

**Apex Ultra****Section: 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING****1.1 Product identifier**

Product name : Apex Ultra

UFI : XJDF-C5DN-1C0E-49AV

Product code : 116638E

Use of the Substance/Mixture : Machine Warewashing Detergent

Substance type: : Mixture

**For professional users only.**

Product dilution information : 0.1 % - 0.25 %

**1.2 Relevant identified uses of the substance or mixture and uses advised against**

Identified uses : Dishwash and rinse aid product; Automatic process

Recommended restrictions on use : Reserved for industrial and professional use.

**1.3 Details of the supplier of the safety data sheet**

Company : Ecolab Limited  
Forest Park  
Mullingar Industrial Estate, Mullingar Co. Westmeath Ireland +353  
1 276 3500  
infoireland@ecolab.com

Ecolab Ltd.  
PO Box 11; Winnington Avenue  
Northwich, Cheshire, United Kingdom CW8 4DX  
+353 (0)1 276 3500  
ccs@ecolab.com

**1.4 Emergency telephone number**

Poison Information Centre telephone number : Poisons Information: For information or to report a poisoning incident contact The National Poisons Information Centre (01 8092166)

Date of Compilation/Revision : 03.10.2022  
Version : 3.1

**Section: 2. HAZARDS IDENTIFICATION****2.1 Classification of the substance or mixture**

**SAFETY DATA SHEET** according to Regulation (EC) No. 1907/2006**Apex Ultra****Classification (REGULATION (EC) No 1272/2008)****Product AS SOLD**

Eye irritation, Category 2

H319

Chronic aquatic toxicity, Category 3

H412

**Product AT USE DILUTION**

Not a hazardous substance or mixture.

**2.2 Label elements****Labelling (REGULATION (EC) No 1272/2008)****Product AS SOLD**

Hazard pictograms

:



Signal Word

: Warning

Hazard Statements

: H319  
H412

Causes serious eye irritation.

Harmful to aquatic life with long lasting effects.

Supplemental Hazard  
Statements

: EUH031

Contact with acids liberates toxic gas.

Precautionary Statements

: **Prevention:**  
P273

Avoid release to the environment.

**Product AT USE DILUTION**

Not a hazardous substance or mixture.

**2.3 Other hazards****Product AS SOLD**

Mixing this product with acid or ammonia releases chlorine gas.

**Section: 3. COMPOSITION/INFORMATION ON INGREDIENTS****3.2 Mixtures****Product AS SOLD****Hazardous components**

Chemical Name	CAS-No. EC-No. REACH No.	Classification REGULATION (EC) No 1272/2008	Concentration : [%]
Sodium Carbonate	497-19-8 207-838-8 01-2119485498-19	Eye irritation Category 2; H319	>= 30 - < 50
Phosphonates	67953-76-8 267-956-0 01-2119510384-48	Acute toxicity Category 4; H302	>= 2.5 - < 5
Sodium dichloro-s-triazinetrione dihydrate	51580-86-0 220-767-7 01-2119489371-33	Acute toxicity Category 4; H302 Eye irritation Category 2; H319 Specific target organ toxicity - single exposure Category 3; H335	>= 1 - < 2.5

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		Acute aquatic toxicity Category 1; H400 Chronic aquatic toxicity Category 1; H410  Specific target organ toxicity - single exposure Category 3 H335 >= 10 %  EUH031 >= 10 %	
Substances with a workplace exposure limit :			
aluminium sodium dioxide	1302-42-7 01-2119519249-35	Corrosive to metals Category 1; H290 Skin corrosion Sub-category 1A; H314 Serious eye damage Category 1; H318	>= 0.1 - < 0.25

**Product AT USE DILUTION**

Remarks : No hazardous ingredients

For the full text of the H-Statements mentioned in this Section, see Section 16.

**Section: 4. FIRST AID MEASURES**

**4.1 Description of first aid measures**

**Product AS SOLD**

In case of eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention.

In case of skin contact : Rinse with plenty of water.

If swallowed : Rinse mouth. Get medical attention if symptoms occur.

If inhaled : Get medical attention if symptoms occur.

**Product AT USE DILUTION**

In case of eye contact : Rinse with plenty of water.

In case of skin contact : Rinse with plenty of water.

If swallowed : Rinse mouth. Get medical attention if symptoms occur.

If inhaled : Get medical attention if symptoms occur.

**4.2 Most important symptoms and effects, both acute and delayed**

See Section 11 for more detailed information on health effects and symptoms.

**4.3 Indication of immediate medical attention and special treatment needed**

Treatment : Treat symptomatically.

**Section: 5. FIREFIGHTING MEASURES**

**Product AS SOLD**

**5.1 Extinguishing media**

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

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Unsuitable extinguishing media : None known.

**5.2 Special hazards arising from the substance or mixture**

Specific hazards during firefighting : Exposure to decomposition products may be a hazard to health.

Hazardous combustion products : Depending on combustion properties, decomposition products may include following materials:  
Carbon oxides  
Sulphur oxides  
metal oxides

**5.3 Advice for firefighters**

Special protective equipment for firefighters : Use personal protective equipment.

Further information : Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. In the event of fire and/or explosion do not breathe fumes.

**Section: 6. ACCIDENTAL RELEASE MEASURES**

**6.1 Personal precautions, protective equipment and emergency procedures**

**Product AS SOLD**

Advice for non-emergency personnel : Ensure clean-up is conducted by trained personnel only. Refer to protective measures listed in sections 7 and 8.

Advice for emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials.

**Product AT USE DILUTION**

Advice for non-emergency personnel : Refer to protective measures listed in sections 7 and 8.

Advice for emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials.

**6.2 Environmental precautions**

**Product AS SOLD**

Environmental precautions : Do not allow contact with soil, surface or ground water.

**Product AT USE DILUTION**

Environmental precautions : No special environmental precautions required.

**6.3 Methods and materials for containment and cleaning up**

**Product AS SOLD**

Methods for cleaning up : Sweep up and shovel into suitable containers for disposal.  
Collect spillage.

**Product AT USE DILUTION**

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Methods for cleaning up : Stop leak if safe to do so. Contain spillage, and then collect 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). Flush away traces with water. For large spills, dike spilled material or otherwise contain material to ensure runoff does not reach a waterway.

**6.4 Reference to other sections**

See Section 1 for emergency contact information.  
For personal protection see section 8.  
See Section 13 for additional waste treatment information.

**Section: 7. HANDLING AND STORAGE**

**7.1 Precautions for safe handling**

**Product AS SOLD**

Advice on safe handling : Avoid contact with skin and eyes. Use only with adequate ventilation. Wash hands thoroughly after handling. Mixing this product with acid or ammonia releases chlorine gas. In case of mechanical malfunction, or if in contact with unknown dilution of product, wear full Personal Protective Equipment (PPE).

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Remove and wash contaminated clothing before re-use. Wash face, hands and any exposed skin thoroughly after handling.

**Product AT USE DILUTION**

Advice on safe handling : Wash hands after handling. In case of mechanical malfunction, or if in contact with unknown dilution of product, wear full Personal Protective Equipment (PPE). For personal protection see section 8.

Hygiene measures : Wash hands before breaks and immediately after handling the product.

**7.2 Conditions for safe storage, including any incompatibilities**

**Product AS SOLD**

Requirements for storage areas and containers : Keep out of reach of children. Keep container tightly closed. Store in suitable labeled containers.

Storage temperature : 0 °C to 40 °C

**Product AT USE DILUTION**

Requirements for storage areas and containers : Keep out of reach of children. Keep container tightly closed. Store in suitable labeled containers.

**7.3 Specific end uses**

**Product AS SOLD**

Specific use(s) : Dishwash and rinse aid product; Automatic process

**Section: 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

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**8.1 Control parameters**
**Product AS SOLD**
**Occupational Exposure Limits**

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
aluminium sodium dioxide	1302-42-7	OELV - 8 hrs (TWA)	2 mg/m <sup>3</sup> (Aluminium)	IR_OEL
chlorine	7782-50-5	OELV - 15 min (STEL)	0.5 ppm 1.5 mg/m <sup>3</sup>	IR_OEL
		STEL	0.5 ppm 1.5 mg/m <sup>3</sup>	2006/15/EC
Further information		Indicative		

**DNEL**

Sodium Carbonate	:	<p>End Use: Workers Exposure routes: Inhalation Potential health effects: Long-term local effects Value: 10 mg/m<sup>3</sup></p> <p>End Use: Consumers Exposure routes: Inhalation Potential health effects: Acute local effects Value: 10 mg/m<sup>3</sup></p>
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**8.2 Exposure controls**
**Product AS SOLD**
**Appropriate engineering controls**

Engineering measures : Effective exhaust ventilation system. Maintain air concentrations below occupational exposure standards.

**Individual protection measures**

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Remove and wash contaminated clothing before re-use. Wash face, hands and any exposed skin thoroughly after handling.

Eye/face protection (EN 166) : Due to the form and packaging of the product, no protective equipment is needed under normal use conditions.

Hand protection (EN 374) : No special protective equipment required.

Skin and body protection (EN 14605) : No special protective equipment required.

Respiratory protection (EN 143, 14387) : When respiratory risks cannot be avoided or sufficiently limited by technical means of collective protection or by measures, methods or procedures of work organization, consider the use of certified respiratory protection equipment meeting EU requirements (89/656/EEC, (EU) 2016/425), or equivalent, with filter type:P

**Product AT USE DILUTION**
**Appropriate engineering controls**

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Engineering measures : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

**Individual protection measures**

Hygiene measures : Wash hands before breaks and immediately after handling the product.

Eye/face protection (EN 166) : No special protective equipment required.

Hand protection (EN 374) : No special protective equipment required.

Skin and body protection (EN 14605) : No special protective equipment required.

Respiratory protection (EN 143, 14387) : None required if airborne concentrations are maintained below the exposure limit listed in Exposure Limit Information. Use certified respiratory protection equipment meeting EU requirements(89/656/EEC, (EU) 2016/425), or equivalent, when respiratory risks cannot be avoided or sufficiently limited by technical means of collective protection or by measures, methods or procedures of work organization.

**Environmental exposure controls**

General advice : Consider the provision of containment around storage vessels.

**Section: 9. PHYSICAL AND CHEMICAL PROPERTIES**

**9.1 Information on basic physical and chemical properties**

	<b>Product AS SOLD</b>	<b>Product AT USE DILUTION</b>
Physical state	: solid	liquid
Colour	: white	colourless
Odour	: Chlorine	Chlorine
pH	: 10.45 - 10.95, 1 %	10.45 - 10.95
Particle characteristics		
Assessment	: no data available	not applicable
Particle size	: no data available	not applicable
Particle Size Distribution	: no data available	not applicable
Dustiness	: no data available	not applicable
Specific surface area	: no data available	not applicable
Surface charge/Zeta potential	: no data available	not applicable
Shape	: no data available	not applicable
Crystallinity	: no data available	not applicable
Surface treatment /Coatings	: no data available	not applicable
Flash point	: Not applicable.	
Odour Threshold	: Not applicable and/or not determined for the mixture	

