

# Safety Data Sheet (SDS)

## Section 1: Identification

**Product identifier:** S1098 Stainless Steel Etchant  
**Other name(s):** GE Class C Schantz Reagent  
**Item number(s):** 1025, 1026  
**Identified use:** SU24 Scientific research and development  
**Details of the supplier of the safety data sheet:**  
ES Laboratory, LLC  
2041 E. Gladstone St. Unit N Glendora, CA 91740 USA  
Tel: 626-208-9011  
**Emergency telephone number:**  
CHEMTREC® 1-800-424-9300 (US & Canada Only)

## Section 2: Hazard(s) Identification

### Hazardous classification of the substance or mixture:

Hazard Class	Category code
Acute Toxicity - Oral	4
Acute Toxicity - Inhalation	1
Skin Corrosion	1
Serious Eye Damage	1
Respiratory Sanitizer	1
Germ Cell Mutagenicity	2
Carcinogenicity	1
Specific target organ toxicity - single exposure:	1
Specific target organ toxicity - repeated exposure:	1
Aspiration Hazard	1
Corrosive to Metals	1
Hazardous to Aquatic Environment (Acute)	2
Hazardous to Aquatic Environment (Chronic)	3

**Signal word:** Danger

**Pictogram:**



### Hazard statement(s):

H290 May be corrosive to metals.  
H304 May be fatal if swallowed and enters airways.  
H314 Cause severe skin burn and eye damage.  
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
H341 Suspected of causing genetic defects.  
H350 May cause cancer.  
H370 Cause damage to organs.  
H372 Causes damage to organs through prolonged or repeated exposure.  
H401 Toxic to aquatic life.  
H402 Harmful to aquatic life.

### Precautionary statement(s):

P201 Obtain special instructions before use.  
P202 Do not handle until all safety precautions have been read and understood.  
P260 Do not breathe dust, fumes 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.

### Response statement(s):

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.  
P301+P330+P331+P310 IF SWALLOWED: rinse mouth. DO NOT induce vomiting. Immediately call a POISON CENTER or doctor/physician.  
P314 Get medical attention if you feel unwell.

### Storage statement(s):

P405 Store locked up.  
P403+P233 Store in a well-ventilated place. Keep container tightly closed.  
P406 Store in corrosive resistant container with a resistant inner liner.

### Disposal statement(s):

P501 Dispose of contents/ container to an approved waste disposal plant.

**Hazard(s) not otherwise classified:** No information.

**Label elements:** See tables above.

## Section 3: Composition/Information on Ingredients

Component	CAS No.	Concentration
Acetic Acid	64-19-7	15-20%
Hydrochloric Acid	7647-01-0	45-50%
Nitric Acid	7697-37-2	10-15%
Ferric Chloride Hexahydrate	10025-77-1	5-15%
Sulfuric Acid	7664-93-9	3-5%

Any concentration shown as a range is to protect the confidentiality or is due to batch variation. Only hazardous components are shown.

## Section 4: First-Aid Measures

**Eye contact:** Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Get medical aid immediately.

**Inhalation:** Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid immediately.

**Skin contact:** Wash the areas of contact with water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid immediately.

**Ingestion:** Do not induce vomiting. Rinse mouth. Get medical aid immediately.

**Most important symptoms and effects, both acute and delayed:**

Repeated ingestion of large doses may cause liver damage.

**Recommendation for immediate medical care and special treatment needed, when necessary:** Wash areas of contact with water. If possible, wipe off areas of contact with dry cloth before flushing with water

## Section 5: Fire-Fighting Measures

**Extinguishing media:** Does not burn. Use extinguishing agents compatible with acid and appropriate for the burning material. Water, dry chemical, alcohol foam, or carbon dioxide.

**Special hazards arising from the substance or mixture:** In the case of fire, the following can be released: acidic liquid, oxides of nitrogen, toxic gases.

**Special protective equipment or precautions for firefighters:** Wear full protective clothing and self-contained respirator.

## Section 6: Accidental Release Measures

### Personal precautions, protective equipment, and emergency procedures:

Wear protective equipment. Keep unprotected persons away. Ensure adequate ventilation.

**Environmental precautions:** Do not allow the material to be released to the environment without proper government permits.

**Methods and materials for containment and cleaning up:** Use a neutralizing agent. Absorb with a liquid binding material (sand, diatomite, acid binder, universal binders, sawdust). Dispose of contaminated material as waste according to section 13. Ensure adequate ventilation.

## Section 7: Handling and Storage

**Precautions for safe handling:** Wear protective equipment. Ensure good ventilation in the workplace. Avoid inhalation of vapor or mist.

**Condition for safe storage:** Keep container tightly sealed. Store in an approved corrosive liquid storage container/area.

**Incompatibilities:** Store away from strong bases. Contact with water will generate heat.

**Specific storage requirement(s):** No information.

## Section 8: Exposure Controls/Personal Protection

### Exposure Limits

Component	CAS No.	ACGIH TLV	OSHA PEL
Acetic Acid	64-19-7	15 ppm STEL 10 ppm TWA	10 ppm
Hydrochloric Acid	7647-01-0	2 ppm ceiling	5 ppm
Nitric Acid	7697-37-2	4 ppm STEL 2 ppm TWA	2 ppm
Ferric Chloride	10025-77-1	1 mg/m3 TWA	-

