SAFETY DATA SHEET

ADAMA MEFENOXAM PLUS

Version 1
Revision Date: 25.06.2019 Publish Date: 25.06.2019

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Trade name : **ADAMA MEFENOXAM PLUS**

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

Use of the Substance/Mixture : Fungicide

1.3 Details of the supplier of the safety data sheet

Company : ADAMA South Africa (Pty) Ltd
Ground Floor, Simeka House,
The Vineyard Office Estate
99 Jip de Jager Drive
Bellville 7530

Telephone : +27 (0) 21 982 1460

E-mail address : sds@adama.com

1.4 Emergency telephone number

Emergency telephone number : +27 (0) 82 446 8946
+27 (0) 861 555 777
+27 (0) 982 1460

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Acute toxicity, Category 4	H332: Harmful if inhaled.
Skin irritation, Category 2	H315: Causes skin irritation.
Eye irritation, Category 2	H319: Causes serious eye irritation.
Skin sensitisation, Sub-category 1A	H317: May cause an allergic skin reaction.
Carcinogenicity, Category 2	H351: Suspected of causing cancer.
Specific target organ toxicity - single exposure, Category 3, Respiratory system	H335: May cause respiratory irritation.
Acute aquatic toxicity, Category 1	H400: Very toxic to aquatic life.
Chronic aquatic toxicity, Category 1	H410: Very toxic to aquatic life with long lasting effects.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :

Signal word : Warning

Hazard statements :

H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H351	Suspected of causing cancer.
H410	Very toxic to aquatic life with long lasting effects.

Supplemental Hazard Statements : EUH401 To avoid risks to human health and the environment, comply with the instructions for use.

Precautionary statements :

Prevention:

P201	Obtain special instructions before use.
P261	Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
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.

Hazardous components which must be listed on the label:
chlorothalonil (ISO)

1,2-benzisothiazol-3(2H)-one

2.3 Other hazards

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.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Mixtures

Hazardous components

Chemical name	CAS-No. EC-No. Registration number	Classification (REGULATION (EC) No 1272/2008)	Concentration (%)
chlorothalonil (ISO)	1897-45-6 217-588-1	Acute Tox. 2; H330 Eye Dam. 1; H318 Skin Sens. 1; H317 Carc. 2; H351 STOT SE 3; H335 Aquatic Acute 1; H400 Aquatic Chronic 1; H410	>= 30 - < 50
metalaxyl-M (ISO)	70630-17-0	Acute Tox. 4; H302 Eye Dam. 1; H318	>= 1 - < 3
1,2-benzisothiazol-3(2H)-one	2634-33-5 220-120-9	Acute Tox. 4; H302 Skin Irrit. 2; H315 Eye Dam. 1; H318 Skin Sens. 1; H317 Aquatic Acute 1; H400	< 0.05

For explanation of abbreviations see section 16.

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

General advice : Have the product container, label or Safety Data Sheet with you when calling the emergency number, a poison control center or physician, or going for treatment.

If inhaled : Move the victim to fresh air.
If breathing is irregular or stopped, administer artificial respiration.
Keep patient warm and at rest.
Call a physician or poison control centre immediately.

In case of skin contact : Take off all contaminated clothing immediately.
Wash off immediately with plenty of water.
If skin irritation persists, call a physician.
Wash contaminated clothing before re-use.

In case of eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
Remove contact lenses.
Immediate medical attention is required.

If swallowed : If swallowed, seek medical advice immediately and show this container or label.
Do NOT induce vomiting.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms : No information available.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : There is no specific antidote available.
Treat symptomatically.

SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media : Extinguishing media - small fires
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Extinguishing media - large fires
Alcohol-resistant foam
or
Water spray

Unsuitable extinguishing media : Do not use a solid water stream as it may scatter and spread fire.