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Melting point/freezing point	: Not applicable and/or not determined for the mixture
Boiling point, initial boiling point and boiling range	: > 100 °C
Evaporation rate	: Not applicable and/or not determined for the mixture
Flammability	: Not applicable and/or not determined for the mixture
Upper explosion limit	: Not applicable and/or not determined for the mixture
Lower explosion limit	: Not applicable and/or not determined for the mixture
Vapour pressure	: Not applicable and/or not determined for the mixture
Relative vapour density	: Not applicable and/or not determined for the mixture
Density and / or relative density	: 3.2 - 3.6
Water solubility	: soluble
Solubility in other solvents	: Not applicable and/or not determined for the mixture
Partition coefficient: n-octanol/water (log value)	: Not applicable and/or not determined for the mixture
Auto-ignition temperature	: Not applicable and/or not determined for the mixture
Thermal decomposition	: Not applicable and/or not determined for the mixture
Viscosity, kinematic	: Not applicable and/or not determined for the mixture
Explosive properties	: Not applicable and/or not determined for the mixture
Oxidizing properties	: Yes

**9.2 Other information**

Not applicable and/or not determined for the mixture

**Section: 10. STABILITY AND REACTIVITY****Product AS SOLD****10.1 Reactivity**

No dangerous reaction known under conditions of normal use.

**10.2 Chemical stability**

Stable under normal conditions.

**10.3 Possibility of hazardous reactions**

Mixing this product with acid or ammonia releases chlorine gas.

**10.4 Conditions to avoid**

None known.

**10.5 Incompatible materials**

Acids  
Bases

**10.6 Hazardous decomposition products**



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Depending on combustion properties, decomposition products may include following materials:

Carbon oxides

Sulphur oxides

metal oxides

**Section: 11. TOXICOLOGICAL INFORMATION****11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008****Product AS SOLD**

Information on likely routes of exposure : Eye contact, Skin contact

**Product**

Acute oral toxicity	: Acute toxicity estimate : > 2,000 mg/kg
Acute inhalation toxicity	: There is no data available for this product.
Acute dermal toxicity	: There is no data available for this product.
Skin corrosion/irritation	: There is no data available for this product.
Serious eye damage/eye irritation	: There is no data available for this product.
Respiratory or skin sensitization	: Contains an ingredient that can cause asthmatic-like reactions in sulfite-sensitive individuals.
Carcinogenicity	: There is no data available for this product.
Reproductive effects	: There is no data available for this product.
Germ cell mutagenicity	: There is no data available for this product.
Teratogenicity	: There is no data available for this product.
STOT - single exposure	: There is no data available for this product.
STOT - repeated exposure	: There is no data available for this product.
Aspiration toxicity	: There is no data available for this product.

**Components**

Acute oral toxicity	: Sodium Carbonate LD50 rat: 2,800 mg/kg
	Phosphonates LD50 rat: 940 mg/kg
	Sodium dichloro-s-triazinetriene dihydrate LD50 rat: 1,823 mg/kg

**Components**

Acute dermal toxicity	: Sodium dichloro-s-triazinetriene dihydrate LD50 rat: > 5,000 mg/kg
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**Potential Health Effects**

**Apex Ultra****Product AS SOLD**

Eyes	: Causes serious eye irritation.
Skin	: Health injuries are not known or expected under normal use.
Ingestion	: Health injuries are not known or expected under normal use.
Inhalation	: Health injuries are not known or expected under normal use.
Chronic Exposure	: Health injuries are not known or expected under normal use.

**Product AT USE DILUTION**

Eyes	: Health injuries are not known or expected under normal use.
Skin	: Health injuries are not known or expected under normal use.
Ingestion	: Health injuries are not known or expected under normal use.
Inhalation	: Health injuries are not known or expected under normal use.
Chronic Exposure	: Health injuries are not known or expected under normal use.

**Experience with human exposure****Product AS SOLD**

Eye contact	: Redness, Pain, Irritation
Skin contact	: No symptoms known or expected.
Ingestion	: No symptoms known or expected.
Inhalation	: No symptoms known or expected.

**Product AT USE DILUTION**

Eye contact	: No symptoms known or expected.
Skin contact	: No symptoms known or expected.
Ingestion	: No symptoms known or expected.
Inhalation	: No symptoms known or expected.

