

**KEYSTONE MANUAL DISH PRO****Section: 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING****1.1 Product identifier**

Product name : KEYSTONE MANUAL DISH PRO

Product code : 123054E

Use of the Substance/Mixture : Manual Warewashing Detergent

Substance type: : Mixture

**For professional users only.**

Product dilution information : No dilution information provided.

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

Identified uses : Dishwash product. Manual process

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

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

Company : Ecolab Ltd.  
PO Box 11; Winnington Avenue  
Northwich, Cheshire, United Kingdom CW8 4DX  
+ 44 (0)1606 74488  
ccs@ecolab.com

**1.4 Emergency telephone number**

Emergency telephone number : +441618841235  
+32-(0)3-575-5555 Trans-European

Poison Information Centre telephone number : For medical professionals only: 0344 892 0111

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**Section: 2. HAZARDS IDENTIFICATION****2.1 Classification of the substance or mixture****Classification (REGULATION (EC) No 1272/2008)**

Skin irritation, Category 2	H315
Serious eye damage, Category 1	H318
Chronic aquatic toxicity, Category 3	H412

**2.2 Label elements**

**KEYSTONE MANUAL DISH PRO****Labelling (REGULATION (EC) No 1272/2008)**

Hazard pictograms :



Signal Word : Danger

Hazard Statements : H315 Causes skin irritation.  
 H318 Causes serious eye damage.  
 H412 Harmful to aquatic life with long lasting effects.

Precautionary Statements : **Prevention:**  
 P273 Avoid release to the environment.  
 P280 Wear protective gloves/ eye protection/ face protection.

**Response:**  
 P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
 P310 Immediately call a POISON CENTER/doctor.

Hazardous components which must be listed on the label:  
 Linear(C12-C14)alkanol, ethoxylated, sulfated, sodium salt

**2.3 Other hazards**

None known.

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

Chemical Name	CAS-No. EC-No. REACH No.	Classification REGULATION (EC) No 1272/2008	Concentration : [%]
Linear(C12-C14)alkanol, ethoxylated, sulfated, sodium salt	68891-38-3 500-234-8 01-2119488639-16	Skin irritation Category 2; H315 Serious eye damage Category 1; H318 Chronic aquatic toxicity Category 3; H412  Serious eye damage/eye irritation Category 1 10 - 100 % Serious eye damage/eye irritation Category 2A > 5 - < 10 %	>= 30 - < 50
ethanol	64-17-5 200-578-6 01-2119457610-43	Flammable liquids Category 2; H225 Serious eye damage/eye irritation Category 2; H319  Serious eye damage/eye irritation Category 2 50 - 100 %	>= 1 - < 10
1-Propanaminium, 3-amino-N-(carboxymethyl)-	147170-44-3 01-2119489410-39	Serious eye damage Category 1; H318 Chronic aquatic toxicity Category 3; H412	>= 2.5 - < 3

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N,N-dimethyl-, N-(C8-18 and C18-unsatd. acyl) derivs., hydroxides, inner salts		Serious eye damage/eye irritation Category 1 > 10 % Serious eye damage/eye irritation Category 2A 4 - 10 %	
Amides, C12-18 and C18-unsatd., N-(hydroxyethyl)	90622-77-8 292-481-0 01-2119489413-33	Serious eye damage/eye irritation Category 1; H318 Skin corrosion/irritation Category 2; H315	>= 1 - < 3
Substances with a workplace exposure limit :			
butanone	78-93-3 201-159-0 01-2119457290-43	Flammable liquids Category 2; H225 Eye irritation Category 2; H319 Specific target organ toxicity - single exposure Category 3; H336	>= 0.1 - < 1

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**

- 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 immediately.
- In case of skin contact : Wash off immediately with plenty of water for at least 15 minutes. Use a mild soap if available. Get medical attention if irritation develops and persists.
- If swallowed : Rinse mouth. Get medical attention if symptoms occur.
- If inhaled : Remove to fresh air. Treat symptomatically. 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****5.1 Extinguishing media**

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Unsuitable extinguishing media : None known.

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

- Specific hazards during : Fire Hazard

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firefighting	Keep away from heat and sources of ignition. Flash back possible over considerable distance. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
Hazardous combustion products	: Depending on combustion properties, decomposition products may include following materials: Carbon oxides nitrogen oxides (NOx) Sulphur oxides metal oxides

**5.3 Advice for firefighters**

Special protective equipment for firefighters	: Use personal protective equipment.
Further information	: Collect contaminated fire extinguishing water separately. This must not be discharged into drains. 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**

Advice for non-emergency personnel	: Ensure adequate ventilation. Remove all sources of ignition. Keep people away from and upwind of spill/leak. Avoid inhalation, ingestion and contact with skin and eyes. When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. 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.

**6.2 Environmental precautions**

Environmental precautions	: Do not allow contact with soil, surface or ground water.
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**6.3 Methods and materials for containment and cleaning up**

Methods for cleaning up	: Eliminate all ignition sources if safe to do so. 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.
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**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.

**KEYSTONE MANUAL DISH PRO****Section: 7. HANDLING AND STORAGE****7.1 Precautions for safe handling**

- Advice on safe handling : Avoid contact with skin and eyes. Do not get in eyes, on skin, or on clothing. Use only with adequate ventilation. Keep away from fire, sparks and heated surfaces. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours). Wash hands thoroughly after handling. Open drum carefully as content may be under pressure. Do not breathe spray, vapour. 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. Provide suitable facilities for quick drenching or flushing of the eyes and body in case of contact or splash hazard.

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

- Requirements for storage areas and containers : Keep away from heat and sources of ignition. Protect from frost, heat and sunlight. Store at room temperature in the original container. Keep away from oxidizing agents. Keep out of reach of children. Keep container tightly closed. Store in suitable labeled containers.
- Storage temperature : 0 °C to 40 °C

**7.3 Specific end uses**

- Specific use(s) : Dishwash product. Manual process

**Section: 8. EXPOSURE CONTROLS/PERSONAL PROTECTION****8.1 Control parameters****Occupational Exposure Limits**

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
ethanol	64-17-5	TWA	1,000 ppm 1,920 mg/m <sup>3</sup>	UKCOSSTD
butanone	78-93-3	TWA	200 ppm 600 mg/m <sup>3</sup>	UKCOSSTD
Further information	Sk	Can be absorbed through the skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity.		
		STEL	300 ppm 899 mg/m <sup>3</sup>	UKCOSSTD
Further information	Sk	Can be absorbed through the skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity.		

**Biological occupational exposure limits**

Substance name	CAS-No.	Control parameters	Sampling time	Basis
butanone	78-93-3	butan-2-one: 70 micromol per litre (Urine)	After shift	GB EH40 BAT

DNEL

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Linear(C12-C14)alkanol,  
ethoxylated, sulfated, sodium  
salt

: End Use: Workers  
Exposure routes: Inhalation  
Potential health effects: Long-term systemic effects  
Value: 175 mg/m3

End Use: Workers  
Exposure routes: Dermal  
Potential health effects: Long-term systemic effects  
Value: 2750 mg/m3

End Use: Workers  
Exposure routes: Dermal  
Potential health effects: Long-term local effects  
Value: 0.132 mg/m3

End Use: Consumers  
Exposure routes: Inhalation  
Potential health effects: Long-term systemic effects  
Value: 52 mg/m3

End Use: Consumers  
Exposure routes: Dermal  
Potential health effects: Long-term systemic effects  
Value: 1650 mg/m3

End Use: Consumers  
Exposure routes: Dermal  
Potential health effects: Long-term local effects  
Value: 0.079 mg/m3

End Use: Consumers  
Exposure routes: Oral  
Potential health effects: Long-term systemic effects  
Value: 15 mg/m3

## PNEC

Linear(C12-C14)alkanol,  
ethoxylated, sulfated, sodium  
salt

: Fresh water  
Value: 0.24 mg/l

Marine water  
Value: 0.024 mg/l

Sewage treatment plant  
Value: 10000 mg/l

Fresh water sediment  
Value: 0.917 mg/kg

Marine sediment  
Value: 0.092 mg/kg

Soil  
Value: 7.5 mg/kg

## 8.2 Exposure controls

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**Appropriate engineering controls**

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

**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. Provide suitable facilities for quick drenching or flushing of the eyes and body in case of contact or splash hazard.

Eye/face protection (EN 166) : Safety goggles  
Face-shield

Hand protection (EN 374) : Recommended preventive skin protection  
Gloves  
Nitrile rubber  
butyl-rubber  
Breakthrough time: 1 – 4 hours  
Minimum thickness for butyl-rubber 0.3 mm for nitrile rubber 0.2 mm or equivalent (please refer to the gloves manufacturer/distributor for advise).  
Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

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**

Appearance : liquid  
Colour : clear, light yellow  
Odour : not significant  
pH : 6.5 - 7.5, 100 %  
Flash point : 37 °C, Does not sustain combustion.  
Odour Threshold : Not applicable and/or not determined for the mixture  
Melting point/freezing point : Not applicable and/or not determined for the mixture  
Initial boiling point and : > 100 °C

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boiling range

Evaporation rate	: Not applicable and/or not determined for the mixture
Flammability (solid, gas)	: 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
Relative density	: 1.05 - 1.06
Water solubility	: soluble
Solubility in other solvents	: Not applicable and/or not determined for the mixture
Partition coefficient: n-octanol/water	: 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	: 280.000 mm <sup>2</sup> /s (40 °C)
Explosive properties	: Not applicable and/or not determined for the mixture
Oxidizing properties	: The substance or mixture is not classified as oxidizing.

**9.2 Other information**

Not applicable and/or not determined for the mixture

**Section: 10. STABILITY AND REACTIVITY**

**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**

No dangerous reaction known under conditions of normal use.

**10.4 Conditions to avoid**

Heat, flames and sparks.

**10.5 Incompatible materials**

None known.

**10.6 Hazardous decomposition products**

In the event of fire, see Section 5

**Section: 11. TOXICOLOGICAL INFORMATION**



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**11.1 Information on toxicological effects**

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

**Product**

Acute oral toxicity : There is no data available for this product.

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 : There is no data available for this product.

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 : Linear(C12-C14)alkanol, ethoxylated, sulfated, sodium salt LD50 rat: 3,350 mg/kg

ethanol LD50 rat: 10,470 mg/kg

1-Propanaminium, 3-amino-N-(carboxymethyl)-N,N-dimethyl-, N-(C8-18 and C18-unsatd. acyl) derivs., hydroxides, inner salts  
LD50 rat: > 5,000 mg/kg

butanone LC50 rat: 2,193 mg/kg

Test substance: Information given is based on data obtained from similar substances.

**Components**

Acute inhalation toxicity : ethanol 4 h LC50 rat: 117 mg/l  
Test atmosphere: vapour

butanone 4 h LC50 rat: 34.4 mg/l  
Test atmosphere: vapour

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**Components**

Acute dermal toxicity : Linear(C12-C14)alkanol, ethoxylated, sulfated, sodium salt LD50 rat: 8,000 mg/kg

ethanol LD50 rabbit: 15,800 mg/kg

1-Propanaminium, 3-amino-N-(carboxymethyl)-N,N-dimethyl-, N-(C8-18 and C18-unsatd. acyl) derivs., hydroxides, inner salts LD50 rat: > 2,000 mg/kg

butanone LD50 rat: > 8,050 mg/kg

**Potential Health Effects**

Eyes : Causes serious eye damage.

Skin : Causes skin irritation.

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**

Eye contact : Redness, Pain, Corrosion

Skin contact : Redness, Irritation

Ingestion : No symptoms known or expected.

Inhalation : No symptoms known or expected.

**Section: 12. ECOLOGICAL INFORMATION**

**12.1 Toxicity**

Environmental Effects : Harmful to aquatic life with long lasting effects.

**Product**

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 : Linear(C12-C14)alkanol, ethoxylated, sulfated, sodium salt 96 h LC50 Danio rerio (zebra fish): 7.1 mg/l

ethanol 96 h LC50 Pimephales promelas (fathead minnow): > 100 mg/l

1-Propanaminium, 3-amino-N-(carboxymethyl)-N,N-dimethyl-, N-(C8-18 and C18-unsatd. acyl) derivs., hydroxides, inner salts LC50 Pimephales promelas (fathead minnow): > 1 mg/l

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butanone96 h LC50 Pimephales promelas (fathead minnow):  
2,993 mg/l

**Components**

Toxicity to daphnia and other aquatic invertebrates : Linear(C12-C14)alkanol, ethoxylated, sulfated, sodium salt48 h  
EC50 Daphnia magna (Water flea): 7.4 mg/l

ethanol48 h EC50 Aquatic Invertebrate: 857 mg/l

1-Propanaminium, 3-amino-N-(carboxymethyl)-N,N-dimethyl-, N-(C8-18 and C18-unsatd. acyl) derivs., hydroxides, inner salts  
EC50 Daphnia magna (Water flea): > 1 mg/l

butanone48 h EC50 Daphnia magna (Water flea): 308 mg/l

**Components**

Toxicity to algae : Linear(C12-C14)alkanol, ethoxylated, sulfated, sodium salt72 h  
EC50 Desmodesmus subspicatus (green algae): 27.7 mg/l

1-Propanaminium, 3-amino-N-(carboxymethyl)-N,N-dimethyl-, N-(C8-18 and C18-unsatd. acyl) derivs., hydroxides, inner salts  
EC50 Desmodesmus subspicatus (green algae): > 1 mg/l

butanone96 h EC50 Pseudokirchneriella subcapitata (algae):  
2,029 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 : Linear(C12-C14)alkanol, ethoxylated, sulfated, sodium saltResult:  
Readily biodegradable.

ethanolResult: Readily biodegradable.

1-Propanaminium, 3-amino-N-(carboxymethyl)-N,N-dimethyl-, N-(C8-18 and C18-unsatd. acyl) derivs., hydroxides, inner  
saltsResult: Readily biodegradable.

Amides, C12-18 and C18-unsatd., N-(hydroxyethyl)Result:  
Biodegradable

butanoneResult: Readily biodegradable.

**12.3 Bioaccumulative potential**

no data available

**12.4 Mobility in soil**

no data available

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**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 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 : 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 : Organic 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.

**Section: 14. TRANSPORT INFORMATION**

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 : 1170

14.2 UN proper shipping name : ETHANOL SOLUTION

14.3 Transport hazard class(es) : 3

14.4 Packing group : III

14.5 Environmental hazards : No

14.6 Special precautions for user : None

**Air transport (IATA)**

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14.1 UN number : 1170  
 14.2 UN proper shipping name : Ethanol solution  
 14.3 Transport hazard class(es) : 3  
 14.4 Packing group : III  
 14.5 Environmental hazards : No  
 14.6 Special precautions for user : None

**Sea transport (IMDG/IMO)**

14.1 UN number : 1170  
 14.2 UN proper shipping name : ETHANOL SOLUTION  
 14.3 Transport hazard class(es) : 3  
 14.4 Packing group : III  
 14.5 Environmental hazards : No  
 14.6 Special precautions for user : None  
 14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code : Not applicable.

**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 : 30 % and more: Anionic surfactants  
 less than 5 %: Amphoteric surfactants

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances. : FLAMMABLE LIQUIDS P5c  
 Lower tier : 5,000 t  
 Upper tier : 50,000 t

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

**National Regulations**

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

Other regulations : The Chemicals (Hazard Information and Packaging for Supply) Regulations.  
 The Control of Substances Hazardous to Health Regulations.  
 Health and Safety at Work Act.

**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
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Skin irritation 2, H315	Calculation method
Serious eye damage 1, H318	Calculation method
Chronic aquatic toxicity 3, H412	Calculation method

**Full text of H-Statements**

H225	Highly flammable liquid and vapour.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H336	May cause drowsiness or dizziness.
H412	Harmful 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 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

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

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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 product. Manual 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

**Contributing scenario controlling worker exposure for:**

Process category : **PROC10** Roller application or brushing

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

**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

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Respiratory Protection : see section 8