

### SECTION 1: Product and company identification

Product name : Aluminum Cleaner & Brightener  
Use of the substance/mixture : Acid  
Metal cleaner  
Product code : 0103  
Company : Total Solutions  
P.O. Box 240014  
Milwaukee, WI 53224 - USA  
T (414) 354-6417  
Emergency number : Chemtrec: (800) 424-9300

### SECTION 2: Hazards identification

#### 2.1. Classification of the substance or mixture

##### GHS-US classification

Acute Tox. 1 (Oral) H300  
Acute Tox. 1 (Dermal) H310  
Acute Tox. 2 (Inhalation:dust,mist) H330  
Skin Corr. 1A H314  
Carc. 1A H350

#### 2.2. Label elements

##### GHS-US labeling

Hazard pictograms (GHS-US) :



GHS05

GHS06

GHS08

Signal word (GHS-US) :

Danger

Hazard statements (GHS-US) :

Fatal if swallowed, in contact with skin or if inhaled  
Causes severe skin burns and eye damage  
May cause cancer

Precautionary statements (GHS-US) :

Obtain special instructions before use.  
Do not handle until all safety precautions have been read and understood.  
Do not breathe mist, spray, vapors.  
Do not get in eyes, on skin, or on clothing.  
Wash thoroughly after handling  
Do not eat, drink or smoke when using this product.  
Use only outdoors or in a well-ventilated area.  
Wear eye protection, face protection, protective clothing, protective gloves.  
In case of inadequate ventilation wear respiratory protection..  
If swallowed: Immediately call a doctor, a POISON CENTER, Do NOT induce vomiting.  
If swallowed: rinse mouth. Do NOT induce vomiting  
If on skin: Wash with plenty of soap and water  
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower  
If inhaled: Remove person to fresh air and keep comfortable for breathing  
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
If exposed or concerned: Get medical advice/attention.  
Immediately call a doctor, a POISON CENTER  
Specific treatment is urgent (see First aid measures on this label)  
Take off immediately all contaminated clothing and wash it before reuse.  
Wash contaminated clothing before reuse.  
Store in a well-ventilated place. Keep container tightly closed.  
Store locked up.  
Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation

#### 2.3. Other hazards

Other hazards not contributing to the classification :

Absorption of excessive F- can result in acute systemic fluorosis with hypocalcemia, interference with various metabolic functions and organ damage (heart, liver, kidneys). dental/bone fluorosis. fluorosis.

#### 2.4. Unknown acute toxicity (GHS US)

Not applicable

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### SECTION 3: Composition/Information on ingredients

#### 3.1. Substances

Not applicable

Full text of H-phrases: see section 16

#### 3.2. Mixtures

Name	Product identifier	%	GHS-US classification
sulfuric acid	(CAS-No.) 7664-93-9	10 - 20	Skin Corr. 1A, H314 Carc. 1A, H350
hydrofluoric acid	(CAS-No.) 7664-39-3	5 - 10	Acute Tox. 1 (Oral), H300 Acute Tox. 1 (Dermal), H310 Acute Tox. 2 (Inhalation), H330 Skin Corr. 1A, H314

A specific chemical identity and/or percentage of composition has been withheld as a trade secret. Any concentration shown as a range is to protect confidentiality or is due to batch variation.

### SECTION 4: First aid measures

#### 4.1. Description of first aid measures

- First-aid measures general : Get immediate medical attention. In all cases of doubt, or when symptoms persist, seek medical attention.
- First-aid measures after inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If breathing is difficult, give oxygen. Artificial respiration and/or oxygen if necessary. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Get immediate medical advice/attention.
- First-aid measures after skin contact : Immediately flush skin with plenty of water for at least 20 minutes while removing contaminated clothing and shoes. Cold water may be used. Material is absorbed through the skin. Get medical attention immediately. While waiting for medical attention, it has been shown that flushing the affected area with water for 1-5 minutes and then massaging HF Antidote Gel into the wound until there is a cessation of pain is a most effective first aid treatment. HF Antidote Gel contains Calcium Gluconate which combines with HF for insoluble Calcium Fluoride, thus preventing the extraction of calcium from the body tissue and bones. Another alternative first aid treatment, after thorough washing of the burned area, is to immerse the burned area in a solution of 0.2% iced aqueous Hyamine 1622 or 0.13% iced aqueous Zephiran Chloride. If immersion is impractical, towels could be soaked with one of the above solutions and used as compresses for the burn area. Hyamine 1622 is a trade name for Tetracaine Benzethonium Chloride. Zephiran is a trade name for Benzalkonium Chloride.
- First-aid measures after eye contact : In case of eye contact, immediately rinse with plenty of water for at least 20 minutes and seek medical attention immediately. Cold water may be used. Keep the eyelids apart and away from the eyeballs during irrigation. Do not use oily drops or ointment or HF skin burn treatments on the eyes. Get medical attention immediately, preferably an eye specialist. Place ice pack on eyes until reaching emergency room.
- First-aid measures after ingestion : Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Get immediate medical advice/attention.

#### 4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/effects : Fatal if swallowed. Fatal in contact with skin. Fatal if inhaled. Causes severe skin burns and eye damage. May cause cancer.
- Symptoms/effects after inhalation : Fatal if inhaled.
- Symptoms/effects after skin contact : Fatal in contact with skin. Causes severe burns.
- Symptoms/effects after eye contact : Causes serious eye burns.
- Symptoms/effects after ingestion : Fatal if swallowed. Burns to the gastric/intestinal mucosa.
- Chronic symptoms : Absorption of excessive F- can result in acute systemic fluorosis with hypocalcemia, interference with various metabolic functions and organ damage (heart, liver, kidneys). fluorosis. dental/bone fluorosis.

#### 4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

### SECTION 5: Firefighting measures

#### 5.1. Extinguishing media

- Suitable extinguishing media : Adapt extinguishing media to the environment.

#### 5.2. Special hazards arising from the substance or mixture

- Fire hazard : Not flammable.
- Reactivity : fluorinated compounds. Hydrogen fluoride. On heating/burning: release of toxic and corrosive gases/vapours e.g.: hydrofluoric acid, carbonyl fluoride.

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### 5.3. Advice for firefighters

- Firefighting instructions : Exercise caution when fighting any chemical fire. Use water spray or fog for cooling exposed containers.
- Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.
- Other information : On exposure to high temperature, may decompose, releasing toxic gases.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

- General measures : Avoid breathing (dust, vapor, mist, gas). Avoid contact with skin and eyes.

#### 6.1.1. For non-emergency personnel

- Protective equipment : Do not enter without an appropriate protective equipment.
- Emergency procedures : No action shall be taken involving any personal risk or without suitable training.

#### 6.1.2. For emergency responders

- Protective equipment : Do not attempt to take action without suitable protective equipment.
- Emergency procedures : Stop leak if safe to do so. Evacuate unnecessary personnel. Ventilate area.

### 6.2. Environmental precautions

- Do not allow to enter drains or water courses. Stop leak if safe to do so.

### 6.3. Methods and material for containment and cleaning up

- For containment : Do not touch or walk on the spilled product.
- Methods for cleaning up : Neutralize leftovers with powdered limestone/sodium bicarbonate. Take up liquid spill into inert absorbent material, e.g.: sand, earth, vermiculite.

### 6.4. Reference to other sections

- No additional information available

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

- Precautions for safe handling : Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area.

### 7.2. Conditions for safe storage, including any incompatibilities

- Technical measures : Ensure adequate ventilation, especially in confined areas. Must not come into contact with food or be consumed. Store in a well-ventilated place. Keep container tightly closed.
- Storage conditions : Keep container closed when not in use. Store in a well-ventilated place. Keep cool. Store in a dry place. Protect from freezing.
- Incompatible products : alkalis. Strong alkalis. Strong bases.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

hydrofluoric acid (7664-39-3)		
ACGIH	ACGIH TWA (ppm)	0.5 ppm
ACGIH	ACGIH Ceiling (ppm)	2 ppm
ACGIH	Remark (ACGIH)	URT, LRT, skin, & eye irr
OSHA	Remark (OSHA)	(2) See Table Z-2.
sulfuric acid (7664-93-9)		
ACGIH	ACGIH TWA (mg/m <sup>3</sup> )	0.2 mg/m <sup>3</sup>
ACGIH	Remark (ACGIH)	Pulm func
OSHA	OSHA PEL (TWA) (mg/m <sup>3</sup> )	1 mg/m <sup>3</sup>

