

Product Name: MAG WHEEL CLEANER

Date of Issue: JAN 2017

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## SECTION 1 – STATEMENT OF CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

SUPPLIER:	GLEAM-IT PRODUCTS		
ADDRESS:	Unit 4, 12 Commercial Drive, Ashmore, Qld 4214 Australia.		
Trade Name:	MAG WHEEL CLEANER		
TELEPHONE:	(07) 5531 1544	FAX:	(07) 5591 1800
AH EMERGENCY TELEPHONE:	13 1126 in Australia	Product Code:	
Substance:	Water based	Product Use:	HD acid cleaner.
Creation Date:	Jan 2017	Revision Date:	Jan 2022

## SECTION 2 – HAZARDS IDENTIFICATION

## Classification of the substance or mixture

Poisons Schedule	S7 (HYDROFLUORIC ACID)
Dangerous Goods	Classified as Dangerous Goods CLASS 8, subsidiary risk 6.1.
GHS Classification	Serious Eye Damage/Irritation Category 1 Skin Corrosion/Irritation Category 1A Acute Toxicity (Oral) Category 3 Acute Toxicity (Dermal) Category 3 Acute Toxicity (Inhalation) Category 3 Corrosive to Metals Category 1

## Label elements

GHS label pictograms	 
	GHS 06                      GHS 05

Signal word **DANGER**

## Hazard statement(s)

<b>H318</b>	Causes serious eye damage.
<b>H314</b>	Causes severe skin burns and eye damage.
<b>H331</b>	Toxic if inhaled.
<b>H311</b>	Toxic in contact with skin.
<b>H301</b>	Toxic if swallowed.
<b>H290</b>	May be corrosive to metals.

## Precautionary statement(s): General

<b>P102</b>	Keep out of reach of children.
<b>P103</b>	Read label before use.

## Precautionary statement(s): Prevention

<b>P260</b>	Do not breathe dusts or mists.
<b>P261</b>	Avoid breathing fume/gas/mist/vapours/spray.
<b>P264</b>	Wash hands/skin thoroughly after handling.
<b>P270</b>	Do not eat, drink or smoke when using this product.
<b>P271</b>	Use only outdoors or in a well-ventilated area.
<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>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.
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<b>P310</b>	Immediately call a POISON CENTER or doctor/physician.
<b>P303 + P361 + P353</b>	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
<b>P312</b>	Call a POISON CENTER or doctor/physician if you feel unwell.
<b>P362</b>	Take off contaminated clothing and wash before reuse.
<b>P363</b>	Wash contaminated clothing before reuse.
<b>P301 + P330 + P331</b>	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
<b>P301 + P310</b>	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
<b>P304 + P340</b>	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
<b>P310</b>	Immediately call a POISON CENTER or doctor/physician.
<b>P321</b>	Specific treatment (see First Aid Measures on Safety Data Sheet).
<b>P322</b>	Specific measures (see First Aid Measures on Safety Data Sheet).
<b>P390</b>	Absorb spillage to prevent material damage.
<b>Precautionary statement(s): Storage</b>	
<b>P405</b>	Store locked up.
<b>P403 + P233</b>	Store in a well-ventilated place. Keep container tightly closed.
<b>P406</b>	Store in corrosive resistant/...container with a resistant inner liner.
<b>Precautionary statement(s): Disposal</b>	
<b>P501</b>	Dispose of contents/ container in accordance with local regulations.
<b>Note</b>	
<b>IMPORTANT</b>	This SDS and the Hazard Classifications contained therein, only apply to the product in its concentrated form, as supplied. When diluted to 1:50 or greater they no longer apply. However, good hygiene and housekeeping practices should be adhered to.