5.2 Special hazards arising from the substance or mixture

Specific hazards during fire-fighting : As the product contains combustible organic components, fire will produce dense black smoke containing hazardous products of combustion (see section 10).
Exposure to decomposition products may be a hazard to health.

5.3 Advice for firefighters

Special protective equipment for firefighters : Wear full protective clothing and self-contained breathing apparatus.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Refer to protective measures listed in sections 7 and 8.

6.2 Environmental precautions

Environmental precautions : Prevent further leakage or spillage if safe to do so.

Do not flush into surface water or sanitary sewer system.
If the product contaminates rivers and lakes or drains inform respective authorities.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : 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).

6.4 Reference to other sections

Refer to disposal considerations listed in section 13., Refer to protective measures listed in sections 7 and 8.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

Advice on safe handling : No special protective measures against fire required.
Avoid contact with skin and eyes.
When using do not eat, drink or smoke.
For personal protection see section 8.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : No special storage conditions required. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children. Keep away from food, drink and animal feedingstuffs.

7.3 Specific end use(s)

Specific use(s) : For proper and safe use of this product, please refer to the approval conditions laid down on the product label.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
chlorothalonil (ISO)	1897-45-6	TWA	0.1 mg/m3	Syngenta
metalaxyl-M (ISO)	70630-17-0	TWA	10 mg/m3	Syngenta

8.2 Exposure controls

Engineering measures

Containment and/or segregation is the most reliable technical protection measure if exposure cannot be eliminated.
The extent of these protection measures depends on the actual risks in use.

If airborne mists or vapors are generated, use local exhaust ventilation controls.
Assess exposure and use any additional measures to keep airborne levels below any relevant exposure limit.

Where necessary, seek additional occupational hygiene advice.

Personal protective equipment

Eye protection : Tightly fitting safety goggles
Always wear eye protection when the potential for inadvertent eye contact with the product cannot be excluded.

Use eye protection according to EN 166.

Hand protection

Material	:	Nitrile rubber
Break through time	:	> 480 min
Glove thickness	:	0.5 mm

Remarks : 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. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. The break through time depends amongst other things on the material, the thickness and the type of glove and therefore has to be measured for each case. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.
The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Skin and body protection : Assess the exposure and select chemical resistant clothing based on the potential for contact and the permeation / penetration characteristics of the clothing material.
Wash with soap and water after removing protective clothing.
Decontaminate clothing before re-use, or use disposable equipment (suits, aprons, sleeves, boots, etc.)
Wear as appropriate:
Dust impervious protective suit

Respiratory protection : When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
Suitable respiratory equipment:
Respirator with a half face mask
The filter class for the respirator must be suitable for the maximum expected contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If this concentration is exceeded, self-contained breathing apparatus must be used.

Use only respiratory protection equipment with CE-symbol including four digit test number.

Filter type : Particulates type (P)

Protective measures : The use of technical measures should always have priority over the use of personal protective equipment.
When selecting personal protective equipment, seek appropriate professional advice.
Personal protective equipment should be certified to appropriate standards.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	:	liquid
Colour	:	beige to grey
Odour	:	characteristic
pH	:	5 - 9, Concentration: 1 % w/v
Flash point	:	>= 90 °C
Density	:	1.26 g/cm3 (20 °C)
Auto-ignition temperature	:	440 °C
Viscosity		
Viscosity, dynamic	:	83.1 - 199 mPa.s (20 °C)
		66.3 - 165 mPa.s (40 °C)
Explosive properties	:	Classification Code: Not explosive
Oxidizing properties	:	not oxidizing

9.2 Other information

Surface tension	:	40.0 mN/m, 20 °C

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity

See section 10.3 "Possibility of hazardous reactions".

10.2 Chemical stability

The product is stable when used in normal conditions

10.3 Possibility of hazardous reactions

Hazardous reactions	:	No hazardous reactions by normal handling and storage according to provisions.

10.4 Conditions to avoid

Conditions to avoid	:	No decomposition if used as directed.

