

# DataDot Glasmat Cream

DataDot Technology Australia

Chemwatch Hazard Alert Code: 3

Chemwatch: 42-5355

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Safety Data Sheet according to WHS and ADG requirements

Initial Date: Not Available

S.GHS.AUS.EN

## SECTION 1 IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

### Product Identifier

Product name	DataDot Glasmat Cream
Synonyms	Not Available
Proper shipping name	TOXIC SOLID, CORROSIVE, INORGANIC, N.O.S. (contains ammonium bifluoride)
Chemical formula	Not Applicable
Other means of identification	Not Available
CAS number	Not Applicable

### Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses	Engraving-matting paste.
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### Details of the manufacturer/importer

Registered company name	DataDot Technology Australia		
Address	9/19 Rodborough Road Frenchs Forest 2086 NSW Australia		
Telephone	+61 2 8977 4900http://www		
Fax	Not Available		
Website	Not Available		
Email	Not Available		

### Emergency telephone number

Association / Organisation	Not Available		
Emergency telephone numbers	Not Available		
Other emergency telephone numbers	Not Available		


## SECTION 2 HAZARDS IDENTIFICATION

### Classification of the substance or mixture

**HAZARDOUS CHEMICAL. DANGEROUS GOODS.** According to the Model WHS Regulations and the ADG Code.

Poisons Schedule	S7
GHS Classification [1]	Metal Corrosion Category 1, Acute Toxicity (Oral) Category 3, Skin Corrosion/Irritation Category 1A, Serious Eye Damage Category 1
Legend:	1. Classified by Chemwatch; 2. Classification drawn from HSIS ; 3. Classification drawn from EC Directive 1272/2008 - Annex VI

### Label elements

GHS label elements	
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SIGNAL WORD	<b>DANGER</b>
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**Hazard statement(s)**

<b>H290</b>	May be corrosive to metals
<b>H301</b>	Toxic if swallowed
<b>H314</b>	Causes severe skin burns and eye damage
<b>H318</b>	Causes serious eye damage

**Precautionary statement(s): Prevention**

<b>P260</b>	Do not breathe dust/fume/gas/mist/vapours/spray.
<b>P270</b>	Do not eat, drink or smoke when using this product.
<b>P280</b>	Wear protective gloves/protective clothing/eye protection/face protection.
<b>P234</b>	Keep only in original container.

**Precautionary statement(s): Response**

<b>P301+P310</b>	IF SWALLOWED: Immediately call a POISON CENTER/doctor/physician/first aider
<b>P301+P330+P331</b>	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
<b>P303+P361+P353</b>	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
<b>P305+P351+P338</b>	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
<b>P321</b>	Specific treatment (see advice on this label).
<b>P363</b>	Wash contaminated clothing before reuse.
<b>P390</b>	Absorb spillage to prevent material damage.

**Precautionary statement(s): Storage**

<b>P405</b>	Store locked up.
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**Precautionary statement(s): Disposal**

<b>P501</b>	Dispose of contents/container to authorised chemical landfill or if organic to high temperature incineration
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**SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS****Substances**

See section below for composition of Mixtures

**Mixtures**

CAS No	%[weight]	Name
1341-49-7	10-25	<a href="#">ammonium bifluoride</a>
7664-93-9	2.5-10	<a href="#">sulfuric acid</a>

**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 <a href="#">calcium gluconate gel</a> 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> </ul>

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	<ul style="list-style-type: none"> <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</b> or <b>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> </ul> <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</b> or <b>calcium carbonate</b> tablets in water by mouth.</li> <li>▶ Transport to hospital, or doctor, urgently.</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>
<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>

### 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	Prior to shift	B, NS
	10mg/gm creatinine	End of shift	B, NS

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

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

Depending on the degree of exposure, periodic medical examination is indicated. The symptoms of lung oedema often do not manifest until a few hours have passed and they are aggravated by physical effort. Rest and medical observation is therefore essential. Immediate administration of an appropriate spray, by a doctor or a person authorised by him/her should be considered.

