TOPIK

Version	Revision Date:	SDS Number:	This version replaces all previous versions.
1.0	02.05.2018	S189570179	

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : TOPIK

Design code : A8588F

Manufacturer or supplier's details

Company : Syngenta SA (Pty) Ltd

Address : P.O. Box 1044,
No. 4 Krokodildrift Avenue Brits 0250
South Africa

Telephone : +27 12 250 6300

Telefax : +27 12 250 3125

Emergency telephone number : +27 (0) 82 446 8946 (Griffon)

Recommended use of the chemical and restrictions on use

Recommended use : Herbicide

2. HAZARDS IDENTIFICATION

Most important hazards

Danger
H304: May be fatal if swallowed and enters airways.
H373: May cause damage to organs through prolonged or repeated exposure.
H410: Very toxic to aquatic life with long lasting effects.

Other hazards

None known.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous components

Chemical name	CAS-No.	Classification	Concentration (% w/w)
Solvent naphtha (petroleum), heavy arom.; Kerosine -unspecified	64742-94-5	Asp. Tox. 1; H304 Aquatic Chronic 2; H411	>= 50 - < 70
clodinafop-propargyl (ISO)	105512-06-9	Acute Tox. 4; H302 Skin Sens. 1; H317 STOT RE 2; H373 Aquatic Acute 1; H400	>= 20 - < 25

		Aquatic Chronic 1; H410	
dihydro-2(3H)-furanon	96-48-0	Acute Tox. 4; H302 Eye Dam. 1; H318 STOT SE 3; H336	>= 10 - < 20
cloquintocet-mexyl	99607-70-2	Acute Tox. 4; H332 Skin Sens. 1; H317 STOT RE 2; H373 Aquatic Acute 1; H400 Aquatic Chronic 1; H410	>= 2,5 - < 10
poly(oxy-1,2-ethanediyl), -[2,4,6-tris(1-phenylethyl)phenyl]- -hydroxy-	99734-09-5	Aquatic Chronic 3; H412	>= 1 - < 2,5
calcium dodecylbenzene sulphonate	26264-06-2	Skin Irrit. 2; H315 Eye Dam. 1; H318 Aquatic Chronic 3; H412	>= 1 - < 2,5
naphthalene	91-20-3	Flam. Sol. 2; H228 Acute Tox. 4; H302 Carc. 2; H351 Aquatic Acute 1; H400 Aquatic Chronic 1; H410	>= 0,25 - < 1

For explanation of abbreviations see section 16.

4. 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: contains petroleum distillates and/or

aromatic solvents.

Most important symptoms and effects, both acute and delayed	:	Aspiration may cause pulmonary oedema and pneumonitis.
Notes to physician	:	There is no specific antidote available. Treat symptomatically. Do not induce vomiting: contains petroleum distillates and/or aromatic solvents.

5. FIREFIGHTING MEASURES

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
Unsuitable extinguishing media	:	Do not use a solid water stream as it may scatter and spread fire.
Specific hazards during firefighting	:	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. Flash back possible over considerable distance.
Specific extinguishing methods	:	Do not allow run-off from fire fighting to enter drains or water courses. Cool closed containers exposed to fire with water spray.
Special protective equipment for firefighters	:	Wear full protective clothing and self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Refer to protective measures listed in sections 7 and 8.
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.
Methods and materials for containment and 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). Clean contaminated surface thoroughly. Clean with detergents. Avoid solvents. Retain and dispose of contaminated wash water.

7. HANDLING AND STORAGE

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.

Conditions for safe storage : 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.

Further information on storage stability : Physically and chemically stable for at least 2 years when stored in the original unopened sales container at ambient temperatures.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Solvent naphtha (petroleum), heavy arom.; Kerosine - unspecified	64742-94-5	TWA	8 ppm 50 mg/m3	Supplier
clodinafop-propargyl (ISO)	105512-06-9	TWA	1 mg/m3	Syngenta
cloquintocet-mexyl	99607-70-2	TWA	5 mg/m3	Syngenta
naphthalene	91-20-3	TWA	10 ppm 50 mg/m3	91/322/EEC
		TWA OEL-RL	10 ppm 50 mg/m3	ZA OEL
	Further information: Recommended Limit			
		STEL OEL-RL	15 ppm 75 mg/m3	ZA OEL
	Further information: Recommended Limit			

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.

Maintain air concentrations below occupational exposure standards.
Where necessary, seek additional occupational hygiene advice.

