SECTION 1: IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY/UNDERTAKING

Product identifier
Product name: AMCO 4948
Other means of identification
Product code: 677

Recommended use of the chemical and restrictions on use
Recommended use: Tin Electroplating solution

Details of the supplier of the safety data sheet
Manufacturer: Force Industries Division.
28 Industrial Blvd. Paoli, PA 19301.

Emergency Telephone number

For hazardous materials incidents only, call CHEMTREC Emergency Response Number: 1-800-424-9300.
For all other questions about this product, call Force Industries Division at 610-647-3575

Revision Date: August 29, 2016
Supersedes: July 3, 2007

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture
GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Corrosive to metals (Category 1), H290
Acute toxicity, Oral (Category 3), H301
Skin corrosion (Category 1B), H314
Skin sensitization (Category 1), H317
Serious eye damage (Category 1), H318
Acute aquatic toxicity (Category 1), H400
Chronic aquatic toxicity (Category 1), H410

For the full text of the H-Statements mentioned in this Section, see Section 16.Classification

Hazard statement(s)

H290 May be corrosive to metals.
H301 Toxic if swallowed.
H302 + H312 + H332 Harmful if swallowed, in contact with skin or if inhaled
H314 Causes severe skin burns and eye damage.
H317 May cause an allergic skin reaction.
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.

2.2 GHS Label elements, including precautionary statements

Emergency overview

Appearance:	Light Yellow
Physical state:	Liquid
Odor:	Slight Sulfurous
Signal Word:	DANGER

Precautionary statement(s)

P234 Keep only in original container.
P260 Do not breathe dust or mist.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P301 + P330 + P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353 IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position
comfortable for breathing.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a POISON CENTER or doctor/ physician.
P321 Specific treatment (see supplemental first aid instructions on this label).
P363 Wash contaminated clothing before reuse.

P390 Absorb spillage to prevent material damage.
P391 Collect spillage.
P405 Store locked up.
P406 Store in corrosive resistant stainless steel container with a resistant inner liner.
P501 Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

Lachrymator.

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

Component	CAS No.	EINECS No.	Weight %
Sulfuric Acid	7664-93-9	231-639-5	5-20
2-Aminophenol-4-sulfonic acid	98-37-3	202-662-8	0-5
Stannous Fluoroborate	13814-97-6	237-487-6	0-5
Other Non-hazardous ingredients	Trade Secret	Trade Secret	70-90

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled

If breathed in, remove person to fresh air and keep at rest in a position comfortable for breathing. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Continue rinsing eyes during transport to hospital.

If swallowed
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11.

4.3 Indication of any immediate medical attention and special treatment needed
No data available

SECTION 5: FIRE-FIGHTING MEASURES

5.1 Extinguishing media
Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
No data available.

5.3 Advice for firefighters
In the event of fire, wear self-contained breathing apparatus. Fire fighters must wear fire resistant personnel protective equipment. Wear chemical resistant oversuit.

5.4 Further information
No data available.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Wear respiratory protection. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing vapors. For personal protection see section 8.

6.2 Environmental precautions
Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up
In case of accidental release or spill, immediately notify the appropriate authorities if required by Federal, State/Provincial and local laws and regulations. Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal. Keep in properly labeled containers. Prevent product from entering drains. Clean spill area thoroughly. Local authorities should be advised if significant spillages cannot be contained.

6.4 Reference to other sections

For disposal see section 13. Personal precautions, protective equipment and emergency procedures

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapor or mist.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Sulfuric Acid	7664-93-9	TWA	1.0 mg/m^3	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
2-Aminophenol-4-sulfonic acid	98-37-3	NA	NA	NA
Stannous Fluoroborate	13814-97-6	TWA	2.0 mg/m3 (as Sn) 2.5 mg/m3 (as F)	ACGIH Threshold Limit Values (TLV)

8.2 Exposure controls

Appropriate engineering controls

General industrial hygiene practice.

Personal protective equipment

Eye/face protection

Tight fitting safety goggles or face shield and safety glasses. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Body Protection

Impervious clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multipurpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure

Do not let product enter drains.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Physical state:	Liquid
Odor:	Sulfurous
Color:	Yellow
Flash point:	>275 °F
Vapor pressure:	N/A
Vapor density:	N/A
Specific gravity:	1.21
Water solubility:	Complete
pH:	<1.0

9.2 Other safety information

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity

No data available

10.2 Chemical stability

Stable under recommended storage conditions

.

10.3 Possibility of hazardous reactions

No data available

10.4 Conditions to avoid

Avoid moisture.

