

1. IDENTIFICATION

Product Identifier**Product Name** ScaleBreak**Other means of identification****SDS #** GOOD-002**Recommended use of the chemical and restrictions on use****Recommended Use** Descaler.**Details of the supplier of the safety data sheet****Supplier Address**SOLVERBio Environmental Solutions Pty Ltd
2/11 Blaikie Street
Myaree, WA 6154
www.solverbio.com.au**Emergency Telephone Number****Company Phone Number** (08) 9333 0777**Emergency Telephone (24 hr)** (08) 9333 0777

2. HAZARDS IDENTIFICATION

Appearance Orange Liquid**Physical state** Liquid**Odor** Mild**Classification**

Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 1
Specific target organ toxicity (single exposure)	Category 3

Signal Word

Danger

Hazard statements

Causes skin irritation

Causes serious eye damage

May cause respiratory irritation

**Precautionary Statements - Prevention**

Wear protective gloves/protective clothing/eye protection/face protection

Wash face, hands and any exposed skin thoroughly after handling

Avoid breathing dust/fume/gas/mist/vapors/spray

Use only outdoors or in a well-ventilated area

Precautionary Statements - Response

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
 Immediately call a poison center or doctor/physician
 IF ON SKIN: Wash with plenty of water and soap
 Take off contaminated clothing and wash before reuse
 If skin irritation occurs: Get medical advice/attention
 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
 Call a poison center or doctor/physician if you feel unwell

Precautionary Statements - Storage

Store in a well-ventilated place. Keep container tightly closed
 Store locked up

Precautionary Statements - Disposal

Disposal should be in accordance with applicable regional, national, and local laws and regulations

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No.	Weight-%
Hydrochloride-based Descaling Compound	Proprietary	<10
Descaling Accelerators	Proprietary	<2
Corrosion Inhibitors & Surfactants	Proprietary	<2

If Chemical Name/CAS No is "proprietary" and/or Weight-% is listed as a range, the specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. FIRST AID MEASURES

First Aid Measures

General Advice	Provide this SDS to medical personnel for treatment.
Eye Contact	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain immediate medical attention, preferably from an ophthalmologist.
Skin Contact	IF ON SKIN: Wash with plenty of water and soap. Remove contaminated clothing, wash thoroughly before reuse. If irritation occurs: Get medical advice/attention.
Inhalation	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If breathing is difficult, give oxygen. If breathing has stopped, give artificial respiration. Loosen tight clothing such as collar, tie, belt, or waistband. If symptoms persist, seek medical attention.
Ingestion	Rinse mouth thoroughly with water. Remove dentures, if any. Do not induce vomiting without medical advice. If spontaneous vomiting occurs, keep head below hips to prevent aspiration and monitor breathing. Never give anything by mouth to a person who is unconscious or convulsing. Do not leave victim unattended. Seek immediate medical attention/advice.

Most important symptoms and effects

Symptoms	EYES: Causes severe eye irritation and serious eye damage. Symptoms may include inflammation, pain, blurred vision, tearing and burns. May cause chemical conjunctivitis. May cause vision impairment and permanent eye damage. SKIN: Causes skin irritation. Symptoms may include localized redness, itching and
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discomfort. Prolonged and repeated contact with unprotected skin may cause drying and cracking of the skin and dermatitis.
 INHALATION: Mist or vapor may cause irritation of the nose, throat and respiratory tract. Symptoms may include sore throat, runny nose, cough and shortness of breath.
 INGESTION: Causes irritation of the gastrointestinal tract with abdominal pain, nausea, vomiting and diarrhea. May be harmful if swallowed.
 CHRONIC: Persons with pre-existing disorders of the skin or impaired respiratory function may be more susceptible to the effects of this substance. Prolonged and repeated skin contact can result in defatting of the skin and dermatitis.

Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically & supportively. Treatment of exposure should be directed at the control of symptoms and the clinical condition.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media None known.

Specific Hazards Arising from the Chemical

Closed containers may explode due to buildup of pressure when exposed to extreme heat.

Hazardous Combustion Products: Smoke, fumes or vapors, and oxides of carbon.

Explosion Data

Sensitivity to Mechanical Impact Not expected.

Sensitivity to Static Discharge Not expected.

Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Water spray may be used for cooling containers to prevent possible pressure build-up and autoignition or explosion when exposed to extreme heat. Prevent fire extinguishing water from contaminating surface water or the ground water system.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions Evacuate unnecessary personnel. Wear protective clothing as described in Section 8 of this safety data sheet. Ventilate affected area. Remove all sources of ignition. No smoking in spill area. Product may cause a slip hazard.

For Emergency Responders Follow all fire-fighting procedures in Section 5. Use personal protection recommended in Section 8.

Environmental precautions

Environmental precautions See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

Methods for Containment Approach release from upwind. Contain and collect spillage with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see Section 13). Prevent from entering drains, sewers, streams or other bodies of water. If runoff occurs, notify authorities as required.

Methods for Clean-Up

Collect with absorbent, non-combustible material in to suitable containers. Clean surface thoroughly to remove residual contamination. Should not be released into the environment. For waste disposal, see section 13 of the SDS.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on Safe Handling

Handle in accordance with good industrial hygiene and safety practice. Use personal protection recommended in Section 8. Avoid contact with skin, eyes or clothing. Avoid breathing vapors or mists. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Wash face, hands and any exposed skin thoroughly after handling. Wash contaminated clothing before reuse.

Conditions for safe storage, including any incompatibilities

Storage Conditions

Keep container tightly closed and store in a cool, dry and well-ventilated place. Keep away from food, drink and animal feeding stuffs. Do not transfer contents to bottles or other unlabeled containers. Protect container from physical damage. Keep containers closed when not in use and upright to prevent leakage. Empty containers retain product residues. Follow SDS precautions in handling empty containers. Use appropriate containment to avoid environmental contamination. Do NOT take internally. Keep out of the reach of children.

Incompatible Materials

Strong oxidizing agents. Strong acids. Bases.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Hydrochloride-based Descaling Compound	Ceiling: 2 ppm	(vacated) Ceiling: 5 ppm (vacated) Ceiling: 7 mg/m ³ Ceiling: 5 ppm Ceiling: 7 mg/m ³	IDLH: 50 ppm Ceiling: 5 ppm Ceiling: 7 mg/m ³
Corrosion Inhibitors & Surfactants, Descaling Accelerator	TWA: 1 mg/m ³ Fe	(vacated) TWA: 1 mg/m ³ Fe	TWA: 1 mg/m ³ Fe

Appropriate engineering controls

Engineering Controls

Apply technical measures to comply with the occupational exposure limits. Ensure adequate ventilation, especially in confined areas. Local exhaust ventilation recommended. Eyewash stations. Showers.

Individual protection measures, such as personal protective equipment

Eye/Face Protection

Chemical resistant splash goggles. Refer to 29 CFR 1910.133 for eye and face protection regulations.

Skin and Body Protection

Oil/solvent resistant gloves. Protective clothing as required by workplace standards. Refer to 29 CFR 1910.138 for appropriate skin and body protection.

Respiratory Protection

Ensure adequate ventilation, especially in confined areas. Refer to 29 CFR 1910.134 for respiratory protection requirements.

General Hygiene Considerations

Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes and clothing. After handling this product, wash hands before eating, drinking, or smoking. If contact occurs, remove contaminated clothing. Launder contaminated clothing

before reuse.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Liquid	Odor	Mild
Appearance	Orange liquid	Odor Threshold	Not determined
Color	Orange		

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	<3.0	
Melting point / freezing point	Not determined	
Boiling Point / Boiling Range	100 °C / 212 °F	
Flash Point	Not determined	
Evaporation Rate	Not determined	
Flammability (Solid, Gas)	Liquid- Not applicable	
Flammability Limit in Air		
Upper Flammability Limit	Not determined	
Lower Flammability Limit	Not determined	
Vapor Pressure	Not determined	
Vapor Density	Not determined	
Relative Density	Not determined	
Water Solubility	Miscible in water	
Solubility in other solvents	Not determined	
Partition Coefficient	Not determined	
Autoignition temperature	Not determined	
Decomposition Temperature	Not determined	
Kinematic Viscosity	Not determined	
Dynamic Viscosity	Not determined	
Explosive Properties	Not applicable	
Oxidizing Properties	Not applicable	

Other Information

VOC Content (%)	NDA
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10. STABILITY AND REACTIVITY

Reactivity

Not reactive under normal conditions.

Chemical Stability

Stable under recommended storage conditions.

Possibility of Hazardous Reactions

None under normal processing.