(ICSC24419/24421)

## SECTION 5 FIREFIGHTING MEASURES

### Extinguishing media

- ▶ Water spray or fog.
- ▶ Foam.
- ▶ Dry chemical powder.
- ▶ BCF (where regulations permit).
- ▶ Carbon dioxide.

### Special hazards arising from the substrate or mixture

<b>Fire Incompatibility</b>	None known.
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### Advice for firefighters

#### Fire Fighting

- ▶ Alert Fire Brigade and tell them location and nature of hazard.
- ▶ Wear full body protective clothing with breathing apparatus.
- ▶ Prevent, by any means available, spillage from entering drains or water course.
- ▶ Use fire fighting procedures suitable for surrounding area.
- ▶ **Do not approach containers suspected to be hot.**
- ▶ Cool fire exposed containers with water spray from a protected location.
- ▶ If safe to do so, remove containers from path of fire.

#### Fire/Explosion Hazard

- ▶ Non combustible.
  - ▶ Not considered to be a significant fire risk.
  - ▶ Acids may react with metals to produce hydrogen, a highly flammable and explosive gas.
  - ▶ Heating may cause expansion or decomposition leading to violent rupture of rigid containers.
  - ▶ May emit acrid smoke. May emit corrosive and poisonous fumes.
- Decomposition may produce toxic fumes of: , hydrogen fluoride , nitrogen oxides (NOx), sulfur oxides (SOx)

## SECTION 6 ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

#### Minor Spills

- ▶ Remove all ignition sources.
- ▶ Clean up all spills immediately.
- ▶ Avoid contact with skin and eyes.
- ▶ Control personal contact with the substance, by using protective equipment.
- ▶ Use dry clean up procedures and avoid generating dust.
- ▶ Place in a suitable, labelled container for waste disposal.
- ▶ Drains for storage or use areas should have retention basins for pH adjustments and dilution of spills before discharge or disposal of material.

#### Major Spills

- ▶ Clear area of personnel and move upwind.
- ▶ Alert Fire Brigade and tell them location and nature of hazard.
- ▶ Wear full body protective clothing with breathing apparatus.
- ▶ Prevent, by any means available, spillage from entering drains or water course.
- ▶ Stop leak if safe to do so.
- ▶ Contain spill with sand, earth or vermiculite.
- ▶ Collect recoverable product into labelled containers for recycling.

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

## SECTION 7 HANDLING AND STORAGE

### Precautions for safe handling

<b>Safe handling</b>	<ul style="list-style-type: none"> <li>▶ Avoid all personal contact, including inhalation.</li> <li>▶ Wear protective clothing when risk of exposure occurs.</li> <li>▶ Use in a well-ventilated area.</li> <li>▶ Prevent concentration in hollows and sumps.</li> <li>▶ <b>DO NOT enter confined spaces until atmosphere has been checked.</b></li> <li>▶ <b>DO NOT allow material to contact humans, exposed food or food utensils.</b></li> <li>▶ Avoid contact with incompatible materials.</li> </ul>
<b>Other information</b>	<ul style="list-style-type: none"> <li>▶ Store in original containers.</li> <li>▶ Keep containers securely sealed.</li> <li>▶ Store in a cool, dry, well-ventilated area.</li> <li>▶ Store away from incompatible materials and foodstuff containers.</li> <li>▶ Protect containers against physical damage and check regularly for leaks.</li> <li>▶ Observe manufacturer's storage and handling recommendations contained within this MSDS.</li> </ul>

