

Material Safety Data Sheet (MSDS)

TCP-976B Trivalent Chromium Black Zinc Passivation Agent

Version: January 1, 2023

1. Product and Company Identification

Product Name: TCP-976B Trivalent Chromium Black Zinc Passivation Agent

Company Name: Dongguan Shuomei Electronic Materials Technology Co., Ltd. Emergency

Hotline: 0769-81030059

2. Composition / Information on Ingredients

Item	Content	CAS No.
Form: Mixture	—	—
Citric Acid	20%	5949-29-1
Lactic Acid	5%	50-21-5
Thioglycolic Acid	10%	68-11-1
Water	65%	—

3. Hazard Identification

Hazard Classification & Hazards

- (1) Physical hazard: Not classified as hazardous for physical risks; non-flammable and non-explosive, no special hazards under normal operating conditions.
- (2) Environmental hazard: Harmful to the environment; special precautions shall be taken to prevent water pollution.
- (3) Health hazard: Failure to take remedial measures after eye or skin contact may cause severe inflammation. Heavy inhalation irritates the nose, throat and bronchi, and generates strong stimulation to mucous membranes.

4. First-Aid Measures

Eye Contact

Immediately flush eyes continuously with running clean water for 15 minutes. Keep eyes open and pull upper and lower eyelids apart to ensure water fully rinses all surfaces of eyeballs and conjunctiva. If discomfort persists due to delayed or incomplete flushing, seek immediate medical treatment from an ophthalmologist.

Skin Contact

Quickly wipe off residual liquid with paper towels or cloth, then thoroughly rinse with abundant running water or skin cleanser. Immediately remove contaminated clothes and footwear and rinse them with plenty of running water. For heavy contamination,

flush skin with large volumes of water before taking off garments. Seek prompt medical attention if skin irritation occurs due to insufficient or delayed cleaning.

Ingestion

Rinse mouth with clean water at once. If feasible, let the casualty drink milk mixed with egg white, which forms a protective film on the mucous membranes of the throat, esophagus and stomach to mitigate chemical burns and penetration. Gastric lavage shall be performed at hospital if necessary.

Massive Inhalation

Remove the victim to a well-ventilated area with fresh air to rest, then send to hospital for further examination and treatment.

5. Fire-Fighting Measures

Suitable Extinguishing Media

Water spray, foam extinguishers, dry powder extinguishers, carbon dioxide extinguishers, sand and earth.

Unsuitable Extinguishing Media

None

Fire Response Instructions

Cut off all ignition sources immediately if a fire breaks out nearby. Transfer product containers to a safe zone if operationally possible. Maintain a safe distance during fire suppression; all fire fighters must wear full protective suits and gas masks.

6. Accidental Release Control

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General Emergency Disposal

Block off the spill area and bar entry of irrelevant personnel. Locate the leakage source as soon as possible to stop further outflow; wear complete personal protective equipment before handling spills.

- Minor spillage: Wipe liquid with cloth or absorb with soil, then rinse residual traces with water.
- Major spillage: Build sandbag dikes to prevent liquid spreading; pump leaked liquid into corrosion-resistant containers for recovery. Flush unrecoverable residues with water.

Wastewater Treatment for Spill Residues

Dilute residual solution and flushing wastewater adequately, then neutralize with alkaline substances such as slaked lime or sodium hydroxide until the pH reaches the specified range. Discharge is only permitted after meeting emission standards; direct untreated discharge is prohibited to avoid environmental damage.

7. Handling and Storage

Handling Precautions

Prevent splashing onto eyes and skin; fully wash hands, face and exposed skin after operation. Sufficient clean water shall be available on-site for emergency rinsing; maintain adequate ventilation at workstations.

Storage Precautions

Store containers in cool, dark, well-ventilated areas away from direct sunlight; avoid high-temperature storage environments. Segregate from strong acids, strong alkalis, oxidants and reducing agents; do not store them in the same storage zone. Do not overstack goods; maximum two layers are recommended to prevent package rupture or damage. Keep containers tightly sealed and avoid long-term stockpiling. Reserve sufficient clean water at storage areas for emergency use.

8. Exposure Controls / Personal Protection

Ventilation

Ensure full air exchange and good ventilation in all operating areas.

Auxiliary Sanitary Facilities

Install wash stations and cleaning equipment near work zones for convenient post-operation cleaning of hands and face.

Personal Protective Equipment (PPE)

- Eye & face protection: No special protection required for routine use; safety goggles and face shields may be worn for high-risk operations.
- Skin protection: Wear suitable rubber gloves and rubber boots.
- Respiratory protection: Wear gas masks.

Additional Workplace Rules

Smoking and eating are prohibited at work sites. Shower and change into clean clothes after finishing work shifts.

9. Physical and Chemical Properties

Appearance: Pale yellow liquid Odor: Slight lactic acid odor Boiling Point: 105 °C
Specific Gravity: 1.13 - 1.16 Viscosity: No available data pH Value (10% aqueous solution): 1.13 - 1.15 Version: January 1, 2023 Solubility: Miscible freely with water
Volatility: Only the water component will volatilize

10. Stability and Reactivity

Flammability characteristic: Stable under normal service conditions (non-flammable aqueous solution) Flash Point: Non-flammable, no flash point Ignition Point: Non-combustible Explosion Risk: Non-explosive substance Chemical Stability: Chemically stable under normal usage conditions Hazardous Decomposition Products: None Incompatible Reaction Hazards: None Additional Property: Corrosive to metals

11. Toxicological Information

Irritation: Mild irritant Corrosivity: Mild corrosive

12. Ecological Information

No available data

13. Disposal Considerations

Disposal Methods

Treat wastewater in accordance with hazardous waste regulatory standards and discharge only after compliance testing. Dilute concentrated stock solution and waste liquid, neutralize with alkali, or entrust disposal to professional hazardous waste treatment organizations.

Disposal Notes

All waste must be disposed of properly; random dumping is forbidden to avoid environmental pollution.

14. Transport Information

Domestic Hazard Classification: Corrosive liquid Hazard Regulation Code: 51520 UN Number: 3090 Packing Group: III Packing Label: Corrosive liquid hazard label

15. Regulatory Information

Applicable National Regulation: Catalogue of Hazardous Chemicals (2002 Version), issued by State Administration of Work Safety

16. Other Information

All data stated in this MSDS is provided by Dongguan Shuomei Electronic Materials Technology Co., Ltd. Users shall reference this document based on actual application scenarios.