**SECTION 3 – COMPOSITION AND INFORMATION ON INGREDIENTS**

Ingredients:	CAS Number:	Proportion:
Hydrofluoric acid	7664-39-3	< 10 % w/w
Sulfuric acid	7664-93-9	< 10 % w/w
Ingredients determined to be non-hazardous	various	<10 % w/w
Water	7732-18-5	To 100 % w/w

NOTE: Ingredients determined not to be hazardous are present in concentrations that do not exceed the relevant cut-off concentrations as found from NOHSC publication "List of Designated Hazardous Substances" or have been found NOT to meet the criteria of a hazardous substance as defined in the NOHSC publication "Approved Criteria for Classifying Hazardous Substances", or have been found NOT to meet the criteria of a dangerous substance as defined in the GLOBALLY HARMONIZED SYSTEM OF CLASSIFICATION AND LABELLING OF CHEMICALS (GHS), 4th edition United Nations 2011. Listed ingredients may be below the cut-off concentrations for classification as hazardous, but are listed for information purposes and for additive effects.

**SECTION 4 – FIRST AID MEASURES**

<b>Inhalation</b>	IMMEDIATELY remove the patient to an uncontaminated atmosphere. Call a physician. Administer oxygen as soon as possible. Trained personnel should provide calcium gluconate, 2.5% solution, by nebulizer with patient in sitting position. Keep patient warm. Patients not breathing: If exposed person is not breathing, do not give mouth to mouth resuscitation; instead use an Ambu-bag. Do not administer any liquids or solids to an unconscious person.
<b>Skin contact</b>	IMMEDIATELY shower with large quantities of water, within seconds after contact or suspected contact, and completely remove all clothing while in shower (remove goggles last). FLUSH SKIN THOROUGHLY WITH WATER FOR 5 MINUTES. Flushing with water thoroughly for 5 minutes is sufficient to effectively remove HF from skin. Additional flushing time is unnecessary and will delay further treatment. Apply calcium gluconate (2.5%) gel at burn site or area of contamination by rubbing in continuously. Wear impervious gloves. Examination and treatment by a physician is recommended as quickly as feasible. It may be necessary to transport patient to

	nearest hospital emergency room. Remember that concentrated HF causes immediate pain, BUT DILUTE HF SOLUTIONS MAY NOT CAUSE REDNESS, BURNING OR PAIN UNTIL SEVERAL MINUTES OR EVEN HOURS HAVE ELAPSED.
Eye contact	IMMEDIATELY flush eyes with large quantities of water for 5 MINUTES while holding the eyelids apart. Trained personnel should apply calcium gluconate 1% (no stronger) by continuous drip. If skills are available at the scene, a Morgan Therapeutic Lens can be used to irrigate the eyes with a calcium gluconate 1% solution. THE EYES WILL REQUIRE FURTHER TREATMENT-- SEE NOTES TO PHYSICIAN--"EYE CONTACT".
Ingestion	DO NOT induce vomiting. If patient is conscious, give water orally to dilute followed by antacid or milk. Seek medical assistance immediately. Call a physician. Throat burns may cause severe swelling and require a tracheotomy (opening the windpipe). The patient should be admitted to the hospital and carefully attended.
Advice to Doctor	<p><b>NOTES TO PHYSICIANS:</b></p> <p>Choice of therapy following first aid measures is at the discretion of attending physician. Selection of the best treatment will depend on the following factors:</p> <ul style="list-style-type: none"><li>• Concentration and temperature of the HF.</li><li>• Degree and extent of the burn.</li><li>• Duration of exposure.</li><li>• Areas of the body affected.</li><li>• Elapsed time since exposure.</li><li>• First aid measures taken before physician's arrival.</li><li>• Age and clinical history of patient.</li><li>• General condition of the patient.</li></ul> <p>The following methods have been effective in treatment of HF burns. Methods are broken down by routes of exposure. Minor exposures are limited exposures to HF liquid and vapor. Major exposures are extensive exposures to HF liquid and vapor and all cases of combined routes of exposure, e.g., skin and inhalation exposures. Patients suffering suspected face or chest skin exposure should be assumed to have incurred inhalation exposure also. Be certain that the patient has been properly decontaminated. In all cases of major exposure by HF, hypocalcemia may be present, therefore, calcium levels must be determined immediately upon arrival at the hospital. During hospitalization calcium levels should be monitored frequently. If possible, blood should be drawn for serum calcium in site medical facility and sent to the hospital with the patient. Cardiac monitoring (EKG) is necessary (hypocalcemia causes prolonged Q-T interval and may cause cardiac rhythm abnormalities). Renal and liver function should be monitored. In major inhalation exposure, pulmonary edema or edema of upper airway may occur. Blood gases should be monitored accordingly.</p> <p><b>SKIN CONTACT:</b> Care should be taken to see that personnel who apply the gel, especially on the initial application, wear medical gloves to prevent skin contamination with HF and the development of hand burns.</p> <p>Topically applied Calcium Gluconate Gel (2.5%) must be rubbed into all burn areas continuously until pain has completely subsided, but not longer than 30 minutes. Calcium gluconate gel should not be used until after thorough and complete washing of the skin with water for 5 minutes. If some relief of pain is not obtained within 20-30 minutes, consider calcium gluconate topical injections using stainless steel needle.</p> <p><b>Severe Skin Burns:</b></p> <p>When there is evidence of skin penetration as in second or third degree burns or for large burns, a 5% calcium gluconate solution may be injected using a small gauge needle (no. 30) by infiltrating the skin and subcutaneous tissues in the same manner as injection of any local anesthetic. The standard ampoule of 10% calcium gluconate for intravenous use must be diluted to 5% by mixing with an equal amount of normal sterile saline. Care should be taken to avoid overdosing with calcium. Do not inject more than 0.5 mL per square centimeter of affected skin surface. No local infiltration of anesthetic should be used, but in the case of severe burns,</p>