### 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> <li>▶ Plastic pail.</li> <li>▶ Polyliner drum.</li> <li>▶ Packing as recommended by manufacturer.</li> <li>▶ Check all containers are clearly labelled and free from leaks.</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>▶ Where a can is to be used as an inner package, the can must have a screwed enclosure.</li> </ul>
<b>Storage incompatibility</b>	<p>Ammonium bifluoride:</p> <ul style="list-style-type: none"> <li>▶ reacts with water forming a weak solution of hydrofluoric acid</li> <li>▶ reacts violently with bases releasing ammonia gas</li> <li>▶ attacks glass, cement and most metals in the presence of moisture</li> <li>▶ upon contact with moisture and metal may release flammable hydrogen gas which may collect in confined spaces -a void aluminium, nickel or steel containers</li> <li>▶ when heated to decomposition emits toxic and corrosive fumes of ammonia, hydrogen fluoride and nitric oxides</li> </ul> <p>Inorganic acids are generally soluble in water with the release of hydrogen ions. The resulting solutions have pH's of less than 7.0.</p> <ul style="list-style-type: none"> <li>▶ Inorganic acids neutralise chemical bases (for example: amines and inorganic hydroxides) to form salts - neutralisation can generate dangerously large amounts of heat in small spaces.</li> <li>▶ The dissolution of inorganic acids in water or the dilution of their concentrated solutions with additional water may generate significant heat.</li> <li>▶ The addition of water to inorganic acids often generates sufficient heat in the small region of mixing to cause some of the water to boil explosively. The resulting "bumping" can spatter the acid.</li> <li>▶ Inorganic acids react with active metals, including such structural metals as aluminum and iron, to release hydrogen, a flammable gas.</li> </ul>

#### PACKAGE MATERIAL INCOMPATIBILITIES

Not Available

## SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

### Control parameters

#### OCCUPATIONAL EXPOSURE LIMITS (OEL)

#### INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
Australia Exposure Standards	ammonium bifluoride	Fluorides (as F)	2.5 mg/m3	Not Available	Not Available	Not Available
Australia Exposure Standards	sulfuric acid	Sulphuric acid	1 mg/m3	3 mg/m3	Not Available	Not Available

#### EMERGENCY LIMITS

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Ingredient	TEEL-0	TEEL-1	TEEL-2	TEEL-3
ammonium bifluoride	3.75 ppm	3.75 ppm	3.75 ppm	3.75 ppm
sulfuric acid	0.2 ppm	0.2 ppm	8.7 ppm	160 ppm

Ingredient	Original IDLH	Revised IDLH
ammonium bifluoride	500 mg/m3	250 mg/m3
sulfuric acid	80 mg/m3	15 mg/m3

**Exposure controls**

<b>Appropriate engineering controls</b>	<p>Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.</p> <p>The basic types of engineering controls are:</p> <p>Process controls which involve changing the way a job activity or process is done to reduce the risk.</p> <p>Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment. Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use.</p> <p>Employers may need to use multiple types of controls to prevent employee overexposure.</p>
<b>Personal protection</b>	
<b>Eye and face protection</b>	<ul style="list-style-type: none"> <li>▶ Chemical goggles.</li> <li>▶ Full face shield may be required for supplementary but never for primary protection of eyes.</li> <li>▶ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable.</li> </ul>
<b>Skin protection</b>	See Hand protection below
<b>Hands/feet protection</b>	<ul style="list-style-type: none"> <li>▶ Wear chemical protective gloves, e.g. PVC.</li> <li>▶ Wear safety footwear or safety gumboots, e.g. Rubber</li> </ul> <p>The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.</p> <p>The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice.</p> <p>Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include:</p> <ul style="list-style-type: none"> <li>▶ frequency and duration of contact,</li> <li>▶ chemical resistance of glove material,</li> <li>▶ glove thickness and</li> <li>▶ dexterity</li> </ul> <p>Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739, AS/NZS 2161.1 or national equivalent).</p> <ul style="list-style-type: none"> <li>▶ When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.</li> </ul>
<b>Body protection</b>	See Other protection below
<b>Other protection</b>	<ul style="list-style-type: none"> <li>▶ Overalls.</li> <li>▶ PVC Apron.</li> <li>▶ PVC protective suit may be required if exposure severe.</li> <li>▶ Eyewash unit.</li> <li>▶ Ensure there is ready access to a safety shower.</li> </ul>
<b>Thermal hazards</b>	Not Available

**Recommended material(s)**

**GLOVE SELECTION INDEX**

Glove selection is based on a modified presentation of the: **"Forsberg Clothing Performance Index"**. The effect(s) of the following substance(s) are taken into account in the **computer-generated** selection:  
DataDot Glasmat Cream Not Available

Material	CPI

**Respiratory protection**

Type E-P Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

Where the concentration of gas/particulates in the breathing zone, approaches or exceeds the "Exposure Standard" (or ES), respiratory protection is required.

