12.5 Results of PBT and vPvb assessment
This product contains no substance considered to be persistent, bioaccumulating or toxic.
12.6 Other adverse effects No information available

SECTION 13. Disposal considerations

13.1 Waste treatment method:
This product is diluted and expended during use. It is recommended that it be pumped back into the delivery container and disposed of with non-hazardous by-products and production residues. Residues can also be disposed of through normal drainage and sewage treatment systems.

SECTION 14. Transport information

Not Classified under EC Directives as dangerous goods for transportation by Road, Rail or Sea.

Transport:	
UN Number:	NA (Not Classified under EC Directives)
UN Proper Shipping Name:	NA (Not Classified under EC Directives)
Hazard Class:	NA (Not Classified under EC Directives)
Packing Group:	NA (Not Classified under EC Directives)
Environmental Hazards:	NA (Not Classified under EC Directives)
Special precautions:	NA (Not Classified under EC Directives)
Transport in bulk:	NA under MARPOL 73/78 and IBC Code

SECTION 15. Regulatory information

15.1 Safety, health or environmental Regulations specific to the mixture: None applicable
15.2 Chemical safety assessment: No chemical safety assessment has been carried out for this mixture.

SECTION 16. Other information

This is the fifth issue of a Safety Data Sheet for Dynamic Descaler in the UK and is at Revision State 5.

Date of Issue: 8th February 2018
Dynamic Descaler MSDS Reference: Dynamic Descaler/2

Further information
This product is intended for industrial use by professional trained persons only.

Do not circulate this product for more than a four (4) hour period without consulting the manufacturer or your local representative. Most cleaning cycles can be accomplished within a two (2) to four (4) hour cycle. This material should be used only as directed.

It should be noted that the effects from exposure to this product will depend on several factors including: frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impossible to prepare a report, which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

However, the hazardous component is at a low concentration (less than 9%) and significant harm from exposure is unlikely provided the relevant precautions are taken.

SAFETY DATA SHEET

According to Regulation (EC) No. 1907/2006, Article 31

SECTION 1: Identification of the substance/mixture and of the Company/undertaking

1.1 Product Identifier Product Name: Dynamic Descaler

1.2 Relevant identified uses of the substance or mixture and uses advised against
Use of the substance/mixture: Industrial removal of Lime Scale and Calcerous Growth from industrial and marine plant

1.3 Details of the supplier of the safety data sheet

Manufacturer:	Precision Dynamics Inc P.O. Box 1595 Burleson, Texas 76097, USA. Phone: 00-1-817-447-9898 Emergency Phone: 00-1-352-323-3500
Importer/UK Supplier:	Dynamic Descaler UK Ltd. Address: Unit 1, Cory Close Wainhouse Corner, Bude, Cornwall, EX23 0AR, U.K. Telephone: 01579 384584 E-mail: sales@dynamicdescaler.co.uk

1.4 Emergency telephone numbers

Supplier:	+44 (0) 1579 384584 (Mon – Fri 08:30 – 17:00) +44 (0) 7899 753479
National Help Desk:	Health and Safety Executive (HSE) Chemicals Regulation Directorate 4N.G Redgrave Court, Merton Road, Bootle, Merseyside. L20 7HS Telephone: +44 151 951 3317 Email: biocidesenquiries@hse.gsi.gov.uk

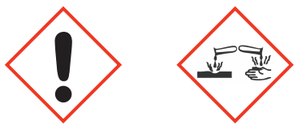
SECTION 2: Hazards Identification

2.1 Classification of the substance or mixture
Classification under EC Directives EC No 1272/2008 (CLP):
For concentration limits up to 10%. Normal concentration of mixture is 9%
Eye irritation Cat 2
Skin irritation Cat 2
Specific target organ toxicity (STOT) Single exposure: Category 3

Hazard statements:
H319: Causes serious eye irritation
H335: May cause respiratory irritation

Precautionary statements:
P202: Do not handle until all safety precautions have been read and understood
P261: Avoid breathing fumes or spray
P271: Use only outdoors or in a well ventilated area
P264: Wash hands thoroughly after using product
P280: Wear protective gloves and goggles
P302 + P352: If on skin, wash with plenty of soap and water
P304 + P340: If inhaled, remove victim to fresh air and keep at rest in a comfortable position for breathing
P305 + P351 + P338: If product gets into the eyes, rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
P301 + P313 + P330: If swallowed, rinse mouth and get medical attention. DO NOT induce vomiting
P312: If victim feels unwell or irritation persists, get medical advice/attention

2.2 Label elements
Labelling under EC Regulation (EC) No 1272/2008 (CLP)
Hazard pictograms



Signal word: Warning

Hazard statements:
Causes serious eye irritation, May cause respiratory irritation
Precautionary statements:
Do not handle until all safety precautions have been read and understood
Avoid breathing fumes or spray

Use only outdoors or in a well ventilated area
Wash hands thoroughly after using product
Wear protective gloves and goggles
If on skin, wash with plenty of soap and water
If inhaled, remove victim to fresh air and keep at rest in a comfortable position for breathing
If product gets into the eyes, rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
If swallowed, rinse mouth and get medical attention. DO NOT induce vomiting
If victim feels unwell or irritation persists, get medical advice/attention
Hazardous components which must be listed on the label:
CAS No: 7647-01-0 Hydrogen chloride, aqueous solution (9%)
HS / Commodity Code 3824994500

2.3 Other hazards
This substance is not considered to be persistent, bioaccumulating or toxic (PBT)

SECTION 3: Composition/information on ingredients

3.2 Mixture
Chemical nature: Acid based mixture in water, concentration 10% or less

Hazardous Components:

Chemical Name CAS No. EC-No. Registration No; TBA	Classification (Regulation EC No. 1272/2008)	Concentration (%)
Hydrogen Chloride CAS 7647-01-0 EC-No. 231-595-7	Eye Irritation Cat 2 Skin Irritation Cat 2 STOT (SE) Cat 3	<9.0

SECTION 4: First Aid measures

4.1 Description of first aid measures
General advice: In all cases of doubt, or when symptoms persist, seek medical attention. Never give anything by mouth to an unconscious person.
Eye contact: Flush eyes immediately with large quantities of water for at least 15 minutes holding eyelids apart to ensure flushing of the entire surface. Washing eyes within one (1) minute is necessary to achieve maximum effectiveness. Remove contact lenses if present and easy to do. Continue rinsing. If irritation persists, get medical attention.
Skin contact: Wash with plenty of soap and water for 15 minutes. Remove contaminated clothing and wash before reuse. Seek medical attention if symptoms are present.
Ingestion: If swallowed, do not induce vomiting. Give large quantities of water or milk of magnesia; if available, several glasses of milk.
Inhalation: Remove to fresh air. If person is not breathing, administer resuscitation. Seek medical attention if loss of consciousness occurs or breathing stops. Seek medical attention if irritation persists.

4.2 Most important symptoms and effects, both acute and delayed
Symptoms: No information available

4.3 Indication of any immediate medical attention and special treatment
Treatment: No information available.

SECTION 5: Fire-fighting measures

This product is non-flammable.

5.1 Extinguishing Media:
N/A to product itself. Water spray, foam, CO2 may all be used if suitable for the primary fire.

5.2 Special hazards arising from the substance: None.

5.3 Advice for fire-fighters:
Use approved self-contained breathing apparatus in areas where this material is involved in a fire.
Protective clothing for skin and eye protection should be worn

SECTION 6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Use appropriate personal protection—rubber or nitryl gloves, goggles or safety glasses.
If spilt in bulk, wear splash-proof goggles, PVC/rubber gloves, coveralls and rubber boots.

6.2 Environmental precautions:
Small spills can be mopped up using sand or spill control granules. Neutralize with large amounts of water and (if available) diluted sodium carbonate. Prevent spill entering drains or waterways until neutralized.

6.3 Methods and materials for containment and cleaning up
May be disposed to normal drainage once neutralized.

SECTION 7. Handling and storage

7.1 Precautions for safe handling
Good industrial hygiene practices should be adhered to when storing and handling this product. Avoid contact with undiluted product. This material when used or completely spent is non-hazardous. It neutralizes itself in use.

7.2 Conditions for safe storage, including any incompatibilities
Store in cool, dry, well-ventilated area, removed from oxidising agents, heat sources and foodstuffs. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use. Large storage areas should have appropriate ventilation systems.

SECTION 8. Exposure controls/personal protection

8.1 Control parameters: None applicable

8.2 Exposure controls:
Engineering measures
Product should be used in purpose-designed equipment that does not expose the operator in normal use. Circulation should only be started once all pipework connections have been made and tested.
Provide adequate general ventilation.

Personal protective equipment
Respiratory Protection: None required under normal conditions with adequate general ventilation.
Hand Protection: Acid resistant gloves such as rubber or nitryl should be worn.
Eye Protection: Safety goggles or a full face visor should be worn while mixing or dispensing the product.
Skin Protection: Standard work clothes (overalls) should be worn. Wash soiled clothing in soap and water and dry before reuse. Eyewash facilities should be accessible.

SECTION 9. Physical and chemical properties

9.1 Information on basic physical and chemical properties
Physical state: Amber coloured liquid.
Odour: Almond-like smell.
pH: < 2
Boiling Point: 108°C
Flash Point: N/A
Flammability: This product is not flammable
Explosive properties: N/A
Relative density (H2O=1): 1.06
Vapour Pressure (mm. Hg): 20 Torr
Melting Point: Not Determined
Vapour Density (air=1): 1.27 Evaporation Rate: (Butyl Acetate=1) 2.0
Solubility in Water: Complete

SECTION 10. Stability and reactivity

10.1 Reactivity: No decomposition if stored and applied as directed
10.2 Chemical stability: Under normal conditions this product is stable.
10.3 Possibility of hazardous reactions: No dangerous reactions known in normal use
10.4 Conditions to avoid: Stable under recommended storage and handling conditions
10.5 Incompatible materials: Do not mix with alkaline products; may cause a hazardous reaction.
10.6 Hazardous Decomposition Products: None

SECTION 11. Toxicological information

11.1 Information on toxicological effects
Health Hazard Summary: Non-Toxic Irritant. This product may present a hazard with direct eye contact, prolonged and repeated skin contact. Chronic effects are not anticipated.
Eye: Irritant. Exposure may result in irritation, pain and redness.
Inhalation: Low Irritant. Over exposure at high levels may result in mucous membrane irritation of the upper respiratory tract (i.e. nose and throat) and coughing. However, due to the low vapour pressure, adverse health effects are not anticipated under normal conditions of use.
Skin: Low Irritant. Prolonged and repeated contact may result in drying and de-fatting of the skin with rash and dermatitis.
Ingestion: Non-Toxic Irritant. Ingestion of large doses may result in nausea, vomiting and gastrointestinal irritation.
Toxicity Data: No carcinogenic effects known.

SECTION 12. Ecological information

12.1 Toxicity: Acute aquatic toxicity: No information available
12.2 Persistence and degradability
This product is biodegradable. Once used, the product is neutralised and has no adverse effects on the environment.
12.3 Bioaccumulative potential: No information available
12.4 Mobility in soil No information available