	<p>regional or general anesthesia may be considered. DO NOT INJECT CALCIUM CHLORIDE to treat skin burns. In cases of overexposure due to HF, as in skin burns of greater than approximately 2 square inches (13 cm<sup>2</sup>) in area, hypocalcemia may be present. Therefore, systemic administration of calcium gluconate may be necessary. Infusions can be repeated until serum calcium, EKG or symptoms improve. Frequent monitoring of serum calcium, cardiac, renal, and hepatic functions is necessary. Treat hypomagnesemia with 1-2 grams of magnesium.</p> <p><b>HAND BURNS:</b> The treatment for hand burns require expert assistance; consult a hand surgeon. Intra arterial calcium infusions have been successfully used to treat HF hand exposures. Calcium gluconate in very small doses can be injected into the fingers. In some cases, burr holes must be drilled in the nail or the nail must be split or removed to permit adequate contact with the sequestering agent. Local anesthesia may be required, but be aware that it may interfere with determining the adequacy of treatment. Care must be used because multiple injections into the fingers can lead to pressure necrosis. Patients whose skin has compromised integrity may have an increased risk of infection after multiple injections of calcium gluconate. Consider the use of antibiotic creams such as Silvadene or Garamycin in these cases.</p> <p><b>EYE CONTACT:</b> Immediate washing of the eyes with large quantities of water for 5 minutes should be followed by continuous drip of 1% calcium gluconate (no stronger) in normal, sterile saline using a nasal prong or Morgan Lens. Up to 500 mL over 1-2 hours may be used. A topical anesthetic can minimize the tendency of the eyelid to close and facilitate inserting an irrigation lens. If exposure was minor, perform visual acuity testing and examine the eyes for corneal damage using fluorescein and a slit lamp. An eye specialist (ophthalmologist) should be consulted immediately.</p> <p><b>VAPOR INHALATION:</b> Persons suspected of having had HF exposure by inhalation should immediately be given 100% oxygen by mask or catheter. As soon as possible (as precautionary treatment), they should be administered (in the sitting position and utilizing a nebulizer) 2.5% calcium gluconate solution by inhalation for 20 minutes. All those suspected of HF exposure and who experience signs and/or symptoms of respiratory irritation should be considered as strong candidates for admission to an intensive care unit for careful observation during the first 24-48 hours. Delayed pulmonary edema is likely in patients with burns of the skin of face or neck. Patient should be carefully watched for edema of the upper airway with respiratory obstruction and the airway maintained by tracheotomy or endotracheal intubation if necessary. The administration of respiratory care should be very closely supervised and most likely includes continued administration of 2.5% calcium gluconate by inhalation. Toxicity from pulmonary absorption of fluoride ion may rapidly develop in the liver and kidneys and may require more energetic measures of control, up to and including hemodialysis, particularly if the blood urea nitrogen and potassium levels rise. Supportive care is necessary for all organ systems.</p> <p><b>INGESTION:</b> THIS SITUATION IS LIFE THREATENING. DO NOT INDUCE VOMITING AND DO NOT USE ACTIVATED CHARCOAL. Refer to first aid measures as described. Extreme throat swelling may cause airway obstruction, which may require endotracheal intubation or cricothyroidotomy.</p>
<b>Scheduled Poisons</b>	Poisons Information Centre in each Australian State capital city or in Christchurch, New Zealand can provide additional assistance for scheduled poisons. (Phone Australia 131126 or New Zealand 0800 764 766).
<b>First Aid Facilities</b>	Calcium Gluconate Gel (2.5%). Eye wash and emergency shower.

