

## Weldbrite

Callington Haven Pty Ltd

Chemwatch: 4512-19

Version No: 9.1.1.1

Safety Data Sheet according to WHS and ADG requirements

Chemwatch Hazard Alert Code: 4

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

#### Product Identifier

Product name	Weldbrite
Synonyms	weld scale remover stainless steel pickling paste
Proper shipping name	CORROSIVE LIQUID, TOXIC, N.O.S. (contains nitric acid and hydrofluoric acid)
Other means of identification	Not Available

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

Relevant identified uses	Thickened stainless steel pickling paste.
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#### Details of the supplier of the safety data sheet

Registered company name	Callington Haven Pty Ltd
Address	30 South Street Rydalmere NSW 2116 Australia
Telephone	+61 2 9898 2700
Fax	+61 2 9475 0449
Website	www.callingtonhaven.com
Email	customerservice@callington.com

#### Emergency telephone number

Association / Organisation	Chemwatch	CHEMWATCH EMERGENCY RESPONSE
Emergency telephone numbers	+61 1800 951 288	+61 1800 951 288
Other emergency telephone numbers	+61 2 9186 1132	+61 2 9186 1132

Once connected and if the message is not in your preferred language then please dial 01

### SECTION 2 HAZARDS IDENTIFICATION

#### Classification of the substance or mixture

Poisons Schedule	S7
Classification (1)	Acute Toxicity (Oral) Category 3, Acute Toxicity (Dermal) Category 3, Acute Toxicity (Inhalation) Category 3, Skin Corrosion/Irritation Category 1A, Serious Eye Damage Category 1, Skin Sensitizer Category 1, Germ cell mutagenicity Category 2
Legend:	1. Classified by Chemwatch; 2. Classification drawn from HCIS; 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI

#### Label elements

Hazard pictogram(s)	
SIGNAL WORD	DANGER

#### Hazard statement(s)

H301	Toxic if swallowed.
H311	Toxic in contact with skin.
H331	Toxic if inhaled.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H341	Suspected of causing genetic defects.

#### Precautionary statement(s) Prevention

P201	Obtain special instructions before use.
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Weldbrite

P260	Do not breathe mist/vapours/spray.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P281	Use personal protective equipment as required.
P272	Contaminated work clothing should not be allowed out of the workplace.

Precautionary statement(s) Response

P301+P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P301+P330+P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313	IF exposed or concerned: Get medical advice/attention.
P321	Specific treatment (see advice on this label).
P322	Specific measures (see advice on this label).
P363	Wash contaminated clothing before reuse.
P302+P352	IF ON SKIN: Wash with plenty of water.
P304+P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.

Precautionary statement(s) Storage

P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.

Precautionary statement(s) Disposal

P501	Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation.
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SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

Substances

See section below for composition of Mixtures

Mixtures

CAS No	%[weight]	Name
7697-37-2	10-30	<u>nitric acid</u>
7664-39-3	<10	<u>hydrofluoric acid</u>
Not Available	10-30	performance additives
7732-18-5	>60	<u>water</u>
Not Available		NOTE: Manufacturer has supplied full ingredient
Not Available		information to allow CHEMWATCH assessment.

SECTION 4 FIRST AID MEASURES

Description of first aid measures

Eye Contact	<p>DO NOT delay.</p> <p>If this product or its vapours come in contact with the eyes,</p> <ul style="list-style-type: none"> <li>DO NOT DELAY: Immediately irrigate continuously by holding the eyelids apart and washing with fresh 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, eye clinic or eye specialist, ophthalmologist without delay.</li> </ul>
Skin Contact	<p>DO NOT delay.</p> <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 calcium gluconate gel 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 calcium gluconate gel 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 calcium gluconate or calcium carbonate tablets in water by mouth.</li> <li>Transport to hospital, or doctor, urgently.</li> </ul>
Inhalation	<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> </ul>

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**Ingestion**

- ▶ 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.
- ▶ If victim is conscious, give six calcium gluconate or calcium carbonate tablets in water by mouth.
- ▶ Transport to hospital, or doctor, urgently.

DO NOT delay.

Rinse mouth out with plenty of water.

Transport to hospital or doctor and seek immediate medical attention.

DO NOT INDUCE vomiting.

If patient is conscious, give six calcium gluconate or calcium carbonate tablets dissolved in water, by mouth.

