

ANIOS RHW

Section: 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Product name : ANIOS RHW

Product code : 1813000

Use of the Substance/Mixture : Rinse Additive

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 : Medical devices . Semi-automatic process

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

1.3 Details of the supplier of the safety data sheet

Company : Laboratoires ANIOS
1 rue de l'Espoir
59260 Lezennes, France Tel. + 33 (0)3 20 67 67 67
Fax. + 33 (0)3 20 67 67 68
fds@anios.com

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 : +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)

ANIOS RHW

Flammable liquids, Category 3
 Serious eye damage, Category 1

H226
 H318

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :



Signal Word : Danger

Hazard Statements : H226 Flammable liquid and vapour.
 H318 Causes serious eye damage.

Precautionary Statements : P102 Keep out of reach of children.
Prevention:
 P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
 P280e Wear eye protection/face protection.
Response:
 P305 + P351 + P338 + P310 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.
 P310 Immediately call a POISON CENTER/doctor.
Disposal:
 P501 Dispose of contents/ container to an approved facility in accordance with local, regional, national and international regulations.

Hazardous components which must be listed on the label:
 Lactic acid

2.3 Other hazards

Do not mix with bleach or other chlorinated products – will cause chlorine gas.

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 : [%]
Oxirane, 2-methyl-, polymer with oxirane, mono-C8-10-alkyl ethers, ethers with 1,2-decanediol (1:1)	501019-88-1 POLYMER	Eye irritation Category 2; H319 Chronic aquatic toxicity Category 3; H412	>= 10 - < 20
Isopropyl Alcohol	67-63-0 200-661-7	Flammable liquids Category 2; H225 Eye irritation Category 2; H319	>= 5 - < 10

ANIOS RHW

	01-2119457558-25	Specific target organ toxicity - single exposure Category 3; H336	
Sodium Xylenesulfonate	1300-72-7 215-090-9 01-2119513350-56	Eye irritation Category 2; H319	$\geq 5 - < 10$
Lactic acid	79-33-4 201-196-2 01-2119474164-39	Skin corrosion Sub-category 1C; H314 Serious eye damage Category 1; H318 Skin corrosion/irritation Category 1C 1 - 100 % Serious eye damage/eye irritation Category 1 1 - 100 %	$\geq 5 - < 10$
oxirane, methyl-, polymer with oxirane	9003-11-6 POLYMER	Acute toxicity Category 4; H332	$\geq 2.5 - < 5$
fatty alcohol alkoxylate	68154-97-2	Acute toxicity Category 4; H302 Serious eye damage Category 1; H318	$\geq 1 - < 2.5$
Alkylethoxy-propoxylates	02-2119548485-30	Eye irritation Category 2; H319	$\geq 1 - < 2.5$
N-(2-ethylhexyl)-isononane acid amide	93820-33-8 01-2119984313-35	Acute aquatic toxicity Category 1; H400 Chronic aquatic toxicity Category 1; H410	$\geq 0.25 - < 0.5$
Substances with a workplace exposure limit :			
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 %	$\geq 0.1 - < 0.25$

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 : Rinse with plenty of water.
- 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

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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 : High volume water jet

5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting : Fire Hazard
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
Sulphur oxides

5.3 Advice for firefighters

Special protective equipment for firefighters : Use personal protective equipment.

Further information : Use water spray to cool unopened containers. 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.