<b>Fire and Explosion Hazards</b>	Non flammable liquid. However, on evaporation of the aqueous component, the residual material may burn. HF (particularly in dilute aqueous solutions) will attack most metals, releasing potentially explosive hydrogen gas.
<b>Extinguishing Media</b>	Use an extinguishing media suitable for surrounding fires. Water Fog, Dry Chemical, CO <sub>2</sub> .
<b>Fire Fighting</b>	Keep containers exposed to extreme heat cool with water spray. Fire fighters to wear self-contained breathing apparatus if risk of exposure to products of combustion or decomposition.
<b>Flash Point</b>	None

**SECTION 6 – ACCIDENTAL RELEASE MEASURES**



<b>Emergency Procedures</b>	Evacuate area and keep upwind until gas has dispersed. Enter contaminated area only with full protective equipment and self-contained breathing apparatus. Dike spill. Dilute with water fog (direct addition of water or alkali causes heat and violent spattering). Neutralize with lime. Do not flush to sewer. Comply with Federal, State, and Local regulations on reporting releases. WATER MITIGATION: The use of water sprays on HF vapors from a release have been found to be effective in removing HF from the air, and thus lowering the amount leaving the spill area. HF removal efficiencies of 25% - 90% have been demonstrated at water to HF ratios of 6:1 to 60:1. Do NOT spray water directly on the leak source as increased corrosion may occur making the leak larger. Dispose of waste according to the applicable local and national regulations. If contamination of sewers or waterways occurs inform the local water and waste management authorities in accordance with local regulations.
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**SECTION 7 – HANDLING AND STORAGE**

<b>Handling</b>	DO NOT store or use in confined spaces. Do not enter these areas without respiratory protection or until the atmosphere has been checked. Keep tank covered and containers sealed when not in use. Build up and inhalation of fumes in the atmosphere must be prevented. Do not breathe vapor or mist. Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling. Avoid all personal contact, including inhalation. Wear protective clothing when risk of exposure occurs. Avoid contact with incompatible materials. When handling, DO NOT eat, drink or smoke. Keep containers closed at all times. Avoid physical damage to containers. Always wash hands with soap and water after handling. Work clothes should be laundered. Launder contaminated clothing before re-use.
<b>Storage</b>	Store in a cool, dry, place with good ventilation. Avoid storing in aluminium and light alloy containers. Store away from acids. Keep containers closed at all times – check regularly for leaks. Drainage facilities should be constructed for containment of small spills. This material is a Scheduled Poison S7 and must be stored, maintained and used in accordance with the relevant regulations. Ensure that storage conditions comply with applicable local and national regulations.