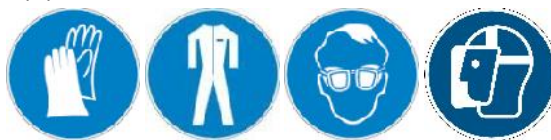
### 8.2. Exposure controls

- Appropriate engineering controls : Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If these are not sufficient to maintain concentrations of particulates and/or solvent vapors below the relevant occupational exposure limits, suitable respiratory protective equipment should be worn. Provide eyewash stations, quick-drench showers and washing facilities accessible to areas of use and handling. Have supplies and equipment for neutralization and running water available. HF antidote gel should be maintained on-site for skin burns or other solutions discussed in Section 4, First Aid.

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Personal protective equipment : Gloves. Protective clothing. Protective goggles. Face shield. Use appropriate personal protective equipment when risk assessment indicates this is necessary.



Hand protection : Chemical-resistant (specifically HF resistant), impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

### SECTION 9: Physical and chemical properties

#### 9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: Clear, colorless liquid.
Odor	: acidic
Odor threshold	: No data available
pH	: No data available
Melting point	: No data available
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: No data available
Explosion limits	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available
Vapor pressure	: No data available
Relative density	: No data available
Relative vapor density at 20 °C	: No data available
Specific gravity / density	: 1.08 g/ml
Solubility	: Soluble in water.
Log Pow	: No data available
Log Kow	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available

### SECTION 10: Stability and reactivity

#### 10.1. Reactivity

fluorinated compounds. Hydrogen fluoride. On heating/burning: release of toxic and corrosive gases/vapours e.g.: hydrofluoric acid, carbonyl fluoride.

#### 10.2. Chemical stability

The product is stable at normal handling and storage conditions.

#### 10.3. Possibility of hazardous reactions

No additional information available

#### 10.4. Conditions to avoid

No additional information available

#### 10.5. Incompatible materials

Moisture. alkalis. Organic materials. Metals. glass. a ceramic. aluminum. stainless steel. Carbonates. Cyanides. sulfides.

#### 10.6. Hazardous decomposition products

Thermal decomposition may produce : toxic fumes of fluorides.

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### SECTION 11: Toxicological information

#### 11.1. Information on toxicological effects

Acute toxicity : Oral: Fatal if swallowed. Dermal: Fatal in contact with skin. Inhalation:dust,mist: Fatal if inhaled.

Aluminum Cleaner & Brightener	
ATE CLP (oral)	50 mg/kg body weight
ATE CLP (dermal)	50 mg/kg body weight
ATE CLP (dust, mist)	0.5 mg/l/4h

hydrofluoric acid (7664-39-3)	
ATE CLP (oral)	5 mg/kg body weight
ATE CLP (dermal)	5 mg/kg body weight
ATE CLP (gases)	100 ppmV/4h
ATE CLP (vapors)	0.5 mg/l/4h
ATE CLP (dust, mist)	0.05 mg/l/4h

sulfuric acid (7664-93-9)	
LD50 oral rat	2140 mg/kg
ATE CLP (oral)	2140 mg/kg body weight

Skin corrosion/irritation : Causes severe skin burns and eye damage.  
Serious eye damage/irritation : Not classified  
Respiratory or skin sensitization : Not classified  
Germ cell mutagenicity : Not classified  
Carcinogenicity : May cause cancer.

sulfuric acid (7664-93-9)	
IARC group	1 - Carcinogenic to humans
National Toxicology Program (NTP) Status	2 - Known Human Carcinogens

Reproductive toxicity : Not classified  
Specific target organ toxicity – single exposure : Not classified  
Specific target organ toxicity – repeated exposure : Not classified  
Aspiration hazard : Not classified  
Symptoms/effects after inhalation : Fatal if inhaled.  
Symptoms/effects after skin contact : Fatal in contact with skin. Causes severe burns.  
Symptoms/effects after eye contact : Causes serious eye burns.  
Symptoms/effects after ingestion : Fatal if swallowed. Burns to the gastric/intestinal mucosa.  
Chronic symptoms : Absorption of excessive F- can result in acute systemic fluorosis with hypocalcemia, interference with various metabolic functions and organ damage (heart, liver, kidneys). fluorosis. dental/bone fluorosis.  
Likely routes of exposure : Skin and eye contact;Inhalation

### SECTION 12: Ecological information

#### 12.1. Toxicity

No additional information available

#### 12.2. Persistence and degradability

No additional information available

#### 12.3. Bioaccumulative potential

No additional information available

### SECTION 13: Disposal considerations

#### 13.1. Waste treatment methods

Waste treatment methods : Dispose of contents/container to comply with local/regional/national regulations.

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### SECTION 14: Transport information

#### Department of Transportation (DOT)

Transport document description : UN2922 Corrosive liquids, toxic, n.o.s. (Hydrofluoric Acid, Sulfuric Acid), 8 (6.1), II  
UN-No.(DOT) : UN2922  
Proper Shipping Name (DOT) : Corrosive liquids, toxic, n.o.s.  
Class (DOT) : 8 - Class 8 - Corrosive material 49 CFR 173.136  
Hazard labels (DOT) : 8 - Corrosive  
6.1 - Poison



Packing group (DOT) : II - Medium Danger  
DOT Packaging Non Bulk (49 CFR 173.xxx) : 202  
DOT Packaging Bulk (49 CFR 173.xxx) : 243  
DOT Symbols : G - Identifies PSN requiring a technical name  
DOT Special Provisions (49 CFR 172.102) : B3,IB2,T7,TP2  
DOT Packaging Exceptions (49 CFR 173.xxx) : 154  
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : 1 L  
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 30 L  
DOT Vessel Stowage Location : B  
DOT Vessel Stowage Other : 40 - Stow "clear of living quarters"

#### Additional information

Emergency Response Guide (ERG) Number : 154  
Other information : No supplementary information available.

#### ADR

No additional information available

#### Transport by sea

No additional information available

#### Air transport

No additional information available

### SECTION 15: Regulatory information

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory.

Chemical(s) subject to the reporting requirements of Section 313 or Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372.

sulfuric acid	CAS-No. 7664-93-9	10 - 20%
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sulfuric acid (7664-93-9)	
Subject to reporting requirements of United States SARA Section 313	
CERCLA RQ	1000 lb
SARA Section 302 Threshold Planning Quantity (TPQ)	1000 lb



#### WARNING

This product can expose you to Strong Inorganic Acid Mists Containing Sulfuric Acid which are known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

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### SECTION 16: Other information

Training advice : Normal use of this product shall imply use in accordance with the instructions on the packaging.

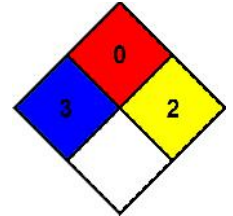
Full text of H-phrases:

H300	Fatal if swallowed
H310	Fatal in contact with skin
H314	Causes severe skin burns and eye damage
H330	Fatal if inhaled
H350	May cause cancer

NFPA health hazard : 3 - Materials that, under emergency conditions, can cause serious or permanent injury.

NFPA fire hazard : 0 - Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand.

NFPA reactivity : 2 - Materials that readily undergo violent chemical change at elevated temperatures and pressures.



Prepared by: Technical Department

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product. No warranty is expressed or implied regarding the accuracy of this data or the results obtained from the use thereof. Our company assumes no responsibility for personal injury or property damage to the vendee, users or third parties caused by the material. Such vendees or users assume all risks associated with the use of this material.*