Hexahydrate			
Sulfuric Acid	7664-93-9	0.2 mg/m3 TWA	1 mg/m3 TWA

**Engineering controls:** Use general and/or local exhaust ventilation to control the vapor concentration.

**Eye protection:** Wear safety glasses or goggles.

**Skin protection:** Wear protective clothing and chemical resistant gloves.

**Respiratory protection:** Use self-contained respiratory device in an emergency situation.

## Section 9: Physical and Chemical Properties

<b>Appearance:</b>	Liquid, brown
<b>UFL/LEL:</b>	Not determined
<b>LFL/LEL:</b>	Not determined
<b>Odor:</b>	No odor
<b>Vapor pressure:</b>	Not determined
<b>Odor threshold:</b>	Not determined
<b>Vapor density:</b>	Not determined
<b>pH:</b>	Not determined
<b>Relative density:</b>	Not determined
<b>Melting Point/Freezing point:</b>	Not determined
<b>Solubility in water:</b>	Miscible
<b>Boiling point/boiling range:</b>	Not determined
<b>Flash point:</b>	Not determined
<b>Evaporation Rate:</b>	Not determined
<b>Flammability (solid, gas):</b>	Not applicable
<b>Partition coefficient (n-octanol/water):</b>	Not determined
<b>Auto-ignition temperature:</b>	Not determined
<b>Decomposition temperature:</b>	Not determined
<b>Viscosity:</b>	Not determined

## Section 10: Stability and Reactivity

**Reactivity:** No information.

**Chemical stability:** Stable under recommended storage conditions.

**Stabilizer(s):** Not required.

**Safety issues that may arise should the product change in appearance:** No information.

**Thermal decomposition/ conditions to Avoid:** Decomposition will not occur if used and stored according to specifications.

**Possibility of hazardous reactions:** see incompatibilities.

**Incompatibilities:** Strong bases, metals.

**Hazardous decomposition products:** No information.

## Section 11: Toxicological Information

### For Acetic Acid

#### Acute toxicity:

Inhalation mouse LC50/1H: 5620 ppm  
 Inhalation rat LC50/4H: 11.4 mg/l  
 Dermal rabbit LD50: 1112mg/kg  
 Oral rat: 3310 mg/kg

#### Other exposure effect:

On the Skin: Corrosive effect.  
 On the Eye: Corrosive effect.  
 Sensitization: No sensitizing effects known.

**Additional toxicological information:** To the best of our knowledge the acute and chronic toxicity of this substance is not fully known. No classification data on carcinogenic properties of this material is available from NTP, IARC or OSHA.

### For Hydrochloric Acid:

#### Acute toxicity:

Oral rat LD50: 900 mg/kg.

#### Other exposure effect:

Inhalation: Strong corrosive effect.  
 On the Skin: Strong corrosive effect.  
 On the Eye: Strong corrosive effect.  
 Sensitization: No sensitizing effects were known.

**Additional toxicological information:** To the best of our knowledge the acute and chronic toxicity of this substance is not fully known. No classification data on carcinogenic properties of this material is available from NTP or OSHA. IARC-3 Not classifiable as to human carcinogenicity.

### For Nitric Acid:

#### Acute toxicity:

Inhalation rat LC50/4H: 0.13 mg/1/4H  
 Oral (human) LDLo: 430 mg/kg.

#### Other exposure effect:

On the Skin: Strong corrosive effect.

On the Eye: Strong corrosive effect.

Sensitization: No sensitizing effects known.

**Additional toxicological information:** To the best of our knowledge the acute and chronic toxicity of this substance is not fully known. No classification data on carcinogenic properties of this material is available from NTP, IARC or OSHA.

### For Ferric Chloride Hexahydrate

#### Acute toxicity:

Oral rat: 900 mg/kg  
 Inhalation: No data.

#### Other exposure effect:

On the Skin: No data.  
 On the Eye: No data.  
 Sensitization: No data.

**Additional toxicological information:** To the best of our knowledge the acute and chronic toxicity of this substance is not fully known. No classification data on carcinogenic properties of this material is available from NTP, IARC or OSHA.

### For Sulfuric Acid

#### Acute toxicity:

Inhalation rat LC50/2H: 510 mg/m3  
 Oral rat: LD50: 2140 mg/kg

#### Other exposure effect:

On the Skin: Extreme corrosive effect.  
 On the Eye: Extreme corrosive effect.  
 Sensitization: No data.

**Additional toxicological information:** To the best of our knowledge the acute and chronic toxicity of this substance is not fully known. No classification data on carcinogenic properties of this material is available from NTP, IARC or OSHA.

## Section 12: Ecological Information

Toxic and harmful to aquatic life. Avoid release to the environment. Dispose of contents in accordance with local, state, federal and international regulations.

### Toxicity:

**Aquatic toxicity:** No information.

**Persistence and degradability:** No information.

### Behavior in environmental system:

**Bioaccumulative potential:** No information.

**Mobility in soil:** No information.

**Additional ecological information:** Avoid transfer into the environment.

**Other adverse effects:** No information.

## Section 13: Disposal Considerations

Place in a chemical waste container for proper disposal in an approved waste disposal facility. Dispose of the content and container in accordance with local, regional, national, international regulations.

## Section 14: Transport Information

**D.O.T. shipping name:** Corrosive liquid, n.o.s. (Hydrochloric Acid, Acetic Acid, Nitric Acid)

**D.O.T. hazard class:** 8

**UN number:** UN1760

**Packing group:** II

## Section 15: Regulatory Information

### Not meant to be all inclusive, selected regulation represented

**OSHA status:** These items meet the OSHA Hazard Communication Standard (29 CFR 1910.1200) definition of a hazardous material.

**TSCA status:** All components are listed.

## Section 16: Other Information

**Disclaimer:** The information above is believed to be accurate and represents the best information currently available to us. ES Laboratory, LLC makes no warranty, express or implied, as to its accuracy, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. We shall not be liable for any damages to person or property resulting from its use.

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