**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.

**SECTION 5 FIREFIGHTING MEASURES****Extinguishing media**

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

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

- ▶ Avoid any contamination of this material as it is very reactive and any contamination is potentially hazardous
- Avoid storage with glass, cement, concrete and other silicon materials; reaction produces toxic silicon tetrafluoride gas; which may pressurise and/or rupture containers.
- Avoid reaction with organic materials / compounds powdered metals reducing agents and hydrogen sulfide (H<sub>2</sub>S) as ignition may result
- ▶ Reacts with mild steel, galvanised steel / zinc producing hydrogen gas which may form an explosive mixture with air.

**Advice for firefighters****Fire Fighting**

- ▶ Alert Fire Brigade and tell them location and nature of hazard.
- ▶ Wear full body protective clothing with breathing apparatus.
- ▶ Consider evacuation (or protect in place).
- ▶ Use water delivered as a fine spray to control fire and cool adjacent 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.
- ▶ Equipment should be thoroughly decontaminated after use.

**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 containers.
- ▶ Decomposes on heating and may produce toxic fumes of carbon monoxide (CO).
- ▶ May emit acid smoke. May emit corrosive fumes.

Other decomposition products include:

carbon dioxide (CO<sub>2</sub>)

hydrogen fluoride

nitrogen oxides (NO<sub>x</sub>)**HAZCHEM**

2X

**SECTION 6 ACCIDENTAL RELEASE MEASURES**

Continued...

## Personal precautions, protective equipment and emergency procedures

See section 8

## Environmental precautions

See section 12

## Methods and material for containment and cleaning up

Minor Spills	<p>Slippery when spill.</p> <ul style="list-style-type: none"> <li>DO NOT touch the spill material</li> </ul> <p>Clean up all spills immediately.</p> <p>Avoid breathing vapours and contact with skin and eyes.</p> <p>Wear impervious gloves and safety glasses.</p> <p>Use soda ash or slaked lime to neutralise.</p> <p>Trowel up/scrape up.</p> <p>Place spilled material in clean, dry, sealable, labelled container.</p> <p>Flush spill area with water.</p>
Major Spills	<p>Slippery when spill.</p> <ul style="list-style-type: none"> <li>Clear area of personnel and move upwind.</li> <li>Alert Fire Brigade and tell them location and nature of hazard.</li> <li>Wear full body protective clothing with breathing apparatus.</li> <li>Prevent, by any means available, spillage from entering drains or water course.</li> <li>Consider evacuation (or protect in place).</li> <li>Stop leak if safe to do so.</li> <li>Contain spill with sand, earth or vermiculite.</li> <li>Collect recoverable product into labelled containers for recycling.</li> <li>Neutralise/decontaminate residue (see Section 13 for specific agent).</li> <li>Collect solid residues and seal in labelled drums for disposal.</li> <li>Wash area and prevent runoff into drains.</li> <li>After clean up operations, decontaminate and launder all protective clothing and equipment before storing and re-using.</li> <li>If contamination of drains or waterways occurs, advise emergency services.</li> </ul>

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

## SECTION 7 HANDLING AND STORAGE

### Precautions for safe handling

Safe handling	<ul style="list-style-type: none"> <li>DO NOT allow clothing wet with material to stay in contact with skin</li> </ul> <p>Use good occupational work practice. Observe manufacturer's storage and handling recommendations contained within this SDS.</p> <ul style="list-style-type: none"> <li>Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.</li> </ul> <p>Avoid all personal contact, including inhalation</p> <p>Wear protective clothing when risk of exposure occurs.</p> <p>Avoid contact with incompatible materials.</p> <p>WARNING: To avoid violent reaction, ALWAYS add material to water and NEVER water to material.</p> <ul style="list-style-type: none"> <li>Handle and open container with care</li> </ul> <p>When handling, DO NOT eat, drink or smoke.</p> <p>Keep containers securely sealed when not in use</p> <p>Avoid physical damage to containers.</p> <p>Wash hands with soap and water after handling.</p> <p>Work clothes should be laundered separately: NOT at home.</p>
Other information	<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 SDS.</li> </ul>

### Conditions for safe storage, including any incompatibilities

Suitable container	<ul style="list-style-type: none"> <li>Polyethylene or polypropylene container.</li> <li>Packing as recommended by manufacturer.</li> <li>Check all containers are clearly labelled and free from leaks.</li> </ul>
Storage incompatibility	<p>Avoid storage with glass, cement, concrete and other silicon materials; reaction produces toxic silicon tetrafluoride gas; which may pressurise and/or rupture containers.</p> <ul style="list-style-type: none"> <li>DO NOT use unlined steel containers</li> <li>DO NOT use aluminium, galvanised or tin-plated containers</li> <li>Segregate from alkalies, oxidising agents and chemicals readily decomposed by acids, i.e. cyanides, sulfides, carbonates.</li> </ul> <p>combustible materials</p> <p>metal oxides</p>

## 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	nitric acid	Nitric acid	2 ppm / 5.2 mg/m3	10 mg/m3 / 4 ppm	Not Available	Not Available

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Australia Exposure Standards	hydrofluoric acid	Hydrogen fluoride (as F)	Not Available	Not Available	3 ppm / 2.6 mg/m3	Not Available
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**EMERGENCY LIMITS**

Ingredient	Material name	TEEL-1	TEEL-2	TEEL-3
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
nitric acid	25 ppm	Not Available
hydrofluoric acid	30 ppm	Not Available
water	Not Available	Not Available

**Exposure controls****Appropriate engineering controls**

Use in a well-ventilated area  
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. The basic types of engineering controls are:  
Process controls which involve changing the way a job activity or process is done to reduce the risk.  
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.  
Employers may need to use multiple types of controls to prevent employee overexposure.

General exhaust is adequate under normal operating conditions. Local exhaust ventilation may be required in specific circumstances. If risk of overexposure exists, wear approved respirator. Correct fit is essential to obtain adequate protection. Provide adequate ventilation in warehouse or closed storage areas. Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant.

**Type of Contaminant:**

solvent, vapours, degreasing etc., evaporating from tank (in still air).

aerosols, fumes from pouring operations, intermittent container filling, low speed conveyer transfers, welding, spray drift, plating acid fumes, pickling (released at low velocity into zone of active generation)

direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion)

grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion).

**Air Speed:**

0.25-0.5 m/s  
(50-100 f/min)

0.5-1 m/s (100-200 f/min.)

1-2.5 m/s (200-500 f/min.)

2.5-10 m/s  
(500-2000 f/min.)

Within each range the appropriate value depends on:

Lower end of the range

1: Room air currents minimal or favourable to capture

2: Contaminants of low toxicity or of nuisance value only.

3: Intermittent, low production.

4: Large hood or large air mass in motion

Upper end of the range

1: Disturbing room air currents

2: Contaminants of high toxicity

3: High production, heavy use

4: Small hood-local control only

Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 1-2 m/s (200-400 f/min) for extraction of solvents generated in a tank 2 meters distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used.

**Personal protection****Eye and face protection**

- ▶ Chemical goggles.
- ▶ Full face shield may be required for supplementary but never for primary protection of eyes.
- ▶ 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. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59], [AS/NZS 1336 or national equivalent]

**Skin protection**

See Hand protection below

- ▶ Barrier cream

- ▶ Neoprene rubber gloves

or

- ▶ Nitrile rubber gloves (Note: Nitric acid penetrates nitrile gloves in a few minutes.)

**Hands/feet protection**

- ▶ Elbow length PVC gloves
- ▶ Rubber boots

- ▶ PVC safety gumboots

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Body protection	See Other protection below
Other protection	<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>

Always ensure that a supply, is on hand, of calcium gluconate gel for treatment of burns and calcium carbonate tablets for accidental ingestion.

### 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:

Weldbrite

Material	CPI
NEOPRENE	A
BUTYL	C
BUTYL/NEOPRENE	C
HYPALON	C
NAT+NEOPR+NITRILE	C
NATURAL RUBBER	C
NATURAL+NEOPRENE	C
NEOPRENE/NATURAL	C
NITRILE	C
NITRILE+PVC	C
PE	C
PE/EVAL/PE	C
PVA	C
PVC	C
SARANEX-23	C
VITON	C
VITON/NEOPRENE	C

\* 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.

