



SAFETY DATA SHEET

Zeriol® FOD

According to Appendix D, OSHA Hazard Communication Standard 29 CFR §1910.1200

1. Identification

Product identifier

Product name Zeriol® FOD

Product number 350-F-00202PL

Recommended use of the chemical and restrictions on use

Application Corrosion inhibitor.

Uses advised against Use only for intended applications.

Details of the supplier of the safety data sheet

Manufacturer Northern Technologies International Corporation
4201 Woodland Rd
Circle Pines, MN 55014 - United States
1-763-225-6600
sds@ntic.com

Emergency telephone number

Emergency telephone Carechem +1 202 464 2554; Outside US/Canada +44 1865 407333 (24 hours; 7 days/week)

2. Hazard(s) identification

Classification of the substance or mixture

Physical hazards Flam. Liq. 4 - H227

Health hazards Acute Tox. 4 - H302 Skin Irrit. 2 - H315 Eye Irrit. 2A - H319 Skin Sens. 1 - H317 Asp. Tox. 1 - H304

Environmental hazards Aquatic Acute 2 - H401 Aquatic Chronic 2 - H411

Label elements

Hazard symbols



Signal word

Danger

Hazard statements

H227 Combustible liquid.
H302 Harmful if swallowed.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H317 May cause an allergic skin reaction.
H304 May be fatal if swallowed and enters airways.
H411 Toxic to aquatic life with long lasting effects.

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Precautionary statements

P210 Keep away from heat, sparks, open flames and hot surfaces. No smoking.
 P261 Avoid breathing vapor/ spray.
 P264 Wash contaminated skin thoroughly after handling.
 P270 Do not eat, drink or smoke when using this product.
 P272 Contaminated work clothing must not be allowed out of the workplace.
 P273 Avoid release to the environment.
 P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
 P301+P310 If swallowed: Immediately call a poison center/ doctor.
 P301+P312 If swallowed: Call a poison center/ doctor if you feel unwell.
 P302+P352 If on skin: Wash with plenty of water.
 P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P321 Specific treatment (see medical advice on this label).
 P330 Rinse mouth.
 P331 Do NOT induce vomiting.
 P332+P313 If skin irritation occurs: Get medical advice/ attention.
 P333+P313 If skin irritation or rash occurs: Get medical advice/ attention.
 P337+P313 If eye irritation persists: Get medical advice/ attention.
 P362+P364 Take off contaminated clothing and wash it before reuse.
 P370+P378 In case of fire: Use foam, carbon dioxide, dry powder or water fog to extinguish.
 P391 Collect spillage.
 P403+P235 Store in a well-ventilated place. Keep cool.
 P405 Store locked up.
 P501 Dispose of contents/ container in accordance with national regulations.

Contains

Mineral Spirits, 2-(Thiocyanomethylthio) benzothiazole, Methylene bis(thiocyanate), Methanol

Other hazards

This product does not contain any substances classified as PBT or vPvB.

3. Composition/information on ingredients

Mixtures

Mineral Spirits CAS number: 64742-47-8	60-100%
Classification Flam. Liq. 3 - H226 Asp. Tox. 1 - H304	
Methylene bis(thiocyanate) CAS number: 6317-18-6 M factor (Acute) = 1	1-5%
Classification Acute Tox. 3 - H301 Acute Tox. 2 - H330 Skin Corr. 1B - H314 Eye Dam. 1 - H318 Skin Sens. 1 - H317 Aquatic Acute 1 - H400	

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2-(Thiocyanomethylthio) benzothiazole CAS number: 21564-17-0 M factor (Acute) = 1 M factor (Chronic) = 1	1-5%
Classification Acute Tox. 4 - H302 Acute Tox. 2 - H330 Skin Irrit. 2 - H315 Eye Irrit. 2A - H319 Skin Sens. 1 - H317 Aquatic Acute 1 - H400 Aquatic Chronic 1 - H410	
2-(2-methoxyethoxy)ethanol CAS number: 111-77-3	<1%
Classification Acute Tox. 3 - H311	
Methanol CAS number: 67-56-1	<1%
Classification Flam. Liq. 2 - H225 Acute Tox. 3 - H301 Acute Tox. 3 - H311 Acute Tox. 3 - H331 STOT SE 1 - H370	

The full text for all hazard statements is displayed in Section 16.

4. First-aid measures

Description of first aid measures

General information	Get medical advice/attention if you feel unwell. Show this Safety Data Sheet to the medical personnel.
Inhalation	Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing.
Ingestion	Rinse mouth thoroughly with water. Do not induce vomiting unless under the direction of medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs.
Skin Contact	Rinse with water. Remove contaminated clothing. Wash contaminated clothing before reuse. Get medical attention if symptoms are severe or persist after washing.
Eye contact	Rinse immediately with plenty of water. Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 10 minutes. Get medical attention if irritation persists after washing.
Protection of first aiders	First aid personnel should wear appropriate protective equipment during any rescue.

Most important symptoms and effects, both acute and delayed

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General information	See Section 11 for additional information on health hazards. The severity of the symptoms described will vary dependent on the concentration and the length of exposure.
Inhalation	A single exposure may cause the following adverse effects: Temporary irritation.
Ingestion	May cause discomfort if swallowed.
Skin contact	May cause discomfort.
Eye contact	May be slightly irritating to eyes.

Indication of immediate medical attention and special treatment needed

Notes for the doctor	Treat symptomatically.
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5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media	Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog.
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.

Special hazards arising from the substance or mixture

Flammability Class	3.1 Combustible Liquid IIIA
Specific hazards	None known.
Hazardous combustion products	Hydrocarbons. Carbon monoxide (CO). Carbon dioxide (CO ₂).

Advice for firefighters

Protective actions during firefighting	Avoid breathing fire gases or vapors. Evacuate area. Cool containers exposed to heat with water spray and remove them from the fire area if it can be done without risk. Cool containers exposed to flames with water until well after the fire is out. If a leak or spill has not ignited, use water spray to disperse vapors and protect men stopping the leak.
Special protective equipment for firefighters	Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing. Standard Firefighter's clothing including helmets, protective boots and gloves will provide a basic level of protection for chemical incidents.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions	Keep unnecessary and unprotected personnel away from the spillage. Wear protective clothing as described in Section 8 of this safety data sheet. Follow precautions for safe handling described in this safety data sheet. Wash thoroughly after dealing with a spillage. Ensure procedures and training for emergency decontamination and disposal are in place. Do not touch or walk into spilled material.
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Environmental precautions

Environmental precautions	Large Spillages: Inform the relevant authorities if environmental pollution occurs (sewers, waterways, soil or air).
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Methods and material for containment and cleaning up

Methods for cleaning up	Wear protective clothing as described in Section 8 of this safety data sheet. Clear up spills immediately and dispose of waste safely. Approach the spillage from upwind. Flush contaminated area with plenty of water. Wash thoroughly after dealing with a spillage. Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.
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Reference to other sections For personal protection, see Section 8. See Section 11 for additional information on health hazards. See Section 12 for additional information on ecological hazards. For waste disposal, see Section 13.

7. Handling and storage

Precautions for safe handling

Usage precautions Wear protective clothing as described in Section 8 of this safety data sheet. Keep away from food, drink and animal feeding stuffs. Do not handle until all safety precautions have been read and understood. Do not handle broken packages without protective equipment.

Advice on general occupational hygiene Wash promptly if skin becomes contaminated. Take off contaminated clothing and wash before reuse. Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Wash at the end of each work shift and before eating, smoking and using the toilet.

Conditions for safe storage, including any incompatibilities

Storage precautions Store away from incompatible materials (see Section 10). Store in accordance with local regulations. Keep only in the original container. Keep container tightly closed, in a cool, well ventilated place. Keep containers upright. Protect containers from damage.

Storage class Flammable liquid storage.

Specific end uses(s)

Specific end use(s) The identified uses for this product are detailed in Section 1.

8. Exposure controls/Personal protection

Control parameters

Occupational exposure limits

Methanol

Long-term exposure limit (8-hour TWA): ACGIH 200 ppm 262 mg/m³

Short-term exposure limit (15-minute): ACGIH 250 ppm 328 mg/m³

Sk

Long-term exposure limit (8-hour TWA): OSHA 200 ppm 260 mg/m³

ACGIH = American Conference of Governmental Industrial Hygienists.

Sk = Danger of cutaneous absorption.

OSHA = Occupational Safety and Health Administration.

Ingredient comments Any relevant occupational exposure limits for ingredients are listed.

Methanol (CAS: 67-56-1)

Immediate danger to life and health 6000 ppm

Exposure controls

Protective equipment



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Appropriate engineering controls	Provide adequate ventilation. Personal, workplace environment or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Use process enclosures, local exhaust ventilation or other engineering controls as the primary means to minimize worker exposure. Personal protective equipment should only be used if worker exposure cannot be controlled adequately by the engineering control measures. Ensure control measures are regularly inspected and maintained. Ensure operatives are trained to minimize exposure.
Eye/face protection	Eyewear complying with an approved standard should be worn if a risk assessment indicates eye contact is possible. Personal protective equipment for eye and face protection should comply with OSHA 1910.133. Unless the assessment indicates a higher degree of protection is required, the following protection should be worn: Tight-fitting safety glasses.
Hand protection	Chemical-resistant, impervious gloves complying with an approved standard should be worn if a risk assessment indicates skin contact is possible. The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material. To protect hands from chemicals, gloves should comply with OSHA 1910.138 and be demonstrated to be impervious to the chemical and resist degradation. Frequent changes are recommended.
Other skin and body protection	Appropriate footwear and additional protective clothing complying with an approved standard should be worn if a risk assessment indicates skin contamination is possible.
Hygiene measures	Provide eyewash station and safety shower. Wash contaminated clothing before reuse. Good personal hygiene procedures should be implemented. Wash at the end of each work shift and before eating, smoking and using the toilet. When using do not eat, drink or smoke.
Respiratory protection	Respiratory protection complying with an approved standard should be worn if a risk assessment indicates inhalation of contaminants is possible. Ensure all respiratory protective equipment is suitable for its intended use and is NIOSH approved. Check that the respirator fits tightly and the filter is changed regularly.
Environmental exposure controls	Keep container tightly sealed when not in use.

9. Physical and chemical properties

Information on basic physical and chemical properties

Appearance	Liquid.
Color	Amber.
Odor	Aromatic hydrocarbons.
Odor threshold	No data available.
pH	No data available.
Melting point	No data available.
Initial boiling point and range	No data available.
Flash point	61-63°C
Evaporation rate	No data available.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	No data available.
Vapor pressure	No data available.

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Vapor density	No data available.
Relative density	0.81-0.84 g/cm ³
Solubility(ies)	No data available.
Partition coefficient	No data available.
Auto-ignition temperature	No data available.
Decomposition Temperature	No data available.
Viscosity	No data available.
Explosive properties	No data available.
Oxidizing properties	Not applicable.

10. Stability and reactivity

Reactivity	See the other subsections of this section for further details.
Stability	Stable at normal ambient temperatures and when used as recommended. Stable under the prescribed storage conditions.
Possibility of hazardous reactions	No potentially hazardous reactions known.
Conditions to avoid	Avoid heat, flames and other sources of ignition.
Materials to avoid	Strong acids. Strong alkalis.
Hazardous decomposition products	Does not decompose when used and stored as recommended. Thermal decomposition or combustion products may include the following substances: Harmful gases or vapors.

11. Toxicological information

Information on toxicological effects

Acute toxicity - oral

Summary	Harmful if swallowed.
ATE oral (mg/kg)	500.0

Acute toxicity - dermal

Summary	Based on available data the classification criteria are not met.
ATE dermal (mg/kg)	16,666.67

Acute toxicity - inhalation

Summary	Based on available data the classification criteria are not met.
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Skin corrosion/irritation

Summary	Causes skin irritation.
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Serious eye damage/irritation

Summary	Causes serious eye irritation.
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Respiratory sensitization

Summary	Based on available data the classification criteria are not met.
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Skin sensitization

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Summary	May cause an allergic skin reaction.
<u>Germ cell mutagenicity</u>	
Summary	Based on available data the classification criteria are not met.
<u>Carcinogenicity</u>	
Summary	Based on available data the classification criteria are not met.
IARC carcinogenicity	None of the ingredients are listed or exempt.
<u>Reproductive toxicity</u>	
Summary	Based on available data the classification criteria are not met.
<u>Specific target organ toxicity - single exposure</u>	
Summary	Based on available data the classification criteria are not met.
<u>Specific target organ toxicity - repeated exposure</u>	
Summary	Based on available data the classification criteria are not met.
<u>Aspiration hazard</u>	
Summary	May be fatal if swallowed and enters airways. Pneumonia may be the result if vomited material containing solvents reaches the lungs.
General information	The severity of the symptoms described will vary dependent on the concentration and the length of exposure.
Inhalation	A single exposure may cause the following adverse effects: Temporary irritation.
Ingestion	May cause sensitization or allergic reactions in sensitive individuals. May cause discomfort if swallowed. Stomach pain. Nausea, vomiting. Aspiration hazard if swallowed. Entry into the lungs following ingestion or vomiting may cause chemical pneumonitis.
Skin Contact	May cause skin sensitization or allergic reactions in sensitive individuals. Redness. Irritating to skin.
Eye contact	Irritating to eyes.
Route of exposure	Ingestion Inhalation Skin and/or eye contact
Target Organs	No specific target organs known.
Medical considerations	Skin disorders and allergies.