10.5 Incompatible materials

Materials to avoid	:	No substances are known which lead to the formation of hazardous substances or thermal reactions.

10.6 Hazardous decomposition products

Combustion or thermal decomposition will evolve toxic and irritant vapors.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

Product:

Acute oral toxicity	:	LD50 (Rat, male): > 3,000 mg/kg Assessment: The substance or mixture has no acute oral toxicity LD50 (Rat, female): > 2,000 - < 3,000 mg/kg Assessment: The substance or mixture has no acute oral toxicity
Acute inhalation toxicity	:	LC50 (Rat, male and female): > 1.20 mg/l Exposure time: 4 h Assessment: The component/mixture is moderately toxic after short term inhalation.
Acute dermal toxicity	:	LD50 (Rat, male and female): > 4,000 mg/kg Assessment: The substance or mixture has no acute dermal toxicity

Components:

chlorothalonil (ISO):

Acute oral toxicity	:	LD50 (Rat, male and female): > 5,000 mg/kg
Acute inhalation toxicity	:	LC50 (Rat, male and female): 0.10 mg/l Exposure time: 4 h Test atmosphere: dust/mist
Acute dermal toxicity	:	LD50 (Rat, male and female): > 5,000 mg/kg

metalaxyl-M (ISO):

Acute oral toxicity	:	LD50 (Rat, male): 953 mg/kg LD50 (Rat, female): 375 mg/kg
Acute inhalation toxicity	:	LC50 (Rat, male and female): > 2.29 mg/l Exposure time: 4 h Test atmosphere: dust/mist Assessment: The substance or mixture has no acute inhalation toxicity Remarks: Highest attainable concentration
Acute dermal toxicity	:	LD50 (Rat, male and female): > 2,000 mg/kg Assessment: The substance or mixture has no acute dermal toxicity

1,2-benzisothiazol-3(2H)-one:

Acute oral toxicity	:	Assessment: The component/mixture is moderately toxic after single ingestion.

Skin corrosion/irritation

Product:
Species: Rabbit
Result: Irritating to skin.

Components:
chlorothalonil (ISO):
Species: Rabbit
Result: No skin irritation

metalaxyl-M (ISO):
Species: Rabbit
Result: No skin irritation

1,2-benzisothiazol-3(2H)-one:
Result: Irritating to skin.

Serious eye damage/eye irritation

Product:
Species: Rabbit
Result: Irritating to eyes.

Components:
chlorothalonil (ISO):
Species: Rabbit
Result: Risk of serious damage to eyes.

metalaxyl-M (ISO):
Species: Rabbit
Result: Risk of serious damage to eyes.

1,2-benzisothiazol-3(2H)-one:
Result: Risk of serious damage to eyes.

Respiratory or skin sensitisation

Product:
Test Type: Maximisation Test
Species: Guinea pig
Result: The product is a skin sensitiser, sub-category 1A.

Components:
chlorothalonil (ISO):
Species: Guinea pig
Result: May cause sensitisation by skin contact.
Remarks: In very rare cases may cause an allergic response of the respiratory system.

metalaxyl-M (ISO):
Species: Guinea pig
Result: Did not cause sensitisation on laboratory animals.

1,2-benzisothiazol-3(2H)-one:
Result: Probability or evidence of skin sensitisation in humans

Germ cell mutagenicity

Components:

chlorothalonil (ISO):
Germ cell mutagenicity- Assessment : Animal testing did not show any mutagenic effects.

metalaxyl-M (ISO):
Germ cell mutagenicity- Assessment : Animal testing did not show any mutagenic effects.

Carcinogenicity

Product:
Carcinogenicity - Assessment : Limited evidence of carcinogenicity in animal studies

Components:

chlorothalonil (ISO):
Carcinogenicity - Assessment : Chlorothalonil causes kidney tumours in rats and mice via a non-gentoxic mode of action secondary to target organ toxicity., Limited evidence of carcinogenicity in animal studies

metalaxyl-M (ISO):
Carcinogenicity - Assessment : No evidence of carcinogenicity in animal studies.

