Infosafe No™	3CHI8	Issue Date : March 2020	RE-ISSUED by AMBERSCI

Product Name : **DECALCIFIER Solution 10% Hydrochloric acid**

Classified as hazardous

1. Identification

GHS Product Identifier	DECALCIFIER Solution 10% Hydrochloric acid
Product Code	DECA
Company Name	AMBER SCIENTIFIC Pty LTD
Address	24 - 28 Stratton Drive Traralgon Victoria 3844 Australia
Telephone/Fax Number	Tel: (03) 5176 2855
Emergency phone number	CHEMCALL (24 hours): 1800 127 406 (Australia) / +64-4-917-98888 (Internalional)
Recommended use of the chemical and restrictions on use	Laboratory reagent.
Other Information	Amber Scientific Pty Ltd does not warrant that this product is suitable for any use or purpose. The user must ascertain the suitability of the product before use or application intended purpose. Preliminary testing of the product before use or application is recommended. Any reliance or purported reliance upon Amber Scientific Pty Ltd with respect to any skill or judgement or advice in relation to the suitability of this product of any purpose is disclaimed. Except to the extent prohibited at law, any condition implied by any statute as to the merchantable quality of this product or fitness for any purpose is hereby excluded. This product is not sold by description. Where the provisions of Part V, Division 2 of the Trade Practices Act apply, the liability of Amber Scientific Pty Ltd is limited to the replacement of supply of equivalent goods or payment of the cost of replacing the goods or acquiring equivalent goods.

2. Hazard Identification

GHS classification of the substance/mixture	Corrosive to Metals: Category 1
Signal Word (s)	WARNING
Hazard Statement (s)	H290 May be corrosive to metals.
Pictogram (s)	Corrosion

Precautionary statement – Prevention	P234 Keep only in original container.
Precautionary statement – Response	P390 Absorb spillage to prevent material damage.
Precautionary statement – Storage	P406 Store in corrosive resistant container with a resistant inner liner.
Precautionary statement – Disposal	P501 Dispose of contents/container according to local, state and federal regulations.

3. Composition/information on ingredients

Chemical Characterization	Liquid
Information on Composition	Aqueous solution of the gas hydrogen chloride.

Ingredients

Name	CAS	Proportion	Hazard Symbol	Risk Phrase
Hydrochloric acid	7647-01-0	10 %v/v		

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Ingredients	Name	CAS	Proportion	Hazard Symbol	Risk Phrase
	Water to make a total of 100%	7732-18-5	-		

4. First-aid measures

Inhalation	If inhaled, remove from contaminated area to fresh air immediately. Apply artificial respiration if not breathing. If breathing is difficult, give oxygen. Get medical aid if cough or other symptoms appear.
Ingestion	Rinse mouth thoroughly with water immediately, repeat until all traces of product have been removed. DO NOT INDUCE VOMITING. Seek medical advice if effects persist.
Skin	Immediately remove contaminated clothing and wash affected area with water for at least 15 minutes. Ensure contaminated clothing is washed before re-use. Seek medical advice /attention depending on the severity. Treat skin and clothing with 1% sodium bicarbonate solution to neutralize acid residues.
Eye contact	Immediately irrigate with copious quantity of water for at least 15 minutes. Eyelids to be held open. In all cases of eye contamination it is a sensible precaution to seek medical advice.
First Aid Facilities	Maintain eyewash fountain and drench facilities in work area.
Advice to Doctor	Treat symptomatically based on judgement of doctor and individual reactions of the patient.
Other Information	For advice, contact a Poisons Information Centre (Phone eg Australia 13 1126; New Zealand 0800 764 766) or a doctor.

5. Fire-fighting measures

Suitable extinguishing media	Use appropriate fire extinguisher for surrounding environment. Use water spray, dry chemical, carbon dioxide, or appropriate foam.
Hazards from Combustion Products	Irritating and highly toxic fumes of hydrogen chloride. Can react with metals generating flammable hydrogen gas.
Specific Methods	This product contains a substantial proportion of water therefore ther are no restrictions on the type of extinguishing media which may be used.
Hazchem Code	2R
Precautions in connection with Fire	Wear SCBA and acid-resistant chemical splash suit.

6. Accidental release measures

Spills & Disposal	In the event of spillage, use absorbent (soil, sand or inert medium) place into tightly closed containers. Adhere to personal protective measures. Flush the remainder with plenty of water. Label container and dispose of as hazardous waste.
Personal Precautions	Avoid contact with substance, do not breathe vapours.
Personal Protection	Use personal protective equipment listed in Section 8.
Environmental Precautions	Prevent contamination of soil and water.