**SECTION 8 – EXPOSURE CONTROLS AND PERSONAL PROTECTION**

<b>Exposure Limits</b>	National Occupational Exposure Limits, as published by National Occupational Health & Safety Commission: <b>Time-weighted Average (TWA):</b> None established for product. <ul style="list-style-type: none"><li>Hydrogen fluoride: 3ppm 2.6 mg/m<sup>3</sup> Peak limitation</li><li>Sulfuric acid: 1 mg/m<sup>3</sup></li></ul> <b>Short Term Exposure Limit (STEL):</b> None established for product. <ul style="list-style-type: none"><li>Sulfuric acid: 3 mg/m<sup>3</sup></li></ul>
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<p><b>Ventilation</b></p>	<p>A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, Industrial Ventilation, A Manual of Recommended Practices, most recent edition, for details.</p> <p>Personal Respirators (NIOSH Approved):</p> <p>If the exposure limit is exceeded briefly, a full facepiece respirator with an acid gas cartridge may be worn. For short elevated exposures, eg, spillages:- Appropriate organic vapour cartridge respirator as per the requirements of AS/NZS 1715 and AS/NZS 1716 (Respiratory protective devices). For emergencies or instances where the exposure levels are not known, use a full-facepiece positive-pressure, air-supplied respirator. Exposure Limit by more than ten times, air supplied apparatus should be used).</p> <p>WARNING: Air purifying respirators do not protect workers in oxygen-deficient atmospheres. Since the IDLH is low (30 ppm), the above cartridge system is not specifically approved for HF. (3M Respirator Selection Guide)</p>
<p><b>Personal Protective Equipment</b></p>	<p>Use good occupational work practice. The use of protective clothing and equipment depends upon the degree and nature of exposure. The following protective equipment should be available;</p>
<p><b>Eye Protection</b></p> 	<p>Wear chemical splash goggles. In addition, where the possibility exists for face contact due to splashing or spraying of the material, wear a full-length face shield/chemical splash goggle combination or an acid hood.</p> <p>Contact lenses pose a special hazard ; soft lenses may absorb irritants and all lenses concentrate them.</p>
<p><b>Hand Protection</b></p> 	<p>Wear gloves of impervious material such as butyl rubber, natural latex, neoprene, PVC and nitrile – to handle in quantity, clean up spills, decanting, etc. Final choice of appropriate gloves will vary according to individual circumstances. i.e. methods of handling or according to risk assessments undertaken. Occupational protective gloves should conform to relevant regulations. Reference should be made to AS/NZS 2161.1: Occupational protective gloves - Selection, use and maintenance.</p>
<p><b>Body Protection</b></p> 	<p>Wear overalls, boots and impervious gloves (as per AS/NZS 2161, or as recommended by supplier). Where there is potential for skin contact, have available and wear as appropriate: acid resistant rubber gauntlet gloves, boots, and acid resistant jacket and pants. If there is any possibility of direct contact, wear a full acid suit of acid resistant material with hood, gloves, boots, and full-face air supplied respirator. The highest degree of protection, used for large leaks or in an emergency situation, is provided by a fully encapsulating acid resistant suit (one piece construction) with a self-contained breathing apparatus. Protective clothing and equipment should not be worn or carried outside of the operating area. Wash protective clothing and equipment under a safety shower after exposure, or suspected exposure, to hydrofluoric acid.</p>

## Respirator



Personal Respirators (NIOSH Approved):

If the exposure limit is exceeded briefly, a full facepiece respirator with an acid gas cartridge may be worn. For short elevated exposures, eg, spillages:- Appropriate organic vapour cartridge respirator as per the requirements of AS/NZS 1715 and AS/NZS 1716 (Respiratory protective devices). For emergencies or instances where the exposure levels are not known, use a full-facepiece positive-pressure, air-supplied respirator. Exposure Limit by more than ten times, air supplied apparatus should be used). WARNING: Air purifying respirators do not protect workers in oxygen-deficient atmospheres. Since the IDLH is low (30 ppm), the above cartridge system is not specifically approved for HF.

EMERGENCY OR PLANNED ENTRY INTO UNKNOWN CONCENTRATION OR IDLH CONDITIONS: Positive pressure, with full-facepiece SCBA or positive pressure, full-facepiece SAR with an auxiliary positive pressure SCBA. (3M Respirator Selection Guide) Final choice of appropriate breathing protection is dependant upon actual airborne concentrations and the type of breathing protection required will vary according to individual circumstances. Expert advice may be required to make this decision.

ABBREVIATIONS:

SAR = supplied air respirator

SCBA = self contained breathing apparatus

IDLH = Immediately Dangerous to Life or Health

Note : In these recommendations, the IDLH concentration is defined as the maximum concentration which would not cause any escape impairing symptoms or irreversible health effects to a person exposed for 30 minutes if the respirator failed.

## SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Non-viscous liquid	Colour	colourless
Odour	Pungent odour	Specific Gravity	1.04 – 1.05 @ 25 °C
Boiling Point	Approximately 100 °C	Freezing Point	Approximately 0 °C
Vapour Pressure	Not available	Vapour Density	Not available
Flash Point	Not flammable	Flammable Limits	none
Water Solubility	Miscible in all proportions	pH	<1.0 neat
Volatile Organic Compounds (VOC)	0 % v/v	Per Cent Volatile	Ca 80 % v/v
Viscosity	Not available	Odour Threshold	Not available

## SECTION 10 – STABILITY AND REACTIVITY

Reactivity	Stable at normal temperatures and pressure.
Conditions to Avoid	Extremes of temperature and direct sunlight. Decomposes by reaction with metals, liberates hydrogen gas. On heating to decomposition, could yield toxic fumes of fluorides. Attacks glass and other silicon containing compounds. Reacts with silica to reduce silicon tetrafluoride, a hazardous colorless gas. Evaporation would produce hydrogen fluoride gas.
Incompatibilities	Reducing agents, oxidizing agents. Incompatible with arsenic trioxide, phosphorous pentoxide, ammonia, calcium oxide, sodium hydroxide, acetate, ethylenediamine, acetic anhydride.
Hazardous Decomposition	Thermal decomposition may result in the release of toxic and/or irritating fumes. Attacks many reactive metals (aluminium/magnesium/zinc alloys) releasing highly flammable gas (hydrogen) which generates fire or explosion hazards. Attacks glass and other silicon containing compounds. Reacts with silica to reduce silicon tetrafluoride, a hazardous colorless gas. Evaporation would produce hydrogen fluoride gas.

## SECTION 11 – TOXICOLOGICAL INFORMATION

POTENTIAL HEALTH EFFECTS	
No adverse health effects expected if the product is handled in accordance with this Safety Data Sheet and the product label. Symptoms or effects that may arise if the product is mishandled and overexposure occurs are:	
<b>Inhalation</b>	Inhaled Hydrogen Fluoride mist or vapour initially affects the nose, throat, and eyes. Mild clinical effects include mucous-membrane irritation and inflammation, cough, and narrowing of the bronchi. Severe clinical effects include an almost immediate narrowing and swelling of the throat, causing upper airway obstruction and lung injury that may evolve rapidly or may be delayed in onset for 12 to 36 hours. These severe effects can include choking and coughing; severe throat irritation followed by fever, chills, difficulty in breathing, cyanosis and pulmonary oedema, accumulation of fluid in the lungs, constriction of the bronchi, and partial or complete lung collapse can occur. Death may occur. Pulmonary effects can result even from Hydrogen Fluoride splashes on the skin due to inhalation of fumes from the area splashed.
<b>Skin contact</b>	Depending on the concentration and duration of exposure, skin contact may produce pain, redness of skin, and deep slow-healing burns. Hydrogen Fluoride solutions of less than 20% cause almost no immediate pain on contact but may cause delayed serious injury 12 to 24 hours later; latent skin burns with necrosis can occur even at concentrations of at least 2%. Healing of skin burns caused by concentrated Hydrogen Fluoride may be prolonged, and extensive scarring may result. In some forms, fluoride can readily penetrate the skin and deep tissue causing destruction of soft tissue and decalcification of bone. Tissue destruction and neutralization of HF may proceed for days. HF can be absorbed through the skin in toxic amounts.
<b>Eye contact</b>	Mild effects of Hydrogen Fluoride exposure include rapid onset of eye irritation with discomfort, tearing, or blurring of vision. More severe effects, which may result from even minor hydrofluoric acid splashes, include sloughing of the surface of the eye, swelling of various structures of the eye, corrosion of the eye with corneal or conjunctival ulceration and cell death due to lack of blood supply. Potentially permanent clouding of the eye surface may develop immediately or after several days. Permanent loss of vision can occur.
<b>Ingestion</b>	Ingestion of Hydrogen Fluoride may cause corrosive injury to the mouth, throat and oesophagus. Inflammation of the stomach with bleeding occurs commonly. Nausea, vomiting, diarrhea, and abdominal pain may occur. Systemic effects are likely. An acid-base imbalance can occur after acute ingestion. Pulmonary aspiration may lead to respiratory complications. Hydrogen Fluoride ingestion may cause progressive damage to the oesophagus and stomach for weeks after ingestion. Persistent narrowing of the oesophagus may result. Death may occur.
<b>Chronic exposure</b>	Intake of more than 6 mg of fluorine per day may result in fluorosis, bone and joint damage. Hypocalcemia and hypomagnesemia can occur from absorption of fluoride ion into blood stream. Prolonged exposure to mists and vapours of sulphuric acid can cause erosion of teeth, chronic irritation of eyes, nose and throat and chronic inflammation of airways. Chronic exposure to mists containing sulfuric acid is a cancer hazard.
<b>Additional Effects</b>	Overexposure by inhalation or skin contact may lead to systemic effects. These effects are due to Hydrogen Fluoride's penetration of cells and its rapid dissociation into hydrogen and fluoride ions. The dissociated fluoride can penetrate and migrate into tissue and bind with calcium primarily, but also magnesium, sodium, and potassium. Local bone demineralization, systemic deficiency of calcium (hypocalcemia) and magnesium, and excess potassium can occur. Hypocalcemia can lead to life-threatening cardiac arrhythmias. The adverse effect of the fluoride ion may progress for several days after exposure. Prolonged exposure to Hydrogen Fluoride vapor can cause fluorosis which may also result in weight loss, brittle bones, anemia, weakness and stiffness of joints, and discoloration of the teeth when exposure occurs during tooth formation.
<b>Toxicology Information</b>	Toxic if swallowed, if inhaled and in contact with skin, based on ingredients.
<b>Carcinogen Status</b>	
<b>NOHSC</b>	No significant ingredient is classified as carcinogenic by NOHSC.
<b>NTP</b>	No significant ingredient is classified as carcinogenic by NTP.
<b>IARC</b>	No significant ingredient is classified as carcinogenic by IARC.



Respiratory sensitisation	Not expected to be a respiratory sensitizer.
Skin Sensitisation	Not expected to be a skin sensitizer.
Germ cell mutagenicity	Not considered to be a mutagenic hazard.
Reproductive Toxicity	Not considered to be toxic to reproduction.
STOT-single exposure	Acute Toxicity (Inhalation) Category 3.
STOT-repeated exposure	Acute Toxicity (Inhalation) Category 3.
Aspiration Hazard	Not expected to be an aspiration hazard.


## SECTION 12 – ECOLOGICAL INFORMATION

Eco-toxicity Product (as sold)	Harmful to aquatic life. Acute Aquatic Toxicity Category 3 - (LC50 >10 mg/L but < 100mg/L).
Eco-toxicity Product (at use dilution 1:100 rinse)	Not harmful to aquatic life. LC50 > 100mg/L. Acute Aquatic Toxicity NOT HAZARDOUS
Persistence and degradability	Biodegradable, based on ingredients.
Bio accumulative potential	No bioaccumulation is expected.
Mobility in soil	Due to its physico-chemical characteristics, highly mobile in the environment and will partition to the aquatic compartment.
Other adverse effects	Not available
Environmental Protection	Do not discharge this material into waterways.

