

Safety Data Sheet

Safety Data Sheet (in compliance with Regulation (EC) 1907/2006, Regulation (EC) 1272/2008 and Regulation (EC) 453/2010)

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1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product Identifier:

Trade Name (as labeled): **Versa-Link® HF Etching Gel**
Part/Item Number: 70515

1.2 Relevant Identified Uses of the Substance or Mixture and Uses Advised Against:

Recommended Use: Etching solution for ceramic restorations
Restrictions on Use: For professional use only

1.3 Details of the Supplier of the Safety Data Sheet:

Manufacturer/Supplier Name: Sultan Healthcare
Manufacturer/Supplier Address: 1301 Smile Way
York, PA, USA
Manufacturer/Supplier Telephone Number: 1-201-871-1232 or 800-637-8582
(Product Information)-
Email address: customer.service@sultanhc.com

1.4 Emergency Telephone Number:

Emergency Contact Telephone Number: 800-535-5053 (INFOTRAC)
1-352-323-3500
(Outside the United States – Call Collect)

2. HAZARD(s) IDENTIFICATION

2.1 Classification of the Substance or Mixture:

GHS SDS Classification:

Health	Environmental	Physical
Skin Corrosion Category 1B Acute Toxicity Category 4 (H312, H332)	Not Hazardous	Not Hazardous

EU Classification (1999/45/EC as amended): Toxic (T), Corrosive (C)

EU Risk (R) Phrases: R23/24/25, R34

Refer to Section 16 for the full text of the EU Classifications and R Phrases.

2.2 Labeling Elements: Contains: hydrofluoric acid



Signal Word: Danger

Hazard Statements	Precautionary Statements
H312 Harmful in contact with skin H314 Causes severe skin burns and eye damage. H332 Harmful if inhaled.	P260 Do not breathe mist, vapours or spray. P264 Wash thoroughly after handling. P271 Use only outdoors or in a well-ventilated area. P280 Wear protective gloves, protective clothing, eye protection, and face protection. P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. P302 + P352 IF ON SKIN: Wash with plenty soap and water. P312 Call a POISON CENTER if you feel unwell. P362 + P364 Take off contaminated clothing and wash it before reuse. 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 person to fresh air and keep comfortable for breathing. P310 Immediately call a POISON CENTER. P405 Store locked up. P501 Dispose of contents and container in accordance with local and national regulations.

2.3 Other Hazards: None

3. COMPOSITION AND INFORMATION ON INGREDIENTS

3.2 Mixture

Hazardous Components	C.A.S. # EC#	IUPAC Name	CLP/GHS / EU Classification (1272/2008) (1999/45/EC)	WT %
Hydrofluoric Acid	7664-39-3 / 231-634-8	Hydrogen Fluoride	T+ C R26/27/28, R35 Acute Tox. 1 (H310) Acute Tox 2 (H300, H330) Skin Corr. 1A (H314)	6

Refer to Section 16 for the full text of the EU Classifications and R Phrases.

4. FIRST-AID MEASURES

4.1 Description of First Aid Measures:

Routes of Exposure	First Aid Instructions
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Eye	Immediately flush eyes with large quantities of water for at least 20 minutes, holding the eyelids apart. Get immediate medical attention, preferably from an ophthalmologist. Effects may be delayed up to 24 hours.
Skin	Immediately remove contaminated clothing and flush skin with water for 30 minutes. Cover burn with a 2.5% calcium gluconate gel and massage into skin. Get immediate medical attention, no matter how minor the burn. Effects may be delayed up to 24 hours.
Inhalation	Immediately remove to fresh air. If breathing is difficult, have qualified personnel administer oxygen. If breathing has stopped, administer artificial respiration. Get immediate medical attention.
Ingestion	Do not induce vomiting. Never give anything by mouth to an unconscious person. If alert rinse mouth with water then drink a large glass of water, milk or several ounces of milk of magnesia. Immediately contact poison control.

4.2 Most Important Symptoms and Effects, Both Acute and Delayed:

Causes eye burns with possible blindness. Skin contact may cause burns that are not immediately evident. Inhalation of vapors may cause respiratory irritation or burns. First aid is required. Effects may be delayed for 24 hours.

4.3 Indication of Any Immediate Medical Attention and Special Treatment Needed:

If eye or skin contact occurs, get immediate medical attention. If swallowed or inhaled, get immediate medical attention.

