

# SAFETY DATA SHEET

## 1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Aluminum Cleaner & Brighthener  
 Product Code: 0103  
 Company: Total Solutions  
 Address: P.O. Box 240014  
 Milwaukee, WI 53224 - USA  
 Telephone: (414) 354-6417  
 Emergency Number: Chemtec: (800) 424-9300

Product Use: Removes corrosion and oxidation from aluminum surfaces  
 Not recommended for: Direct contact with food

## 2. HAZARDS IDENTIFICATION

### HAZARD SUMMARY:

Extremely corrosive and destructive to tissue.  
 Specialized medical treatment is required for all exposures. May be fatal if inhaled, absorbed through skin, or swallowed.

**Target Organs:** Liver, Kidney

### GHS Ratings:

|                        |              |  |
|------------------------|--------------|--|
| Inhalation Toxicity    | Acute Tox. 3 | Gases>500+<=2500ppm, Vapors>2+<=10mg/l,<br>Dusts&mists>0.5+<=1mg/l   |
| Skin corrosive         | 1A           | Destruction of dermal tissue: Exposure < 3 min. Observation < 1 hour, visible necrosis in at least one animal  |
| Eye corrosive          | 1            | Serious eye damage: Irreversible damage 21 days after exposure, Draize score: Corneal opacity >= 3, Iritis > 1.5   |
| Respiratory sensitizer | 1            | Respiratory sensitizer   |
| Skin sensitizer        | 1            | Skin sensitizer  |
| Mutagen                | 2            | Suspected/Possible: May include heritable mutations in human germ cells, Positive evidence from tests in mammals and somatic cell tests, In vivo somatic genotoxicity supported by in vitro mutagenicity |
| Carcinogen             | 1B           | Presumed Human Carcinogen, Based on demonstrated animal carcinogenicity  |
| Reproductive toxin     | 2            | Suspected of damaging fertility or the unborn child. Human or animal evidence possibly with other information  |

### GHS Hazards

|      |   |
|------|---|
| H314 | Causes severe skin burns and eye damage             |
| H317 | May cause an allergic skin reaction                 |
| H318 | Causes serious eye damage                           |
| H331 | Toxic if inhaled                                    |
| H334 | May cause allergy or asthma difficulties if inhaled |
| H341 | Suspected of causing genetic defects                |
| H350 | May cause cancer                                    |
| H361 | Suspected of damaging fertility or the unborn child |

### GHS Precautions

|      |   |
|------|---|
| P201 | Obtain special instructions before use                                    |
| P202 | Do not handle until all safety precautions have been read and understood  |
| P260 | Do not breathe dust/fume/gas/mist/vapours/spray                           |
| P264 | Wash any exposed skin thoroughly after handling                           |
| P271 | Use only outdoors or in a well-ventilated area                            |
| P272 | Contaminated work clothing should not be allowed out of the workplace     |
| P280 | Wear protective gloves/protective clothing/eye protection/face protection |
| P281 | Use personal protective equipment as required                             |

### GHS Hazards

### GHS Precautions

|                |   |
|----------------|---|
| P285           | In case of inadequate ventilation wear respiratory protection   |
| P310           | Immediately call a POISON CENTER or doctor/physician  |
| P321           | Specific treatment (see ... on this label)  |
| P363           | Wash contaminated clothing before reuse   |
| 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 continuously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing |
| P308+P313      | IF exposed or concerned: Get medical advice/attention   |
| P333+P313      | If skin irritation or a rash occurs: Get medical advice/attention   |
| P405           | Store locked up   |
| P403+P233      | Store in a well-ventilated place. Keep container tightly closed   |
| P501           | Dispose of contents/container to comply with local/regional/national/international regulations.                                   |

**DANGER:**



**ACCUTE TOXICITY:**

**Signs & Symptoms of Exposure**

**Eyes:** Burns, pain, watering eyes.

**Inhalation:** Burning, choking, coughing, wheezing, laryngitis, shortness of breath, headache or nausea.

**Skin:** Burning, irritation

**Ingestion:** Severe and rapid corrosive burns of the mouth, gullet and gastrointestinal tract, burning, choking, nausea, vomiting and severe pain.

**CHRONIC EFFECTS:** May cause Fluorosis or hypocalcaemia

**3. COMPOSITION / INFORMATION ON INGREDIENTS**

| Chemical Name / CAS No. | OSHA Exposure Limits | ACGIH Exposure Limits | Other Exposure Limits |
|-------------------------|----------------------|-----------------------|-----------------------|
|                         |                      |                       |                       |

|   |                         |  |   |
|---|-------------------------|--|---|
| Water / Proprietary Balance   | N/A                     | N/A  | N/A   |
| Sulfuric acid<br>< 20%<br>7664-93-9<br>Vapor Pressure: 0.525 mmHg       | 1 mg/m <sup>3</sup> TWA | 0.2 mg/m <sup>3</sup> TWA<br>(thoracic fraction) | NIOSH: 1 mg/m <sup>3</sup> TWA  |
| Hydrofluoric acid<br>< 10%<br>7664-39-3<br>Vapor Pressure: 789.817 mmHg | 3 ppm TWA (as F)        | 2 ppm Ceiling (as F)<br>0.5 ppm TWA (as F)       | NIOSH: 3 ppm TWA;<br>2.5 mg/m <sup>3</sup> TWA<br>6 ppm Ceiling (15 min);<br>5 mg/m <sup>3</sup> Ceiling (15 min) |

#### 4. FIRST-AID MEASURES

**INHALATION:** Move casualty to fresh air and keep at rest. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention immediately.

**EYE CONTACT:** In case of eye contact, immediately rinse with plenty of water for at least 15 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.

**SKIN CONTACT:** Immediately flush skin with plenty of water 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 minute 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.

**INGESTION: Do Not Induce Vomiting!** Never give anything by mouth to an unconscious person. If conscious, wash out mouth with water. Get medical attention immediately.

#### 5. FIRE-FIGHTING MEASURES

**FLAMMABLE LIMITS:** Product is not flammable. Use appropriate media for adjacent fire. Cool containers with water, keep away from common metals.

Flash Point: N/A

LEL: N/A

UEL: N/A

**EXTINGUISHING MEDIA:** Use an extinguishing agent suitable for the surrounding fire.

**FIRE AND EXPLOSION HAZARD:** Use water spray to cool unopened containers if necessary to prevent BLEVE (Boiling Liquid Expanding Vapor Explosion). Emits toxic fumes (hydrogen fluoride) under fire conditions. (See also Stability and Reactivity section).

**HAZARDOUS COMBUSTION PRODUCTS:** Under fire conditions toxic fumes should be anticipated.

**FIRE FIGHTING:** See also Stability and Reactivity section.

**FIRE EQUIPMENT:** Wear self-contained, approved breathing apparatus and full protective clothing (including eye protection and boots).

#### 6. ACCIDENTAL RELEASE MEASURES

**SPILL/LEAK:** Follow your companies established procedures for reporting and/or responding to Chemical incidents. No action shall be taken involving any personal risk or without suitable training.

See section 8 for recommendations on the use of personal protective equipment.

**SMALL SPILL:** Stop leak if without risk. Neutralize spill with sodium bicarbonate or lime. Absorb spill with noncombustible absorbent

material, then place in a suitable container for disposal. Clean surfaces thoroughly with water to remove residual contamination. Dispose of all waste and cleanup materials in accordance with regulations.

**LARGE SPILL:** No action shall be taken involving any personal risk or without suitable training.

Stop leak if without risk. Prevent spillage from entering drains and/or waterways. Any release to the environment may be subject to federal/national or local reporting requirements.

## 7. HANDLING AND STORAGE

**HANDLING PRECAUTIONS:** Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Wash thoroughly after handling. Remove contaminated clothing and protective equipment before entering eating areas. Use with adequate ventilation. Avoid formation of aerosols.

See section 8 for recommendations on the use of personal protective equipment.

**STORAGE:** Keep container closed when not in use. Store in cool, dry well ventilated area. Keep away from incompatible materials (see section 10 for incompatibilities). Protect from excessive heat and/or freezing.