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

ANIOS RHW

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**

- Advice on safe handling : Do not get in eyes, on skin, or on clothing. Use only with adequate ventilation. Handle at room temperature. 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. Do not breathe spray, vapour. Do not mix with bleach or other chlorinated products – will cause 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. 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. Keep in a cool, well-ventilated place. Keep away from oxidizing agents. Keep out of reach of children. Keep container tightly closed. Store in suitable labeled containers.
- Storage temperature : 5 °C to 25 °C

7.3 Specific end uses

- Specific use(s) : Medical devices . Semi-automatic 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
Isopropyl Alcohol	67-63-0	TWA	400 ppm 999 mg/m ³	UKCOSSTD
		STEL	500 ppm 1,250 mg/m ³	UKCOSSTD
ethanol	64-17-5	TWA	1,000 ppm 1,920 mg/m ³	UKCOSSTD

ANIOS RHW

DNEL

Isopropyl Alcohol	:	<p>End Use: Workers Exposure routes: Dermal Potential health effects: Long-term systemic effects 888 mg/kg</p> <p>End Use: Workers Exposure routes: Inhalation Potential health effects: Long-term systemic effects Value: 500 mg/m3</p> <p>End Use: Consumers Exposure routes: Dermal Potential health effects: Long-term systemic effects 319 mg/kg</p> <p>End Use: Consumers Exposure routes: Inhalation Potential health effects: Long-term systemic effects Value: 89 mg/m3</p> <p>End Use: Consumers Exposure routes: Ingestion Potential health effects: Long-term systemic effects 26 mg/kg</p>
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PNEC

Isopropyl Alcohol	:	<p>Fresh water Value: 140.9 mg/l</p> <p>Marine water Value: 140.9 mg/l</p> <p>Intermittent use/release Value: 140.9 mg/l</p> <p>Fresh water Value: 552 mg/kg</p> <p>Marine sediment Value: 552 mg/kg</p> <p>Soil Value: 28 mg/kg</p> <p>Sewage treatment plant Value: 2251 mg/l</p> <p>Oral Value: 160 mg/kg</p>
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8.2 Exposure controls

Appropriate engineering controls

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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. 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) : Wear protective gloves.
Recommendation: Personal protective equipment should be selected based on the task being performed.
The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other.
Neoprene gloves
Nitrile rubber
This recommendation is only valid for the product mentioned in the safety data sheet and provided by us and for the application specified by us.
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.A

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 : colourless
Odour : slight
pH : 2.1 - 3.0, 100 %
Flash point : 41 °C closed cup
Odour Threshold : Not applicable and/or not determined for the mixture
Melting point/freezing point : Not applicable and/or not determined for the mixture

ANIOS RHW

Initial boiling point and boiling range	: Not applicable and/or not determined for the mixture
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	: 1.033 - 1.036
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	: Not applicable and/or not determined for the mixture
Explosive properties	: Not applicable and/or not determined for the mixture
Oxidizing properties	: Not applicable and/or not determined for the mixture

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

Do not mix with bleach or other chlorinated products – will cause chlorine gas.

10.4 Conditions to avoid

Heat, flames and sparks.

10.5 Incompatible materials

None known.

10.6 Hazardous decomposition products

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

ANIOS RHW

Section: 11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

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

Product

Acute oral toxicity : Acute toxicity estimate : > 2,000 mg/kg

Acute inhalation toxicity : 4 h Acute toxicity estimate : > 20 mg/l
Test atmosphere: vapour

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 : Isopropyl Alcohol LD50 rat: 5,840 mg/kg

Sodium Xylenesulfonate LD50 rat: > 7,000 mg/kg

Lactic acid LD50 rat: 3,543 mg/kg

N-(2-ethylhexyl)-isononane acid amide LD50 rat: > 2,000 mg/kg

ethanol LD50 rat: 10,470 mg/kg

Components

Acute inhalation toxicity : Isopropyl Alcohol 4 h LC50 rat: > 30 mg/l
Test atmosphere: vapour

Lactic acid 4 h LC50 rat: > 7.94 mg/l
Test atmosphere: dust/mist

ANIOS RHW

oxirane, methyl-, polymer with oxirane 4 h LD50 rat: 1 mg/l
Test atmosphere: dust/mist

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

Components

Acute dermal toxicity : Isopropyl Alcohol LD50 rabbit: 12,870 mg/kg
ethanol LD50 rabbit: 15,800 mg/kg

