

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

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
Skin Corrosion	1B
Serious Eye Damage	1
Carcinogenicity	1
Specific target organ toxicity - single exposure	3
Specific target organ toxicity - repeated exposure	2
Corrosive to Metals	1
Hazardous to Aquatic Environment (Chronic)	3

Signal word: Danger

Pictogram:



Hazard statement(s):

H290	May be corrosive to metals.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H350	May cause cancer.
H335	May cause respiratory irritation.
H373	May cause damage to organs through prolonged or repeated exposure.
H412	Harmful to aquatic life with long lasting effects.

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): 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.

HMIS Ratings:	NFPA Ratings:
Health: 3	Health: 3
Flammability: 0	Flammability: 0
Reactivity: 1	Reactivity: 1
	Special hazard: None

Section 3: Composition/Information on Ingredients

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

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 a 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 a 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 Hexahydrate	10025-77-1	1 mg/m ³ TWA (as Fe)	-
Sulfuric Acid	7664-93-9	0.2 mg/m ³ TWA	1 mg/m ³ 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 a self-contained respiratory device in an emergency situation.

Section 9: Physical and Chemical Properties

Appearance:	Brown liquid
UFL/UEL:	Not determined
LFL/LEL:	Not determined
Odor:	Acidic, pungent smell
Vapor pressure:	Not determined
Odor threshold:	Not determined
Vapor density:	Not determined
pH:	< 1
Relative density:	Not determined
Melting Point/Freezing point:	Not determined
Solubility in water:	Miscible
Boiling point/boiling range:	Not determined
Flashpoint:	Not applicable
Evaporation Rate:	Not determined
Flammability (solid, gas):	Not applicable
Partition coefficient (n-octanol/water):	Not determined
Auto-ignition temperature:	Not determined
Decomposition temperature:	Not determined
Viscosity:	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: 5620 ppm (1 h)
Inhalation rat LC50: 11.4 mg/L (4 h)
Dermal rabbit LD50: 1112 mg/kg
Oral rat LD50: 3310 mg/kg

Other exposure effect:

On the Skin: Corrosive effect.
On the Eye: Corrosive effect.
Sensitization: No sensitizing effects are 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: 700 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: 0.13 mg/L (4 h)
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 are 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 LD50: 900 mg/kg.

Other exposure effect:

Inhalation: No data.
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: 510 mg/m³ (2 h)
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, and 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 regulations 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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