**REGULATORY:** Do not store in unlabeled containers.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

| Chemical Name / CAS No.   | OSHA Exposure Limits | ACGIH Exposure Limits                          | Other Exposure Limits   |
|---|----------------------|--|---|
| Water / Proprietary Balance   | N/A                  | N/A  | N/A   |
| Sulfuric acid<br>< 20%<br>7664-93-9<br>Vapor Pressure: 0.525 mmHg       | 1 mg/m3 TWA          | 0.2 mg/m3 TWA<br>(thoracic fraction)           | NIOSH: 1 mg/m3 TWA  |
| Hydrofluoric acid<br>< 10%<br>7664-39-3<br>Vapor Pressure: 789.817 mmHg | 3 ppm TWA (as F)     | 2 ppm Ceiling (as F)<br><br>0.5 ppm TWA (as F) | NIOSH: 3 ppm TWA;<br>2.5 mg/m3 TWA<br>6 ppm Ceiling (15 min);<br>5 mg/m3 Ceiling (15 min) |

**ENGINEERING CONTROLS:** Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn.

**VENTILATION:** Use only with adequate ventilation.

Good general ventilation (typically 10 air changes per hour) should be used. 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 exposure limits have not been established, maintain airborne levels to an acceptable level.

**ADMINISTRATIVE CONTROLS:** No action shall be taken involving any personal risk or without suitable training. **Other Recommendations:** 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 for skin burns or other solutions discussed in Section 4, First Aid.

### PROTECTIVE GEAR:

**Eye protection:** Wear safety goggles if eye contact is possible (face shield recommended if splashing is possible).

**Hand protection:** Chemical-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.

**Body Protection:** Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

**Other Skin Protection:** Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

**Respiratory Protection:** If needed, use a properly fitted, air-purifying or supplied air respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

**CONTAMINATED GEAR:** Routinely wash work clothing and protective equipment to remove contaminants.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**NOTE:** These physical data are typical values based on material tested but may vary from sample to sample. Typical values should not be construed as a guaranteed analysis of any specific lot or as specifications for the product.

|                                   |                   |                                   |                   |
|-----------------------------------|-------------------|-----------------------------------|-------------------|
| <b>Appearance:</b>                | Yellow Liquid     | <b>Odor:</b>                      | Acidic            |
| <b>Auto ignition temperature:</b> | No Data Available | <b>Decomposition temperature:</b> | No Data Available |
| <b>Viscosity:</b>                 | No Data Available | <b>Grams VOC less water:</b>      | No Data Available |
| <b>Vapor Pressure:</b>            | No Data Available | <b>VOC Content:</b>               | Negligible        |
| <b>Vapor Density:</b>             | No Data Available | <b>pH:</b>                        | 1.00              |
| <b>Specific Gravity:</b>          | No Data Available | <b>Melting point:</b>             | No Data Available |
| <b>Freezing point:</b>            | No Data Available | <b>Solubility:</b>                | No Data Available |
| <b>Boiling range:</b>             | No Data Available | <b>Flash point:</b>               | No Data Available |
| <b>Evaporation rate:</b>          | No Data Available | <b>Flammability:</b>              | No Data Available |
| <b>Explosive Limits:</b>          | No Data Available | <b>Partition coefficient:</b>     | No Data Available |
| <b>Odor threshold:</b>            | No Data Available | <b>(n-octanol/water)</b>          |                   |

## 10. STABILITY AND REACTIVITY

Under normal conditions of storage and handling, this Product is: **STABLE**

**INCOMPATIBLE MATERIALS:** Moisture, bases, organic material, metals, glass, ceramics, aluminum, stainless steel, carbonates, cyanides, sulfides. Reacts violently with acetic anhydride, ammonium hydroxide, arsenic trioxide, calcium oxide, potassium permanganate, sodium, sodium hydroxide, sulfuric acid.

Attacks glass and other silicon-containing compounds  
 Reacts with silica to produce silicon tetrafluoride a hazardous, colorless gas. On contact with metals, liberates hydrogen gas.  
 Violent reaction with strong bases can occur.

**HAZARDOUS DECOMPOSITION:**

Thermal decomposition may release toxic fumes of fluorides. Hazardous polymerization will not occur.

## 11. TOXICOLOGICAL INFORMATION

**Component/Mixture Toxicity**

Inhalation Toxicity LC50: 3mg/L

This material has been defined as a hazardous chemical under the criteria of the OSHA Hazard Communication Standard (29 CFR 1910.1200).