Potential Health Effects

Eyes : Causes serious eye damage.
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

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

Section: 12. ECOLOGICAL INFORMATION

12.1 Toxicity

Environmental Effects : This product has no known ecotoxicological 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 : Oxirane, 2-methyl-, polymer with oxirane, mono-C8-10-alkyl ethers, ethers with 1,2-decanediol (1:1)96 h LC50 Pimephales promelas (fathead minnow): > 1 mg/l
Isopropyl Alcohol96 h LC50 Pimephales promelas (fathead minnow): 9,640 mg/l
Lactic acid96 h LC50 Oncorhynchus mykiss (rainbow trout): 130 mg/l

ANIOS RHW

oxirane, methyl-, polymer with oxirane 96 h LC50 Fish: > 100 mg/l

N-(2-ethylhexyl)-isononane acid amide 96 h LC50 Danio rerio (zebra fish): > 1,000 mg/l

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

Components

Toxicity to daphnia and other aquatic invertebrates : Oxirane, 2-methyl-, polymer with oxirane, mono-C8-10-alkyl ethers, ethers with 1,2-decanediol (1:1) 48 h EC50 Daphnia magna (Water flea): > 1 mg/l

Isopropyl Alcohol LC50 Daphnia magna (Water flea): > 10,000 mg/l

Lactic acid 48 h EC50 Daphnia magna (Water flea): 130 mg/l

N-(2-ethylhexyl)-isononane acid amide 48 h EC50 Daphnia magna (Water flea): 0.475 mg/l

ethanol 48 h EC50 Aquatic Invertebrate: 857 mg/l

Components

Toxicity to algae : Oxirane, 2-methyl-, polymer with oxirane, mono-C8-10-alkyl ethers, ethers with 1,2-decanediol (1:1) 72 h EC50 Desmodesmus subspicatus (green algae): > 10 mg/l

Sodium Xylenesulfonate 96 h EC50: 230 mg/l

Lactic acid 72 h EC50 Pseudokirchneriella subcapitata (green algae): > 2,800 mg/l

N-(2-ethylhexyl)-isononane acid amide 72 h EC50 Desmodesmus subspicatus (green algae): 0.962 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 : Oxirane, 2-methyl-, polymer with oxirane, mono-C8-10-alkyl ethers, ethers with 1,2-decanediol (1:1) Result: Readily biodegradable.

Isopropyl Alcohol Result: Readily biodegradable.

Sodium Xylenesulfonate Result: Biodegradable

Lactic acid Result: Readily biodegradable.

oxirane, methyl-, polymer with oxirane Result: Readily biodegradable.

ANIOS RHW

fatty alcohol alkoxylate Result: Readily biodegradable.

N-(2-ethylhexyl)-isononane acid amide Result: Readily biodegradable.

ethanol Result: Readily biodegradable.

12.3 Bioaccumulative potential

no data available

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 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 ponds, waterways or ditches 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

ANIOS RHW

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 : 1993
14.2 UN proper shipping name : FLAMMABLE LIQUID, N.O.S.
(Isopropanol)
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)

14.1 UN number : 1993
14.2 UN proper shipping name : Flammable liquid, n.o.s.
(Isopropanol)
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 : 1993
14.2 UN proper shipping name : FLAMMABLE LIQUID, N.O.S.
(Isopropanol)
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 : 15 % or over but less than 30 %: Non-ionic surfactants
5 % or over but less than 15 %: Anionic 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 : Not applicable.

ANIOS RHW

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 : 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

Information from the chemical safety assessment of substances present in the product is included in the appropriate sections of this safety data sheet, whenever necessary.

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

Classification	Justification
Flammable liquids 3, H226	Based on product data or assessment
Serious eye damage 1, H318	Calculation method

Full text of H-Statements

H225	Highly flammable liquid and vapour.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H336	May cause drowsiness or dizziness.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
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; AIIIC - 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;

ANIOS RHW

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 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