7. Handling and storage

Precautions for Safe Handling	Use only with adequate ventilation. In case of insufficient ventilation, wear suitable respiratory equipment. Wear appropriate protective equipment to prevent inhalation, skin and eye contact. When diluting, the acid should always be added slowly to water and in small amounts. Never use hot water and never add water to the acid. Keep away from incompatibles such as oxidizing agents, organic materials, metals, alkalis, moisture/water. Keep out of direct sunlight and away from heat and incompatible materials.
Conditions for safe storage, including any incompatabilities	Store in original tightly closed containers, in a cool, dry, well-ventilated storage area with acid resistant floors and good drainage, away from incompatible substances. Store away from flammable or oxidizing substances (especially nitric acid or chlorates). Do not store in metal containers. There may be instances with the technical grade products where there may be contamination due to hydrofluoric acid. Containers of this material may be hazardous when empty since they retain product residues (vapours, liquid); observe all warnings and precautions listed for the product.
Corrosiveness	Very corrosive to most metals. Rubber-lined steel, Haveg, Hastelby and tantalum, are the most commonly used corrosion-resistant materials of construction. Rubber, glass, plastic and ceramic ware are also resistant to corrosion.
Storage Regulations	Refer Australian Standard AS 3780-1994 'The storage and handling of corrosive substances'.

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Storage Temperatures Store in a cool place (below 25 °C).

8. Exposure controls/personal protection

Occupational exposure limit values

Name	STEL		TWA		
	mg/m3	ppm	mg/m3	ppm	Footnote
Hydrochloric acid			7.5	5	Hydrogen chloride Peak Limitation

Other Exposure Information No exposure standards have been established for this product by Safe Work Australia, however, the TWA exposure standard for dusts/mists not otherwise specified is 10 mg/m3. All atmospheric contamination should be kept to as low a level as is workable.
A time weighted average (TWA) has been established for Hydrogen chloride (Worksafe Aust) of 7.5 mg/m³ (Peak limitation), (5 ppm). The exposure value at the TWA is the average airborne concentration of a particular substance when calculated over a normal 8 hour working day for a 5 day working week.

Appropriate engineering controls Maintain the concentrations values below the TWA. This may be achieved by process modification, use of local exhaust ventilation, capturing substances at the source, or other methods.

Respiratory Protection Where ventilation is not adequate, respiratory protection may be required. Avoid breathing vapours or mists. Select and use respirators in accordance with AS 1716 - Respiratory Protective Devices and be selected in accordance with AS 1715 - Selection, Use and Maintenance of Respiratory Protective Devices. When mists or vapours exceed the exposure standards then the use of the following is recommended: Approved respirator with organic vapour and dust/mist filters. Filter capacity and respirator type depends on exposure levels.

Eye Protection The use of a face shield, chemical goggles or safety glasses with side shield protection as appropriate. Must comply with Australian Standards AS 1337 and be selected and used in accordance with AS 1336.

Hand Protection Wear gloves of impervious material conforming to AS/NZS 2161: Occupational protective gloves - Selection, use and maintenance. Final choice of appropriate glove type will vary according to individual circumstances. This can include methods of handling, and engineering controls as determined by appropriate risk assessments. Avoid skin contact when removing gloves from hands, do not touch the gloves outer surface. Dispose of gloves as hazardous waste.

Personal Protective Equipment Personal protective equipment should not solely be relied upon to control risk and should only be used when all other reasonably practicable control measures do not eliminate or sufficiently minimise risk. Guidance in selecting personal protective equipment can be obtained from Australian, Australian/New Zealand or other approved standards.

Footwear Safety boots in industrial situations is advisory, foot protection should comply with AS 2210, Occupational protective footwear - Guide to selection, care and use.

Body Protection Clean impervious clothing should be worn. Clothing for protection against chemicals should comply with AS 3765 Clothing for Protection Against Hazardous Chemicals.

Hygiene Measures Always wash hands before smoking, eating or using the toilet. Wash contaminated clothing and other protective equipment before storing or re-using.

9. Physical and chemical properties

Form Liquid

Appearance Clear, colourless liquid.

Odour Slight, characteristic, irritating odour of hydrogen chloride.

Melting Point -18 °C (10%)

Boiling Point 103 °C (10%)

Solubility in Water Soluble in all proportions, with slight evolution of heat.

Specific Gravity 1.048 (10%)

pH -0.5 (10%)

Vapour Pressure 0.527 Pa (10%)

Vapour Density (Air=1) >1

Odour Threshold 1-5 ppm (detectable); 10 ppm (irritating)

Volatile Component	Hydrogen Chloride Gas
Partition Coefficient: n-octanol/water	log Pow: 0.25 (concentrated).
Flammability	Non combustible material.
Dynamic Viscosity	1.16 mPa·s (10%)