### Respiratory protection

Type BE-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 Minimum Protection Factor	Half-Face Respirator	Full-Face Respirator	Powered Air Respirator
up to 10 x ES	BE-AUS P2	-	BE-PAPR-AUS / Class 1 P2
up to 50 x ES	-	BE-AUS / Class 1 P2	-
up to 100 x ES	-	BE-2 P2	BE-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(SO2), G = Agricultural chemicals, K = Ammonia(NH3), 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

Appearance	Opaque white acidic gel; mixes with water. Pungent acidic odour.		
Physical state	Non Slump Paste	Relative density (Water = 1)	1.12-1.18
Odour	Not Available	Partition coefficient n-octanol / water	Not Available
Odour threshold	Not Available	Auto-ignition temperature (°C)	Not Available
pH (as supplied)	< 1	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 Applicable
Flash point (°C)	Not Applicable	Taste	Not Available
Evaporation rate	Not Available	Explosive properties	Not Available
Flammability	Not Applicable	Oxidising properties	Not Available
Upper Explosive Limit (%)	Not Applicable	Surface Tension (dyn/cm or mN/m)	Not Available
Lower Explosive Limit (%)	Not Applicable	Volatile Component (%vol)	Not Available
Vapour pressure (kPa)	Not Available	Gas group	Not Available
Solubility in water	Miscible	pH as a solution (1%)	Not available.

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Vapour density (Air = 1) Not available.

VOC g/L 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>There is some evidence to suggest that the material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage.</p> <p>Corrosive acids can cause irritation of the respiratory tract, with coughing, choking and mucous membrane damage. There may be dizziness, headache, nausea and weakness.</p> <p>Inhalation hazard is increased at higher temperatures.</p> <p>Acute effects of fluoride inhalation include irritation of nose and throat, coughing and chest discomfort. A single acute over-exposure may even cause nose bleed.</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 water in the lungs, and may cause death. The above irritation occurs even with fairly low concentrations of hydrogen fluoride. Hydrogen fluoride has a strong irritating odour, that can be detected at concentrations of about 0.04 parts per million. Higher levels cause corrosion of the throat, nose and lungs, leading to severe inflammation and water buildup in the lungs (which may occur with 1 hour of exposure). A vapour concentration of 10 parts per million is regarded as intolerable, but a vapour concentration of 30 parts per million is considered as immediately dangerous to life and health.</p> <p>It is estimated that the lowest lethal concentration for a 5-minute human exposure to hydrogen fluoride is in the range of 50 to 250 parts per million. Exposure by either skin contact or inhalation may lead to low levels of calcium and magnesium in the blood, which may result in heart rhythm disturbances. Animal testing suggests that repeated exposure produces liver and kidney damage.</p> <p>Inhalation of nitric acid mist or fumes may produce respiratory symptoms. Depending on the concentration and duration of exposure, cough, gagging, chest pain, low body oxygen, lung irritation and damage may occur. Deaths have occurred and may be delayed for several days.</p> <p>Inhalation of aerosols (mists, fumes), generated by the material during the course of normal handling, may produce severely toxic effects. Relatively small amounts absorbed from the lungs may prove fatal.</p>
<b>Ingestion</b>	<p>Severely toxic effects may result from the accidental ingestion of the material; animal experiments indicate that ingestion of less than 5 gram may be fatal or may produce serious damage to the health of the individual.</p> <p>Ingestion of acidic corrosives may produce burns around and in the mouth, the throat and oesophagus. Immediate pain and difficulties in swallowing and speaking may also be evident.</p> <p>Fluoride causes severe loss of calcium in the blood, with symptoms appearing several hours later including painful and rigid muscle contractions of the limbs. Cardiovascular collapse can occur and may cause death with increased heart rate and other heart rhythm irregularities.</p> <p>Exposure to nitric acid causes burning pain, severe corrosion and scarring of the digestive tract with adhesions, narrowing and obstruction and even anaemia. There may be vomiting, aspiration, lung inflammation and shock. Death may be delayed 12 hours to 14 days or several months from these complications. Survivors may have strictures of the stomach lining and subsequent pernicious anaemia.</p> <p>fatal if swallowed unless immediate treatment is applied</p>
<b>Skin Contact</b>	<p>Skin contact with the material may produce severely toxic effects; systemic effects may result following absorption and these may be fatal.</p> <p>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.</p> <p>Fluorides are easily absorbed through the skin and cause death of soft tissue and erode bone. Healing is delayed and death of tissue may continue to spread beneath skin.</p> <p>Open cuts, abraded or irritated skin should not be exposed to this material</p> <p>Contact of the skin with liquid hydrofluoric acid (hydrogen fluoride) may cause severe burns, erythema, and swelling, vesiculation, and serious crusting. With more serious burns, ulceration, blue-gray discoloration, and necrosis may occur. Solutions of hydrofluoric acid, as dilute as 2%, may cause severe skin burns.</p> <p>Dermal burns may not be readily noticed or painful, unlike the warning properties of other acids. Skin contact with HF concentrations in the 20% to 50% range may not produce symptoms for one to eight hours. With concentrations less than 20%, the latency period may be up to twenty-four hours. A solution of only 1-2% HF exposed to greater than 10% of the body is fatal without medical attention; however dermal burns are not likely immediate.</p> <p>Fluoride ions form insoluble salts with calcium and magnesium in bodily tissue. Soluble salts can form with other cations, which dissociate rapidly causing further disruption and damage to tissue. The severe, throbbing pain associated with HF burns is thought to result from nerve irritation due to potassium cations entering the extracellular space to compensate for reduced calcium ion concentrations. Fluoride poisoning is associated with hypocalcemia (low calcium levels), hyperkalemia (high potassium levels), hypomagnesemia (low magnesium levels), and sudden death.</p> <p>Systemic hypocalcemia should be considered a risk whenever the body surface area of skin burns from concentrated hydrofluoric acid exceed 160 cm<sup>2</sup> (25 sq.in.), or about the size of the palm of your hand. Concentrated hydrogen fluoride burns can be fatal if only 2% of the body surface area is exposed.</p> <p>Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.</p> <p>Skin contact with nitric acid may cause corrosion, skin thickening, yellow discolouration of the skin, blisters and scars depending on the concentration exposed.</p>
<b>Eye</b>	<p>Direct eye contact with acid corrosives may produce pain, tears, sensitivity to light and burns. Mild burns of the epithelia generally recover rapidly and completely.</p> <p>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. Swelling of the stroma of the cornea occurred within 1 hour, followed by tissue death (necrosis) of structures of the front of the eye.</p> <p>Eye contact with both diluted and concentrated nitric acid may result in burns causing pain, adhesions, corneal damage, blindness or permanent eye damage. Pain may be absent after contact with concentrated nitric acid.</p> <p>The vapour may produce pronounced discomfort of the eyes when present at higher concentrations and this generally gives warning of excessive exposure and the need for control measures to ensure safe working conditions</p>

Continued...

## Weldbrite

Chronic	Repeated or prolonged exposure to acids may result in the erosion of teeth, swelling and/or ulceration of mouth lining. Irritation of airways to lung, with cough, and inflammation of lung tissue often occurs. Long-term exposure to respiratory irritants may result in airways disease, involving difficulty breathing and related whole-body problems. 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. There may also be frequent urination and thirst. Prolonged or repeated overexposure to low concentrations of nitric acid vapour may cause chronic airway inflammation, corrosion of teeth and chemical lung inflammation. Hydrogen fluoride easily penetrates the skin and causes destruction and corrosion of the bone and underlying tissue. Ingestion causes severe pains and burns in the mouth and throat and blood calcium levels are dangerously reduced.		
	Weldbrite	TOXICITY Not Available	IRRITATION Not Available
	nitric acid	TOXICITY 50500 mg/kg <sup>[2]</sup> Inhalation (rat) LC50: 0.13 mg/l/4h <sup>[2]</sup>	IRRITATION Eye: adverse effect observed (irritating) <sup>[1]</sup> Skin: adverse effect observed (corrosive) <sup>[1]</sup>
	hydrofluoric acid	TOXICITY Inhalation (rat) LC50: 0.275 mg/l/60M <sup>[2]</sup>	IRRITATION Eye (human): 50 mg - SEVERE
	water	TOXICITY Oral (rat) LD50: >90000 mg/kg <sup>[2]</sup>	IRRITATION Not Available
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	
NITRIC ACID	<p>Oral (?) LD50: 50-500 mg/kg * [Various Manufacturers] For acid mists, aerosols, vapours Test results suggest that eukaryotic cells are susceptible to genetic damage when the pH falls to about 6.5. Cells from the respiratory tract have not been examined in this respect. Mucous secretion may protect the cells of the airway from direct exposure to inhaled acidic mists (which also protects the stomach lining from the hydrochloric acid secreted there). 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. Repeated exposures may produce severe ulceration.</p>		
HYDROFLUORIC ACID	<p>(liver and kidney damage) [Manufacturer] for hydrogen fluoride (as vapour) Laboratory (in vitro) and animal studies show, exposure to the material may result in a possible risk of irreversible effects, with the possibility of producing mutation. The following information refers to contact allergens as a group and may not be specific to this product. Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's oedema. The pathogenesis of contact eczema involves a cell-mediated (T lymphocytes) immune reaction of the delayed type. Other allergic skin reactions, e.g. contact urticaria, involve antibody-mediated immune reactions. The significance of the contact allergen is not simply determined by its sensitisation potential: the distribution of the substance and the opportunities for contact with it are equally important. A weakly sensitising substance which is widely distributed can be a more important allergen than one with stronger sensitising potential with which few individuals come into contact. From a clinical point of view, substances are noteworthy if they produce an allergic test reaction in more than 1% of the persons tested.</p>		
NITRIC ACID & HYDROFLUORIC ACID	<p>Asthma-like symptoms may continue for months or even years after exposure to the material ends. This may be due to a non-allergic condition known as reactive airways dysfunction syndrome (RADS) which can occur after exposure to high levels of highly irritating compound. Main criteria for diagnosing RADS include the absence of previous airways disease in a non-atopic individual, with sudden onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. Other criteria for diagnosis of RADS include a reversible airflow pattern on lung function tests, moderate to severe bronchial hyperreactivity on methacholine challenge testing, and the lack of minimal lymphocytic inflammation, without eosinophilia. 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. On the other hand, industrial bronchitis is a disorder that occurs as a result of exposure due to high concentrations of irritating substance (often particles) and is completely reversible after exposure ceases. The disorder is characterized by difficulty breathing, cough and mucus production. The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis. The material may produce respiratory tract irritation, and result in damage to the lung including reduced lung function.</p>		
HYDROFLUORIC ACID & WATER	No significant acute toxicological data identified in literature search.		
Acute Toxicity	✓	Carcinogenicity	✗
Skin Irritation/Corrosion	✓	Reproductivity	✗
Serious Eye Damage/Irritation	✓	STOT - Single Exposure	✗
Respiratory or Skin sensitisation	✓	STOT - Repeated Exposure	✗
Mutagenicity	✓	Aspiration Hazard	✗
Legend: ✗ - Data either not available or does not fill the criteria for classification ✓ - Data available to make classification			

## SECTION 12 ECOLOGICAL INFORMATION

## Toxicity

Weldbrite	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	Not Available	Not Available	Not Available	Not Available	Not Available

Continued...

	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
nitric acid	LC50	96	Fish	1-354mg/L	2
	EC50	48	Crustacea	490mg/L	2
	NOEC	720	Fish	58mg/L	2
hydrofluoric acid	LC50	96	Fish	51mg/L	2
	EC50	48	Crustacea	97mg/L	2
	EC50	96	Algae or other aquatic plants	43mg/L	2
	NOEC	504	Crustacea	3.7mg/L	2
water	LC50	96	Fish	897.520mg/L	3
	EC50	96	Algae or other aquatic plants	8768.874mg/L	3
<b>Legend:</b>	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				

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>Recycle wherever possible or consult manufacturer for recycling options.</li> <li>Consult State Land Waste Management Authority for disposal.</li> <li>Treat and neutralise at an effluent treatment plant.</li> <li>Use soda ash or slaked lime to neutralise.</li> <li>Recycle containers, otherwise dispose of in an authorised landfill.</li> </ul>
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### SECTION 14 TRANSPORT INFORMATION

#### Labels Required

	 
Marine Pollutant	NO
HAZCHEM	2X

#### Land transport (ADG)

UN number	2922
UN proper shipping name	CORROSIVE LIQUID, TOXIC, N.O.S. (contains nitric acid and hydrofluoric acid)
Transport hazard class(es)	Class 8
	Subrisk 6.1
Packing group	II
Environmental hazard	Not Applicable
Special precautions for user	Special provisions 274
	Limited quantity 1 L

Continued...

## Air transport (ICAO-IATA / DGR)

UN number	2922
UN proper shipping name	Corrosive liquid, toxic, n.o.s. * (contains nitric acid and hydrofluoric acid)
Transport hazard class(es)	ICAO/IATA Class 8 ICAO / IATA Subrisk 6.1 ERG Code 8P
Packing group	II
Environmental hazard	Not Applicable
Special precautions for user	Special provisions A3 A803 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)

UN number	2922
UN proper shipping name	CORROSIVE LIQUID, TOXIC, N.O.S. (contains nitric acid and hydrofluoric acid)
Transport hazard class(es)	IMDG Class 8 IMDG Subrisk 6.1
Packing group	II
Environmental hazard	Not Applicable
Special precautions for user	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

Not Applicable

## SECTION 15 REGULATORY INFORMATION

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

## NITRIC ACID IS FOUND ON THE FOLLOWING REGULATORY LISTS

Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals  
Australia Inventory of Chemical Substances (AICS)

Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) -  
Schedule 5

## HYDROFLUORIC ACID IS FOUND ON THE FOLLOWING REGULATORY LISTS

Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals  
Australia Inventory of Chemical Substances (AICS)  
Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) -  
Schedule 2  
Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) -  
Schedule 3  
Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) -  
Schedule 4

Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) -  
Schedule 5

Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) -  
Schedule 6

Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) -  
Schedule 7

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC  
Monographs

## WATER IS FOUND ON THE FOLLOWING REGULATORY LISTS

Australia Inventory of Chemical Substances (AICS)

## ECHA SUMMARY

Ingredient	CAS number	Index No	ECHA Dossier
nitric acid	7697-37-2	007-004-00-1	01-2119487297-23-XXXX 01-2119987992-14-XXXX 01-2120763162-60-XXXX

Harmonisation (C&L Inventory)	Hazard Class and Category Code(s)	Pictograms Signal Word Code(s)	Hazard Statement Code(s)
1	Ox. Sol. 2; Skin Corr. 1A	GHS03; GHS05; Dgr	H272; H314

Harmonisation Code 1 = The most prevalent classification. Harmonisation Code 2 = The most severe classification.

Ingredient	CAS number	Index No	ECHA Dossier
hydrofluoric acid	7664-39-3	009-002-00-6 009-003-00-1	01-2119458860-33-XXXX 01-2120762785-41-XXXX

Continued...

Harmonisation (C&L Inventory)	Hazard Class and Category Code(s)	Pictograms Signal Word Code(s)	Hazard Statement Code(s)
1	Acute Tox. 2; Acute Tox. 1; Skin Corr. 1A; Acute Tox. 2	GHS05; GHS06; Dgr	H300; H310; H314; H330
1	Acute Tox. 2; Acute Tox. 1; Skin Corr. 1A; Acute Tox. 2	GHS05; GHS06; Dgr	H300; H310; H314; H330
1	Acute Tox. 2; Acute Tox. 1; Skin Corr. 1A; Acute Tox. 2	GHS05; GHS06; Dgr	H300; H310; H314; H330

Harmonisation Code 1 = The most prevalent classification. Harmonisation Code 2 = The most severe classification.

Ingredient	CAS number	Index No	ECHA Dossier
water	7732-18-5	Not Available	Not Available

Harmonisation (C&L Inventory)	Hazard Class and Category Code(s)	Pictograms Signal Word Code(s)	Hazard Statement Code(s)
1	Not Classified	Not Available	Not Available

Harmonisation Code 1 = The most prevalent classification. Harmonisation Code 2 = The most severe classification.

#### National Inventory Status

National Inventory	Status
Australia - AICS	Yes
Canada - DSL	Yes
Canada - NDSL	No (nitric acid; hydrofluoric acid; water)
China - IECSC	Yes
Europe - EINEC / ELINCS / NLP	Yes
Japan - ENCS	Yes
Korea - KECI	Yes
New Zealand - NZIoC	Yes
Philippines - PICCS	Yes
USA - TSCA	Yes
Taiwan - TCSI	Yes
Mexico - INSQ	Yes
Vietnam - NCI	Yes
Russia - ARIPS	Yes

#### Legend:

Yes = All CAS declared ingredients are on the inventory

No = One or more of the CAS listed ingredients are not on the inventory and are not exempt from listing (see specific ingredients in brackets)

#### SECTION 16 OTHER INFORMATION

Revision Date	07/03/2020
Initial Date	30/12/2002

#### SDS Version Summary

Version	Issue Date	Sections Updated
8.1.1.1	15/01/2020	Acute Health (inhalated)
9.1.1.1	07/03/2020	Classification change due to full database hazard calculation/update.

#### 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.

The 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.

#### 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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