

ES Laboratory, LLC

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TECHNICAL DATA SHEET

1. Product Identification

Product name	S1098 Stainless Steel Etchant, GE Class C Schantz Reagent
Item number(s)	1025
Product type	Etchant for stainless steels and other listed alloys

2. Description and Application

S1098 Stainless Steel Etchant is a chemical listed in the CFM specifications for etching stainless steels as part of the pre-penetrant etch process in non-destructive testing (NDT). It is also known as Class C or Schantz reagent, and is listed in multiple aerospace manuals such as GEK 9250 for 300 and 400 series stainless steels, precipitation hardening steels, A-286, Duplex 2205, maraging steels, Rene 77, 80, 95, 100 and 125, Udimet 500, Sel, Sel 15, TD-NiCr, Waspaloy, 17-4 PH, and Hastelloy B, C and W.

It prepares these metals for subsequent fluorescent penetrant inspection, and can also etch Duplex 2205 for microscopic studies.

3. Composition

Acetic acid (CAS 64-19-7)	15 – 20 wt%
Hydrochloric acid (CAS 7647-01-0)	15 – 20 wt%
Nitric acid (CAS 7697-37-2)	5 – 10 wt%
Ferric chloride hexahydrate (CAS 10025-77-1)	5 – 10 wt%
Sulfuric acid (CAS 7664-93-9)	1 – 5 wt%
Balance	Deionized water

Concentration ranges are shown to protect formulation confidentiality and to allow for batch variation. Only hazardous components are listed.

4. Physical Properties

Appearance	Brown liquid
pH	< 1
Odor	Acidic, pungent
Solubility in water	Miscible
Chemical stability	Stable under normal conditions of use and storage

5. Directions for Use

- Use only in a well-ventilated area with appropriate personal protective equipment.
- Etch to the requirement of the governing specification or process sheet, then rinse thoroughly with water before penetrant inspection.
- Keep the container tightly closed when not in use.

6. Shelf Life, Storage and Packaging

Shelf life	6 months from date of manufacture
Made to order	Produced upon request to maximize freshness. Allow 1 business day to fulfill the order.
Storage	Store closed, upright, in a cool, well-ventilated area away from incompatible materials (see SDS).
Packaging	Nalgene® leakproof bottle, HDPE
Documentation	A Certificate of Conformance stating lot number, manufacture date and expiration date is available upon request.

7. Transport Classification (for US & Canada only)

D.O.T. shipping name	Corrosive liquid, n.o.s. (Hydrochloric Acid, Acetic Acid, Nitric Acid)
Hazard class	8
UN number	UN1760
Packing group	II
Emergency Contact	CHEMTREC® 1-800-424-9300 (US & Canada Only)

8. Suggested Tariff Classification

Suggested HS / HTS code	3822.90.00.00 — Diagnostic or laboratory reagents
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This code is offered as a suggestion only, based on the classification ES Laboratory uses for shipments to Canada. Tariff classification is the responsibility of the importer of record. Customers exporting outside North America should confirm the correct code with their customs broker for the destination country.

9. Safety

This product is a strong acid mixture and is corrosive to skin and eyes. Read the Safety Data Sheet (SDS) before use and wear appropriate personal protective equipment. The Safety Data Sheet is available at www.eslaboratory.com/sds.html.

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.

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