

Material Safety Data Sheet

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Section 1: Product Identification

MSDS Code: 41672 **Name: Tin Electroplating Solution**

Related Part Numbers: 41672-1L, 41672-4L

Use: For use in electroplating tin on pc boards

Section 2: Hazardous Ingredients

CAS#	Chemical Name	Percentage by weight	ACGIH TWA	Osha Pel	Osha Stel
7488-55-3	Stannous Sulfate	1-3 %	N/E	N/E	N/E
7664-93-9	Sulfuric acid	9-10 %	0.2 mg/m ³	N/E	N/E

Section 3: Hazards Identification

- Eyes:** Corrosive. Contact of liquid will cause severe eye burns, and corneal damage.
- Skin:** Corrosive. May cause severe skin irritation with possible burns.
- Inhalation:** May cause irritation mucous membranes and respiratory tract.
- Ingestion:** May be corrosive to the gastrointestinal tract. May cause chemical burns in the mouth, throat, esophagus, and stomach.
- Chronic:** Repeated exposure may cause chronic inflammation of respiratory tract.

Section 4: First Aid Measure

- Eyes:** Remove contact lenses. Flush with plenty of water. Get medical aid.
- Skin:** Wash skin with soap and water. Get medical aid if symptoms persist.
- Inhalation:** Immediately remove from exposure to fresh air. Get medical aid.
- Ingestion:** Do not induce vomiting. If conscious, give 1-2 glasses of water. Get medical aid.

Section 5: Fire Fighting Measures

- Autoignition Temperature:** N/A **Flash Point:** N/A **LEL / UEL:** N/A
- Extinguishing Media:** If only water is available, use it in the form of a fog. For small fires use dry chemical or Carbon Dioxide.
- General Information:** Not combustible.

Section 6: Accidental Release Measures

- Spill Procedure:** Cover spill with dry earth, sand or other non-combustible material. Use clean non-sparking tools to collect material and place it into loosely covered plastic containers for later disposal.

Section 7: Handling and Storage

Handling: Wash thoroughly after handling. Avoid contact with eyes, skin, and clothing. Do not ingest or inhale.

Storage: Keep away from sources of ignition. Store in a cool, dry, well-ventilated area, away from incompatible substances. Keep from freezing.

Section 8: Exposure Controls

Routes of entry: Eyes, ingestion, inhalation, and skin.

Ventilation: Use adequate general or local exhaust ventilation to keep airborne concentrations below exposure limits.

Personal Protection: Wear appropriate protective eyeglasses or chemical safety goggles. Wear appropriate protective clothing to prevent skin contact. Wear Neoprene, butyl or natural rubber gloves. Use a NIOSH approved respirator when necessary.

Section 9: Physical and Chemical Properties

Physical State: Liquid	Odor: Mild Acid	Solubility In water: 100%	Evaporation Rate: Similar to water	
Boiling Point: 95°C	Specific Gravity: 1.125 @ 25°C	Vapor Pressure: N/E	Vapor Density: Similar to water	pH: <1.0

Section 10: Stability and Reactivity

Stability: Stable at normal conditions and temperatures.

Conditions to avoid: Contact with incompatible materials. Contact With Organic Materials (Such As Alcohol Acrylonitrile, Chlorates, Carbides, Epichlorohydrin, Fulminates, Isoprene, Nitrates And Picrates) May Cause Fire And Explosions. Contact With Metals May Produce Flammable Hydrogen Gas.
WHEN DILUTING, ADD ACID TO WATER. DO NOT ADD WATER TO ACID.

Incompatibilities: Sulfides, Cyanides, strong Alkalis, combustible materials, Halogens, Organic materials, Powdered metals, Strong oxidizing agents, Strong reducing agents.

Polymerization: Will not occur.

Decomposition: Sulfur dioxide and sulfur trioxide could be evolved in a hot fire. May form corrosive vapors, sulfur oxides, toxic fumes

Section 11: Toxicological Information

Sensitization: (effects of repeated exposure)

Not known to

The International Agency for Research on Cancer (IARC) has classified "strong inorganic acid mists containing sulfuric acid" as a known human carcinogen, (IARC category 1). This classification applies only to mists containing sulfuric acid and not to sulfuric acid or sulfuric acid solutions.

Carcinogenicity: (risk of cancer)

Teratogenicity: (risk of malformation in an unborn fetus)

Not known to

Reproductive Toxicity: (risk of sterility)

Not known to

Mutagenicity: (risk of heritable genetic effects)

Not known to

Lethal Exposure Concentrations:

Ingestion (LD50):

Inhalation (LC50):

Skin (LD50): **Inhalation (TCLo):**

Stannous Sulfate

5152 mg/kg Mouse

N/E

N/E

290 ug/m3/24H Rat

Sulfuric acid

350 mg/kg rat

18 mg/m3/8H guinea Pig

N/E

8 mg/m3/5D guinea Pig

Section 12: Ecological Information

General Information: Avoid runoff into storms and sewers, which lead into waterways. Water runoff can cause environmental damage.