10. Stability and reactivity

Chemical Stability	Stable at normal temperatures, pressures and conditions of use or storage.
Conditions to Avoid	Metals, excess heat, exposure to moist air or water and incompatible materials.
Incompatible Materials	Metals, bases (e.g. sodium hydroxide, amines), aldehydes, epoxides, reducing agents, oxidizing agents, permanganates, explosives, acetylides, borides, carbides, silicides, cyanides, sulfides and phosphide.
Hazardous Decomposition Products	Hydrogen chloride gas. Hydrogen chloride is thermally stable up to temperatures of about 1500 °C.
Possibility of hazardous reactions	Large amounts of heat can be released when concentrated HCl is mixed with water or with organic solvents. Can react with most metals, generating flammable hydrogen gas. Reacts violently with bases (e.g. sodium hydroxide, amines), generating heat and pressure. Reaction with aldehydes, or epoxides may cause violent polymerization, generating heat and pressure. Reaction with reducing agents may produce heat, fire and flammable hydrogen gas. May react with oxidizing agents, generating heat and toxic or corrosive chloride gases. Contact with explosives may generate heat which could cause detonation. May react with acetylides, borides, carbides, silicides, producing flammable gas (e.g., acetylene). May react with cyanides, or sulfides to release toxic gas (HCN or H2S). May react with phosphide to release toxic, flammable phosphine gas.

11. Toxicological Information

Ingestion	Causes irritation to mouth,throat and stomach.
Inhalation	Vapour may cause irritation to the mucous membranes of the respiratory tract, with sore throat and coughing.
Skin	Liquid is slightly to highly irritating to skin and may cause burns.
Eye	Liquid is irritating to highly irritating to eyes and may cause scarring of the cornea (based on animal data). Vapour may cause eye irritation.
Carcinogenicity	Hydrochloric acid [7647-01-0] is evaluated in the IARC Monographs (Vol. 54; 1992) as Group 3: Not classifiable as to carcinogenicity to humans.
Mutagenicity	No human information is available. Questionable positive results reported in some short-term tests. Negative results in some in-vitro mammalian cell tests.

12. Ecological information

Ecotoxicity	Preparation contains: hydrochloric acid. Toxic for aquatic organisms. Harmful effect due to pH shift. The following applies to HCl in general: Harmful effect on aquatic organisms. Harmful effect due to pH shift. Does not cause biological oxygen deficit.
Environmental Protection	Do not allow to enter waters, waste water, or soil!

13. Disposal considerations

Disposal Considerations	Dispose of according to relevant local, state and federal government regulations.

14. Transport information

Transport Information	Dangerous goods of Class 8 (Corrosive) are incompatible in a placard load with any of the following: Class 1, Class 4.3, Class 5, Class 6, if the Class 6 dangerous goods are cyanides and the Class 8 dangerous goods are acids, Class 7; and are incompatible with food and food packaging in any quantity.
U.N. Number	1789
UN proper shipping name	HYDROCHLORIC ACID
Transport hazard class(es)	8

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Hazchem Code	2R
Packaging Method	3.8.8RT8
Packing Group	II
EPG Number	8A1
IERG Number	40

15. Regulatory information

Poisons Schedule	S6

16. Other Information

Literature References	'Standard for the Uniform Scheduling of Medicines and Poisons .', Commonwealth of Australia. Lewis, Richard J. Sr. 'Hawley's Condensed Chemical Dictionary 13th. Ed.', Rev., John Wiley and Sons, Inc., NY, 1997. National Road Transport Commission, 'Australian Code for the Transport of Dangerous Goods by Road and Rail 7th. Ed.', 2007. Safe Work Australia, 'National Code of Practice fot the Preparation of Safety Data Sheets for Hazardous Chemicals', 2011. Standards Australia, 'SAA/SNZ HB 76:2010 Dangerous Goods - Initial Emergency Response Guide', Standards Australia/Standards New Zealand, 2010. Safe Work Australia, 'Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004)]'. Safe Work Australia, 'Hazardous Chemical Information System, 2005'. Safe Work Australia, 'National Code of Practice for the Labelling of Safe Work Hazardous Substances (2011)'. Safe Work Australia, 'National Exposure Standards for Atmospheric Contaminants in the Occupational Environment [NOHSC:1003(1995) 3rd Edition]'.
Contact Person/Point	Amber Scientific Pty Ltd does not warrant that this product is suitable for any use or purpose. The user must ascertain the suitability of the product before use or application intended purpose. Preliminary testing of the product before use or application is recommended. Any reliance or purported reliance upon Amber Scientific Pty Ltd with respect to any skill or judgement or advice in relation to the suitability of this product of any purpose is disclaimed. Except to the extent prohibited at law, any condition implied by any statute as to the merchantable quality of this product or fitness for any purpose is hereby excluded. This product is not sold by description. Where the provisions of Part V, Division 2 of the Trade Practices Act apply, the liability of Amber Scientific Pty Ltd is limited to the replacement of supply of equivalent goods or payment of the cost of replacing the goods or acquiring equivalent goods.
Empirical Formula & Structural Formula	Cl-H; HCl·H2O; HCl·3H2O; HCl·6H2O. (There are four constant-crystallization eutectic points for hydrochloric acid, between the crystal form of HCl·H2O (68% HCl), HCl·2H2O (51% HCl), HCl·3H2O (41% HCl), HCl·6H2O (25% HCl), and ice (0% HCl). There is also a metastable eutectic point at 24.8% between ice and the HCl·3H2O crystallization.)

...End Of MSDS...