

# SAFETY DATA SHEET



## Vertrel™ XP specialty fluid

Version	Revision Date:	SDS Number:	Date of last issue: 16.10.2024
2.8	05.03.2025	1731747-00018	Date of first issue: 05.06.2017

### SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Vertrel™ XP specialty fluid

SDS-Identcode : 130000000164

#### Manufacturer or supplier's details

Company name of supplier : The Chemours Company FC, LLC

Address : 1007 Market Street  
Wilmington, DE 19801 United States of America (USA)

Telephone : 55 5125 4907 in D.F. and metropolitan area - 800 737 5623  
inside the Republic.

Emergency telephone : (ANIQ - SETIQ) 55 5559 1588 in CDMX and metropolitan  
area; 800 002 1400 inside the Republic.

E-mail address : sds-support@chemours.com

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

Recommended use : Cleaning agent

Restrictions on use : For professional and industrial installation and use only.

### SECTION 2. HAZARDS IDENTIFICATION

#### GHS Classification

Not a hazardous substance or mixture.

#### GHS label elements

No hazard pictogram, no signal word, no hazard statement(s), no precautionary statement(s) required.

#### Other hazards

Vapors are heavier than air and can cause suffocation by reducing oxygen available for breathing. Misuse or intentional inhalation abuse may cause death without warning symptoms, due to cardiac effects.  
Rapid evaporation of the product may cause frostbite.

### SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

#### Components

Chemical name	CAS-No.	Concentration (% w/w)
1,1,1,2,2,3,4,5,5,5-Decafluoropentane	138495-42-8	>= 90 -<= 100
Propan-2-ol	67-63-0	>= 1 -< 5

### SECTION 4. FIRST AID MEASURES

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- |   |   |   |
|---|---|---|
| If inhaled  | : | If inhaled, remove to fresh air.<br>Get medical attention if symptoms occur.  |
| In case of skin contact                                     | : | Wash with water and soap as a precaution.<br>Get medical attention if symptoms occur.   |
| In case of eye contact                                      | : | Flush eyes with water as a precaution.<br>Get medical attention if irritation develops and persists.  |
| If swallowed  | : | If swallowed, DO NOT induce vomiting.<br>Get medical attention if symptoms occur.<br>Rinse mouth thoroughly with water.   |
| Most important symptoms and effects, both acute and delayed | : | May cause cardiac arrhythmia.<br>Skin contact may provoke the following symptoms:<br>Dermatitis<br>Irritation<br>Pain<br>superficial burning sensation<br>Itching<br>Redness<br>Swelling of tissue<br>Rash<br>Discomfort<br>Eye contact may provoke the following symptoms<br>Pain<br>tearing<br>Swelling of tissue<br>Redness<br>Impairment of vision<br>Inhalation may provoke the following symptoms:<br>Unconsciousness<br>Drowsiness<br>Lack of coordination<br>confusion<br>Dizziness<br>Central nervous system depression<br>Effects of breathing high concentrations of vapor may include:<br>Tiredness<br>Drowsiness<br>central nervous system effects<br>Convulsions<br>Adverse effects from repeated inhalation may include<br>central nervous system effects<br>Aspiration may cause pulmonary edema and pneumonitis. |
| Protection of first-aiders                                  | : | No special precautions are necessary for first aid responders.  |
| Notes to physician  | : | Because of possible disturbances of cardiac rhythm, catecholamine drugs, such as epinephrine, that may be used in situations of emergency life support should be used with special caution.   |
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## SECTION 5. FIRE-FIGHTING MEASURES

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- Suitable extinguishing media : Water spray  
Alcohol-resistant foam  
Carbon dioxide (CO<sub>2</sub>)  
Dry chemical
- Unsuitable extinguishing media : None known.
- Specific hazards during fire fighting : Exposure to combustion products may be a hazard to health.
- Hazardous combustion products : Hydrogen fluoride  
carbonyl fluoride  
Carbon oxides
- Specific extinguishing methods : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.  
Use water spray to cool unopened containers.  
Remove undamaged containers from fire area if it is safe to do so.  
Evacuate area.
- Special protective equipment for fire-fighters : Wear self-contained breathing apparatus for firefighting if necessary.  
Use personal protective equipment.

### SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Follow safe handling advice (see section 7) and personal protective equipment recommendations (see section 8).
- Environmental precautions : Avoid release to the environment.  
Prevent further leakage or spillage if safe to do so.  
Prevent spreading over a wide area (e.g., by containment or oil barriers).  
Retain and dispose of contaminated wash water.  
Local authorities should be advised if significant spillages cannot be contained.
- Methods and materials for containment and cleaning up : Soak up with inert absorbent material.  
For large spills, provide diking or other appropriate containment to keep material from spreading. If diked material can be pumped, store recovered material in appropriate container.  
Clean up remaining materials from spill with suitable absorbent.  
Local or national regulations may apply to releases and disposal of this material, as well as those materials and items em-

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played in the cleanup of releases. You will need to determine which regulations are applicable.  
Sections 13 and 15 of this SDS provide information regarding certain local or national requirements.

### SECTION 7. HANDLING AND STORAGE

- Technical measures : See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.
- Local/Total ventilation : Use only with adequate ventilation.
- Advice on safe handling : Handle in accordance with good industrial hygiene and safety practice, based on the results of the workplace exposure assessment  
Take care to prevent spills, waste and minimize release to the environment.
- Hygiene measures : If exposure to chemical is likely during typical use, provide eye flushing systems and safety showers close to the working place.  
When using do not eat, drink or smoke.  
Wash contaminated clothing before re-use.
- Conditions for safe storage : Do not expose drums to direct heat or temperature above 46°C (115°F) to avoid pressurizing and possibly distorting the drums.  
Material should not be dispensed by pouring from pail/drum shipping containers containing 5 gallons or more. The use of a drum pump is recommended for dispensing from pail/drum shipping containers with 5 gallons or more, except for smaller containers where adequate ventilation can be used to manage the exposure.  
Keep in properly labeled containers.  
Store in accordance with the particular national regulations.
- Materials to avoid : No special restrictions on storage with other products.
- Recommended storage temperature : < 46 °C
- Further information on storage stability : The product has an indefinite shelf life when stored properly.

### SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### Ingredients with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
1,1,1,2,2,3,4,5,5,5-Decafluoropentane	138495-42-8	TWA	225 ppm 2,320 mg/m <sup>3</sup>	WEEL

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		STEL	700 ppm 7,217 mg/m <sup>3</sup>	WEEL
Propan-2-ol	67-63-0	VLE-PPT	200 ppm	NOM-010- STPS-2014
		VLE-CT	400 ppm	NOM-010- STPS-2014
		TWA	200 ppm	ACGIH
		STEL	400 ppm	ACGIH

### Biological occupational exposure limits

Components	CAS-No.	Control parameters	Biological specimen	Sam-pling time	Permissible concentra-tion	Basis
Propan-2-ol	67-63-0	Acetone	Urine	End of shift at end of work-week	40 mg/l	MX BEI
		Acetone	Urine	End of shift at end of work-week	40 mg/l	ACGIH BEI

**Engineering measures** : Ensure adequate ventilation, especially in confined areas.  
Minimize workplace exposure concentrations.

### Personal protective equipment

Respiratory protection : Use a positive pressure air supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown.

#### Hand protection

Material : Viton®  
Glove thickness : 0.7 mm  
Wearing time : 120 min

Remarks : Choose gloves to protect hands against chemicals depending on the concentration specific to place of work. For special applications, we recommend clarifying the resistance to chemicals of the aforementioned protective gloves with the glove manufacturer. Wash hands before breaks and at the end of workday. Breakthrough time is not determined for the product. Change gloves often!

Eye protection : Wear the following personal protective equipment:  
Safety glasses

Skin and body protection : Skin should be washed after contact.

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

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Appearance	: liquid
Color	: colorless
Odor	: slight, ether-like
Odor Threshold	: No data available
pH	: No data available
Melting point/freezing point	: < -80.0 °C
Initial boiling point and boiling range	: 52 °C (1,013 hPa)
Flash point	: does not flash
Evaporation rate	: No data available
Flammability (solid, gas)	: Not applicable
Flammability (liquids)	: No data available
Upper explosion limit / Upper flammability limit	: Upper flammability limit Method: ASTM E681 None.
Lower explosion limit / Lower flammability limit	: Lower flammability limit Method: ASTM E681 None.
Vapor pressure	: 93.3 hPa (0 °C)
Relative vapor density	: 7.86
Density	: 1.530 g/cm <sup>3</sup> (25 °C) 1.591 g/cm <sup>3</sup> (0 °C) 1.456 g/cm <sup>3</sup> (50 °C)
Solubility(ies) Water solubility	: partly soluble
Partition coefficient: n-octanol/water	: Not applicable
Autoignition temperature	: No data available
Decomposition temperature	: No data available

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Viscosity  
Viscosity, dynamic : 0.68 mPa.s ( 25 °C)  
Viscosity, kinematic : No data available  
Explosive properties : Not explosive  
Oxidizing properties : The substance or mixture is not classified as oxidizing.  
Particle characteristics  
Particle size : Not applicable

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### SECTION 10. STABILITY AND REACTIVITY

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

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### SECTION 11. TOXICOLOGICAL INFORMATION

#### Information on likely routes of exposure

Inhalation  
Skin contact  
Ingestion  
Eye contact

#### Acute toxicity

Not classified based on available information.

#### Components:

##### **1,1,1,2,2,3,4,5,5,5-Decafluoropentane:**

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg  
Method: OECD Test Guideline 401

Acute inhalation toxicity : LC50 (Rat): 114.428 mg/l  
Exposure time: 4 h  
Test atmosphere: vapor  
Method: OECD Test Guideline 403

No observed adverse effect concentration (Dog): 5000 ppm  
Test atmosphere: gas

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Method: Cardiac sensitization study

Lowest observed adverse effect concentration (Dog): > 5000 ppm

Test atmosphere: gas

Method: Cardiac sensitization study

Cardiac sensitisation threshold limit (Dog): > 51,544 mg/m<sup>3</sup>

Test atmosphere: gas

Method: Cardiac sensitization study

Acute dermal toxicity : LD50 (Rabbit): > 5,000 mg/kg  
Method: OECD Test Guideline 402

### Propan-2-ol:

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 25 mg/l  
Exposure time: 6 h  
Test atmosphere: vapor

Acute dermal toxicity : LD50 (Rabbit): > 5,000 mg/kg

### Skin corrosion/irritation

Not classified based on available information.

### Components:

#### 1,1,1,2,2,3,4,5,5,5-Decafluoropentane:

Species : Rabbit  
Method : OECD Test Guideline 404  
Result : No skin irritation

### Propan-2-ol:

Species : Rabbit  
Result : No skin irritation

### Serious eye damage/eye irritation

Not classified based on available information.

### Components:

#### 1,1,1,2,2,3,4,5,5,5-Decafluoropentane:

Species : Rabbit  
Result : No eye irritation  
Method : OECD Test Guideline 405

### Propan-2-ol:

Species : Rabbit  
Result : Irritation to eyes, reversing within 21 days



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### Respiratory or skin sensitization

#### Skin sensitization

Not classified based on available information.

#### Respiratory sensitization

Not classified based on available information.

#### Components:

##### **1,1,1,2,2,3,4,5,5,5-Decafluoropentane:**

Test Type	: Buehler Test
Routes of exposure	: Skin contact
Species	: Guinea pig
Method	: OECD Test Guideline 406
Result	: negative

##### **Propan-2-ol:**

Test Type	: Buehler Test
Routes of exposure	: Skin contact
Species	: Guinea pig
Method	: OECD Test Guideline 406
Result	: negative

### Germ cell mutagenicity

Not classified based on available information.

#### Components:

##### **1,1,1,2,2,3,4,5,5,5-Decafluoropentane:**

Genotoxicity in vitro	: Test Type: Bacterial reverse mutation assay (AMES) Method: OECD Test Guideline 471 Result: negative
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	Test Type: In vitro mammalian cell gene mutation test Method: OECD Test Guideline 476 Result: negative
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Genotoxicity in vivo	: Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay) Species: Rat Application Route: inhalation (vapor) Method: OECD Test Guideline 474 Result: negative
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Germ cell mutagenicity - Assessment	: Weight of evidence does not support classification as a germ cell mutagen.
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##### **Propan-2-ol:**

Genotoxicity in vitro	: Test Type: Bacterial reverse mutation assay (AMES) Result: negative
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	Test Type: In vitro mammalian cell gene mutation test Result: negative
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Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)  
Species: Mouse  
Application Route: Intraperitoneal injection  
Result: negative

### Carcinogenicity

Not classified based on available information.

#### Components:

##### **Propan-2-ol:**

Species : Rat  
Application Route : inhalation (vapor)  
Exposure time : 104 weeks  
Method : OECD Test Guideline 451  
Result : negative

### Reproductive toxicity

Not classified based on available information.

#### Components:

##### **1,1,1,2,2,3,4,5,5,5-Decafluoropentane:**

Effects on fertility : Test Type: One-generation reproduction toxicity study  
Species: Rat  
Application Route: inhalation (vapor)  
Method: OECD Test Guideline 415  
Result: negative

Effects on fetal development : Test Type: Prenatal development toxicity study (teratogenicity)  
Species: Rat  
Application Route: inhalation (vapor)  
Method: OECD Test Guideline 414  
Result: negative

Reproductive toxicity - Assessment : Weight of evidence does not support classification for reproductive toxicity

##### **Propan-2-ol:**

Effects on fertility : Test Type: Two-generation reproduction toxicity study  
Species: Rat  
Application Route: Ingestion  
Result: negative

Effects on fetal development : Test Type: Embryo-fetal development  
Species: Rat  
Application Route: Ingestion  
Result: negative

### STOT-single exposure

Not classified based on available information.

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### Components:

#### **1,1,1,2,2,3,4,5,5,5-Decafluoropentane:**

Routes of exposure	: Ingestion
Assessment	: No significant health effects observed in animals at concentrations of 2000 mg/kg bw or less

Routes of exposure	: Skin contact
Assessment	: No significant health effects observed in animals at concentrations of 2000 mg/kg bw or less

Routes of exposure	: inhalation (vapor)
Assessment	: No significant health effects observed in animals at concentrations of 20 mg/l/4h or less

#### **Propan-2-ol:**

Assessment	: May cause drowsiness or dizziness.
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### **STOT-repeated exposure**

Not classified based on available information.

### Components:

#### **1,1,1,2,2,3,4,5,5,5-Decafluoropentane:**

Routes of exposure	: inhalation (vapor)
Assessment	: No significant health effects observed in animals at concentrations of 1 mg/l/6h/d or less.

### **Repeated dose toxicity**

### Components:

#### **1,1,1,2,2,3,4,5,5,5-Decafluoropentane:**

Species	: Rat, male and female
NOAEL	: 15.463 mg/l
LOAEL	: 20.618 mg/l
Application Route	: inhalation (vapor)
Exposure time	: 90 Days
Method	: OECD Test Guideline 413

#### **Propan-2-ol:**

Species	: Rat
NOAEL	: 12.5 mg/l
Application Route	: inhalation (vapor)
Exposure time	: 104 Weeks

### **Aspiration toxicity**

Not classified based on available information.

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### Components:

#### **1,1,1,2,2,3,4,5,5,5-Decafluoropentane:**

No aspiration toxicity classification

## SECTION 12. ECOLOGICAL INFORMATION

### **Ecotoxicity**

#### Components:

##### **1,1,1,2,2,3,4,5,5,5-Decafluoropentane:**

Toxicity to fish	:	LC50 (Danio rerio (zebra fish)): 13 mg/l Exposure time: 96 h Method: OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 10.6 mg/l Exposure time: 48 h Method: OECD Test Guideline 202
Toxicity to algae/aquatic plants	:	EC50 (Selenastrum capricornutum (green algae)): > 120 mg/l Exposure time: 72 h Method: OECD Test Guideline 201  NOEC (Scenedesmus capricornutum (fresh water algae)): 120 mg/l Exposure time: 72 h Method: OECD Test Guideline 201
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC (Daphnia magna (Water flea)): 1.72 mg/l Exposure time: 21 d Method: OECD Test Guideline 211

##### **Propan-2-ol:**

Toxicity to fish	:	LC50 (Pimephales promelas (fathead minnow)): 9,640 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): > 10,000 mg/l Exposure time: 24 h
Toxicity to microorganisms	:	EC50 (Pseudomonas putida): > 1,050 mg/l Exposure time: 16 h

### **Persistence and degradability**

#### Components:

##### **1,1,1,2,2,3,4,5,5,5-Decafluoropentane:**

Biodegradability	:	Result: Not readily biodegradable. Method: OECD Test Guideline 301D
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##### **Propan-2-ol:**

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Biodegradability : Result: rapidly degradable

BOD/COD : BOD: 1,19 (BOD5)  
COD: 2,23  
BOD/COD: 53 %

### Bioaccumulative potential

#### Components:

##### **1,1,1,2,2,3,4,5,5,5-Decafluoropentane:**

Bioaccumulation : Remarks: Bioaccumulation is unlikely.

Partition coefficient: n-octanol/water : log Pow: 2.4 (24 °C)

##### **Propan-2-ol:**

Partition coefficient: n-octanol/water : log Pow: 0.05

### Mobility in soil

No data available

### Other adverse effects

No data available

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## SECTION 13. DISPOSAL CONSIDERATIONS

### Disposal methods

Waste from residues : Do not dispose of waste into sewer.

Dispose of in accordance with local regulations.

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

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## SECTION 14. TRANSPORT INFORMATION

### International Regulations

#### **UNRTDG**

Not regulated as a dangerous good

#### **IATA-DGR**

Not regulated as a dangerous good

#### **IMDG-Code**

Not regulated as a dangerous good

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

Not applicable for product as supplied.

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### Domestic regulation

#### NOM-002-SCT

Not regulated as a dangerous good

#### Special precautions for user

Not applicable

## SECTION 15. REGULATORY INFORMATION

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

NOM-165-SEMARNAT-2013, Norm establishing a list of substances subject to report for the Registry of Emissions and Pollutant Transfer

Components	CAS-No.	MPU (kg/year)	Transfer/Release (kg/year)
1,1,1,2,2,3,4,5,5,5-Decafluoropentane	138495-42-8	2500 kg/year	100 kg/year

MPU: Applicable reporting threshold when the substance, pure or in mixture in a composition of more than 1% by weight, is used for industrial activities at facilities that are subject to report or are produced by them

Federal Law for the control of chemical precursors, essential chemical products and machinery for producing capsules, tablets and pills. : Not applicable

### International Regulations

Montreal Protocol : 1,1,1,2,2,3,4,5,5,5-Decafluoropentane

## SECTION 16. OTHER INFORMATION

Revision Date : 05.03.2025

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Before use read Chemours safety information.

For further information contact the local Chemours office or nominated distributors.

### Full text of other abbreviations

ACGIH	: USA. ACGIH Threshold Limit Values (TLV)
ACGIH BEI	: ACGIH - Biological Exposure Indices (BEI)
MX BEI	: Official Mexican Norm NOM-047-SSA1-2011, Environmental Health - Biological exposure indices for workers occupationally exposed to chemical agents
NOM-010-STPS-2014	: Mexico. Norm NOM-010-STPS-2014 on Chemicals Polluting the Work Environment - Identification, Assessment and Control - Appendix 1 Occupational Exposure Limits
WEEL	: Workplace Environmental Exposure Levels (WEEL)

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ACGIH / TWA	:	8-hour, time-weighted average
ACGIH / STEL	:	Short-term exposure limit
NOM-010-STPS-2014 / VLE-PPT	:	Time weighted average limit value
NOM-010-STPS-2014 / VLE-CT	:	Short term exposure limit value
WEEL / STEL	:	Short term exposure limit
WEEL / TWA	:	8-hr TWA

AIIC - Australian Inventory of Industrial Chemicals; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; TECL - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System

Sources of key data used to compile the Material Safety Data Sheet	:	Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agency, <a href="http://echa.europa.eu/">http://echa.europa.eu/</a>
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The information is considered as correct, but not exhaustive, and will be used only as a guide, which is based in the current knowledge of the substance or mixture, and is applicable to proper safety precautions for the product.

MX / Z8