Note to Physicians (Treatment, Testing, and Monitoring): Treatment of overexposure should be directed at the control of symptoms and clinical conditions.

5. FIRE-FIGHTING MEASURES

5.1 Extinguishing Media

Use media appropriate for surrounding fire.

5.2 Special Hazards Arising from the Substance or Mixture:

Heating hydrofluoric acid gives off corrosive fumes which are heavier than air.

5.3 Advice for Fire-Fighters:

Fire Fighting Procedures:	Cool fire exposed containers and structures with water.
Precautions for Fire Fighters:	Firefighters should wear positive pressure self-contained breathing apparatus and full protective clothing in fires with chemicals..

Recommended Protective Equipment for Fire Fighters:

EYES/FACE	SKIN	RESPIRATORY	THERMAL
			

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal Precautions, Protective Equipment and Emergency Procedures:

Evacuate spill area and keep unprotected personnel away. Wear appropriate protective clothing, gloves and eye protection. For large spills or confined spaces, respiratory protection is required.

Recommended Personal Protective Equipment for Containment and Clean-up:

EYES/FACE	SKIN	RESPIRATORY	THERMAL
			

6.2 Environmental Precautions:

Prevent spill from entering sewers and water courses. Report releases as required by local and national authorities.

6.3 Methods and Material for Containment and Cleaning up:

Collect using an inert non-combustible absorbent material and place in appropriate containers for disposal. Clean spill area thoroughly.

6.4 Reference to Other Sections:

Refer to Section 8 for Personal Protective Equipment and Section 13 for Disposal information.

7. HANDLING AND STORAGE

7.1 Precautions for Safe Handling:

Prevent contact with the eyes and skin. Do not breathe mists. Wear appropriate protective clothing and equipment. Use only with adequate ventilation. Wash thoroughly with soap and water after handling. Keep containers closed when not in use. Empty containers retain product residues can be hazardous. Follow all MSDS precautions when handling empty containers.

7.2 Conditions for Safe Storage, Including Any Incompatibilities:

Store in a cool, dry, well ventilated area away from incompatible materials. Protect from physical damage.

7.3 Specific End Use (s): For professional use only.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control Parameters:

Occupational Exposure Limits:

Hydrogen Fluoride	United States	3 ppm TWA US OSHA PEL 0.5 ppm, skin TWA ACGIH TLV, 2 ppm Ceiling
	Germany	1 ppm TWA DFG MAK
	United Kingdom	1.8 ppm TWA, 3 ppm STEL UK OEL
	France	1.8 ppm TWA VME, 3 ppm VLCT INRS
	Spain	1.8 ppm TWA VLA-ED, 3 ppm VLA-EC
	Italy	None Established
	European Union	1.8 ppm TWA, 3 ppm STEL EU IOEL

Biological Exposure Limits:

Hydrogen Fluoride (as fluorides) - Prior to shift 3 mg/g creatinine; End of shift 10 mg/g creatinine. (ACGIH BEI)

8.2 Exposure Controls:

Appropriate Engineering Controls: Use with adequate general or local exhaust ventilation to maintain exposure levels below the occupational exposure limits.

Individual Protection Measures (PPE)

Specific Eye/face Protection: Chemical safety goggles recommended.

Specific Skin Protection: Wear impervious gloves such as PVC or neoprene. Recommended glove: PVC or neoprene. Contact glove supplier for thickness and breakthrough times.

Specific Respiratory Protection: If occupational exposure limits are exceeded, an approved respirator is recommended. Respirator selection and use should be based on contaminant type, form and concentration. Follow applicable regulations for use and selection of respiratory protection.

Specific Thermal Hazards: Not applicable

Recommended Personal Protective Equipment

EYES/FACE	SKIN	RESPIRATORY	THERMAL
			

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on Basic Physical and Chemical Properties:

Appearance:	Pink gel	Explosive limits:	Not applicable
Odor:	Acrid	Vapor pressure:	25 @ 20°C mmHg
Odor threshold:	0.042 ppm (hydrogen fluoride)	Vapor density:	>1

pH:	0.5	Relative density:	1.17-1.18
Melting/freezing point:	-32°F / -35°C	Solubility:	Complete
Initial boiling point and range:	212-226°F / 100-108°C	Partition coefficient: n-octanol/water:	Not available
Flash point:	>200°F / 93.3°C	Auto-ignition temperature:	Not available
Evaporation rate:	<1 (butyl acetate =1)	Decomposition temperature:	Not available
Flammability:	Not flammable	Viscosity:	Not available
Explosive Properties:	None	Oxidizing Properties:	None

9.2 Other Information: None available

10. STABILITY AND REACTIVITY

10.1 Reactivity: Will not polymerize. Reactive with many other chemicals

10.2 Chemical Stability: Stable under normal conditions of use.

10.3 Possibility of Hazardous Reactions: Reacts with metals to form hydrogen gas. Reacts with bases to generate heat and corrosive and toxic fumes.

