

# SAFETY DATA SHEET



## Abamectin Liquid Formulation

Version 6.1 Revision Date: 30.09.2023 SDS Number: 1219562-00018 Date of last issue: 04.04.2023 Date of first issue: 18.01.2017

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### Section 1: Identification

Product name : Abamectin Liquid Formulation

#### Manufacturer or supplier's details

Company : MSD

Address : 33 Whakatiki Street - Private Bag 908  
Upper Hutt - New Zealand

Telephone : 0800 800 543

Emergency telephone number : 0800 764 766 (0800 POISON) 0800 243 622 (0800 CHEMCALL)

E-mail address : EHSDATASTEWARD@msd.com

#### Recommended use of the chemical and restrictions on use

Recommended use : Veterinary product

Restrictions on use : Not applicable

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### Section 2: Hazard identification

#### GHS Classification

Acute toxicity (Inhalation) : Category 4

Reproductive toxicity : Category 2

Specific target organ toxicity - repeated exposure : Category 2 (Central nervous system)

Hazardous to the aquatic environment - acute hazard : Category 1

Hazardous to the aquatic environment - chronic hazard : Category 1

#### GHS label elements

Hazard pictograms :



Signal word : Warning

Hazard statements : H332 Harmful if inhaled.  
H361fd Suspected of damaging fertility. Suspected of damage-

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ing the unborn child.

H373 May cause damage to organs (Central nervous system) through prolonged or repeated exposure.

H410 Very toxic to aquatic life with long lasting effects.

### Precautionary statements

:

#### **Prevention:**

P201 Obtain special instructions before use.

P202 Do not handle until all safety precautions have been read and understood.

P260 Do not breathe mist or vapours.

P271 Use only outdoors or in a well-ventilated area.

P273 Avoid release to the environment.

P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

#### **Response:**

P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.

P308 + P313 IF exposed or concerned: Get medical advice/ attention.

P391 Collect spillage.

#### **Storage:**

P405 Store locked up.

#### **Disposal:**

P501 Dispose of contents/ container to an approved waste disposal plant.

### Other hazards which do not result in classification

None known.

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## Section 3: Composition/information on ingredients

Substance / Mixture :

Mixture

### Components

Chemical name	CAS-No.	Concentration (% w/w)
abamectin (combination of avermectin B1a and avermectin B1b) (ISO)	71751-41-2	>= 1 -< 2.5

## Section 4: First-aid measures

General advice :

In the case of accident or if you feel unwell, seek medical advice immediately.

When symptoms persist or in all cases of doubt seek medical advice.

If inhaled

:

If inhaled, remove to fresh air.

If not breathing, give artificial respiration.

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	<p>If breathing is difficult, give oxygen. Get medical attention.</p>
In case of skin contact	<p>: In case of contact, immediately flush skin with soap and plenty of water. Remove contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.</p>
In case of eye contact	<p>: Flush eyes with water as a precaution. Get medical attention if irritation develops and persists.</p>
If swallowed	<p>: If swallowed, DO NOT induce vomiting. Get medical attention. Rinse mouth thoroughly with water.</p>
Most important symptoms and effects, both acute and delayed	<p>: Harmful if inhaled. Suspected of damaging fertility. Suspected of damaging the unborn child. May cause damage to organs through prolonged or repeated exposure.</p>
Protection of first-aiders	<p>: First Aid responders should pay attention to self-protection, and use the recommended personal protective equipment when the potential for exposure exists (see section 8).</p>
Notes to physician	<p>: Treat symptomatically and supportively.</p>

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## Section 5: Fire-fighting measures

Suitable extinguishing media	<p>: Water spray Alcohol-resistant foam Carbon dioxide (CO2) Dry chemical</p>
Unsuitable extinguishing media	<p>: None known.</p>
Specific hazards during fire-fighting	<p>: Exposure to combustion products may be a hazard to health.</p>
Hazardous combustion products	<p>: Carbon oxides</p>
Specific extinguishing methods	<p>: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Use water spray to cool unopened containers. Remove undamaged containers from fire area if it is safe to do so. Evacuate area.</p>
Special protective equipment for firefighters	<p>: In the event of fire, wear self-contained breathing apparatus. Use personal protective equipment.</p>
Hazchem Code	<p>: 3Z</p>