Personal protective equipment

Respiratory protection : No personal respiratory protective equipment normally required.
When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

Hand protection

Material : Nitrile rubber
Break through time : > 480 min
Glove length : 0,5 mm

Remarks : Wear protective gloves. 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.

Eye protection : No special protective equipment required.

Skin and body protection : Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place.
Remove and wash contaminated clothing before re-use.
Wear as appropriate:
Impervious clothing

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.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid

Colour : yellow to brown

Odour : aromatic

Odour Threshold : No data available

pH : 4 - 8

		Concentration: 1 % w/v
Melting point/range	:	No data available
Boiling point/boiling range	:	No data available
Flash point	:	86 °C
		Method: Pensky-Martens closed cup
Evaporation rate	:	No data available
Flammability (solid, gas)	:	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
Density	:	1,09 g/cm3
Solubility(ies) Solubility in other solvents	:	No data available
Partition coefficient: n-octanol/water	:	No data available
Auto-ignition temperature	:	490 °C
Decomposition temperature	:	No data available
Viscosity Viscosity, dynamic	:	5,7 mPa.s (40 °C)
		11,4 mPa.s (20 °C)
Explosive properties	:	Not explosive
Oxidizing properties	:	The substance or mixture is not classified as oxidizing.
Surface tension	:	37,8 mN/m, 25 °C
		33,5 mN/m, 20 °C

10. STABILITY AND REACTIVITY

Reactivity	:	None reasonably foreseeable.

Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	No dangerous reaction known under conditions of normal use.
Conditions to avoid	:	No decomposition if used as directed.
Incompatible materials	:	None known.
Hazardous decomposition products	:	No hazardous decomposition products are known.

11. TOXICOLOGICAL INFORMATION

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

Acute toxicity

Product:

Acute oral toxicity	:	LD50 (Rat, female): > 2.000 mg/kg Assessment: The component/mixture is minimally toxic after single ingestion.
Acute inhalation toxicity	:	Acute toxicity estimate: > 5 mg/l Assessment: The substance or mixture has no acute inhalation toxicity
Acute dermal toxicity	:	LD50 (Rat, male and female): > 5.000 mg/kg

Components:

clodinafop-propargyl (ISO):

Acute oral toxicity	:	LD50 (Rat, male and female): 1.829 mg/kg
Acute inhalation toxicity	:	LC50 (Rat, male and female): > 2,325 mg/l Exposure time: 4 h Test atmosphere: dust/mist Assessment: The substance or mixture has no acute inhalation toxicity
Acute dermal toxicity	:	LD50 (Rat, male and female): > 2.000 mg/kg Assessment: The substance or mixture has no acute dermal toxicity

dihydro-2(3H)-furanon:

Acute oral toxicity	:	LD50 (Rat): 1.582 mg/kg
Acute inhalation toxicity	:	LC50 (Rat): > 5,1 mg/l Exposure time: 4 h Test atmosphere: dust/mist

Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Guinea pig): > 5.000 mg/kg

cloquintocet-mexyl:

Acute oral toxicity : LD50 (Rat, male and female): > 5.000 mg/kg

Acute inhalation toxicity : LC50 (Rat, male and female): > 0,935 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Assessment: The component/mixture is moderately toxic after short term inhalation.
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

poly(oxy-1,2-ethanediyl), -[2,4,6-tris(1-phenylethyl)phenyl]- -hydroxy-:

Acute oral toxicity : LD50 Oral (Rat): 5.000 mg/kg
Assessment: The substance or mixture has no acute oral toxicity

Acute dermal toxicity : LD50 Dermal (Rat): > 2.000 mg/kg
Assessment: The substance or mixture has no acute dermal toxicity

naphthalene:

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

Skin corrosion/irritation

Product:

Species : Rabbit
Result : No skin irritation

Components:

clodinafop-propargyl (ISO):

Species : Rabbit
Result : No skin irritation

cloquintocet-mexyl:

Species : Rabbit
Result : No skin irritation

calcium dodecylbenzene sulphonate:

Result : Irritating to skin.

Serious eye damage/eye irritation

Product:

Species : Rabbit
Result : No eye irritation

Components:

clodinafop-propargyl (ISO):

Species : Rabbit
Result : No eye irritation

dihydro-2(3H)-furanon:

Species : Rabbit
Result : Irreversible effects on the eye

cloquintocet-mexyl:

Species : Rabbit
Result : No eye irritation

calcium dodecylbenzene sulphonate:

Result : Risk of serious damage to eyes.

Respiratory or skin sensitisation

Product:

Test Type : Buehler Test
Species : Guinea pig
Result : Did not cause sensitisation on laboratory animals.