**ROUTES OF ENTRY: Eyes / Skin**

**Target Organs:** Liver, Kidney

**Effects of Overexposure**

**CARCINOGENICITY:** The following chemicals comprise 0.1 % or more of this mixture and are listed and/or classified as carcinogens or potential carcinogens by NPT, IARC, OSHA (mandatory listing), or ACGIH (optional listing).

| <u>CAS Number</u> | <u>Description</u> | <u>% Weight</u> | <u>Carcinogen Rating</u>                                    |
|-------------------|--------------------|-----------------|---|
| 7664-93-9         | Sulfuric acid      | < 20%           | Sulfuric acid: IARC: *Human carcinogen<br>OSHA: *Not listed |

\* Sulfuric acid is not listed as a carcinogen by OSHA, National Toxicology Program (NTP), International Agency for Research on Cancer (IARC), ACGIH or the EU. IARC has concluded that there is sufficient evidence that occupational exposure to “strong inorganic acid mists” containing sulfuric acid is carcinogenic to humans, resulting in an increased incidence of primarily laryngeal cancers. The ACGIH lists “strong inorganic acid mists” containing sulfuric acid as a suspect human carcinogen (A2) and the NTP have recently reclassified “strong inorganic acid mists” containing sulfuric acid to a known human carcinogen.

**12. ECOLOGICAL INFORMATION**

The information given is based on data available for the material, the components of the material, and similar materials (if any).

**Component Eco toxicity**

|                   |  |
|-------------------|--|
| Sulfuric acid     | 96 Hr LC50 Brachydanio rerio: >500 mg/L [static] |
| Hydrofluoric acid | 48 Hr EC50 Daphnia species: 270 mg/L             |

**13. DISPOSAL CONSIDERATIONS**

If this product becomes a waste, it may likely meet the criteria of a hazardous waste as defined under 40 CFR 261.

D002: Waste Corrosive material [pH <=2 or =>12.5, or corrosive to steel]

Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner.

Dispose of in accordance with Federal, State, and Local regulations.

**14. TRANSPORTATION INFORMATION**

**Important Note:** The data provided in this section is for information only. Please apply the appropriate regulations to properly classify your shipment for transportation. As shipping descriptions may vary based on mode of transport, quantities, package size, and/or origin / destination. Consult your company's Hazardous Materials/Dangerous Goods expert for information specific to your situation.

For small quantities packed in combination packaging, exceptions may apply.

**For emergency transportation information, in the United States: call CHEMTREC at 800-424-9300**

| <u>Agency</u> | <u>Proper Shipping Name</u>  | <u>UN Number</u> | <u>Packing Group</u> | <u>Hazard Class</u> |
|---------------|--|------------------|----------------------|---------------------|
| DOT (US)      | Corrosive Liquids, Toxic, N.O.S.<br>(Hydrofluoric Acid, Sulfuric Acid) | UN2922           | II                   | 8 (6.1)             |

**15. REGULATORY INFORMATION**

**Safety, health and environmental regulations/legislation specific for the substance or mixture:**

The following chemicals are reportable under Pennsylvania Right to Know:

- 7664-39-3 Hydrofluoric acid
- 7664-93-9 Sulfuric acid

**State of California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65):** WARNING! This product contains the following chemicals which are listed by the State of California as carcinogenic or a reproductive toxin:

- Strong Inorganic Acid "Mist" Containing Sulfuric Acid: Chemical listed effective March 14, 2003 to the State of California, Proposal 65.
- **NOTE:** Although conditions may be encountered in the Production Processes that could warrant further evaluation, the Product itself is in the liquid form.

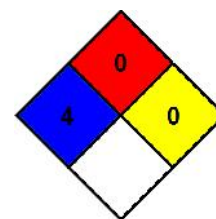
**United States inventory (TSCA 8b):** All components are listed or exempted.

**SARA 313 Components:** The following listed components (if any) are subject to the Supplier Notification Requirement found in 40 CFR 372.45 (c 4); a part of Title III of the Superfund Amendments and Reauthorization Act of 1986. SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

7664-39-3 Hydrofluoric acid < 10%  
7664-93-9 Sulfuric acid < 20%

## 16. OTHER INFORMATION

- NFPA health hazard : 4 - Very short exposure could cause death or serious residual injury even though prompt medical attention was given.
- NFPA fire hazard : 0 - Materials that will not burn.
- NFPA reactivity : 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.



Date Prepared: 4/24/2015

Date revised: 2015-06-23

Reviewer Revision 1.1

Disclaimer: Our company believes that the information herein is factual but is not intended to be all inclusive. The information relates only to the specific material designated and does not relate to its use in combination with other materials or its use as to any particular process. Because safety standards and regulations are subject to change and because our company has no continuing control over the material, those handling, storing or using the material should satisfy themselves that they have current information regarding the particular way the material is handled, stored or used and that the same is done in accordance with federal, state and local law.

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