Hazardous Polymerization	Hazardous polymerization does not occur.
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Conditions to Avoid

Keep out of reach of children.

Incompatible Materials

Strong oxidizing agents. Strong acids. Bases.

Hazardous Decomposition Products

Smoke, fumes or vapors, and oxides of carbon. Nitrogen oxides (NOx). Sulfur oxides.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Eye Contact	Causes serious eye damage.
Skin Contact	Causes skin irritation.
Inhalation	May cause respiratory irritation.
Ingestion	Do not ingest.

Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Hydrochloride-based Descaling Compound	238 - 277 mg/kg (Rat)	> 5010 mg/kg (Rabbit)	= 1.68 mg/L (Rat) 1 h
Descaling Accelerators	= 1950 mg/kg (Rat)	-	= 3.6 mg/L (Rat) 4 h > 5.2 mg/L (Rat) 4 h
Corrosion Inhibitors & Surfactants	= 316 mg/kg (Rat) = 450 mg/kg (Rat)	-	-

Information on physical, chemical and toxicological effects

Symptoms Please see section 4 of this SDS for symptoms.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Carcinogenicity Based on the information provided, this product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.

Chemical Name	ACGIH	IARC	NTP	OSHA
Hydrochloride-based Descaling Compound		Group 3		X

Numerical measures of toxicity

Not determined

12. ECOLOGICAL INFORMATION

Ecotoxicity

The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Chemical Name	Algae/aquatic plants	Fish	Crustacea
Hydrochloride-based Descaling Compound		282: 96 h Gambusia affinis mg/L LC50 static	
Descaling Accelerators		5000: 96 h Brachydanio rerio mg/L LC50 static	
Corrosion Inhibitors & Surfactants		75.6: 96 h Gambusia affinis mg/L LC50 static 20.95 - 22.56: 96 h Pimephales promelas mg/L LC50 semi-static 20.26: 96 h Lepomis macrochirus mg/L LC50 semi-static	27.9: 48 h Daphnia magna mg/L EC50 9.6: 48 h Daphnia magna mg/L EC50 Static

Persistence/Degradability

Components of this product are readily biodegradable.

Bioaccumulation

Not determined.

Mobility

Not determined

Chemical Name	Partition Coefficient
Descaling Accelerators	-1.11
Corrosion Inhibitors & Surfactants	-4

Other Adverse Effects

Not determined

13. DISPOSAL CONSIDERATIONS

Waste Treatment Methods

Disposal of Wastes

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated Packaging

Disposal should be in accordance with applicable regional, national and local laws and regulations.

14. TRANSPORT INFORMATION

Note

Please see current shipping paper for most up to date shipping information, including exemptions and special circumstances.

DOT

Not regulated

IATA

Not regulated

IMDG

Not regulated

15. REGULATORY INFORMATION

International Inventories

Chemical Name	TSCA	DSL/NDSL	EINECS/E LINCS	ENCS	IECSC	KECL	PICCS	AICS
Hydrochloride-based Descaling Compound	X	X	X	Present	X	Present	X	X
Descaling Accelerators	X	X	X	Present	X	Present	X	X
Corrosion Inhibitors & Surfactants	X	X	X	Present	X	Present	X	X

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

AICS - Australian Inventory of Chemical Substances

US Federal Regulations

Chemical Name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Hydrochloride-based Descaling Compound	5000 lb	5000 lb	RQ 5000 lb final RQ RQ 2270 kg final RQ
Corrosion Inhibitors & Surfactants	1000 lb		RQ 1000 lb final RQ RQ 454 kg final RQ

SARA 311/312 Hazard Categories

Acute Health Hazard

Yes

SARA 313

Chemical Name	CAS No.	Weight-%	SARA 313 - Threshold Values %
Hydrochloride-based Descaling Compound -		<10	1.0

CWA (Clean Water Act)

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Hydrochloride-based Descaling Compound	5000 lb			X
Corrosion Inhibitors & Surfactants	1000 lb			X

US State Regulations

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Hydrochloride-based Descaling Compound	X	X	X
Corrosion Inhibitors & Surfactants	X	X	X

16. OTHER INFORMATION

<u>NFPA</u>	Health Hazards	Flammability	Instability	Special Hazard
	2	0	0	-
<u>HMIS</u>	Health Hazards	Flammability	Physical hazards	Personal Protection
	2	0	0	C

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Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet