

**ANTIFROGEN KF VP 1974**

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Substance key: SXR103368

Revision Date: 28.11.2017

Version : 3 - 5 / EU

Date of printing : 17.09.2018

**SECTION 1: Identification of the substance/mixture and of the company/undertaking**

**1.1. Product identifier**

**Trade name**

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**Material number:** 121161

**Chemical nature:** Inhibited potassium formate, approx 50% aqueous solution

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

**Relevant identified uses of the substance or mixture**

Industry sector : Functional Fluids  
Type of use : Brine for refrigeration

**1.3. Details of the supplier of the safety data sheet**

**Identification of the company**

Clariant Produkte (Deutschland) GmbH  
65926 Frankfurt am Main  
Telephone no. : +49 69 305 18000

**Information about the substance/mixture**

BU Industrial & Consumer Specialties  
Product Stewardship  
e-mail: SDS.Europe@clariant.com

**1.4. Emergency telephone number**

00800-5121 5121 (24 h)

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**SECTION 2: Hazards identification**

**2.1 Classification of the substance or mixture**

**Classification (REGULATION (EC) No 1272/2008)**

Not a hazardous substance or mixture.

**2.2 Label elements**

**Labelling (REGULATION (EC) No 1272/2008)**

Not a hazardous substance or mixture.

**Additional Labelling**

EUH210 Safety data sheet available on request.

**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.

According to the present state of knowledge provided this product is handled correctly, there is no danger to humans or the environment

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**SECTION 3: Composition/information on ingredients**

**3.2 Mixtures**

**Hazardous components**

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
Potassium carbonate	584-08-7 209-529-3 01-2119532646-36 01-2119532646-36- 0000 01-2119532646-36- 0005 01-2119532646-36- 0014 01-2119532646-36- XXXX	Skin Irrit. 2; H315 Eye Irrit. 2; H319 STOT SE 3; H335	>= 1 - < 10

For explanation of abbreviations see section 16.

**SECTION 4: First aid measures**

**4.1 Description of first aid measures**

- General advice : Remove/Take off immediately all contaminated clothing.
- If inhaled : If inhaled, remove to fresh air.  
Get medical advice/ attention.
- In case of skin contact : In case of contact, immediately flush skin with soap and plenty of water.
- In case of eye contact : In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
- If swallowed : When swallowed accidentally, drink sufficient amounts of water and seek medical aid.

**4.2 Most important symptoms and effects, both acute and delayed**

- Symptoms : No symptoms known currently.
- Risks : No hazards known at this time.

**4.3 Indication of any immediate medical attention and special treatment needed**

- Treatment : Treat symptomatically.

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**SECTION 5: Firefighting measures**

**5.1 Extinguishing media**

Suitable extinguishing media : Water spray jet  
Foam  
Carbon dioxide (CO<sub>2</sub>)  
Dry powder

**5.2 Special hazards arising from the substance or mixture**

Specific hazards during firefighting : In case of fires, hazardous combustion gases are formed:  
Carbon monoxide (CO)  
Carbon dioxide (CO<sub>2</sub>)

**5.3 Advice for firefighters**

Special protective equipment for firefighters : Self-contained breathing apparatus

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**SECTION 6: Accidental release measures**

**6.1 Personal precautions, protective equipment and emergency procedures**

Personal precautions : Wear suitable protective equipment.

**6.2 Environmental precautions**

Environmental precautions : Do not allow to enter drains or waterways

**6.3 Methods and material for containment and cleaning up**

Methods for cleaning up : Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).

Can be landfilled or incinerated, when in compliance with local regulations.

**6.4 Reference to other sections**

Information regarding Safe handling, see chapter 7., For personal protection see section 8., For disposal considerations see section 13.

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**SECTION 7: Handling and storage**

**7.1 Precautions for safe handling**

Advice on safe handling : Handle and open container with care.

Advice on protection against fire and explosion : No special measures necessary.

Hygiene measures : When using do not eat or drink.

Wash hands before breaks and at the end of workday.

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**7.2 Conditions for safe storage, including any incompatibilities**

Requirements for storage areas and containers : Do not use zinc containers.

Further information on storage conditions : Keep containers tightly closed in a cool, well-ventilated place.

Advice on common storage : Do not store near acids.  
Keep away from oxidizing agents.

**7.3 Specific end use(s)**

Specific use(s) : No further recommendations.

**SECTION 8: Exposure controls/personal protection**

**8.1 Control parameters**

**Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:**

Substance name	End Use	Exposure routes	Potential health effects	Value
Potassium formate CAS-No.: 590-29-4	Workers	Dermal	Acute systemic effects	6175 mg/kg bw/day
Remarks:	DNEL			
	Workers	Inhalation	Acute systemic effects	435 mg/m3
Remarks:	DNEL			
	Workers	Dermal	Acute local effects	20,6 mg/cm2
Remarks:	DNEL			
	Workers	Dermal	Long-term systemic effects	6175 mg/kg bw/day
Remarks:	DNEL			
	Workers	Inhalation	Long-term systemic effects	435 mg/m3
Remarks:	DNEL			
	Workers	Dermal	Long-term local effects	20,6 mg/cm2
Remarks:	DNEL			
	General population	Dermal	Acute systemic effects	3088 mg/kg bw/day
Remarks:	DNEL			
	General population	Inhalation	Acute systemic effects	107,4 mg/m3
Remarks:	DNEL			
	General population	Dermal	Acute local effects	10,3 mg/cm2
Remarks:	DNEL			
	General population	Dermal	Long-term systemic effects	3088 mg/kg bw/day
Remarks:	DNEL			

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	General population	Inhalation	Long-term systemic effects	107,4 mg/m <sup>3</sup>
Remarks:	DNEL			
	General population	Oral	Long-term systemic effects	30,9 mg/kg bw/day
Remarks:	DNEL			
	General population	Dermal	Long-term local effects	103,0 mg/cm <sup>2</sup>
Remarks:	DNEL			
Potassium carbonate CAS-No.: 584-08-7	Workers	Inhalation	Long-term local effects	10 mg/m <sup>3</sup>
Remarks:	DNEL			
	General population	Inhalation	Long-term local effects	10 mg/m <sup>3</sup>
Remarks:	DNEL			
	Workers	Skin contact	Long-term local effects	16 mg/cm <sup>2</sup>
Remarks:	DNEL			
	General population	Skin contact	Long-term local effects	8 mg/cm <sup>2</sup>
Remarks:	DNEL			

**Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:**

Substance name	Environmental Compartment	Value
Potassium formate CAS-No.: 590-29-4	Fresh water	2 mg/l
	salt water	0,2 mg/l
	Water (intermittent release)	10 mg/l
	Fresh water sediment	13,4 mg/kg dry weight (d.w.)
	Marine sediment	1,34 mg/kg dry weight (d.w.)
	Soil	1,5 mg/kg dry weight (d.w.)
	Sewage treatment plant	1,8 mg/l

**8.2 Exposure controls**

**Personal protective equipment**

Eye protection : Safety glasses

Hand protection

Break through time : 480 min

Glove thickness : 0,7 mm

Remarks : Long-term exposure Impervious butyl rubber gloves

Break through time : 30 min

Glove thickness : 0,4 mm

Remarks : For short-term exposure (splash protection): Nitrile rubber gloves.

Remarks : These types of protective gloves are offered by various manufacturers. Please note the manufacturers' detailed statements, especially about the minimum thickness and the

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minimum breakthrough time. Consider also the particular working conditions under which the gloves are being used.

- Skin and body protection : Wear suitable protective clothing.
- Respiratory protection : Use respiratory protection in case of insufficient exhaust ventilation or prolonged exposure  
Half-mask according to DIN EN 140  
Respirator with a particle filter (EN 143)  
The use of filter apparatus presupposes that the environment atmosphere contains at least 17% oxygen by volume, and does not exceed the maximum gas concentration, usually 0.5% by volume. Relevant guidelines to be considered include EN 136/141/143/371/372 as well as other national regulations.
- Protective measures : Avoid contact with skin and eyes.

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**SECTION 9: Physical and chemical properties**

**9.1 Information on basic physical and chemical properties**

- Appearance : Liquid
- Colour : colourless
- Odour : characteristic
- Odour Threshold : not tested.
- pH : 10,8 - 11,4  
Method: DIN EN 1262  
Determined in the undiluted form
- Freezing point : approx. -53 °C  
Method: ASTM D 1177
- Boiling point : approx. 115 °C  
(1.013 hPa)  
Method: ASTM D 1120
- Flash point : > 110 °C  
Method: DIN 51758  
No flash point - Measure made up to the boiling point.
- Evaporation rate : not tested.
- Burning number : Not applicable
- Upper explosion limit / upper flammability limit : not tested.
- Lower explosion limit / Lower flammability limit : not tested.

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Vapour pressure	:	approx. 20 mbar (20 °C) Method: Calculated by Syracuse.
Relative vapour density	:	not tested.
Density	:	approx. 1,35 g/cm <sup>3</sup> (20 °C) Method: DIN 51757
Bulk density	:	Not applicable
Solubility(ies)	:	
Water solubility	:	completely miscible
Solubility in other solvents	:	not tested. Solvent: fat
Partition coefficient: n-octanol/water	:	not tested.
Auto-ignition temperature	:	> 550 °C Method: DIN 51794
Decomposition temperature	:	> 400 °C Method: DSC
Viscosity	:	
Viscosity, kinematic	:	approx. 2 mm <sup>2</sup> /s (20 °C) Method: DIN 51562
Explosive properties	:	Not explosive Method: Expert judgement
Oxidizing properties	:	The substance or mixture is not classified as oxidizing.  Method: Expert judgement

**9.2 Other information**

Metal corrosion rate	:	< 6,25 mm/a
Minimum ignition energy	:	not tested.
Particle size	:	Not applicable
Self-ignition	:	Not applicable

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**SECTION 10: Stability and reactivity**

**10.1 Reactivity**

See section 10.3. "Possibility of hazardous reactions"

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**10.2 Chemical stability**

Stable under normal conditions.

**10.3 Possibility of hazardous reactions**

Hazardous reactions : Reactions with acids.  
Reactions with oxidising agents.

**10.4 Conditions to avoid**

Conditions to avoid : Keep away from oxidizing agents.  
Acidic materials.

**10.5 Incompatible materials**

Materials to avoid : not known

**10.6 Hazardous decomposition products**

When handled and stored appropriately, no dangerous decomposition products are known

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**SECTION 11: Toxicological information**

**11.1 Information on toxicological effects**

**Acute toxicity**

**Product:**

Acute oral toxicity : LD50 (Mouse): 5.500 mg/kg  
Remarks: Information refers to the main component.

Acute inhalation toxicity : Remarks: not tested.

Acute dermal toxicity : LD50 (Rat, male and female): > 2.000 mg/kg  
Method: OECD Test Guideline 402  
Remarks: Information refers to the main component.

**Components:**

**Potassium carbonate:**

Acute oral toxicity : LD50 (Rat, male and female): > 2.000 mg/kg  
Method: OECD Test Guideline 401  
GLP: no

Acute inhalation toxicity : LC50 (Rat, male and female): > 4,96 mg/l  
Exposure time: 4,5 h  
Method: Other  
GLP: yes

Acute dermal toxicity : LD50 (Rabbit, male and female): > 2.000 mg/kg  
Method: EPA  
GLP: yes



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**Skin corrosion/irritation**

**Product:**

Species: Rabbit  
Method: OECD Test Guideline 404  
Result: No skin irritation  
Remarks: Information refers to the main component.

**Components:**

**Potassium carbonate:**

Species: Rabbit  
Exposure time: 24 h  
Method: FDA guideline  
Result: No skin irritation  
GLP: yes

**Serious eye damage/eye irritation**

**Product:**

Species: rabbit eye  
Method: OECD Test Guideline 405  
Result: No eye irritation  
Remarks: Information refers to the main component.

**Components:**

**Potassium carbonate:**

Species: rabbit eye  
Method: FDA guideline  
Result: Eye irritation  
GLP: yes

**Respiratory or skin sensitisation**

**Product:**

Test Type: Guinea pig maximization test  
Species: Guinea pig  
Method: OECD Test Guideline 406  
Result: non-sensitizing  
Remarks: Information refers to the main component.

**Components:**

**Potassium carbonate:**

Test Type: Buehler Test  
Exposure routes: Skin contact  
Species: Guinea pig  
Method: Buehler Test  
Result: Does not cause skin sensitisation.  
GLP: yes

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**Germ cell mutagenicity**

**Product:**

Germ cell mutagenicity-  
Assessment : It is concluded that the product is not mutagenic based on  
evaluation of several mutagenicity tests.

Information refers to the main component.

**Components:**

**Potassium carbonate:**

Genotoxicity in vitro : Test Type: Ames test  
Test system: Salmonella typhimurium  
Concentration: 100 - 10000 µg/plate  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 471  
Result: negative  
GLP: No information available.

Test Type: Chromosome aberration test in vitro  
Test system: Chinese hamster lung cells  
Concentration: <= 1000 µg/ml  
Metabolic activation: without  
Method: OECD Test Guideline 473  
Result: negative  
GLP: No information available.

Test Type: Mouse lymphoma assay  
Test system: mouse lymphoma cells  
Concentration: 1049 - 5000 µg/ml  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 476  
Result: negative  
GLP: No information available.  
Remarks: By analogy with a product of similar composition

Germ cell mutagenicity-  
Assessment : It is concluded that the product is not mutagenic based on  
evaluation of several mutagenicity tests.

**Carcinogenicity**

**Product:**

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

Information refers to the main component.

**Components:**

**Potassium carbonate:**

Carcinogenicity -  
Assessment : Not classifiable as a human carcinogen.

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**Reproductive toxicity**

**Product:**

Reproductive toxicity - Assessment : No indications of toxic effects were observed in reproduction studies in animals.

No reproductive toxicity to be expected.

Information refers to the main component.

Information refers to the main component.

**Components:**

**Potassium carbonate:**

Effects on fertility : Remarks: Not applicable

Effects on foetal development : Species: Rat  
Strain: wistar  
Application Route: oral (gavage)  
Dose: 1,8 - 8,4 - 38,8 - 180 mg/kg  
General Toxicity Maternal: NOAEL: 180 mg/kg body weight  
Teratogenicity: NOAEL: 180 mg/kg body weight  
Method: OECD Test Guideline 414  
GLP: no

Reproductive toxicity - Assessment : No reproductive toxicity to be expected.  
No teratogenic effects to be expected.

**STOT - single exposure**

**Product:**

Remarks: not tested.

**Components:**

**Potassium carbonate:**

Assessment: May cause respiratory irritation.

**STOT - repeated exposure**

**Product:**

Remarks: not tested.

**Components:**

**Potassium carbonate:**

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

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**Repeated dose toxicity**

**Product:**

Species: Rat, male and female  
NOAEL: 3.877 mg/kg  
Application Route: oral (feed)  
Method: OECD Test Guideline 408  
Remarks: Information refers to the main component.

Species: Rat, male and female  
NOAEL: 2.585 mg/kg  
Application Route: oral (feed)  
Method: Chronic oral toxicity  
Remarks: Information refers to the main component.

**Components:**

**Potassium carbonate:**

Species: Rat, male and female  
NOAEL: 2.667 - 3.331 mg/kg  
Application Route: oral (feed)  
Exposure time: 130 w  
Number of exposures: daily  
Dose: 2 - 4 % in diet  
Group: yes  
Method: Other  
GLP: no  
Remarks: By analogy with a product of similar composition

Species: Rat, male and female  
NOAEL: 0,062 mg/l  
Application Route: Inhalation  
Exposure time: 21 d  
Number of exposures: daily, 6 hours per day  
Dose: 0,11-0,16-0,41 (ca. 30%) mg/l  
Method: OECD Test Guideline 412  
GLP: No information available.  
Remarks: By analogy with a product of similar composition

Application Route: Skin contact  
Remarks: not available

**Aspiration toxicity**

**Components:**

**Potassium carbonate:**

No aspiration toxicity classification

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**SECTION 12: Ecological information**

**12.1 Toxicity**

**Product:**

Toxicity to fish : (Pimephales promelas (fathead minnow)): > 1.000 mg/l  
Exposure time: 96 h  
Method: US-EPA TSCA 797.1400  
Remarks: Information refers to the main component.

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 1.000 mg/l  
Exposure time: 48 h  
Method: US-EPA Ecological Research Series 660/3-75009  
Remarks: The values mentioned are those of the active ingredient.

Toxicity to algae : Remarks: not tested.

Toxicity to microorganisms : EC0 : > 10 g/l  
Method: OECD Test Guideline 209

**Components:**

**Potassium carbonate:**

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 68 mg/l  
Exposure time: 96 h  
Test Type: flow-through test  
Analytical monitoring: yes  
Method: US-EPA FIFRA 72-1  
GLP: yes

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia pulex (Water flea)): 200 mg/l  
Exposure time: 48 h  
Test Type: static test  
Analytical monitoring: yes  
Method: US-EPA FIFRA 72-2  
GLP: yes

Toxicity to algae : Remarks: not required

Toxicity to microorganisms :  
Remarks: not required

Toxicity to fish (Chronic toxicity) : Remarks: not required

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : Remarks: not required

Toxicity to soil dwelling organisms : Test Type: artificial soil  
LC50: 5.595 mg/kg  
Exposure time: 14 d

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End point: mortality  
Species: Eisenia sp.  
Method: OECD Test Guideline 207  
GLP: No information available.  
Remarks: The details of the toxic effect relate to the nominal concentration.

Plant toxicity : Remarks: Not applicable  
Sediment toxicity : Remarks: Not applicable  
Toxicity to terrestrial organisms : Remarks: Not applicable

**12.2 Persistence and degradability**

**Product:**

Biodegradability : Biodegradation: > 90 %  
Exposure time: 28 d  
Method: DIN 38412 T.24

Inoculum: activated sludge, domestic  
Result: Readily biodegradable.  
Biodegradation: 92 %  
Exposure time: 28 d  
Method: OECD Test Guideline 301D  
Remarks: Information refers to the main component.

Chemical Oxygen Demand (COD) : 211 mg/g  
Method: DIN 38409-H-41

**Components:**

**Potassium carbonate:**

Biodegradability : Remarks: Not applicable

**12.3 Bioaccumulative potential**

**Product:**

Bioaccumulation : Remarks: not tested.

**Components:**

**Potassium carbonate:**

Bioaccumulation : Remarks: Not applicable

**12.4 Mobility in soil**

**Product:**

Distribution among environmental compartments : Remarks: not tested.

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**Components:**

**Potassium carbonate:**

Distribution among environmental compartments : Remarks: Not applicable

**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:**

**Potassium carbonate:**

Assessment : The substance is not identified as a PBT or as a vPvB substance..

**12.6 Other adverse effects**

**Product:**

Environmental fate and pathways : no data available

Additional ecological information : By analogy with a product of similar composition

**Components:**

**Potassium carbonate:**

Environmental fate and pathways : not available

Additional ecological information : slightly water endangering  
The product should not be allowed to enter drains, water courses or the soil.

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**SECTION 13: Disposal considerations**

**13.1 Waste treatment methods**

Product : In accordance with regulations for hazardous waste, must be taken to a hazardous waste disposal site

Contaminated packaging : Packaging that cannot be cleaned should be disposed of as product waste

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**SECTION 14: Transport information**

**Section 14.1. to 14.5.**

ADR	not restricted
ADN	not restricted
RID	not restricted
IATA	not restricted
IMDG	not restricted

**14.6. Special precautions for user**

See sections 6 to 8 of this Safety Data Sheet.

**14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code (International Bulk Chemicals Code)**

No transport as bulk according IBC - Code.

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**SECTION 15: Regulatory information**

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

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59) : Not applicable

Regulation (EC) No 1005/2009 on substances that deplete the ozone layer : Not applicable

Regulation (EC) No 850/2004 on persistent organic pollutants : Not applicable

**Other regulations:**

Apart from the data/regulations specified in this chapter, no further information is available concerning safety, health and environmental protection.

**15.2 Chemical safety assessment**

Chemical Safety Assessments (CSAs) are available for one or more of the component substances contained in this product.

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**SECTION 16: Other information**

**Full text of H-Statements**

H315	: Causes skin irritation.
H319	: Causes serious eye irritation.
H335	: May cause respiratory irritation.

**Full text of other abbreviations**

Eye Irrit.	: Eye irritation
Skin Irrit.	: Skin irritation



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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; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

**Further information**

Other information : Observe national and local legal requirements

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**SAFETY DATA SHEET**  
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