Reproductive toxicity

Components:

chlorothalonil (ISO):
Reproductive toxicity - Assessment : No toxicity to reproduction

metalaxyl-M (ISO):
Reproductive toxicity - Assessment : No toxicity to reproduction

STOT - single exposure

Product:
Assessment: The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with respiratory tract irritation.

Components:

chlorothalonil (ISO):
Assessment: The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with respiratory tract irritation.

STOT - repeated exposure

Components:

metalaxyl-M (ISO):
Assessment: The substance or mixture is not classified as specific target organ toxicant, single exposure.

Repeated dose toxicity

Components:

chlorothalonil (ISO):
Remarks: The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

Product:

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): 0.09 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 0.58 mg/l Exposure time: 48 h
Toxicity to algae	:	ErC50 (Pseudokirchneriella subcapitata (green algae)): 57 mg/l Exposure time: 72 h EbC50 (Pseudokirchneriella subcapitata (green algae)): 17 mg/l Exposure time: 72 h

Ecotoxicology Assessment

Acute aquatic toxicity	:	Very toxic to aquatic life.
Chronic aquatic toxicity	:	Very toxic to aquatic life with long lasting effects.

Components:

chlorothalonil (ISO):

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): 0.039 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 0.07 mg/l Exposure time: 48 h
Toxicity to algae	:	ErC50 (Navicula pelliculosa (Freshwater diatom)): 0.02 mg/l Exposure time: 96 h NOEC (Navicula pelliculosa (Freshwater diatom)): 0.0035 mg/l End point: Growth rate Exposure time: 96 h ErC50 (Skeletonema costatum (marine diatom)): 0.017 mg/l Exposure time: 96 h NOEC (Skeletonema costatum (marine diatom)): 0.012 mg/l End point: Growth rate Exposure time: 96 h
M-Factor (Acute aquatic toxicity)	:	10

Toxicity to fish (Chronic toxicity)	:	NOEC: 0.003 mg/l Exposure time: 297 d Species: Pimephales promelas (fathead minnow)
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC: 0.035 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea) NOEC: 0.00083 mg/l Exposure time: 28 d Species: Americamysis bahia (Mysid shrimp)
M-Factor (Chronic aquatic toxicity)	:	10

metalaxyl-M (ISO):

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): > 100 mg/l Exposure time: 48 h
Toxicity to algae	:	ErC50 (Pseudokirchneriella subcapitata (algae)): 271 mg/l Exposure time: 96 h NOErC (Pseudokirchneriella subcapitata (algae)): 19.7 mg/l Exposure time: 96 h
Toxicity to bacteria	:	EC50 (activated sewage sludge): > 100 mg/l Exposure time: 3 h
Toxicity to fish (Chronic toxicity)	:	NOEC: 50 mg/l Exposure time: 28 d Species: Oncorhynchus mykiss (rainbow trout)
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC: 25 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea)

1,2-benzisothiazol-3(2H)-one:

Ecotoxicology Assessment		
Acute aquatic toxicity	:	Very toxic to aquatic life.

12.2 Persistence and degradability

Components:

chlorothalonil (ISO):

Stability in water	:	Degradation half life: < 5 d (20 °C) Remarks: Not persistent in water.

metalaxyl-M (ISO):

Biodegradability	:	Result: Not readily biodegradable.

Stability in water : Degradation half life: 22.4 - 47.5 d
Remarks: Not persistent in water.

12.3 Bioaccumulative potential

Components:

chlorothalonil (ISO):
Bioaccumulation : Remarks: Chlorothalonil has low potential for bioaccumulation.

Partition coefficient: n-octanol/water : log Pow: 2.94 (25 °C)

metalaxyl-M (ISO):
Bioaccumulation : Remarks: Low bioaccumulation potential.