Toxicological information on ingredients.

Methylene bis(thiocyanate)

Acute toxicity - oral

ATE oral (mg/kg) 100.0

Acute toxicity - inhalation

ATE inhalation (vapours mg/l) 0.5

2-(Thiocyanomethylthio) benzothiazole

Acute toxicity - oral

ATE oral (mg/kg) 500.0

Acute toxicity - inhalation

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ATE inhalation (vapours
mg/l) 0.5

2-(2-methoxyethoxy)ethanolAcute toxicity - dermal

ATE dermal (mg/kg) 300.0

MethanolAcute toxicity - oral

ATE oral (mg/kg) 100.0

Acute toxicity - dermal

ATE dermal (mg/kg) 300.0

Acute toxicity - inhalation

ATE inhalation (vapours
mg/l) 3.0

12. Ecological information

Ecotoxicity Not regarded as dangerous for the environment. However, large or frequent spills may have hazardous effects on the environment.

Acute aquatic toxicity

Summary Toxic to aquatic life.

Chronic aquatic toxicity

Summary Toxic to aquatic life with long lasting effects.

Ecological information on ingredients.Methylene bis(thiocyanate)Acute aquatic toxicity

LE(C)₅₀ 0.1 < L(E)C₅₀ ≤ 1

M factor (Acute) 1

2-(Thiocyanomethylthio) benzothiazoleAcute aquatic toxicity

LE(C)₅₀ 0.1 < L(E)C₅₀ ≤ 1

M factor (Acute) 1

Chronic aquatic toxicity

M factor (Chronic) 1

Persistence and degradability

Persistence and degradability The degradability of the product is not known.

Bioaccumulative potential

Bio-Accumulative Potential No data available on bioaccumulation.

Partition coefficient No data available.

Zeriol® FOD**Mobility in soil**

Mobility No data available.

Other adverse effects

Other adverse effects None known.

13. Disposal considerations**Waste treatment methods**

General information The generation of waste should be minimized or avoided wherever possible. Reuse or recycle products wherever possible. This material and its container must be disposed of in a safe way. Disposal of this product, process solutions, residues and by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any local authority requirements. When handling waste, the safety precautions applying to handling of the product should be considered.

Disposal methods Do not empty into drains. Dispose of surplus products and those that cannot be recycled via a licensed waste disposal contractor. Waste, residues, empty containers, discarded work clothes and contaminated cleaning materials should be collected in designated containers, labeled with their contents. Waste packaging should be collected for reuse or recycling. Incineration or landfill should only be considered when recycling is not feasible.

14. Transport information**UN Number**

UN No. (TDG) 1760
UN No. (IMDG) 1760
UN No. (ICAO) 1760
UN No. (DOT) UN1760

UN proper shipping name

Proper shipping name (TDG) CORROSIVE LIQUID, N.O.S. (2-thiocyanomethylthiobenzothiazole, Methylene bithiocyanate)
Proper shipping name (IMDG) CORROSIVE LIQUID, N.O.S. (2-thiocyanomethylthiobenzothiazole, Methylene bithiocyanate)
Proper shipping name (ICAO) CORROSIVE LIQUID, N.O.S. (2-thiocyanomethylthiobenzothiazole, Methylene bithiocyanate)
Proper shipping name (DOT) CORROSIVE LIQUIDS, N.O.S. (2-thiocyanomethylthiobenzothiazole, Methylene bithiocyanate)

Transport hazard class(es)

DOT hazard class 8
DOT hazard label 8
TDG class 8
TDG label(s) 8
IMDG Class 8
ICAO class/division 8

Zeriol® FOD**Transport labels****DOT transport labels****Packing group**

TDG Packing Group	III
IMDG packing group	III
ICAO packing group	III
DOT packing group	III

Environmental hazards**Environmentally Hazardous Substance**

No.

Special precautions for user

EmS	F-A, S-B
DOT reportable quantity	RQ: Methyl alcohol (555555.5556 lbs)
DOT TIH Zone	Not applicable.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

15. Regulatory information

Regulatory References OSHA Hazard Communication Standard 29 CFR §1910.1200

US Federal Regulations**SARA Section 302 Extremely Hazardous Substances Tier II Threshold Planning Quantities**

None of the ingredients are listed.