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## Section 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures	<p>: Use personal protective equipment. Follow safe handling advice (see section 7) and personal protective equipment recommendations (see section 8).</p>
Environmental precautions	<p>: Avoid release to the environment.</p>

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Prevent further leakage or spillage if safe to do so.  
Prevent spreading over a wide area (e.g. by containment or oil barriers).  
Retain and dispose of contaminated wash water.  
Local authorities should be advised if significant spillages cannot be contained.

Methods and materials for containment and cleaning up

- : Soak up with inert absorbent material.  
For large spills, provide dyking or other appropriate containment to keep material from spreading. If dyked material can be pumped, store recovered material in appropriate container. Clean up remaining materials from spill with suitable absorbent.  
Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable.  
Sections 13 and 15 of this SDS provide information regarding certain local or national requirements.

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### Section 7: Handling and storage

Technical measures

- : See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.

Local/Total ventilation

- : If sufficient ventilation is unavailable, use with local exhaust ventilation.

Advice on safe handling

- : Do not breathe mist or vapours.  
Do not swallow.  
Avoid contact with eyes.  
Avoid prolonged or repeated contact with skin.  
Wash skin thoroughly after handling.  
Handle in accordance with good industrial hygiene and safety practice, based on the results of the workplace exposure assessment  
Keep container tightly closed.  
Do not eat, drink or smoke when using this product.  
Take care to prevent spills, waste and minimize release to the environment.

Hygiene measures

- : If exposure to chemical is likely during typical use, provide eye flushing systems and safety showers close to the working place.  
When using do not eat, drink or smoke.  
Wash contaminated clothing before re-use.  
The effective operation of a facility should include review of engineering controls, proper personal protective equipment, appropriate degowning and decontamination procedures, industrial hygiene monitoring, medical surveillance and the use of administrative controls.

Conditions for safe storage

- : Keep in properly labelled containers.  
Keep tightly closed.  
Keep in a cool, well-ventilated place.  
Store in accordance with the particular national regulations.

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Materials to avoid : Do not store with the following product types:  
Strong oxidizing agents

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### Section 8: Exposure controls/personal protection

#### Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
abamectin (combination of avermectin B1a and avermectin B1b) (ISO)	71751-41-2	TWA	15 µg/m <sup>3</sup> (OEB 3)	Internal
		Wipe limit	150 µg/100 cm <sup>2</sup>	Internal

**Engineering measures** : Use appropriate engineering controls and manufacturing technologies to control airborne concentrations (e.g., drip-less quick connections). All engineering controls should be implemented by facility design and operated in accordance with GMP principles to protect products, workers, and the environment. Containment technologies suitable for controlling compounds are required to control at source and to prevent migration of the compound to uncontrolled areas (e.g., open-face containment devices). Minimize open handling.

#### Personal protective equipment

Respiratory protection : If adequate local exhaust ventilation is not available or exposure assessment demonstrates exposures outside the recommended guidelines, use respiratory protection.

Filter type Hand protection : Combined particulates and organic vapour type

Material : Chemical-resistant gloves

Remarks Eye protection : Consider double gloving.  
: Wear safety glasses with side shields or goggles.  
If the work environment or activity involves dusty conditions, mists or aerosols, wear the appropriate goggles.  
Wear a faceshield or other full face protection if there is a potential for direct contact to the face with dusts, mists, or aerosols.

Skin and body protection : Work uniform or laboratory coat.  
Additional body garments should be used based upon the task being performed (e.g., sleevelets, apron, gauntlets, disposable suits) to avoid exposed skin surfaces.  
Use appropriate degowning techniques to remove potentially contaminated clothing.