Partition coefficient: n-octanol/water : log Pow: 1.71 (25 °C)

12.4 Mobility in soil

Components:

chlorothalonil (ISO):
Distribution among environmental compartments : Remarks: Chlorothalonil has low to slight mobility in soil.

Stability in soil : Percentage dissipation: 50 % (DT50: 7 d)
Remarks: Not persistent in soil.

metalaxyl-M (ISO):
Distribution among environmental compartments : Remarks: Metalaxyl has a range from low to very high mobility in soil depending on soil type.

Stability in soil : Percentage dissipation: 50 % (DT50: < 50 d)
Remarks: Not persistent in soil.

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.

Components:

chlorothalonil (ISO):
Assessment : This substance is not considered to be very persistent and very bioaccumulating (vPvB). This substance is not considered to be persistent, bioaccumulating and toxic (PBT).

metalaxyl-M (ISO):
Assessment : This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

12.6 Other adverse effects

Product:

Additional ecological information : Remarks: Classification of the product is based on the summation of the concentrations of classified components.

Components:

chlorothalonil (ISO):

Additional ecological information : Remarks: No data available

metalaxyl-M (ISO):

Additional ecological information : Remarks: No data available

1,2-benzisothiazol-3(2H)-one:

Additional ecological information : Remarks: No data available

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product : Do not contaminate ponds, waterways or ditches with chemical or used container.
Do not dispose of waste into sewer.
Where possible recycling is preferred to disposal or incineration.
If recycling is not practicable, dispose of in compliance with local regulations.

Contaminated packaging : Empty remaining contents.
Triple rinse containers.
Empty containers should be taken to an approved waste handling site for recycling or disposal.
Do not re-use empty containers.

SECTION 14: TRANSPORT INFORMATION

Land transport (ADR/RID)

14.1 UN number:	UN 3082
14.2 UN proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CHLOROTHALONIL)
14.3 Transport hazard class(es):	9
14.4 Packing group:	III
Labels:	9
14.5 Environmental hazards :	Environmentally hazardous
Tunnel restriction code:	E

Sea transport(IMDG)

14.1 UN number:	UN 3082
14.2 UN proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CHLOROTHALONIL)
14.3 Transport hazard class(es):	9
14.4 Packing group:	III
Labels:	9
14.5 Environmental hazards :	Marine pollutant

Air transport (IATA-DGR**)**

14.1 UN number:	UN 3082
14.2 UN proper shipping name:	Environmentally hazardous substance, liquid, n.o.s. (CHLOROTHALONIL)
14.3 Transport hazard class(es):	9
14.4 Packing group:	III
Labels:	9

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

Other regulations : Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work.

15.2 Chemical safety assessment

A Chemical Safety Assessment is not required for this substance when it is used in the specified applications.

SECTION 16: OTHER INFORMATION

Full text of H-Statements

H302	:	Harmful if swallowed.
H315	:	Causes skin irritation.
H317	:	May cause an allergic skin reaction.
H318	:	Causes serious eye damage.
H330	:	Fatal if inhaled.
H335	:	May cause respiratory irritation.
H351	:	Suspected of causing cancer.
H400	:	Very toxic to aquatic life.
H410	:	Very toxic to aquatic life with long lasting effects.

Full text of other abbreviations

Acute Tox.	:	Acute toxicity
Aquatic Acute	:	Acute aquatic toxicity
Aquatic Chronic	:	Chronic aquatic toxicity
Carc.	:	Carcinogenicity
Eye Dam.	:	Serious eye damage
Skin Irrit.	:	Skin irritation

Skin Sens. : Skin sensitisation
STOT SE : Specific target organ toxicity - single exposure

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; AICS - Australian Inventory of Chemical Substances; 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; TCSI - Taiwan Chemical Substance 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

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.

CH / EN