated acid-proof waste receptacles. Arrange disposal via licensed waste-handling contractor.

SECTION 7: HANDLING AND STORAGE

7.1 Handling precautions:

- Use with adequate local ventilation; operators shall receive special safety training.

- Wear full set of acid-resistant PPE; avoid skin-eye contact at all times.

- Keep away from heat sources; no open-flame smoking in working zone.

- Incompatible with strong alkali, oxidizing agents; strictly avoid mixing-contact.

- Handle drums carefully to prevent rupture-leakage. Eyewash and emergency equipment shall be readily available.

7.2 Storage conditions:

- Store in cool, well-ventilated warehouse; storage temperature range 5-35 °C. Keep acid-proof containers tightly closed.

- Segregate from alkalis, oxidizing agents and food-grade commodities. Strictly no co-storage.

- Comply with local fire-safety and warehouse-storage regulations.

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SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Occupational exposure limits: No established OSHA-PEL / ACGIH-TLV values for this mixture.

8.2 Engineering controls: Maintain adequate ventilation; install eyewash and safety shower in work station.

8.3 Respiratory protection: Normally not required. If heavy acid mist is generated, use acid-gas respirator.

8.4 Hand protection: Chemical-resistant / acid-proof rubber gloves.

8.5 Eye protection: Chemical-resistant safety goggles plus face shield.

8.6 Body protection: Acid-resistant work clothing.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES



Appearance: Colorless to yellow clear liquid

Odor: Neutral mild odor

pH value: 0.1-1 (5 % aqueous solution, strong acid)

Relative density (15 °C): 1.00 ± 0.05 g/cm³

Flash point: Non-flammable, no measurable flash-point

Solubility: Miscible with water in all proportions

Flammability: Non-combustible

Other properties: For high-Al zinc-bath galvanizing, improve workpiece wettability, reduce leak-plating risk. Contains no phosphorus and no ozone-depleting substances.

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> Source of data: In-house CMA-COA third-party test report.

SECTION 10: STABILITY AND REACTIVITY

10.1 Chemical stability: Stable under normal ambient storage-handling conditions.

10.2 Incompatible materials: Strong alkalis, strong oxidizing agents.

10.3 Hazardous reactions: Violent exothermic neutralization reaction when mixed with strong alkali; may react with strong oxidants.

10.4 Hazardous decomposition products: Sulfur oxides, carbon monoxide and organic fumes under high-temperature incomplete combustion; no decomposition under ambient storage.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Acute toxicity: No high-acute-toxicity data available for this mixture.

11.2 Skin corrosion / irritation: Category 1B; strong acid, causes severe chemical skin burns.

11.3 Serious eye damage / eye irritation: Category 1; causes irreversible serious eye injury.

11.4 Skin sensitization: No confirmed sensitizing-reaction records.

11.5 Germ-cell mutagenicity, carcinogenicity, reproductive toxicity: No evidence of carcinogenic / mutagenic hazards from component data.

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SECTION 12: ECOLOGICAL INFORMATION (Non-mandatory for OSHA-HCS)

12.1 Aquatic toxicity: Harmful to aquatic life with long lasting effects.

Strong-acid raw product must not discharge to natural water environment.

12.2 Biodegradability: Organic component biodegradation rate > 90 %.

12.3 Bioaccumulative potential: No significant bioaccumulation.

12.4 Other adverse environmental effects: Wastewater shall be neutralized and pre-treated before discharge.

SECTION 13: DISPOSAL CONSIDERATIONS (Non-mandatory for OSHA-HCS)

13.1 Product residues: Neutralize waste with sodium bicarbonate to pH 6-9 before discharge. Pretreat via on-site waste-water system or consign to licensed hazardous-waste disposal contractor complying with local EPA regulations.

13.2 Contaminated packaging: Neutralize and thoroughly rinse containers for potential recycling; residual content shall be managed as hazardous waste material.

13.3 Regulatory note: Always follow federal, state and local waste-management statutes.

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SECTION 14: TRANSPORT INFORMATION (Non-mandatory for OSHA-HCS)

14.1 UN number: To be determined after corrosivity classification test.

14.2 DOT hazard class: Pending corrosive hazard classification.

14.3 Packing group: Not applicable before classification.

14.4 Packaging: 25 kg acid-resistant plastic drums.

14.5 Transport advice: Inspect drum sealing before shipment. Protect from freeze-thaw and direct sunlight. **Do not co-ship with alkalis, oxidants or food-stuff cargo**. Prevent container leakage.

SECTION 15: REGULATORY INFORMATION (Non-mandatory for OSHA-HCS)

Prepared in accordance with OSHA 29 CFR 1910.1200 Hazard Communication Standard (HazCom 2012).

TSCA inventory status to be verified for US import scenarios.

Complies with RoHS directive requirements for restricted-substance limits.

SECTION 16: OTHER INFORMATION

16.1 References: In-house CMA-COA test report, product TDS technical data sheet.

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16.2 Revision note: Version V2.0. Obsolete earlier MSDS documents compiled under old GB16483-2000 Chinese standard. Updated GHS corrosive classification for strong-acid mixture.

16.3 Prepared by: Engineering Department, Kunshan Guanghua Chemical Materials Co., Ltd.

16.4 Disclaimer: This SDS is compiled based on available test-data and literature for safety-operation reference only. End-users shall independently assess safety risks according to actual site working-conditions.