## SECTION 13 – DISPOSAL CONSIDERATIONS

	Dispose of waste according to applicable local and national regulations. Do not allow into drains or watercourses or dispose of where ground or surface waters may be affected. Wastes including emptied containers are controlled wastes and should be disposed of in accordance with all applicable local and national regulations.
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## SECTION 14 – TRANSPORT INFORMATION

Labels Required	
ADG	 <p>Classified as Dangerous Goods.</p>
IMDG Marine Pollutant	No
HAZCHEM	2XE
Land Transport (ADG)	
UN Number	2922
Proper shipping name	CORROSIVE LIQUID, TOXIC, N.O.S. (HYDROFLUORIC ACID & SULFURIC ACID)
HAZCHEM Code	2XE
Special Provisions	274
Subsidiary risk	6.1
Packing Group	II
Packaging Method	P001 IBC02

<b>Segregation</b>	This material is a Class 8 Corrosive Substance according to the Australian Code for the Transport of Dangerous Goods by Road and Rail. Class 8 - Corrosive Substances are incompatible in a placard load with any of the following: Class 1, Explosives, Class 4.3, Dangerous When Wet Substances, Class 5.1, Oxidising Agents & Class 5.2 Organic Peroxides, Class 6, Toxic Substances (where the Toxic substances are cyanides and the corrosives are acids), Class 7, Radioactive Substances, Class 8, Corrosive Substances (concentrated strong acid is to be segregated from strong alkali), and are incompatible with food and food packaging in any quantity.
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**SECTION 15 – REGULATORY INFORMATION**

<b>GHS Classification</b>	Classified as Hazardous according to the Globally Harmonised System of Classification and labelling of Chemicals (GHS) including Work, Health and Safety regulations, Australia.
<b>SUSMP</b>	S7 (hydrofluoric acid)
<b>ADG Code</b>	DG class 8, subsidiary risk 6.1
<b>AICS</b>	All ingredients present on AICS.

**SECTION 16 – OTHER INFORMATION**

<b>Issue Date</b>	4 <sup>th</sup> January 2017
<b>Version Number</b>	V 2.0 GHS classification
<b>Abbreviations and acronyms</b>	<p><b>ADG Code:</b> Australian Code for the Transport of Dangerous Goods by Road and Rail.</p> <p><b>AICS:</b> Australian Inventory of Chemical Substances.</p> <p><b>CAS Number:</b> Chemical Abstracts Service Registry Number.</p> <p><b>GHS:</b> Globally Harmonized System of Classification and Labelling of Chemicals</p> <p><b>HAZCHEM:</b> An emergency action code of numbers and letters which gives information to emergency services.</p> <p><b>HSIS:</b> Hazardous Substances Information System</p> <p><b>IARC:</b> International Agency for Research on Cancer.</p> <p><b>NOHSC:</b> National Occupational Health and Safety Commission.</p> <p><b>NTP:</b> National Toxicology Program (USA).</p> <p><b>SDS:</b> Safety Data Sheet</p> <p><b>STEL:</b> Short Term Exposure Limit.</p> <p><b>SUSMP:</b> Standard for the Uniform Scheduling of Medicines and Poisons.</p> <p><b>TWA:</b> Time Weighted Average.</p> <p><b>UN Number:</b> United Nations Number.</p>
<b>Literature references</b>	<p>Preparation of Safety Data Sheets for Hazardous Chemicals – Code of Practice ( Safe Work Australia)</p> <p>GHS Hazardous Chemical Information List (Safe Work Australia)</p> <p>Guidance on the Classification of Hazardous Chemicals under the WHS Regulations.</p> <p>Global Harmonized System of Classification and Labelling of Chemicals (GHS)</p> <p>“Australian Exposure Standards”. Safework Australia</p> <p>Australian Code For The Transport Of Dangerous Goods By Road And Rail</p> <p>Standard for the Uniform Scheduling of Medicines and Poisons</p> <p>Material Safety Data Sheets – individual raw materials – Suppliers</p> <p>HSIS – Hazardous Substance Information System – National Safe Work Australia Data Base.</p> <p>HCIS – Hazardous Chemical Information System – National Safe Work Australia Data Base.</p>
<b>Disclaimer</b>	This MSDS summarizes at the date of issue our best knowledge of the health and safety hazard information of this product, and in particular how to safely handle and use this product in the workplace. Since the supplier cannot anticipate or control the conditions under which the product may be used, each user must, prior to usage, review this MSDS in the context of how the user intends to handle and use the product in the workplace. If clarification or further

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information is needed to ensure that an appropriate assessment can be made, the user should contact this supplier.

**End of SDS**