

## 10 2-3 Antimony (10 µg/mL in 2% HNO<sub>3</sub> + Tr HF)

### High-Purity Standards

Catalogue number: 10 2-3  
Version No: 2.2  
Safety Data Sheet according to OSHA HazCom Standard (2012) requirements

Chemwatch Hazard Alert Code: 3

Issue Date: 04/28/2017  
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S.GHS.USA.EN

## SECTION 1 IDENTIFICATION

### Product Identifier

<b>Product name</b>	10 2-3 Antimony (10 µg/mL in 2% HNO <sub>3</sub> + Tr HF)
<b>Synonyms</b>	Not Available
<b>Proper shipping name</b>	Corrosive liquid, acidic, inorganic, n.o.s. (contains nitric acid)
<b>Other means of identification</b>	10 2-3

### Recommended use of the chemical and restrictions on use

<b>Relevant identified uses</b>	Use according to manufacturer's directions.
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### Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party

<b>Registered company name</b>	High-Purity Standards
<b>Address</b>	PO Box 41727 SC 29423 United States
<b>Telephone</b>	843-767-7900
<b>Fax</b>	843-767-7906
<b>Website</b>	highpuritystandards.com
<b>Email</b>	Not Available

### Emergency phone number


<b>Association / Organisation</b>	INFOTRAC
<b>Emergency telephone numbers</b>	1-800-535-5053
<b>Other emergency telephone numbers</b>	1-352-323-3500

## SECTION 2 HAZARD(S) IDENTIFICATION

### Classification of the substance or mixture

<b>Classification</b>	Acute Toxicity (Oral) Category 4, Acute Toxicity (Dermal) Category 4, Metal Corrosion Category 1, Skin Corrosion/Irritation Category 1A, Serious Eye Damage Category 1
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### Label elements

<b>Hazard pictogram(s)</b>	
<b>SIGNAL WORD</b>	<b>DANGER</b>

### Hazard statement(s)

<b>H302</b>	Harmful if swallowed.
<b>H312</b>	Harmful in contact with skin.
<b>H290</b>	May be corrosive to metals.
<b>H314</b>	Causes severe skin burns and eye damage.

### Hazard(s) not otherwise specified

Not Applicable

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**Precautionary statement(s) Prevention**

P260	Do not breathe dust/fume/gas/mist/vapours/spray.
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**Precautionary statement(s) Response**

P301+P330+P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
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**Precautionary statement(s) Storage**

P405	Store locked up.
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**Precautionary statement(s) Disposal**

P501	Dispose of contents/container in accordance with local regulations.
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**SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS**

**Substances**

See section below for composition of Mixtures

**Mixtures**

CAS No	%[weight]	Name
7440-36-0	0.001	<u>antimony</u>
7732-18-5	balance	<u>water</u>
7697-37-2	2	<u>nitric acid</u>
7664-39-3	0-0.49	<u>hydrofluoric acid</u>

**SECTION 4 FIRST-AID MEASURES**

**Description of first aid measures**

<b>Eye Contact</b>	<p>If this product comes in contact with the eyes:</p> <ul style="list-style-type: none"> <li>▶ Immediately hold eyelids apart and flush the eye continuously with running water.</li> <li>▶ Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.</li> <li>▶ Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes.</li> <li>▶ Transport to hospital or doctor without delay.</li> <li>▶ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.</li> </ul>
<b>Skin Contact</b>	<p>If there is evidence of severe skin irritation or skin burns:</p> <ul style="list-style-type: none"> <li>▶ Avoid further contact. Immediately remove contaminated clothing, including footwear.</li> <li>▶ Flush skin under running water for 15 minutes.</li> <li>▶ Avoiding contamination of the hands, massage <b>calcium gluconate gel</b> into affected areas, pay particular attention to creases in skin.</li> <li>▶ Contact the Poisons Information Centre.</li> <li>▶ Continue gel application for at least 15 minutes after burning sensation ceases.</li> <li>▶ If pain recurs, repeat application of <b>calcium gluconate gel</b> or apply every 20 minutes.</li> <li>▶ If no gel is available, continue washing for at least 15 minutes, using soap if available. If patient is conscious, give six <b>calcium gluconate or calcium carbonate</b> tablets in water by mouth.</li> <li>▶ Transport to hospital, or doctor, urgently.</li> </ul>
<b>Inhalation</b>	<ul style="list-style-type: none"> <li>▶ If fumes or combustion products are inhaled remove from contaminated area.</li> <li>▶ Lay patient down. Keep warm and rested.</li> <li>▶ Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.</li> <li>▶ Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.</li> <li>▶ Transport to hospital, or doctor, without delay.</li> <li>▶ Inhalation of vapours or aerosols (mists, fumes) may cause lung oedema.</li> <li>▶ Corrosive substances may cause lung damage (e.g. lung oedema, fluid in the lungs).</li> <li>▶ As this reaction may be delayed up to 24 hours after exposure, affected individuals need complete rest (preferably in semi-recumbent posture) and must be kept under medical observation even if no symptoms are (yet) manifested.</li> <li>▶ Before any such manifestation, the administration of a spray containing a dexamethasone derivative or beclomethasone derivative may be considered.</li> </ul> <p><b>This must definitely be left to a doctor or person authorised by him/her.</b>            (ICSC13719)</p> <p>For massive exposures:</p> <ul style="list-style-type: none"> <li>▶ If dusts, vapours, aerosols, fumes or combustion products are inhaled, remove from contaminated area.</li> <li>▶ Lay patient down.</li> <li>▶ Keep warm and rested.</li> <li>▶ Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.</li> <li>▶ Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.</li> <li>▶ If victim is conscious, give six <b>calcium gluconate or calcium carbonate</b> tablets in water by mouth.</li> <li>▶ Transport to hospital, or doctor, urgently.</li> </ul>
<b>Ingestion</b>	<ul style="list-style-type: none"> <li>▶ For advice, contact a Poisons Information Centre or a doctor at once.</li> <li>▶ Urgent hospital treatment is likely to be needed.</li> <li>▶ <b>If swallowed do NOT induce vomiting.</b></li> <li>▶ If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.</li> <li>▶ Observe the patient carefully.</li> <li>▶ Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.</li> <li>▶ Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.</li> <li>▶ Transport to hospital or doctor without delay.</li> </ul>

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

See Section 11

**Indication of any immediate medical attention and special treatment needed**

Following acute or short term repeated exposure to hydrofluoric acid:

- ▶ Subcutaneous injections of Calcium Gluconate may be necessary around the burnt area. Continued application of Calcium Gluconate Gel or subcutaneous Calcium Gluconate should then continue for 3-4 days at a frequency of 4-6 times per day. If a "burning" sensation recurs, apply more frequently.
- ▶ Systemic effects of extensive hydrofluoric acid burns include renal damage, hypocalcaemia and consequent cardiac arrhythmias. Monitor haematological, respiratory, renal, cardiac and electrolyte status at least daily. Tests should include FBE, blood gases, chest X-ray, creatinine and electrolytes, urine output, Ca ions, Mg ions and phosphate ions. Continuous ECG monitoring may be required.
- ▶ Where serum calcium is low, or clinical, or ECG signs of hypocalcaemia develop, infusions of calcium gluconate, or if less serious, oral Sandocal, should be given. Hydrocortisone 500 mg in a four to six hourly infusion may help.
- ▶ Antibiotics should not be given as a routine, but only when indicated.
- ▶ Eye contact pain may be excruciating and 2-3 drops of 0.05% pentocaine hydrochloride may be instilled, followed by further irrigation

BIOLOGICAL EXPOSURE INDEX - BEI

These represent the determinants observed in specimens collected from a healthy worker exposed at the Exposure Standard (ES or TLV):

Determinant	Index	Sampling Time	Comments
1. Methaemoglobin in blood	1.5% of haemoglobin	During or end of shift	B, NS, SQ

B: Background levels occur in specimens collected from subjects **NOT** exposed.

NS: Non-specific determinant; Also seen after exposure to other materials

SQ: Semi-quantitative determinant - Interpretation may be ambiguous; should be used as a screening test or confirmatory test.

For acute or short term repeated exposures to fluorides:

- ▶ Fluoride absorption from gastro-intestinal tract may be retarded by calcium salts, milk or antacids.
- ▶ Fluoride particulates or fume may be absorbed through the respiratory tract with 20-30% deposited at alveolar level.
- ▶ Peak serum levels are reached 30 mins. post-exposure; 50% appears in the urine within 24 hours.
- ▶ For acute poisoning (endotracheal intubation if inadequate tidal volume), monitor breathing and evaluate/monitor blood pressure and pulse frequently since shock may supervene with little warning. Monitor ECG immediately; watch for arrhythmias and evidence of Q-T prolongation or T-wave changes. Maintain monitor. Treat shock vigorously with isotonic saline (in 5% glucose) to restore blood volume and enhance renal excretion.
- ▶ Where evidence of hypocalcaemic or normocalcaemic tetany exists, calcium gluconate (10 ml of a 10% solution) is injected to avoid tachycardia.

BIOLOGICAL EXPOSURE INDEX - BEI

These represent the determinants observed in specimens collected from a healthy worker exposed at the Exposure Standard (ES or TLV):

Determinant	Index	Sampling Time	Comments
Fluorides in urine	3 mg/gm creatinine 10mg/gm creatinine	Prior to shift End of shift	B, NS B, NS

B: Background levels occur in specimens collected from subjects **NOT** exposed

NS: Non-specific determinant; also observed after exposure to other exposures.

**SECTION 5 FIRE-FIGHTING MEASURES**

**Extinguishing media**

- ▶ Water spray or fog.

**Special hazards arising from the substrate or mixture**

<b>Fire Incompatibility</b>	None known.
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**Special protective equipment and precautions for fire-fighters**

<b>Fire Fighting</b>	▶ Alert Fire Brigade and tell them location and nature of hazard.
<b>Fire/Explosion Hazard</b>	▶ Non combustible. May emit corrosive fumes.

**SECTION 6 ACCIDENTAL RELEASE MEASURES**

**Personal precautions, protective equipment and emergency procedures**

See section 8

**Environmental precautions**

See section 12

**Methods and material for containment and cleaning up**

<b>Minor Spills</b>	▶ Drains for storage or use areas should have retention basins for pH adjustments and dilution of spills before discharge or disposal of material. ▶ Clean up all spills immediately.
<b>Major Spills</b>	▶ Clear area of personnel and move upwind.

Personal Protective Equipment advice is contained in Section 8 of the SDS.

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SECTION 7 HANDLING AND STORAGE

Precautions for safe handling

<b>Safe handling</b>	▶ Avoid all personal contact, including inhalation.
<b>Other information</b>	▶ Store in original containers.

Conditions for safe storage, including any incompatibilities

<b>Suitable container</b>	<ul style="list-style-type: none"> <li>▶ <b>DO NOT use aluminium or galvanised containers</b></li> <li>▶ Lined metal can, lined metal pail/ can.</li> </ul> <p>For low viscosity materials</p> <ul style="list-style-type: none"> <li>▶ Drums and jerricans must be of the non-removable head type.</li> <li>▶ Material is corrosive to most metals, glass and other siliceous materials.</li> </ul>
<b>Storage incompatibility</b>	<ul style="list-style-type: none"> <li>▶ Inorganic acids are generally soluble in water with the release of hydrogen ions.</li> </ul> <p>Salts of inorganic fluoride:</p> <ul style="list-style-type: none"> <li>▶ react with water forming acidic solutions.</li> <li>▶ Reacts with mild steel, galvanised steel / zinc producing hydrogen gas which may form an explosive mixture with air.</li> </ul> <p>Hydrogen fluoride:</p> <ul style="list-style-type: none"> <li>▶ reacts violently with strong oxidisers, acetic anhydride, alkalis, 2-aminoethanol, arsenic trioxide (with generation of heat), bismuthic acid, calcium oxide, chlorosulfonic acid, cyanogen fluoride, ethylenediamine, ethyleneimine, fluorine (fluorine gas reacts vigorously with a 50% hydrofluoric acid solution and may burst into flame), nitrogen trifluoride, N-phenylazopiperidine, oleum, oxygen difluoride, phosphorus pentoxide, potassium permanganate, potassium tetrafluorosilicate(2-), beta-propiolactone, propylene oxide, sodium, sodium tetrafluorosilicate, sulfuric acid, vinyl acetate</li> <li>▶ reacts (possibly violently) with aliphatic amines, alcohols, alkanolamines, alkylene oxides, aromatic amines, amides, ammonia, ammonium hydroxide, epichlorohydrin, isocyanates, metal acetylides, metal silicides, methanesulfonic acid, nitrogen compounds, organic anhydrides, oxides, silicon compounds, vinylidene fluoride</li> <li>▶ attacks glass and siliceous materials, concrete, ceramics, metals (flammable hydrogen gas may be produced), metal alloys, some plastics, rubber coatings, leather, and most other materials with the exception of lead, platinum, polyethylene, wax.</li> </ul>

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

OCCUPATIONAL EXPOSURE LIMITS (OEL)

INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
US OSHA Permissible Exposure Levels (PELs) - Table Z1	antimony	Antimony and compounds	0.5 mg/m3	Not Available	Not Available	(as Sb)
US ACGIH Threshold Limit Values (TLV)	antimony	Antimony and compounds, as Sb	0.5 mg/m3	Not Available	Not Available	TLV® Basis: Skin & URT irr
US NIOSH Recommended Exposure Limits (RELs)	antimony	Antimony metal, Antimony powder, Stibium	0.5 mg/m3	Not Available	Not Available	[*Note: The REL also applies to other antimony compounds (as Sb).]
US OSHA Permissible Exposure Levels (PELs) - Table Z1	nitric acid	Nitric acid	5 mg/m3 / 2 ppm	Not Available	Not Available	Not Available
US ACGIH Threshold Limit Values (TLV)	nitric acid	Nitric acid	2 ppm	4 ppm	Not Available	TLV® Basis: URT & eye irr; dental erosion
US NIOSH Recommended Exposure Limits (RELs)	nitric acid	Aqua fortis, Engravers acid, Hydrogen nitrate, Red fuming nitric acid (RFNA), White fuming nitric acid (WFNA)	5 mg/m3 / 2 ppm	10 mg/m3 / 4 ppm	Not Available	Not Available
US OSHA Permissible Exposure Levels (PELs) - Table Z1	hydrofluoric acid	Hydrogen fluoride	Not Available	Not Available	Not Available	See Table Z-2;(as F)
US OSHA Permissible Exposure Levels (PELs) - Table Z2	hydrofluoric acid	Hydrogen fluoride	3 ppm	Not Available	Not Available	(Z37.28-1969)
US ACGIH Threshold Limit Values (TLV)	hydrofluoric acid	Hydrogen fluoride, as F	0.5 ppm	Not Available	2 ppm	TLV® Basis: URT, LRT, skin, & eye irr; fluorosis; BEI
US NIOSH Recommended Exposure Limits (RELs)	hydrofluoric acid	Anhydrous hydrogen fluoride; Aqueous hydrogen fluoride (i.e., Hydrofluoric acid); HF-A	2.5 mg/m3 / 3 ppm	Not Available	5 mg/m3 / 6 ppm	[15-minute]


EMERGENCY LIMITS

Ingredient	Material name	TEEL-1	TEEL-2	TEEL-3
antimony	Antimony	1.5 mg/m3	13 mg/m3	80 mg/m3
nitric acid	Nitric acid	Not Available	Not Available	Not Available
hydrofluoric acid	Hydrogen fluoride; (Hydrofluoric acid)	Not Available	Not Available	Not Available

Ingredient	Original IDLH	Revised IDLH
antimony	80 mg/m3	50 mg/m3
water	Not Available	Not Available
nitric acid	100 ppm	25 ppm
hydrofluoric acid	30 ppm	30 [Unch] ppm

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Exposure controls

Appropriate engineering controls	Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard.
Personal protection	
Eye and face protection	<ul style="list-style-type: none"> <li>Safety glasses with unperforated side shields may be used where continuous eye protection is desirable, as in laboratories; spectacles are not sufficient where complete eye protection is needed such as when handling bulk-quantities, where there is a danger of splashing, or if the material may be under pressure.</li> </ul>
Skin protection	See Hand protection below
Hands/feet protection	<ul style="list-style-type: none"> <li>Elbow length PVC gloves</li> <li>When handling corrosive liquids, wear trousers or overalls outside of boots, to avoid spills entering boots.</li> </ul>
Body protection	See Other protection below
Other protection	<ul style="list-style-type: none"> <li>Overalls.</li> </ul>
Thermal hazards	Not Available

Respiratory protection

Type A Filter of sufficient capacity.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	colorless		
Physical state	liquid	Relative density (Water = 1)	Not Available
Odour	Not Available	Partition coefficient n-octanol / water	Not Available
Odour threshold	Not Available	Auto-ignition temperature (°C)	Not Available
pH (as supplied)	<2	Decomposition temperature	Not Available
Melting point / freezing point (°C)	Not Available	Viscosity (cSt)	Not Available
Initial boiling point and boiling range (°C)	Not Available	Molecular weight (g/mol)	Not Available
Flash point (°C)	Not Available	Taste	Not Available
Evaporation rate	Not Available	Explosive properties	Not Available
Flammability	Not Available	Oxidising properties	Not Available
Upper Explosive Limit (%)	Not Available	Surface Tension (dyn/cm or mN/m)	Not Available
Lower Explosive Limit (%)	Not Available	Volatile Component (%vol)	Not Available
Vapour pressure (kPa)	Not Available	Gas group	Not Available
Solubility in water (g/L)	Miscible	pH as a solution (1%)	Not Available
Vapour density (Air = 1)	Not Available	VOC g/L	Not Available

SECTION 10 STABILITY AND REACTIVITY

Reactivity	See section 7
Chemical stability	<ul style="list-style-type: none"> <li>Contact with alkaline material liberates heat</li> <li>Unstable in the presence of incompatible materials.</li> </ul>
Possibility of hazardous reactions	See section 7
Conditions to avoid	See section 7
Incompatible materials	See section 7
Hazardous decomposition products	See section 5

SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects

Inhaled	<p>Inhalation of vapours or aerosols (mists, fumes), generated by the material during the course of normal handling, may be harmful. The material can cause respiratory irritation in some persons.</p> <p>Corrosive acids can cause irritation of the respiratory tract, with coughing, choking and mucous membrane damage.</p> <p>Acute effects of fluoride inhalation include irritation of nose and throat, coughing and chest discomfort.</p> <p>Acute inhalation of hydrogen fluoride (hydrofluoric acid) vapours causes severe irritation of the eye, nose and throat, delayed fever, bluing of the extremities and</p>
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	water in the lungs, and may cause death.
<b>Ingestion</b>	Accidental ingestion of the material may be harmful; animal experiments indicate that ingestion of less than 150 gram may be fatal or may produce serious damage to the health of the individual. Ingestion of acidic corrosives may produce burns around and in the mouth, the throat and oesophagus. Fluoride causes severe loss of calcium in the blood, with symptoms appearing several hours later including painful and rigid muscle contractions of the limbs.
<b>Skin Contact</b>	Skin contact with the material may be harmful; systemic effects may result following absorption. Skin contact with acidic corrosives may result in pain and burns; these may be deep with distinct edges and may heal slowly with the formation of scar tissue. Contact of the skin with liquid hydrofluoric acid (hydrogen fluoride) may cause severe burns, erythema, and swelling, vesiculation, and serious crusting. Fluorides are easily absorbed through the skin and cause death of soft tissue and erode bone. Open cuts, abraded or irritated skin should not be exposed to this material Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects.
<b>Eye</b>	If applied to the eyes, this material causes severe eye damage. Direct eye contact with acid corrosives may produce pain, tears, sensitivity to light and burns. Animal testing showed that a 20% solution of hydrofluoric acid (hydrogen fluoride) in water caused immediate damage in the form of total clouding of the lens and ischaemia of the conjunctiva.
<b>Chronic</b>	Long-term exposure to respiratory irritants may result in airways disease, involving difficulty breathing and related whole-body problems. Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure. Repeated or prolonged exposure to acids may result in the erosion of teeth, swelling and/or ulceration of mouth lining. Extended exposure to inorganic fluorides causes fluorosis, which includes signs of joint pain and stiffness, tooth discolouration, nausea and vomiting, loss of appetite, diarrhoea or constipation, weight loss, anaemia, weakness and general unwellness. Hydrogen fluoride easily penetrates the skin and causes destruction and corrosion of the bone and underlying tissue.

<b>10 2-3 Antimony (10 µg/mL in 2% HNO3 + Tr HF)</b>	<b>TOXICITY</b>	<b>IRRITATION</b>
	Not Available	Not Available
<b>antimony</b>	<b>TOXICITY</b>	<b>IRRITATION</b>
	Dermal (rabbit) LD50: >8300 mg/kg <sup>[1]</sup>	Not Available
	Oral (rat) LD50: 100 mg/kg <sup>[2]</sup>	
<b>water</b>	<b>TOXICITY</b>	<b>IRRITATION</b>
	Not Available	Not Available
<b>nitric acid</b>	<b>TOXICITY</b>	<b>IRRITATION</b>
	Inhalation (rat) LC50: 625 ppm/1h <sup>[2]</sup>	Not Available
<b>hydrofluoric acid</b>	<b>TOXICITY</b>	<b>IRRITATION</b>
	Inhalation (rat) LC50: 1276 ppm/4hr <sup>[2]</sup>	Eye (human): 50 mg - SEVERE
	Inhalation (rat) LC50: 319 ppm/1hr <sup>[2]</sup>	