Components:

clodinafop-propargyl (ISO):

Species : Guinea pig
Result : May cause sensitisation by skin contact.

cloquintocet-mexyl:

Species : Guinea pig
Result : May cause sensitisation by skin contact.

Germ cell mutagenicity

Components:

clodinafop-propargyl (ISO):

Germ cell mutagenicity - Assessment : Animal testing did not show any mutagenic effects.

dihydro-2(3H)-furanon:

Germ cell mutagenicity - Assessment : In vitro tests did not show mutagenic effects, In vivo tests did not show mutagenic effects

cloquintocet-mexyl:

Germ cell mutagenicity - Assessment : Animal testing did not show any mutagenic effects.

poly(oxy-1,2-ethanediyl), -[2,4,6-tris(1-phenylethyl)phenyl]- -hydroxy-:

Germ cell mutagenicity - Assessment : In vitro tests did not show mutagenic effects

Carcinogenicity

Components:

clodinafop-propargyl (ISO):

Carcinogenicity - Assessment : No evidence of carcinogenicity in animal studies.

dihydro-2(3H)-furanon:

Carcinogenicity - Assessment : Animal testing did not show any carcinogenic effects.

cloquintocet-mexyl:

Carcinogenicity - Assessment : No evidence of carcinogenicity in animal studies.

naphthalene:

Carcinogenicity - Assessment : Limited evidence of carcinogenicity in animal studies

Reproductive toxicity

Components:

clodinafop-propargyl (ISO):

Reproductive toxicity - Assessment : No toxicity to reproduction

dihydro-2(3H)-furanon:

Reproductive toxicity - Assessment : No toxicity to reproduction

cloquintocet-mexyl:

Reproductive toxicity - Assessment : No toxicity to reproduction

STOT - single exposure

Components:

dihydro-2(3H)-furanon:

Exposure routes : Inhalation
Assessment : The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with narcotic effects.

cloquintocet-mexyl:

Assessment : The substance or mixture is not classified as specific target organ toxicant, single exposure.

STOT - repeated exposure

Components:

clodinafop-propargyl (ISO):

Assessment : The substance or mixture is not classified as specific target organ toxicant, repeated exposure.
Remarks : Repeated exposure may cause anaemia.

cloquintocet-mexyl:

Target Organs : Urinary system, Liver, thymus
Assessment : The substance or mixture is classified as specific target organ toxicant, repeated exposure, category 2.

Aspiration toxicity

Components:

Solvent naphtha (petroleum), heavy arom.; Kerosine -unspecified:

May be fatal if swallowed and enters airways.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 3,6 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 9,5 mg/l
Exposure time: 48 h

Toxicity to algae : ErC50 (Pseudokirchneriella subcapitata (green algae)): 7,6 mg/l
Exposure time: 72 h

Components:

Solvent naphtha (petroleum), heavy arom.; Kerosine -unspecified:

Ecotoxicology Assessment

Chronic aquatic toxicity	:	Toxic to aquatic life with long lasting effects.

clodinafop-propargyl (ISO):

Toxicity to fish	:	LC50 (Lepomis macrochirus (Bluegill sunfish)): 0,21 mg/l Exposure time: 96 h LC50 (Oncorhynchus mykiss (rainbow trout)): 0,31 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): > 60 mg/l Exposure time: 48 h
Toxicity to algae	:	ErC50 (Desmodesmus subspicatus (green algae)): > 3,2 mg/l Exposure time: 72 h NOEC (Desmodesmus subspicatus (green algae)): 0,24 mg/l Exposure time: 72 h
M-Factor (Acute aquatic toxicity)	:	1
Toxicity to fish (Chronic toxicity)	:	NOEC (Pimephales promelas (fathead minnow)): 0,024 mg/l Exposure time: 33 d
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC (Daphnia (water flea)): 0,23 mg/l Exposure time: 21 d
M-Factor (Chronic aquatic toxicity)	:	1
Toxicity to microorganisms	:	EC50 (activated sludge): > 100 mg/l Exposure time: 3 h

dihydro-2(3H)-furanon:

Toxicity to fish	:	LC50 (Lepomis macrochirus (Bluegill sunfish)): 56 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): > 500 mg/l Exposure time: 48 h
Toxicity to algae	:	ErC50 (Desmodesmus subspicatus (green algae)): > 1.000 mg/l Exposure time: 72 h

cloquintocet-mexyl:

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): > 0,97 mg/l Exposure time: 96 h