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### Section 9: Physical and chemical properties

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Appearance : liquid  
Colour : light yellow  
Odour : characteristic  
Odour Threshold : No data available  
pH : No data available  
Melting point/freezing point : No data available  
Initial boiling point and boiling range : No data available  
Flash point : No data available  
Evaporation rate : No data available  
Flammability (solid, gas) : Not applicable  
Flammability (liquids) : No data available  
Upper explosion limit / Upper flammability limit : No data available  
Lower explosion limit / Lower flammability limit : No data available  
Vapour pressure : No data available  
Relative vapour density : No data available  
Relative density : No data available  
Density : 0.90 - 0.94 g/cm<sup>3</sup>  
Solubility(ies)  
Water solubility : insoluble  
Partition coefficient: n-octanol/water : Not applicable  
Auto-ignition temperature : No data available  
Decomposition temperature : No data available  
Viscosity  
Viscosity, kinematic : No data available  
Explosive properties : Not explosive

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Oxidizing properties : The substance or mixture is not classified as oxidizing.  
Molecular weight : No data available  
Particle size : Not applicable

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**Section 10: Stability and reactivity**

Reactivity : Not classified as a reactivity hazard.  
Chemical stability : Stable under normal conditions.  
Possibility of hazardous reactions : Can react with strong oxidizing agents.  
Conditions to avoid : None known.  
Incompatible materials : Oxidizing agents  
Hazardous decomposition products : No hazardous decomposition products are known.

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**Section 11: Toxicological information**

Exposure routes : Inhalation  
Skin contact  
Ingestion  
Eye contact

**Acute toxicity**

Harmful if inhaled.

**Product:**

Acute oral toxicity : Acute toxicity estimate: > 2,000 mg/kg  
Method: Calculation method  
  
Acute inhalation toxicity : Acute toxicity estimate: 2.3 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Method: Calculation method  
  
Acute dermal toxicity : Acute toxicity estimate: > 2,000 mg/kg  
Method: Calculation method

**Components:****abamectin (combination of avermectin B1a and avermectin B1b) (ISO):**

Acute oral toxicity : LD50 (Rat): 24 mg/kg  
LD50 (Mouse): 10 mg/kg  
LDLo (Monkey): 24 mg/kg  
Symptoms: Dilatation of the pupil  
  
Acute inhalation toxicity : LC50 (Rat): 0.023 mg/l  
Exposure time: 4 h

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Test atmosphere: dust/mist

Acute dermal toxicity : LD50 (Rat): 330 mg/kg  
LD50 (Rabbit): 2,000 mg/kg

**Skin corrosion/irritation**

Not classified based on available information.

**Components:****abamectin (combination of avermectin B1a and avermectin B1b) (ISO):**

Species : Rabbit  
Result : No skin irritation

**Serious eye damage/eye irritation**

Not classified based on available information.

**Components:****abamectin (combination of avermectin B1a and avermectin B1b) (ISO):**

Species : Rabbit  
Result : Mild eye irritation

**Respiratory or skin sensitisation****Skin sensitisation**

Not classified based on available information.

**Respiratory sensitisation**

Not classified based on available information.

**Components:****abamectin (combination of avermectin B1a and avermectin B1b) (ISO):**

Test Type : Maximisation Test  
Exposure routes : Skin contact  
Result : Not a skin sensitizer.

**Chronic toxicity****Germ cell mutagenicity**

Not classified based on available information.

**Components:****abamectin (combination of avermectin B1a and avermectin B1b) (ISO):**

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)  
Result: negative

Test Type: In vitro mammalian cell gene mutation test  
Test system: Chinese hamster lung cells

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Result: negative

Test Type: Alkaline elution assay  
Result: negative

Genotoxicity in vivo : Test Type: Mutagenicity (in vivo mammalian bone-marrow cytogenetic test, chromosomal analysis)  
Species: Mouse  
Application Route: Intraperitoneal injection  
Result: negative

**Carcinogenicity**

Not classified based on available information.

**Components:****abamectin (combination of avermectin B1a and avermectin B1b) (ISO):**

Species	:	Rat
Application Route	:	Oral
Exposure time	:	105 weeks
Result	:	negative

  

Species	:	Mouse
Application Route	:	Oral
Exposure time	:	93 weeks
Result	:	negative

**Reproductive toxicity**

Suspected of damaging fertility. Suspected of damaging the unborn child.

**Components:****abamectin (combination of avermectin B1a and avermectin B1b) (ISO):**

Effects on fertility	:	Test Type: Fertility Species: Rat, male Application Route: Oral Result: Effects on fertility
		Test Type: Two-generation reproduction toxicity study Species: Rat Application Route: Oral Early Embryonic Development: NOAEL: 0.12 mg/kg body weight Result: Fetotoxicity
Effects on foetal development	:	Test Type: Embryo-foetal development Species: Mouse Application Route: Oral General Toxicity Maternal: NOAEL: 0.05 mg/kg body weight Developmental Toxicity: NOAEL: 0.2 mg/kg body weight Result: Cleft palate Remarks: Adverse developmental effects were observed

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Test Type: Embryo-foetal development  
Species: Rabbit  
Application Route: Oral  
Developmental Toxicity: LOAEL: 2 mg/kg body weight  
Result: Cleft palate, Teratogenic effects, Reduced embryonic survival  
Remarks: Adverse developmental effects were observed

Test Type: Development  
Species: Rat  
Application Route: Oral  
Developmental Toxicity: LOAEL: 1.6 mg/kg body weight  
Result: Teratogenic effects

Reproductive toxicity - Assessment : Some evidence of adverse effects on sexual function and fertility, based on animal experiments., Some evidence of adverse effects on development, based on animal experiments.

**STOT - single exposure**

Not classified based on available information.

**STOT - repeated exposure**

May cause damage to organs (Central nervous system) through prolonged or repeated exposure.

**Components:****abamectin (combination of avermectin B1a and avermectin B1b) (ISO):**

Exposure routes : Ingestion  
Target Organs : Central nervous system  
Assessment : Causes damage to organs through prolonged or repeated exposure.

**Repeated dose toxicity****Components:****abamectin (combination of avermectin B1a and avermectin B1b) (ISO):**

Species : Rat  
NOAEL : 1.5 mg/kg  
Application Route : Oral  
Exposure time : 24 Months  
Target Organs : Central nervous system  
Symptoms : Tremors, ataxia

Species : Mouse  
NOAEL : 4.0 mg/kg  
Application Route : Oral  
Exposure time : 24 Months  
Target Organs : Central nervous system  
Symptoms : Tremors, ataxia

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Species : Dog  
NOAEL : 0.25 mg/kg  
LOAEL : 0.5 mg/kg  
Application Route : Oral  
Exposure time : 53 Weeks  
Target Organs : Central nervous system  
Symptoms : Tremors, weight loss  
Remarks : mortality observed

Species : Monkey  
NOAEL : 1.0 mg/kg  
Application Route : Oral  
Exposure time : 14 Weeks  
Target Organs : Central nervous system

### Aspiration toxicity

Not classified based on available information.

### Experience with human exposure

#### Components:

#### **abamectin (combination of avermectin B1a and avermectin B1b) (ISO):**

Ingestion : Symptoms: May cause, Tremors, Diarrhoea, central nervous system effects, Salivation, tearing

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## Section 12: Ecological information

### Ecotoxicity

#### Components:

#### **abamectin (combination of avermectin B1a and avermectin B1b) (ISO):**

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 3.2 µg/l  
Exposure time: 96 h

LC50 (Lepomis macrochirus (Bluegill sunfish)): 9.6 µg/l  
Exposure time: 96 h

LC50 (Ictalurus punctatus (channel catfish)): 24 µg/l  
Exposure time: 96 h

LC50 (Cyprinus carpio (Carp)): 42 µg/l  
Exposure time: 96 h

LC50 (Cyprinodon variegatus (sheepshead minnow)): 15 µg/l  
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Americamysis): 0.022 µg/l  
Exposure time: 96 h

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EC50 (Daphnia magna (Water flea)): 0.34 µg/l  
Exposure time: 48 h

Toxicity to algae/aquatic plants : EC50 (Pseudokirchneriella subcapitata (green algae)): 100 mg/l  
Exposure time: 72 h

M-Factor (Acute aquatic toxicity) : 10,000

Toxicity to fish (Chronic toxicity) : NOEC (Pimephales promelas (fathead minnow)): 0.52 µg/l  
Exposure time: 32 d

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 0.03 µg/l  
Exposure time: 21 d  
NOEC (Mysidopsis bahia (opossum shrimp)): 0.0035 µg/l  
Exposure time: 28 d

M-Factor (Chronic aquatic toxicity) : 10,000

Toxicity to microorganisms : EC50: > 1,000 mg/l  
Exposure time: 3 h  
Test Type: Respiration inhibition

### Persistence and degradability

#### Components:

##### **abamectin (combination of avermectin B1a and avermectin B1b) (ISO):**

Stability in water : Hydrolysis: 50 %(< 12 h)

### Bioaccumulative potential

#### Components:

##### **abamectin (combination of avermectin B1a and avermectin B1b) (ISO):**

Bioaccumulation : Bioconcentration factor (BCF): 52

Partition coefficient: n-octanol/water : log Pow: 4

### Mobility in soil

#### Components:

##### **abamectin (combination of avermectin B1a and avermectin B1b) (ISO):**

Distribution among environmental compartments : log Koc: > 3.6

### Other adverse effects

No data available

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### Section 13: Disposal considerations

#### Disposal methods

Waste from residues : Do not dispose of waste into sewer.  
Dispose of in accordance with local regulations.

Contaminated packaging : Empty containers should be taken to an approved waste handling site for recycling or disposal.  
If not otherwise specified: Dispose of as unused product.

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### Section 14: Transport information

#### International Regulations

##### UNRTDG

UN number : UN 3082

Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.  
(abamectin (combination of avermectin B1a and avermectin B1b) (ISO))

Class : 9

Packing group : III

Labels : 9

Environmentally hazardous : yes

##### IATA-DGR

UN/ID No. : UN 3082

Proper shipping name : Environmentally hazardous substance, liquid, n.o.s.  
(abamectin (combination of avermectin B1a and avermectin B1b) (ISO))

Class : 9

Packing group : III

Labels : Miscellaneous

Packing instruction (cargo aircraft) : 964

Packing instruction (passenger aircraft) : 964

Environmentally hazardous : yes

##### IMDG-Code

UN number : UN 3082

Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.  
(abamectin (combination of avermectin B1a and avermectin B1b) (ISO))

Class : 9

Packing group : III

Labels : 9

EmS Code : F-A, S-F

Marine pollutant : yes

#### Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

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### National Regulations

#### NZS 5433

UN number : UN 3082  
Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.  
(abamectin (combination of avermectin B1a and avermectin B1b) (ISO))  
Class : 9  
Packing group : III  
Labels : 9  
Hazchem Code : 3Z  
Marine pollutant : no

#### Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

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### Section 15: Regulatory information

#### Safety, health and environmental regulations/legislation specific for the substance or mixture

#### HSNO Approval Number

HSR100759 Veterinary Medicines Non dispersive Open System Application Group Standard

#### HSW Controls

Certified handler certificate not required.

Tracking hazardous substance not required.

Refer to the Health and Safety at Work (Hazardous Substances) Regulations 2017, for further information.

#### The components of this product are reported in the following inventories:

AICS : not determined  
DSL : not determined  
IECSC : not determined

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### Section 16: Other information

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#### Further information

Sources of key data used to compile the Safety Data Sheet : Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agency, <http://echa.europa.eu/>

Date format : dd.mm.yyyy

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### Full text of other abbreviations

AIIC - Australian Inventory of Industrial Chemicals; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); 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; ERG - Emergency Response Guide; 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; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; NTP - National Toxicology Program; 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; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System

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 is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only to the specific material identified at the top of this SDS and may not be valid when the SDS material is used in combination with any other materials or in any process, unless specified in the text. Material users should review the information and recommendations in the specific context of their intended manner of handling, use, processing and storage, including an assessment of the appropriateness of the SDS material in the user's end product, if applicable.

NZ / EN