10.4 Conditions to Avoid: Attacks some plastics, rubber, and coatings. Avoid heat.

10.5 Incompatible materials: Avoid bases, alkenes, cyanide salts, dithiocarbamates, isocyanates, mercaptans, nitrides, nitriles, sulfides, sulfites, nitrites, thiosulfates, dithionites, carbonates, arsenic trioxide, phosphorus pentachloride, acetic anhydride, alkali metals, ammonium hydroxide, chlorosulfonic acid, ethylenediamine, fluorine, potassium permanganate, oleum, propylene oxide, vinyl acetate, mercury(II) oxide.

10.6 Hazardous Decomposition Products: Attacks glass and other silica containing materials to form silicon tetrafluoride, a toxic gas. Emits highly corrosive fumes of hydrogen fluoride gas when heated.

11. TOXICOLOGICAL INFORMATION

11.1 Information on Toxicological Effects:

Potential Health Effects:

Eyes: Causes burns to eyes with redness, pain and blurred vision. Blindness may occur.

Skin: Skin contact causes serious skin burns that may not be immediately apparent or painful. Symptoms may be delayed up to 24 hours. The fluoride ion readily penetrates the skin causing destruction of deep tissue layers and bone.

Ingestion: Swallowing may cause abdominal pain, vomiting, diarrhea, burns to the digestive tract and possible perforation of the stomach, cardiac arrhythmia and respiratory failure. Kidney damage may occur.

Inhalation: Inhalation of vapors or mists may cause mucous membrane and upper respiratory tract irritation and burns. Symptoms include sore throat, coughing, labored breathing and lung inflammation. Symptoms may be delayed up to 24 hours.
Chronic Health Effects: Prolonged overexposure to hydrogen fluorides may cause fluorosis with symptoms of joint pain, limited mobility, brittle bones, calcification of ligaments, bone and teeth abnormalities and mottled tooth enamel.
Carcinogenicity: A 2-year study in rats found a weak, equivocal fluoride-related increase in the occurrence of osteosarcomas in male rats, and no evidence of carcinogenicity in female rats or male or female mice. The weight of the evidence indicates that fluoridation of water does not increase the risk of developing cancer. IARC has determined that the carcinogenicity of fluoride to humans is not classifiable. None of the components are listed as a carcinogen by IARC, NTP, OSHA, ACGIH or the EU Substances Directive.
Mutagenicity: Hydrogen fluoride: Negative in AMES test. Negative dominant lethal mutations in mice.
Medical Conditions Aggravated by Exposure: Employees with pre-existing eye and skin disorders may be at increased risk from exposure.
Acute Toxicity Data: Hydrogen fluoride: Inhalation rat LC50 1276 ppm/1 hr; Dermal LD0 mice 500 mg/kg; Intraperitoneal LD0 rat 25 mg/kg
Reproductive Toxicity Data: In a 75 day reproductive study with rats, doses of 4.5 ppm and 9.0 ppm showed a significant decrease in sperm count, sperm motility, sperm viability and sperm function. However, other animal studies, including two-generation studies, have not found alterations in serum hormone levels in male rats, testicular histopathology, sperm morphology, or fertility. None of the available laboratory animal studies examined reproductive toxicity at low fluoride doses. The inadequate human studies and conflicting animal studies do not allow for an assessment of the potential of fluoride to induce reproductive effects in humans. Animal studies have not found increases in the incidences of birth defects in the absence of maternal toxicity. At doses that caused maternal toxicity (decreases in body weight gain and food consumption), increases in abnormalities were found.
Specific Target Organ Toxicity (STOT): Single Exposure: Hydrogen fluoride is highly corrosive to rabbit skin. An 8% solution in a rabbit eye will cause reversible eye damage lasting 40-65 days. Repeated Exposure: Repeated inhalation of 17 ppm hydrogen fluoride resulted in damage to the lungs, liver, and kidneys of animals, but similar inhalation of 8.6 ppm failed to elicit significant pathologic change in these tissues.