		LC50 (Gobiocypris rarus (rare gudgeon)): 0,102 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): > 0,82 mg/l Exposure time: 48 h
Toxicity to algae	:	ErC50 (Desmodesmus subspicatus (green algae)): > 2,2 mg/l Exposure time: 72 h NOEC (Desmodesmus subspicatus (green algae)): 0,12 mg/l End point: Growth rate Exposure time: 72 h
M-Factor (Acute aquatic toxicity)	:	1
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC (Daphnia (water flea)): > 0,437 mg/l Exposure time: 21 d
Toxicity to microorganisms	:	EC50 (activated sludge): > 1.000 mg/l Exposure time: 3 h

poly(oxy-1,2-ethanediyl), -[2,4,6-tris(1-phenylethyl)phenyl]- -hydroxy-:

Toxicity to fish	:	LC50 (Danio rerio (zebra fish)): 21 mg/l Exposure time: 96 h

Ecotoxicology Assessment

Chronic aquatic toxicity	:	Harmful to aquatic life with long lasting effects.

calcium dodecylbenzene sulphonate:

Ecotoxicology Assessment

Chronic aquatic toxicity	:	Harmful to aquatic life with long lasting effects.

naphthalene:

Ecotoxicology Assessment

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

Persistence and degradability

<u>Components:</u>

clodinafop-propargyl (ISO):

Biodegradability	:	Result: Not readily biodegradable.
Stability in water	:	Degradation half life: < 1 d (20 °C) Remarks: Product is not persistent.

dihydro-2(3H)-furanon:

Biodegradability : Result: Readily biodegradable.

cloquintocet-mexyl:

Biodegradability : Result: Not readily biodegradable.

Stability in water : Degradation half life: 0,4 d
Remarks: Product is not persistent.

Bioaccumulative potential

Components:

clodinafop-propargyl (ISO):

Bioaccumulation : Remarks: Does not bioaccumulate.

Partition coefficient: n-octanol/water : log Pow: 3,9 (25 °C)

cloquintocet-mexyl:

Bioaccumulation : Remarks: Does not bioaccumulate.

Partition coefficient: n-octanol/water : log Pow: 5,24 (25 °C)

Mobility in soil

Components:

clodinafop-propargyl (ISO):

Distribution among environmental compartments : Remarks: Low mobility in soil.

Stability in soil : Dissipation time: < 0,5 d
Percentage dissipation: 50 % (DT50)
Remarks: Product is not persistent.

cloquintocet-mexyl:

Distribution among environmental compartments : Remarks: immobile

Stability in soil : Dissipation time: 2,4 d
Percentage dissipation: 50 % (DT50)
Remarks: Product is not persistent.

Other adverse effects

Components:

clodinafop-propargyl (ISO):

Results of PBT and vPvB 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).

dihydro-2(3H)-furanon:

Results of PBT and vPvB 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).

cloquintocet-mexyl:

Results of PBT and vPvB 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).

poly(oxy-1,2-ethanediyl), -[2,4,6-tris(1-phenylethyl)phenyl]- -hydroxy-:

Results of PBT and vPvB 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).

13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : 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.

14. TRANSPORT INFORMATION

International Regulations

UNRTDG

UN number	:	UN 3082
Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CLODINAFOP-PROPARGYL AND SOLVENT NAPHTHA)
Class	:	9
Packing group	:	III
Labels	:	9

IATA-DGR

UN/ID No.	:	UN 3082
Proper shipping name	:	Environmentally hazardous substance, liquid, n.o.s. (CLODINAFOP-PROPARGYL AND SOLVENT NAPHTHA)
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. (CLODINAFOP-PROPARGYL AND SOLVENT NAPHTHA)
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.

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.

15. REGULATORY INFORMATION

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

None known.

Hazardous components which must be listed on the label	:	CGA 184927 heavy aromatic solvent naphtha

16. OTHER INFORMATION

Full text of other abbreviations

91/322/EEC	:	Europe. Commission Directive 91/322/EEC on establishing indicative limit values
ZA OEL	:	South Africa. Hazardous Chemical Substances Regulations, Occupational Exposure Limits
91/322/EEC / TWA	:	Limit Value - eight hours
ZA OEL / TWA OEL-RL	:	Long term occupational exposure limits - recommended limit
ZA OEL / STEL OEL-RL	:	Short term occupational exposure limits - recommended limit

AICS - Australian Inventory of Chemical Substances; 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; CPR - Controlled Products Regulations; 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; 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 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.

ZA / EN