**Legend:** 1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2.\* Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances

<b>NITRIC ACID</b>	For acid mists, aerosols, vapours Test results suggest that eukaryotic cells are susceptible to genetic damage when the pH falls to about 6.5. The material may cause severe skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin. Oral (?) LD50: 50-500 mg/kg * [Various Manufacturers]
<b>HYDROFLUORIC ACID</b>	(liver and kidney damage) [Manufacturer] for hydrogen fluoride (as vapour)
<b>WATER &amp; HYDROFLUORIC ACID</b>	No significant acute toxicological data identified in literature search.
<b>NITRIC ACID &amp; HYDROFLUORIC ACID</b>	Asthma-like symptoms may continue for months or even years after exposure to the material ends.
<b>NITRIC ACID &amp; HYDROFLUORIC ACID</b>	The material may produce severe irritation to the eye causing pronounced inflammation.
<b>NITRIC ACID &amp; HYDROFLUORIC ACID</b>	The material may produce respiratory tract irritation, and result in damage to the lung including reduced lung function.

<b>Acute Toxicity</b>	✓	<b>Carcinogenicity</b>	⊘
<b>Skin Irritation/Corrosion</b>	✓	<b>Reproductivity</b>	⊘
<b>Serious Eye Damage/Irritation</b>	✓	<b>STOT - Single Exposure</b>	⊘
<b>Respiratory or Skin sensitisation</b>	⊘	<b>STOT - Repeated Exposure</b>	⊘
<b>Mutagenicity</b>	⊘	<b>Aspiration Hazard</b>	⊘

**Legend:** ✗ – Data available but does not fill the criteria for classification  
 ✓ – Data available to make classification  
 ⊘ – Data Not Available to make classification

SECTION 12 ECOLOGICAL INFORMATION

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**Toxicity**

10 2-3 Antimony (10 µg/mL in 2% HNO <sub>3</sub> + Tr HF)	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable

antimony	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	LC50	96	Fish	0.93mg/L	2
	EC50	48	Crustacea	1mg/L	2
	EC50	72	Algae or other aquatic plants	>2.4mg/L	2
	EC50	96	Crustacea	0.5mg/L	2
	NOEC	720	Fish	>0.0075mg/L	2

water	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable

nitric acid	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	NOEC	16	Crustacea	107mg/L	4

hydrofluoric acid	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	LC50	96	Fish	51mg/L	2
	EC50	48	Crustacea	=270mg/L	1
	EC50	96	Crustacea	26-48mg/L	2
	NOEC	504	Fish	4mg/L	2

**Legend:** Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 (QSAR) - Aquatic Toxicity Data (Estimated) 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data

**Ecotoxicity:**

The tolerance of water organisms towards pH margin and variation is diverse.  
 For Fluorides: Small amounts of fluoride have beneficial effects however; excessive intake over long periods may cause dental and/or skeletal fluorosis.  
 Prevent, by any means available, spillage from entering drains or water courses.  
**DO NOT discharge into sewer or waterways.**

**Persistence and degradability**

Ingredient	Persistence: Water/Soil	Persistence: Air
water	LOW	LOW

**Bioaccumulative potential**

Ingredient	Bioaccumulation
water	LOW (LogKOW = -1.38)

**Mobility in soil**

Ingredient	Mobility
water	LOW (KOC = 14.3)


**SECTION 13 DISPOSAL CONSIDERATIONS**

**Waste treatment methods**

Product / Packaging disposal	
	<ul style="list-style-type: none"> <li>Containers may still present a chemical hazard/ danger when empty.</li> <li>Recycle wherever possible.</li> </ul>

**SECTION 14 TRANSPORT INFORMATION**

**Labels Required**

	
Marine Pollutant	NO

**Land transport (DOT)**

UN number	3264
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10 2-3 Antimony (10 µg/mL in 2% HNO3 + Tr HF)

<b>UN proper shipping name</b>	Corrosive liquid, acidic, inorganic, n.o.s. (contains nitric acid)	
<b>Transport hazard class(es)</b>	Class	8
	Subrisk	Not Applicable
<b>Packing group</b>	II	
<b>Environmental hazard</b>	Not Applicable	
<b>Special precautions for user</b>	Hazard Label	8
	Special provisions	386, B2, IB2, T11, TP2, TP27