Volatile Organic Compounds, % by weight: 0
Volatile Organic Compounds, grams per litre: 0

Section 13: Disposal Information

General Information: Dispose of in accordance with all local, provincial, state, and federal regulations. Water runoff can cause environmental damage.

Section 14: Transportation Information

Ground Canada: (all sizes 1L or smaller)

Classified as **Limited Quantity**. We recommend an **MSDS accompany each carton**.

We recommend that the shipper is trained and certified. Refer to TDG regulations (Canadian Transportation of Dangerous Goods regulations) and **USA CFR 49 Regulations**.

Meets **Commodity/ORM-D** label requirements and dual marking is permissible.

Ground Canada: (4L or larger)

Shipper must be trained and certified. Refer Refer to TDG regulations (Canadian Transportation of Dangerous Goods regulations) and **USA CFR 49 Regulations**.

Shipping Name: **CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Nitric Acid, Ferric Nitrate)**,
UN number: **3264**, Class: **8**, Packing Group: **II**.

Air: (all sizes 1L or smaller)

Shipper must be trained and certified. Refer to IATA Dangerous Goods Regulations.

Shipping Name: **CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Nitric Acid, Ferric Nitrate)**,
UN number: **3264**, Class: **8**, Packing Group: **II**.

Recommendation: **DO NOT SHIP BY AIR.**

Sea:

Shipper must be trained and certified. Refer to IMDG regulations.

Shipping Name: **CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Nitric Acid, Ferric Nitrate)**,
UN number: **3264**, Class: **8**, Packing Group: **II**.

Section 15: Regulatory Information Cont.

CANADA

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by the Controlled Products Regulations.

DSL

All ingredients in this product are listed on the Domestic Substances List

Health Canada

Products produced by MG Chemicals intended for retail display conform to the Canadian Consumer Labeling regulations.

Industry and Science Canada

MG Labels products intended for the workplace to conform to WHMIS labeling regulations. Product identification, net quantity declaration, minimum printing type size heights, and packaging of this product are in compliance.

WHMIS

This product belongs to the following categories: **D1A, E**

USA

CAA (Clean Air Act, USA)

This product does not contain any class 1-ozone depletors.

This product does not contain any class 2-ozone depletors.

This product does not contain any chemicals listed as hazardous air pollutants.

SARA (Superfund Amendments and Reauthorization Act of 1986, USA, 40 CFR 372.4)

This product contains (CAS# 7664-93-9 Sulfuric acid 9%) a toxic chemicals subject to the reporting requirements of section 313 of Title III of the superfund Amendments and Reauthorization Act of 1986 and 40 CFR part 372

EPCRA (Emergency Planning and Right to Know Act, USA, 40 CFR 372.45)

This product contains (CAS# 7664-93-9 Sulfuric acid 9%) chemicals subject to the reporting requirements of section 313 Title III of the SARA of 1986 and 40 CFR part 372.

TSCA (Toxic Substances Control Act of 1976, USA)

All substances are TSCA listed.

California Proposition 65 (Chemicals know to cause cancer or reproductive toxicity, May 1, 1997 revision, USA)

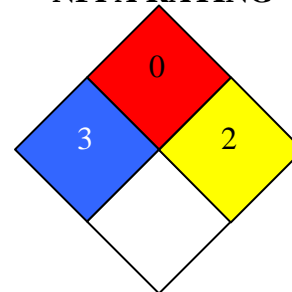
This product does contain a chemical known to the state to cause cancer.

HMIS RATING

HEALTH:	3
FLAMMABILITY:	0
PHYSICAL HAZARD:	2
PERSONAL PROTECTION (PPE):	H

Protection=H (Splash goggles, gloves, protective apron and vapor respirator.)

NFPA RATING



EUROPE

RoHS

This product does not contain any lead, cadmium, mercury, hexavalent chromium, PBB's, or PBDE's, and complies with European RoHS regulations.

WEEE

This product is not a piece of electrical or electronics equipment, and is therefore not governed by this regulation.

Section 16: Other Information

Definitions: N/A = not applicable, N/E = not established

Disclaimer: This material safety data sheet is provided as an information resource only. M.G. Chemicals believes the information contained herein is accurate and compiled from reliable sources. It is the responsibility of the user to verify its validity. The buyer assumes all responsibility of using and handling the product in accordance with federal, state, and local regulations.