

ANTIFROGEN KF VP 1974

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Substance key: SXR103368

Revision Date: 02.05.2019

Version : 3 - 6 / EU

Date of printing : 04.05.2020

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

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

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 01-2119532646-36-0010 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 (CO₂)
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 (CO₂)

5.3 Advice for firefighters

Special protective equipment for firefighters : Self-contained breathing apparatus

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.

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.

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Wash hands before breaks and at the end of workday.

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			

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	General population	Dermal	Long-term systemic effects	3088 mg/kg bw/day
Remarks:	DNEL			
	General population	Inhalation	Long-term systemic effects	107,4 mg/m3
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/cm2
Remarks:	DNEL			
Potassium carbonate CAS-No.: 584-08-7	Workers	Inhalation	Long-term local effects	10 mg/m3
Remarks:	DNEL			
	General population	Inhalation	Long-term local effects	10 mg/m3
Remarks:	DNEL			
	Workers	Skin contact	Long-term local effects	16 mg/cm2
Remarks:	DNEL			
	General population	Skin contact	Long-term local effects	8 mg/cm2
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.

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

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.
- Flammability (solid, gas) : Not applicable
- Burning number : Not applicable

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Upper explosion limit / upper flammability limit	:	not tested.
Lower explosion limit / Lower flammability limit	:	not tested.
Vapour pressure	:	approx. 20 mbar (20 °C) Method: Calculated by Syracuse.
Relative vapour density	:	not tested.
Density	:	approx. 1,35 g/cm ³ (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 ² /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"

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

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
Assessment: The substance or mixture has no acute

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inhalation toxicity

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

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 : Other
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
Method : Other
Result : Irritating to eyes.
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

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Exposure routes : Skin contact
Species : Guinea pig
Method : Buehler Test
Result : Not a skin sensitizer.
GLP : yes

Assessment : Causes skin irritation., Causes serious eye irritation.

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 : In vitro tests did not show mutagenic effects

Carcinogenicity

Product:

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

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Information refers to the main component.

Components:

Potassium carbonate:

Carcinogenicity - Assessment : Not classifiable as a human carcinogen.

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 evidence of adverse effects on sexual function and fertility, or on development, based on animal experiments.

STOT - single exposure

Product:

Remarks : not tested.

Components:

Potassium carbonate:

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

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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.

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

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Aspiration toxicity

Components:

Potassium carbonate:

No aspiration toxicity classification

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/aquatic plants : 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: Other
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: Other
GLP: yes

Toxicity to algae/aquatic plants : Remarks: not required

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

Toxicity to daphnia and other : Remarks: not required

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aquatic invertebrates
(Chronic toxicity)

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

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.

12.4 Mobility in soil

Product:

Distribution among environmental compartments : Remarks: not tested.

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

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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 hazardous to water
The product should not be allowed to enter drains, water courses or the soil.

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

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.

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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.

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.

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
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

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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; SVHC - Substance of Very High Concern; 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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