**11.2 Information on other hazards**

<b>Further information</b>	: no data available
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**Section: 12. ECOLOGICAL INFORMATION****12.1 Toxicity****Product AS SOLD**

Environmental Effects	: Harmful to aquatic life with long lasting effects.
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**Product AT USE DILUTION**

Environmental Effects	: This product has no known ecotoxicological effects.
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**Product AS SOLD  
Product**

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Toxicity to fish : no data available

Toxicity to daphnia and other aquatic invertebrates : no data available

Toxicity to algae : no data available

**Components**

Toxicity to fish : Sodium Carbonate  
96 h LC50 *Lepomis macrochirus* (Bluegill sunfish): 300 mg/l

Sodium dichloro-s-triazinetrione dihydrate  
96 h LC50 *Oncorhynchus mykiss* (rainbow trout): 0.24 mg/l

aluminium sodium dioxide  
96 h EC50 *Salmo trutta* (brown trout): > 100 mg/l  
Test substance: Information given is based on data obtained from similar substances.

**Components**

Toxicity to daphnia and other aquatic invertebrates : Sodium Carbonate  
48 h EC50 *Ceriodaphnia* (water flea): 213.5 mg/l

Phosphonates  
48 h EC50: 167 mg/l

Sodium dichloro-s-triazinetrione dihydrate  
48 h EC50 *Daphnia magna* (Water flea): 0.196 mg/l

**Components**

Toxicity to algae : Sodium dichloro-s-triazinetrione dihydrate  
72 h EC50 *Skeletonema costatum* (marine diatom): > 100 mg/l

**12.2 Persistence and degradability**

**Product**

Biodegradability : The surfactants contained in the product are biodegradable according to the requirements of the detergent regulation 648/2004/EC

**Components**

Biodegradability : Sodium Carbonate  
Result: Not applicable - inorganic

Phosphonates  
Result: Poorly biodegradable

Sodium dichloro-s-triazinetrione dihydrate  
Result: Poorly biodegradable

aluminium sodium dioxide  
Result: Not applicable - inorganic

**12.3 Bioaccumulative potential**

no data available

**Apex Ultra****12.4 Mobility in soil**

no data available

**12.5 Results of PBT and vPvB assessment****Product**

Assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

**12.6 Endocrine disrupting properties**

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher

**12.7 Other adverse effects**

no data available

**Section: 13. DISPOSAL CONSIDERATIONS**

Dispose of in accordance with the European Directives on waste and hazardous waste. Waste codes should be assigned by the user, preferably in discussion with the waste disposal authorities.

**13.1 Waste treatment methods****Product AS SOLD**

- Product : Do not contaminate storm water drains, natural waterways or soil with chemical or used container. Where possible recycling is preferred to disposal or incineration. If recycling is not practicable, dispose of contents/container in accordance with local regulations. Dispose of wastes in an approved waste disposal facility.
- Contaminated packaging : Dispose of as unused product. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers. Dispose of in accordance with local, state, and federal regulations.
- Guidance for Waste Code selection : Inorganic wastes containing dangerous substances. If this product is used in any further processes, the final user must redefine and assign the most appropriate European Waste Catalogue Code. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable European (EU Directive 2008/98/EC) and local regulations.

**Product AT USE DILUTION**

- Product : Diluted product can be flushed to sanitary sewer if regulations permit.
- Contaminated packaging : Dispose of in accordance with local, state, and federal regulations.

**Apex Ultra****Section: 14. TRANSPORT INFORMATION****Product AS SOLD**

The shipper/consignor/sender is responsible to ensure that the packaging, labeling, and markings are in compliance with the selected mode of transport.