12. ECOLOGICAL INFORMATION

12.1 Toxicity: Hydrofluoric acid: No data available
12.2 Persistence and Degradability: Biodegradation is not applicable to inorganic substances such as hydrogen fluoride.
12.3 Bio-accumulative Potential: The biological half-life of hydrogen fluoride is 12-24 hours.
12.4 Mobility in Soil: This product is expected to be highly mobile in soil.
12.5 Other Adverse Effects: The low pH of this product will cause effects in aquatic systems and eco-systems.
12.6 Results of PBT/vPvB Assessment: Not applicable

13. DISPOSAL CONSIDERATIONS

13.1 Waste Treatment Methods:
Regulations: Dispose in accordance with local and national environmental regulations.
Properties (Physical/Chemical) Affecting Disposal: None known.
Waste Treatment Recommendations: None needed for normal anticipated use.

14. TRANSPORT INFORMATION

	14.1 UN Number	14.2 UN Proper Shipping Name	14.3 Hazard Class(s)	14.4 Packing Group	14.5 Environmental Hazards
DOT	UN1790	Hydrofluoric Acid (with not more than 60% strength)	8 (6.1)	PG II	No
ADR/RID	UN1790	Hydrofluoric Acid (with not more than 60% strength)	8 (6.1)	PG II	No
IMDG	UN1790	Hydrofluoric Acid (with not more than 60% strength)	8 (6.1)	PG II	Marine Pollutant-No
IATA/ICAO	UN1790	Hydrofluoric Acid (with not more than 60% strength)	8 (6.1)	PG II	No

14.6 Special precautions for user: Not Applicable

14.7 Transport in Bulk According to Annex II of MARPOL 73/78 and the IBC Code: Not applicable – product is transported only in packaged form.

15. REGULATORY INFORMATION

15.1 Safety, Health and Environmental Regulations/Legislation Specific for the Substance or Mixture:

U.S. Federal Regulations

Comprehensive Environmental Response and Liability Act of 1980 (CERCLA): This product has an RQ of 16,666 lbs based on the RQ hydrofluoric acid of 100 lbs present at 6%. Many other states have more stringent regulations. Report all spills in accordance with local, state, and federal regulations.

Toxic Substances Control Act (TSCA): This product is a medical device and not subject to chemical notification requirements.

Clean Water Act (CWA): Not Listed

Clean Air Act (CAA): Hydrogen fluoride - listed

Superfund Amendments and Reauthorization Act (SARA) Title III Information:

SARA Section 311/312 (40 CFR 370) Hazard Categories:

Immediate Hazard:	Yes	Pressure Hazard:	No
Delayed Hazard:	Yes	Reactivity Hazard:	No
Fire Hazard:	No		

This product contains the following toxic chemical(s) subject to reporting requirements of SARA Section 313

(40 CFR 372):

Components	C.A.S. #	WT %
Hydrogen Fluoride	7664-39-3	6

State Regulations

California: This product contains the following chemical(s) known to the State of California to cause cancer, birth defects or reproductive harm:

Components	C.A.S. #	WT %
None		

International Regulations

EU REACH: The substances in this product comply with the EU REACH regulation as applicable.

16. OTHER INFORMATION

Full text of Classification abbreviations used in Section 2 and 3:

C Corrosive

T Toxic

T+ Very toxic

R23/24/25 Toxic by inhalation, in contact with skin and if swallowed.

R26/27/28 Very toxic by inhalation, in contact with skin and if swallowed

R34 Causes burns.

R35 Causes severe burns.

Acute Tox 1 Acute Toxicity Category 1

Acute Tox 2 Acute Toxicity Category 2

Skin Corr 1 Skin Corrosion Category 1

H300 Fatal if swallowed.

H310 Fatal in contact with skin

H312 Harmful in contact with skin.

H314 Causes severe skin burns and eye damage.

H330 Fatal if inhaled.

H332 Harmful if inhaled.

Supersedes: 17 July 2013

Revision Summary: Comprehensive review, new format.

Date of SDS Preparation/Revision: 04 August 2014

Data Sources: US NLM ChemID Plus and HSDB, Substance SDS for components, IUCLID Dataset EU Chemical Bureau, ESIS, Country websites for occupational exposure limits.

Supersedes: 17 July 2013