Degree of protection varies with both face-piece and Class of filter; the nature of protection varies with Type of filter.

Required	Half-Face	Full-Face	Powered Air

\* CPI - Chemwatch Performance Index

A: Best Selection

B: Satisfactory; may degrade after 4 hours continuous immersion

C: Poor to Dangerous Choice for other than short term immersion

**NOTE:** As a series of factors will influence the actual performance of the glove, a final selection must be based on detailed observation. -

\* Where the glove is to be used on a short term, casual or infrequent basis, factors such as "feel" or convenience (e.g. disposability), may dictate a choice of gloves which might otherwise be unsuitable following long-term or frequent use. A qualified practitioner should be consulted.

Minimum Protection Factor	Respirator	Respirator	Respirator
up to 10 x ES	E-AUS P2	-	E-PAPR-AUS / Class 1 P2
up to 50 x ES	-	E-AUS / Class 1 P2	-
up to 100 x ES	-	E-2 P2	E-PAPR-2 P2 ^

^ - Full-face

A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO<sub>2</sub>), G = Agricultural chemicals, K = Ammonia(NH<sub>3</sub>), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

## SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

<b>Appearance</b>	Violet highly acidic waxy paste with characteristic odour; mixes with water.		
<b>Physical state</b>	Non Slump Paste	<b>Relative density (Water = 1)</b>	1.024
<b>Odour</b>	Not Available	<b>Partition coefficient n-octanol / water</b>	Not Available
<b>Odour threshold</b>	Not Available	<b>Auto-ignition temperature (°C)</b>	Not Available
<b>pH (as supplied)</b>	0.5	<b>Decomposition temperature</b>	180
<b>Melting point / freezing point (°C)</b>	Not Applicable	<b>Viscosity (cSt)</b>	4016
<b>Initial boiling point and boiling range (°C)</b>	>100	<b>Molecular weight (g/mol)</b>	Not Applicable
<b>Flash point (°C)</b>	Not Applicable	<b>Taste</b>	Not Available
<b>Evaporation rate</b>	Not Available	<b>Explosive properties</b>	Not Available
<b>Flammability</b>	Not Applicable	<b>Oxidising properties</b>	Not Available
<b>Upper Explosive Limit (%)</b>	Not Applicable	<b>Surface Tension (dyn/cm or mN/m)</b>	Not Available
<b>Lower Explosive Limit (%)</b>	Not Applicable	<b>Volatile Component (%vol)</b>	Not Available
<b>Vapour pressure (kPa)</b>	2.3@ 20C	<b>Gas group</b>	Not Available
<b>Solubility in water (g/L)</b>	Miscible	<b>pH as a solution(1%)</b>	Not Available
<b>Vapour density (Air = 1)</b>	Not Available	<b>VOC g/L</b>	Not Available

## SECTION 10 STABILITY AND REACTIVITY

<b>Reactivity</b>	See section 7
<b>Chemical stability</b>	<ul style="list-style-type: none"> <li>▶ Unstable in the presence of incompatible materials.</li> <li>▶ Product is considered stable.</li> <li>▶ Hazardous polymerisation will not occur.</li> </ul>
<b>Possibility of hazardous reactions</b>	See section 7
<b>Conditions to avoid</b>	See section 7
<b>Incompatible materials</b>	See section 7
<b>Hazardous decomposition products</b>	See section 5

## SECTION 11 TOXICOLOGICAL INFORMATION



## Information on toxicological effects

<b>Inhaled</b>	<p>Inhalation of dusts, generated by the material during the course of normal handling, may produce serious damage to the health of the individual.</p> <p>Acute effects of fluoride inhalation include irritation of nose and throat, coughing and chest discomfort.</p> <p>Even brief exposure to high concentrations of inorganic fluoride may cause sore throat, chest pains, pulmonary oedema, and in rare cases irreparable damage to the lungs, and death</p> <p>A single acute over-exposure may cause nose bleed. Pre-existing respiratory conditions such as emphysema, bronchitis may be aggravated by exposure. Occupational asthma may result from exposure.</p> <p>Persons with impaired respiratory function, airway diseases and conditions such as emphysema or chronic bronchitis, may incur further disability if excessive concentrations of particulate are inhaled.</p> <p>If prior damage to the circulatory or nervous systems has occurred or if kidney damage has been sustained, proper screenings should be conducted on individuals who may be exposed to further risk if handling and use of the material result in excessive exposures.</p>
<b>Ingestion</b>	<p>Toxic effects may result from the accidental ingestion of the material; animal experiments indicate that ingestion of less than 40 gram may be fatal or may produce serious damage to the health of the individual.</p> <p>The material can produce chemical burns within the oral cavity and gastrointestinal tract following ingestion.</p> <p>Fluoride is a general protoplasmic poison which appears to produce at least four major functional derangements; (1) enzyme inhibition, (2) hypocalcaemia, (3) cardiovascular collapse and (4) specific organ damage.</p> <p>Hypocalcaemia which leads to severe reductions in plasma levels of both total calcium and ionic calcium, may appear several hours after exposure producing painful and involuntary muscular contractions (tetany) initially of the extremities (carpedal spasm, twitching of limb muscles, laryngo-spasm, cardiospasm etc). Cardiovascular collapse is probably the principal cause of death in acute fluoride poisoning with sinus tachycardia the commonest cardiac finding and serious cardiac arrhythmias also common. Poisonings also cause major adverse effects on the brain and kidneys.</p> <p>Toxic effects may include headache, excessive salivation, rapid movements of the eyeball (nystagmus) and dilated pupils.</p>
<b>Skin Contact</b>	<p>The material can produce chemical burns following direct contact with the skin.</p> <p>Skin contact with the material may damage the health of the individual; systemic effects may result following absorption.</p> <p>The skin is readily penetrated by the fluoride ion causing liquefaction necrosis of the soft tissues and decalcification and corrosion of bone. Healing is delayed and necrotic changes may continue to occur and spread beneath a layer of tough coagulated skin.</p> <p>Percutaneous absorption of pure liquefied hydrogen fluoride gas produced severe hypocalcaemia, multiple attacks of ventricular fibrillation, and death 9.5 hours after exposure. Skin contact with hydrogen fluoride or solutions containing more than 30 percent hydrogen fluoride produces immediate pain; reactions to more dilute solutions may be delayed for many hours. The accompanying pain is excruciating and persistent due to delayed healing.</p>
<b>Eye</b>	<p>The material can produce chemical burns to the eye following direct contact. Vapours or mists may be extremely irritating.</p> <p>When applied to the eye(s) of animals, the material produces severe ocular lesions which are present twenty-four hours or more after instillation.</p> <p>Direct eye contact with acid corrosives may produce pain, lachrymation, photophobia and burns. Mild burns of the epithelia generally recover rapidly and completely. Severe burns produce long-lasting and possible irreversible damage. The appearance of the burn may not be apparent for several weeks after the initial contact.</p>
<b>Chronic</b>	<p>Limited evidence suggests that repeated or long-term occupational exposure may produce cumulative health effects involving organs or biochemical systems.</p> <p>Long term exposure to vapour or dust with inorganic fluorides may result in fluorosis, with rheumatic symptoms, stiff joints, mottling of tooth enamel. Other signs may include nausea, vomiting, anorexia, diarrhoea or constipation, weight loss, anaemia, weakness and general ill-health. Polyuria and polydipsia may also occur. Exfoliative dermatitis, atopic dermatitis, stomatitis, gastrointestinal and respiratory allergy, and on occasions, central nervous system involvement have all been described.</p> <p>Repeated or prolonged exposure to acids may result in the erosion of teeth, inflammatory and ulcerative changes in the mouth and necrosis (rarely) of the jaw. Bronchial irritation, with cough, and frequent attacks of bronchial pneumonia may ensue.</p>

<b>DataDot Glasmat Cream</b>	<b>TOXICITY</b>	<b>IRRITATION</b>
	Not Available	Not Available
<b>ammonium bifluoride</b>	<b>TOXICITY</b>	<b>IRRITATION</b>
	Inhalation (mouse) LC50: 342 ppm/1hr*	*[Bayer]
	Inhalation (rat) LC50: 1276 ppm/1hr*	Eye (-): corrosive*
	Not Available	Skin (-): corrosive*
	Not Available	Not Available
<b>sulfuric acid</b>	<b>TOXICITY</b>	<b>IRRITATION</b>
	Inhalation (rat) LC50: 510 mg/m <sup>3</sup> /2h	Eye (rabbit): 1.38 mg SEVERE



Oral (rat) LD50: 2140 mg/kg	Eye (rabbit): 5 mg/30sec SEVERE
Not Available	Not Available

Not available. Refer to individual constituents.

<b>AMMONIUM BIFLUORIDE</b>	as fluoride anion
<b>SULFURIC ACID</b>	Occupational exposures to strong inorganic acid mists of sulfuric acid:
<b>AMMONIUM BIFLUORIDE, SULFURIC ACID</b>	Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. A reversible airflow pattern, on spirometry, with the presence of moderate to severe bronchial hyperreactivity on methacholine challenge testing and the lack of minimal lymphocytic inflammation, without eosinophilia, have also been included in the criteria for diagnosis of RADS. RADS (or asthma) following an irritating inhalation is an infrequent disorder with rates related to the concentration of and duration of exposure to the irritating substance. Industrial bronchitis, on the other hand, is a disorder that occurs as result of exposure due to high concentrations of irritating substance (often particulate in nature) and is completely reversible after exposure ceases. The disorder is characterised by dyspnea, cough and mucus production.

<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 required to make classification available  
 ✗ – Data available but does not fill the criteria for classification  
 ⊘ – Data Not Available to make classification

## CMR STATUS

Not Applicable

## SECTION 12 ECOLOGICAL INFORMATION

### Toxicity

**DO NOT discharge into sewer or waterways.**

### Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
Not Available	Not Available	Not Available

### Bioaccumulative potential

Ingredient	Bioaccumulation
Not Available	Not Available

### Mobility in soil

Ingredient	Mobility
Not Available	Not Available

## SECTION 13 DISPOSAL CONSIDERATIONS

### Waste treatment methods

<b>Product / Packaging disposal</b>	Recycle wherever possible. ▶ Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no
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Continued...

- ▶ suitable treatment or disposal facility can be identified.
- ▶ Treat and neutralise at an approved treatment plant. Treatment should involve: Mixing or slurring in water; Neutralisation with soda-lime or soda-ash followed by: burial in a land-fill specifically licenced to accept chemical and / or pharmaceutical wastes or Incineration in a licenced apparatus (after admixture with suitable combustible material)
- ▶ Decontaminate empty containers with 5% aqueous sodium hydroxide or soda ash, followed by water. Observe all label safeguards until containers are cleaned and destroyed.

## SECTION 14 TRANSPORT INFORMATION

### Labels Required

	 
Marine Pollutant	NO
HAZCHEM	2X

### Land transport (ADG)

UN number	3290				
Packing group	II				
UN proper shipping name	TOXIC SOLID, CORROSIVE, INORGANIC, N.O.S. (contains ammonium bifluoride)				
Environmental hazard	No relevant data				
Transport hazard class(es)	<table border="1"> <tr> <td>Class</td> <td>6.1</td> </tr> <tr> <td>Subrisk</td> <td>8</td> </tr> </table>	Class	6.1	Subrisk	8
Class	6.1				
Subrisk	8				
Special precautions for user	<table border="1"> <tr> <td>Special provisions</td> <td>274</td> </tr> <tr> <td>Limited quantity</td> <td>500 g</td> </tr> </table>	Special provisions	274	Limited quantity	500 g
Special provisions	274				
Limited quantity	500 g				

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

UN number	3290														
Packing group	II														
UN proper shipping name	Toxic solid, corrosive, inorganic, n.o.s. * (contains ammonium bifluoride)														
Environmental hazard	No relevant data														
Transport hazard class(es)	<table border="1"> <tr> <td>ICAO/IATA Class</td> <td>6.1</td> </tr> <tr> <td>ICAO / IATA Subrisk</td> <td>8</td> </tr> <tr> <td>ERG Code</td> <td>6C</td> </tr> </table>	ICAO/IATA Class	6.1	ICAO / IATA Subrisk	8	ERG Code	6C								
ICAO/IATA Class	6.1														
ICAO / IATA Subrisk	8														
ERG Code	6C														
Special precautions for user	<table border="1"> <tr> <td>Special provisions</td> <td>A5</td> </tr> <tr> <td>Cargo Only Packing Instructions</td> <td>675</td> </tr> <tr> <td>Cargo Only Maximum Qty / Pack</td> <td>50 kg</td> </tr> <tr> <td>Passenger and Cargo Packing Instructions</td> <td>668</td> </tr> <tr> <td>Passenger and Cargo Maximum Qty / Pack</td> <td>15 kg</td> </tr> <tr> <td>Passenger and Cargo Limited Quantity Packing Instructions</td> <td>Y644</td> </tr> <tr> <td>Passenger and Cargo Limited Maximum Qty / Pack</td> <td>1 kg</td> </tr> </table>	Special provisions	A5	Cargo Only Packing Instructions	675	Cargo Only Maximum Qty / Pack	50 kg	Passenger and Cargo Packing Instructions	668	Passenger and Cargo Maximum Qty / Pack	15 kg	Passenger and Cargo Limited Quantity Packing Instructions	Y644	Passenger and Cargo Limited Maximum Qty / Pack	1 kg
Special provisions	A5														
Cargo Only Packing Instructions	675														
Cargo Only Maximum Qty / Pack	50 kg														
Passenger and Cargo Packing Instructions	668														
Passenger and Cargo Maximum Qty / Pack	15 kg														
Passenger and Cargo Limited Quantity Packing Instructions	Y644														
Passenger and Cargo Limited Maximum Qty / Pack	1 kg														

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

UN number	3290
Packing group	II
UN proper shipping name	TOXIC SOLID, CORROSIVE, INORGANIC, N.O.S. (contains ammonium bifluoride)
Environmental hazard	No relevant data

<b>Transport hazard class(es)</b>	IMDG Class	6.1
	IMDG Subrisk	8
<b>Special precautions for user</b>	EMS Number	F-A , S-B
	Special provisions	274
	Limited Quantities	500 g

### Transport in bulk according to Annex II of MARPOL 73 / 78 and the IBC code

Source	Ingredient	Pollution Category
IMO MARPOL 73/78 (Annex II) - List of Noxious Liquid Substances Carried in Bulk	sulfuric acid	Y