**Land transport (ADR/ADN/RID)**

14.1 UN number or ID number	: Not dangerous goods
14.2 UN proper shipping name	: Not dangerous goods
14.3 Transport hazard class(es)	: Not dangerous goods
14.4 Packing group	: Not dangerous goods
14.5 Environmental hazards	: Not dangerous goods
14.6 Special precautions for user	: Not dangerous goods

**Air transport (IATA)**

14.1 UN number or ID number	: Not dangerous goods
14.2 UN proper shipping name	: Not dangerous goods
14.3 Transport hazard class(es)	: Not dangerous goods
14.4 Packing group	: Not dangerous goods
14.5 Environmental hazards	: Not dangerous goods
14.6 Special precautions for user	: Not dangerous goods

**Sea transport (IMDG/IMO)**

14.1 UN number or ID number	: Not dangerous goods
14.2 UN proper shipping name	: Not dangerous goods
14.3 Transport hazard class(es)	: Not dangerous goods
14.4 Packing group	: Not dangerous goods
14.5 Environmental hazards	: Not dangerous goods
14.6 Special precautions for user	: Not dangerous goods
14.7 Maritime transport in bulk according to IMO instruments	: Not dangerous goods

**Section: 15. REGULATORY INFORMATION****15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

according to Detergents Regulation EC 648/2004	: 15 % or over but less than 30 %: Phosphates less than 5 %: Phosphonates, Anionic surfactants, Non-ionic surfactants, Chlorine-based bleaching agents, Polycarboxylates
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Seveso III: Directive : Not applicable.  
2012/18/EU of the European  
Parliament and of the Council  
on the control of major-  
accident hazards involving  
dangerous substances.

Candidate List of Substances : Not applicable.  
of Very High Concern for  
Authorisation

**National Regulations**

**Take note of Dir 94/33/EC on the protection of young people at work.**

Other regulations : Safety, Health and Welfare at Work Act, 2005  
European Communities (Classification, Packaging, Labelling and  
Notification of Dangerous Preparations) Regulations 1995. (S.I.  
272 of 1995) as amended

**15.2 Chemical Safety Assessment**

No Chemical Safety Assessment has been carried out on the product.

**Section: 16. OTHER INFORMATION****Procedure used to derive the classification according to REGULATION (EC) No 1272/2008**

Classification	Justification
Eye irritation 2, H319	Calculation method
Chronic aquatic toxicity 3, H412	Calculation method

**Full text of H-Statements**

H290 May be corrosive to metals.  
H302 Harmful if swallowed.  
H314 Causes severe skin burns and eye damage.  
H318 Causes serious eye damage.  
H319 Causes serious eye irritation.  
H335 May cause respiratory irritation.  
H400 Very toxic to aquatic life.  
H410 Very toxic to aquatic life with long lasting effects.

**Full text of other abbreviations**

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing

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Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of Very High Concern; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

**Further information**

Prepared by : Regulatory Affairs

Numbers quoted in the MSDS are given in the format: 1,000,000 = 1 million and 1,000 = 1 thousand. 0.1 = 1 tenth and 0.001 = 1 thousandth

REVISED INFORMATION: Significant changes to regulatory or health information for this revision is indicated by a bar in the left-hand margin of the SDS.

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.

**Annex: Exposure Scenarios****Exposure Scenario: Dishwash and rinse aid product; Automatic process**

Life Cycle Stage : Widespread use by professional workers

Product category : **PC35** Washing and cleaning products (including solvent based products)

**Contributing scenario controlling environmental exposure for:**

Environmental release category : **ERC8a** Wide dispersive indoor use of processing aids in open systems

Daily amount per site : 7.5 kg

Type of Sewage Treatment Plant : Municipal sewage treatment plant

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**Contributing scenario controlling worker exposure for:**

Process category : **PROC8a** Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities

Exposure duration : 60 min

Operational conditions and risk management measures : Indoor

Local Exhaust Ventilation is not required

General ventilation Ventilation rate per hour 1

Skin Protection : see section 8

Respiratory Protection : see section 8

**Contributing scenario controlling worker exposure for:**

Process category : **PROC3** Use in closed batch process (synthesis or formulation)

Exposure duration : 480 min

Operational conditions and risk management measures : Indoor

Local Exhaust Ventilation is not required

General ventilation Ventilation rate per hour 1

Skin Protection : see section 8

Respiratory Protection : see section 8