10.5 Incompatible materials

Bases, Halides, Organic materials, Carbides, fulminates, Nitrates, Picrates, Cyanides, Chlorates, alkali halides, Zinc salts, permanganates, e.g. potassium permanganate, Hydrogen peroxide, Azides, Perchlorates., Nitromethane, phosphorous, Reacts violently with:, cyclopentadiene, cyclopentanone oxime, nitroaryl amines, hexalithium disilicide, phosphorous(III) oxide, Powdered metals

10.6 Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Sulphur oxides, other decomposition products - No data available In the event of fire: see section 5

SECTION 11: TOXICOLOGICAL INFORMATION

Component toxicity

Components	**LC50/Inhalation /2h/Rat**	**Rabbit**	**LD50/Oral/Rat**
Sulfuric Acid	**510 mg/kg**	Extremely corrosive and destructive to tissue.	**2140 mg/kg**
2-Aminophenol-4-sulfonic acid	**No Data**	**2000 mg /kg**	**5000 mg/kg**
Stannous Fluoroborate	**No data**	**No Data**	**No Data**

Reproductive toxicity

No data available

Chronic Toxicity and Carcinogenicity

No data available

Carcinogenicity:

The International Agency for Research on Cancer (IARC) has determined that occupational exposure to strong inorganic-acid mists containing sulfuric acid is carcinogenic to humans (group 1).

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Developmental Toxicity

No data available

Reproductive Toxicity

No data available

Genetic Toxicology

No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

Additional Information

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin, spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonaryedema, burning sensation, cough, wheezing, laryngitis, shortness of breath, headache, and nausea. Effects may be delayed. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Stomach - Irregularities - Based on Human Evidence

SECTION 12: ECOLOGICAL INFORMATION

12. ECOLOGICAL INFORMATION
12.1 Toxicity

Component Ecological Toxicity

Components	LC50
Sulfuric Acid	Gambusia affinis (Mosquito fish) - 42 mg/l - 96 h
2-Aminophenol-4-sulfonic acid	Oncorhynchus mykiss (rainbow trout) - > 100 mg/l - 96 h
Stannous Fluoroborate	No data

12.2 Persistence and degradability
No data available

12.3 Bio-accumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects
No data available

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods
Product
Offer surplus and non-recyclable solutions to a licensed disposal company.

Characteristic Waste: D001

Contaminated packaging
Dispose of as unused product.

SECTION 14: TRANSPORT INFORMATION

U.S. Department of Transportation Ground (49CFR)

Proper shipping name:	Corrosive Liquid NOS (Sulfuric Acid, Sulfonic acid)
UN No.:	1760
Packing Groups:	II
Hazard Class:	8
Reportable Quantity (RQ):	None
Marine Pollutant:	No

International Air Transportation (ICAO/IATA):

Proper shipping name:	Corrosive Liquid NOS (Sulfuric acid, Sulfonic acid)
UN No.:	1760
Packaging Groups:	II
Hazard Class:	8
Hazard labels:	Corrosive
IATA PKG Inst#	855
	Cargo aircraft only
ERG Guide Number:	154

International Maritime Organization (IMO/IMDG):

Proper Shipping name:	Corrosive Liquid NOS (Sulfuric acid, Sulfonic acid)
UN No.:	1760
Packaging Groups:	II
Hazard Class:	8
Hazard labels:	Corrosive
IMDG – Marine Pollutant:	No

SECTION 15: REGULATORY INFORMATION

International Inventories

USA (TSCA): Complies

Federal Regulations

SARA Tittle III 313 Reportable Substances
This product does not contains the chemicals which are subject to the reporting requirements of the Act and of Tittle 40 of the Code of Federal Regulations, Part 372

SARA Title III Section 311/312 Hazard Categories:
Acute Health Hazard

CERCLA Section 103
This product contains the following substances which are subject to CERCLA Section 103 reporting requirements and which are listed on 40 CFR 302.4

Sulfuric Acid	7664-93-9

Toxic Substance Control Act (TSCA)
If listed below, non-proprietary substances are subject to export notification Section 12 (b) of TSCA:
None listed

State Regulations (RTK)

Pennsylvania Right to Know Components

Component	CAS No.
Sulfuric Acid	7664-93-9
2-Aminophenol-4-sulfonic acid	98-37-3
Stannous Fluoroborate	13814-97-6

New Jersey Right to Know Components

Component	CAS No.
Sulfuric Acid	7664-93-9
2-Aminophenol-4-sulfonic acid	98-37-3
Stannous Fluoroborate	13814-97-6

California Proposition 65
This product does not contain a chemical known in the State of California to cause cancer, birth defects, or any other reproductive harm.

SECTION 16: OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.
Eye Dam. Serious eye damage
H314 Causes severe skin burns and eye damage.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
Skin Corr. Skin corrosion
Skin Sens. Skin sensitization

HMIS:
Health: 3
Flammability: 0
Reactivity: 0

PREPARATION INFORMATION: Technical Service Department,
Force Industries Division

DISCLAIMER: The data set forth in these sheets are based on information provided by the suppliers of the raw materials and chemicals used in the manufacture of the aforementioned product. Force Industries makes no warranty with respect to the accuracy of the information provided by their suppliers, and declaims all liability of reliance thereon. Force Industries warrants only that its products conform to their published specifications and no other express warranty is made with regards thereof. We do not guarantee favorable results, and we assume no liability in connection with the use of the products. They are intended for use by persons having technical skill and knowledge, at their own discretion and risk.