**Air transport (ICAO-IATA / DGR)**

<b>UN number</b>	3264	
<b>UN proper shipping name</b>	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (contains nitric acid)	
<b>Transport hazard class(es)</b>	ICAO/IATA Class	8
	ICAO / IATA Subrisk	Not Applicable
	ERG Code	8L
<b>Packing group</b>	II	
<b>Environmental hazard</b>	Not Applicable	
<b>Special precautions for user</b>	Special provisions	A3A803
	Cargo Only Packing Instructions	855
	Cargo Only Maximum Qty / Pack	30 L
	Passenger and Cargo Packing Instructions	851
	Passenger and Cargo Maximum Qty / Pack	1 L
	Passenger and Cargo Limited Quantity Packing Instructions	Y840
	Passenger and Cargo Limited Maximum Qty / Pack	0.5 L

**Sea transport (IMDG-Code / GGVSee)**

<b>UN number</b>	3264	
<b>UN proper shipping name</b>	Corrosive liquid, acidic, inorganic, n.o.s. * (contains nitric acid)	
<b>Transport hazard class(es)</b>	IMDG Class	8
	IMDG Subrisk	Not Applicable
<b>Packing group</b>	II	
<b>Environmental hazard</b>	Not Applicable	
<b>Special precautions for user</b>	EMS Number	F-A, S-B
	Special provisions	274
	Limited Quantities	1 L

**Transport in bulk according to Annex II of MARPOL and the IBC code**

Source	Product name	Pollution Category	Ship Type
IMO MARPOL (Annex II) - List of Noxious Liquid Substances Carried in Bulk	Nitric acid (70% and over) Nitric acid (less than 70%)	Y; Y	2 2

**SECTION 15 REGULATORY INFORMATION**

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

**ANTIMONY(7440-36-0) IS FOUND ON THE FOLLOWING REGULATORY LISTS**

US - Alaska Limits for Air Contaminants	US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants
US - California Permissible Exposure Limits for Chemical Contaminants	US - Washington Permissible exposure limits of air contaminants
US - Hawaii Air Contaminant Limits	US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants
US - Idaho - Limits for Air Contaminants	US ACGIH Threshold Limit Values (TLV)
US - Massachusetts - Right To Know Listed Chemicals	US Clean Air Act - Hazardous Air Pollutants
US - Michigan Exposure Limits for Air Contaminants	US CWA (Clean Water Act) - Priority Pollutants
US - Minnesota Permissible Exposure Limits (PELs)	US CWA (Clean Water Act) - Toxic Pollutants
US - Oregon Permissible Exposure Limits (Z-1)	US EPCRA Section 313 Chemical List
US - Pennsylvania - Hazardous Substance List	US NIOSH Recommended Exposure Limits (RELs)
US - Rhode Island Hazardous Substance List	US OSHA Permissible Exposure Levels (PELs) - Table Z1
US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants	US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory
US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants	

**WATER(7732-18-5) IS FOUND ON THE FOLLOWING REGULATORY LISTS**

US - Pennsylvania - Hazardous Substance List	US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory
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10 2-3 Antimony (10 µg/mL in 2% HNO3 + Tr HF)

**NITRIC ACID(7697-37-2) IS FOUND ON THE FOLLOWING REGULATORY LISTS**

International Air Transport Association (IATA) Dangerous Goods Regulations - Prohibited List Passenger and Cargo Aircraft	US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants
US - Alaska Limits for Air Contaminants	US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants
US - California OEHHA/ARB - Acute Reference Exposure Levels and Target Organs (RELS)	US - Washington Permissible exposure limits of air contaminants
US - California Permissible Exposure Limits for Chemical Contaminants	US - Washington Toxic air pollutants and their ASIL, SQER and de minimis emission values
US - Hawaii Air Contaminant Limits	US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants
US - Idaho - Limits for Air Contaminants	US ACGIH Threshold Limit Values (TLV)
US - Massachusetts - Right To Know Listed Chemicals	US CWA (Clean Water Act) - List of Hazardous Substances
US - Michigan Exposure Limits for Air Contaminants	US EPCRA Section 313 Chemical List
US - Minnesota Permissible Exposure Limits (PELs)	US NIOSH Recommended Exposure Limits (RELS)
US - Oregon Permissible Exposure Limits (Z-1)	US OSHA Permissible Exposure Levels (PELs) - Table Z1
US - Pennsylvania - Hazardous Substance List	US SARA Section 302 Extremely Hazardous Substances
US - Rhode Island Hazardous Substance List	US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory
US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants	

**HYDROFLUORIC ACID(7664-39-3) IS FOUND ON THE FOLLOWING REGULATORY LISTS**

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs	US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants
US - Alaska Limits for Air Contaminants	US - Washington Permissible exposure limits of air contaminants
US - California OEHHA/ARB - Acute Reference Exposure Levels and Target Organs (RELS)	US - Washington Toxic air pollutants and their ASIL, SQER and de minimis emission values
US - California OEHHA/ARB - Chronic Reference Exposure Levels and Target Organs (CRELS)	US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants
US - California Permissible Exposure Limits for Chemical Contaminants	US - Wyoming Toxic and Hazardous Substances Table Z-2 Acceptable ceiling concentration, Acceptable maximum peak above the acceptable ceiling concentration for an 8-hr shift
US - Hawaii Air Contaminant Limits	US ACGIH Threshold Limit Values (TLV)
US - Idaho - Acceptable Maximum Peak Concentrations	US ACGIH Threshold Limit Values (TLV) - Carcinogens
US - Idaho - Limits for Air Contaminants	US ATSDR Minimal Risk Levels for Hazardous Substances (MRLs)
US - Massachusetts - Right To Know Listed Chemicals	US Clean Air Act - Hazardous Air Pollutants
US - Michigan Exposure Limits for Air Contaminants	US CWA (Clean Water Act) - List of Hazardous Substances
US - Minnesota Permissible Exposure Limits (PELs)	US EPCRA Section 313 Chemical List
US - Oregon Permissible Exposure Limits (Z-1)	US NIOSH Recommended Exposure Limits (RELS)
US - Oregon Permissible Exposure Limits (Z-2)	US OSHA Permissible Exposure Levels (PELs) - Table Z1
US - Pennsylvania - Hazardous Substance List	US OSHA Permissible Exposure Levels (PELs) - Table Z2
US - Rhode Island Hazardous Substance List	US SARA Section 302 Extremely Hazardous Substances
US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants	US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory
US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants	

**Federal Regulations**

**Superfund Amendments and Reauthorization Act of 1986 (SARA)**

**SECTION 311/312 HAZARD CATEGORIES**

Immediate (acute) health hazard	Yes
Delayed (chronic) health hazard	No
Fire hazard	No
Pressure hazard	No
Reactivity hazard	No

**US. EPA CERCLA HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES (40 CFR 302.4)**

Name	Reportable Quantity in Pounds (lb)	Reportable Quantity in kg
Antimony	5000	2270
Nitric acid	1000	454
Hydrofluoric acid	100	45.4

**State Regulations**

**US. CALIFORNIA PROPOSITION 65**

None Reported

National Inventory	Status
Australia - AICS	Y
Canada - DSL	Y
Canada - NDSL	N (water; antimony; hydrofluoric acid; nitric acid)
China - IECSC	Y
Europe - EINEC / ELINCS / NLP	Y
Japan - ENCS	N (water; antimony; hydrofluoric acid; nitric acid)
Korea - KECI	Y
New Zealand - NZIoC	Y
Philippines - PICCS	Y
USA - TSCA	Y
<b>Legend:</b>	Y = All ingredients are on the inventory N = Not determined or one or more ingredients are not on the inventory and are not exempt from listing(see specific ingredients in brackets)

10 2-3 Antimony (10 µg/mL in 2% HNO<sub>3</sub> + Tr HF)

**SECTION 16 OTHER INFORMATION**

**Other information**

**Ingredients with multiple cas numbers**

Name	CAS No
hydrofluoric acid	7664-39-3, 790596-14-4

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment.

**Definitions and abbreviations**

PC – TWA: Permissible Concentration-Time Weighted Average  
PC – STEL: Permissible Concentration-Short Term Exposure Limit  
IARC: International Agency for Research on Cancer  
ACGIH: American Conference of Governmental Industrial Hygienists  
STEL: Short Term Exposure Limit  
TEEL: Temporary Emergency Exposure Limit,  
IDLH: Immediately Dangerous to Life or Health Concentrations  
OSF: Odour Safety Factor  
NOAEL: No Observed Adverse Effect Level  
LOAEL: Lowest Observed Adverse Effect Level  
TLV: Threshold Limit Value  
LOD: Limit Of Detection  
OTV: Odour Threshold Value  
BCF: BioConcentration Factors  
BEI: Biological Exposure Index

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