CERCLA/Superfund, Hazardous Substances/Reportable Quantities (EPA)

The following ingredients are listed:

Methanol

Final CERCLA RQ: 5000(2270) pounds (Kilograms)

SARA Extremely Hazardous Substances EPCRA Reportable Quantities

None of the ingredients are listed.

SARA 313 Emission Reporting

The following ingredients are listed:

Methylene bis(thiocyanate)

1.0 %

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2-(2-methoxyethoxy)ethanol

1.0 %

Methanol

1.0 %

CAA Accidental Release Prevention

None of the ingredients are listed.

FDA - Essential Chemical

None of the ingredients are listed or exempt.

FDA - Precursor Chemical

None of the ingredients are listed or exempt.

SARA (311/312) Hazard Categories

Acute toxicity (any route of exposure)

Aspiration hazard

Flammable (gases, aerosols, liquids or solids)

Respiratory or skin sensitization

Serious eye damage or eye irritation

Skin corrosion or irritation

OSHA Highly Hazardous Chemicals

None of the ingredients are listed.

US State Regulations

California Proposition 65 Carcinogens and Reproductive Toxins



WARNING

This product can expose you to chemicals including those listed below, which is [are] known to the State of California to cause cancer, birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

Methanol

Developmental toxin.

California Air Toxics "Hot Spots" (A-I)

The following ingredients are listed:

2-(2-methoxyethoxy)ethanol

Methanol

California Air Toxics "Hot Spots" (A-II)

None of the ingredients are listed.

California Directors List of Hazardous Substances

The following ingredients are listed:

Methanol

Massachusetts "Right To Know" List

The following ingredients are listed:

2-(Thiocyanomethylthio) benzothiazole

2-(2-methoxyethoxy)ethanol

Methanol

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Rhode Island "Right To Know" List

The following ingredients are listed:

Methanol

Minnesota "Right To Know" List

The following ingredients are listed:

Methanol

New Jersey "Right To Know" List

The following ingredients are listed:

2-(Thiocyanomethylthio) benzothiazole

Methanol

Pennsylvania "Right To Know" List

The following ingredients are listed:

2-(2-methoxyethoxy)ethanol

Methanol

Inventories

EU - EINECS/ELINCS

All the ingredients are listed or exempt.

Canada - DSL/NDSL

All the ingredients are listed or exempt.

US - TSCA

All the ingredients are listed or exempt.

US - TSCA 12(b) Export Notification

None of the ingredients are listed or exempt.

Australia - AICS

All the ingredients are listed or exempt.

Japan - ENCS

All the ingredients are listed or exempt.

Korea - KECI

All the ingredients are listed or exempt.

China - IECSC

All the ingredients are listed or exempt.

Philippines - PICCS

All the ingredients are listed or exempt.

New Zealand - NZIOC

All the ingredients are listed or exempt.

Taiwan - TCSI

All the ingredients are listed or exempt.

16. Other information

Zeriol® FOD

Abbreviations and acronyms used in the safety data sheet

TDG: The transport of dangerous goods act

IATA: International air transport association.

ICAO: Technical instructions for the safe transport of dangerous goods by air.

IMDG: International maritime dangerous goods.

CAS: Chemical abstracts service.

ATE: Acute toxicity estimate.

LC₅₀: Lethal concentration to 50 % of a test population.

LD₅₀: Lethal dose to 50% of a test population (median lethal dose).

EC₅₀: 50% of maximal effective concentration.

PBT: Persistent, bioaccumulative and toxic substance.

vPvB: Very persistent and very bioaccumulative.

Training advice

Read and follow manufacturer's recommendations. Only trained personnel should use this material.

Issued by

HS&E Manager.

Revision date

2/28/2022

Revision

1.2

Supersedes date

6/30/2020

SDS No.

231

Hazard statements in full

H225 Highly flammable liquid and vapor.

H226 Flammable liquid and vapor.

H227 Combustible liquid.

H301 Toxic if swallowed.

H302 Harmful if swallowed.

H304 May be fatal if swallowed and enters airways.

H311 Toxic in contact with skin.

H314 Causes severe skin burns and eye damage.

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H318 Causes serious eye damage.

H319 Causes serious eye irritation.

H330 Fatal if inhaled.

H331 Toxic if inhaled.

H370 Causes damage to organs .

H400 Very toxic to aquatic life.

H401 Toxic to aquatic life.

H410 Very toxic to aquatic life with long lasting effects.

H411 Toxic to aquatic life with long lasting effects.

This 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. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.