## SECTION 15 REGULATORY INFORMATION

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

<b>ammonium bifluoride(1341-49-7) is found on the following regulatory lists</b>	"Australia - New South Wales Protection of the Environment Operations (Waste) Regulation 2005 - Waste transported within NSW or interstate and required to be tracked"; "Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 5"; "Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Appendix F (Part 3)"; "International Council of Chemical Associations (ICCA) - High Production Volume List"; "International Maritime Dangerous Goods Requirements (IMDG Code)"; "Australia - Queensland Health (Drugs and Poisons) Regulation 1996 - Appendix 7: Regulated poisons"; "Australia Exposure Standards"; "International Maritime Dangerous Goods Requirements (IMDG Code) - Substance Index"; "Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Appendix J (Part 2)"; "Australia New Zealand Food Standards Code - Maximum Residue Limits (Australia only) - Schedule 1"; "Australia FAISD Handbook - First Aid Instructions, Warning Statements, and General Safety Precautions"; "United Nations Recommendations on the Transport of Dangerous Goods Model Regulations (English)"; "Australia Dangerous Goods Code (ADG Code) - List of Emergency Action Codes"; "Australia Inventory of Chemical Substances (AICS)"; "OECD List of High Production Volume (HPV) Chemicals"; "Australia Hazardous Waste Act - List A Wastes"; "Belgium Federal Public Service Mobility and Transport, Regulations concerning the International Carriage of Dangerous Goods by Rail - Table A: Dangerous Goods List - RID 2013 (Dutch)"; "OECD Existing Chemicals Database"; "The Australia Group Export Control List: Chemical Weapons Precursors"; "Australia National Pollutant Inventory"; "UNECE - Kiev Protocol on Pollutant Release and Transfer Registers - Annex II"; "Sigma-AldrichTransport Information"; "United Nations Recommendations on the Transport of Dangerous Goods Model Regulations (Spanish)"; "Australia Dangerous Goods Code (ADG Code) - Dangerous Goods List"; "Australia Hazardous Substances Information System - Consolidated Lists"; "International Air Transport Association (IATA) Dangerous Goods Regulations"; "Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Appendix E (Part 2)"; "Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 7"; "Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 6"; "Acros Transport Information"
<b>sulfuric acid(7664-93-9) is found on the following regulatory lists</b>	"Australia Customs (Prohibited Exports) Regulations 1958 - Schedule 9 Precursor substances - Part 2"; "Australia Illicit Drug Reagents/Essential Chemicals - Category III"; "IMO MARPOL 73/78 (Annex II) - List of Noxious Liquid Substances Carried in Bulk"; "Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Appendix F (Part 3)"; "International Council of Chemical Associations (ICCA) - High Production Volume List"; "International Maritime Dangerous Goods Requirements (IMDG Code)"; "United Nations Convention Against Illicit Traffic in Narcotic Drugs and Psychotropic Substances - Table II"; "Australia Exposure Standards"; "International Maritime Dangerous Goods Requirements (IMDG Code) - Substance Index"; "Australia Council of Australian Governments (COAG) Chemicals of Security Concern"; "Australia FAISD Handbook - First Aid Instructions, Warning Statements, and General Safety Precautions"; "United Nations Recommendations on the Transport of Dangerous Goods Model Regulations (English)"; "FisherTransport Information"; "Australia Dangerous Goods Code (ADG Code) - List of Emergency Action Codes"; "Australia Inventory of Chemical Substances (AICS)"; "OECD List of High Production Volume (HPV) Chemicals"; "International Air Transport Association (IATA) Dangerous Goods Regulations - Prohibited List Passenger and Cargo Aircraft"; "Belgium Federal Public Service Mobility and Transport, Regulations concerning the International Carriage of Dangerous Goods by Rail - Table A: Dangerous Goods List - RID 2013 (Dutch)"; "International Numbering System for Food Additives"; "OECD Existing Chemicals Database"; "OSPAR National List of Candidates for Substitution - United Kingdom"; "Australia National Pollutant Inventory"; "Australia High Volume Industrial Chemical List (HVICL)"; "Sigma-AldrichTransport Information"; "United Nations Recommendations on the Transport of Dangerous Goods Model Regulations (Spanish)"; "Australia Dangerous Goods Code (ADG Code) - Dangerous Goods List"; "Australia Hazardous Substances Information System - Consolidated Lists"; "International Air Transport Association (IATA) Dangerous Goods Regulations"; "GESAMP/EHS Composite List - GESAMP Hazard Profiles"; "Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Appendix E (Part 2)"; "United Nations List of Precursors and Chemicals Frequently used in the Illicit Manufacture of Narcotic Drugs and Psychotropic Substances Under International Control (Red List) - Table II"; "Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 6"; "IMO IBC Code Chapter 17: Summary of minimum requirements"

## SECTION 16 OTHER INFORMATION

## Other information

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.

A list of reference resources used to assist the committee may be found at:

[www.chemwatch.net/references](http://www.chemwatch.net/references)

The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

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