

# SAFETY DATA SHEET

according to the OSHA Hazard Communication Standard



## Opteon™ XP30 (R-514A) Refrigerant

Version	Revision Date:	SDS Number:	Date of last issue: 03/24/2023
4.2	09/25/2023	2621195-00007	Date of first issue: 03/19/2018

### SECTION 1. IDENTIFICATION

Product name : Opteon™ XP30 (R-514A) Refrigerant

SDS-Identcode : 130000144003

#### 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 : 1-844-773-CHEM (outside the U.S. 1-302-773-1000)

Emergency telephone : Medical emergency: 1-866-595-1473 (outside the U.S. 1-302-773-2000) ; Transport emergency: +1-800-424-9300 (outside the U.S. +1-703-527-3887)

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

Recommended use : Refrigerant  
Heat transfer fluids

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

### SECTION 2. HAZARDS IDENTIFICATION

#### GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Eye irritation : Category 2B

Specific target organ toxicity : Category 3  
- single exposure

#### GHS label elements

Hazard pictograms :



Signal Word : Warning

Hazard Statements : H320 Causes eye irritation.  
H336 May cause drowsiness or dizziness.

Precautionary Statements : **Prevention:**  
P261 Avoid breathing mist or vapors.  
P264 Wash skin thoroughly after handling.

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P271 Use only outdoors or in a well-ventilated area.

### Response:

P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a doctor if you feel unwell.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P337 + P313 If eye irritation persists: Get medical attention.

### Storage:

P405 Store locked up.

### Disposal:

P501 Dispose of contents and container to an approved waste disposal plant.

### 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)
(Z)-1,1,1,4,4,4-Hexafluoro-2-butene#	692-49-9	75.1
Trans-Dichloroethylene	156-60-5	24.9

# Voluntarily-disclosed substance

## SECTION 4. FIRST AID MEASURES

General advice : In the case of accident or if you feel unwell, seek medical advice immediately.  
When symptoms persist or in all cases of doubt seek medical advice.

If inhaled : If inhaled, remove to fresh air.  
Get medical attention if symptoms occur.

In case of skin contact : In case of contact, immediately flush skin with plenty of water.  
Remove contaminated clothing and shoes.  
Get medical attention.  
Wash clothing before reuse.  
Thoroughly clean shoes before reuse.

In case of eye contact : In case of contact, immediately flush eyes with plenty of water for at least 15 minutes.

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- If easy to do, remove contact lens, if worn.  
Get medical attention.
- If swallowed : If swallowed, DO NOT induce vomiting.  
Get medical attention if symptoms occur.  
Rinse mouth thoroughly with water.
- Most important symptoms and effects, both acute and delayed : May cause cardiac arrhythmia.  
Other symptoms potentially related to misuse or inhalation abuse are  
Cardiac sensitization  
Anaesthetic effects  
Light-headedness  
Dizziness  
confusion  
Lack of coordination  
Drowsiness  
Unconsciousness  
Skin contact may provoke the following symptoms:  
Irritation  
Swelling of tissue  
Itching  
Discomfort  
Redness  
Eye contact may provoke the following symptoms  
tearing  
Redness  
Discomfort  
Causes eye irritation.  
May cause drowsiness or dizziness.
- Protection of first-aiders : First Aid responders should pay attention to self-protection, and use the recommended personal protective equipment when the potential for exposure exists (see section 8).
- 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.

### SECTION 5. FIRE-FIGHTING MEASURES

- 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 prod- : Hydrogen fluoride

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ucts  
carbonyl fluoride  
Carbon oxides  
Chlorine compounds

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 : In the event of fire, wear self-contained breathing apparatus.  
Use personal protective equipment.

### SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Use personal protective equipment.  
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 employed 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 : If sufficient ventilation is unavailable, use with local exhaust ventilation.

Advice on safe handling : Do not get on skin or clothing.  
Avoid breathing mist or vapors.  
Do not swallow.

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Do not get in eyes.  
Wash skin thoroughly after 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.

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 locked up.  
Keep in a cool, well-ventilated place.  
Store in accordance with the particular national regulations.

Materials to avoid : No special restrictions on storage with other products.

Recommended storage temperature : < 115 °F / < 46 °C

Storage period : > 10 y

Further information on storage stability : The product has an indefinite shelf life when stored properly.

Keep away from direct sunlight.

## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Ingredients with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
(Z)-1,1,1,4,4,4-Hexafluoro-2-butene	692-49-9	TWA	500 ppm 3,350 mg/m <sup>3</sup>	US WEEL
Trans-Dichloroethylene	156-60-5	TWA	200 ppm	ACGIH

**Engineering measures** : Minimize workplace exposure concentrations.  
If sufficient ventilation is unavailable, use with local exhaust ventilation.

### Personal protective equipment

Respiratory protection : General and local exhaust ventilation is recommended to maintain vapor exposures below recommended limits. Where

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concentrations are above recommended limits or are unknown, appropriate respiratory protection should be worn. Follow OSHA respirator regulations (29 CFR 1910.134) and use NIOSH/MSHA approved respirators. Protection provided by air purifying respirators against exposure to any hazardous chemical is limited. Use a positive pressure air supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstance where air purifying respirators may not provide adequate protection.

### Hand protection

Material : Chemical-resistant gloves

Remarks : Choose gloves to protect hands against chemicals depending on the concentration specific to place of work. Breakthrough time is not determined for the product. Change gloves often! 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.

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

Skin and body protection : Wear the following personal protective equipment:  
If assessment demonstrates that there is a risk of explosive atmospheres or flash fires, use flame retardant antistatic protective clothing.

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.

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid

Color : clear

Odor : slight, ether-like

Odor Threshold : No data available

pH : 7

Melting point/freezing point : No data available

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Initial boiling point and boiling range	:	84.4 °F / 29.1 °C
Flash point	:	Method: ASTM D 56 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	:	871.4 hPa (77 °F / 25 °C)
Relative vapor density	:	5.01 (Air = 1.0)
Relative density	:	1.31 (77 °F / 25 °C)
Density	:	1.308 g/cm <sup>3</sup> (77 °F / 25 °C)
Solubility(ies) Water solubility	:	No data available
Partition coefficient: n-octanol/water	:	Not applicable
Autoignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity Viscosity, kinematic	:	No data available
Explosive properties	:	Not explosive
Oxidizing properties	:	The substance or mixture is not classified as oxidizing.
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.

### 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:

##### **(Z)-1,1,1,4,4,4-Hexafluoro-2-butene:**

Acute inhalation toxicity	:	LC50 (Rat): > 690.413 mg/l Exposure time: 4 h Test atmosphere: vapor Method: OECD Test Guideline 403
		No observed adverse effect concentration (Dog): 12500 ppm Test atmosphere: gas
		Lowest observed adverse effect concentration (Dog): 25000 ppm Test atmosphere: gas
		Cardiac sensitisation threshold limit (Dog): 1,677,740 mg/m <sup>3</sup> Test atmosphere: gas

##### **Trans-Dichloroethylene:**

Acute oral toxicity	:	LD50 (Rat): 7,902 mg/kg Method: OECD Test Guideline 420
Acute inhalation toxicity	:	LC50 (Rat): 95.5 mg/l Exposure time: 4 h Test atmosphere: vapor Method: OECD Test Guideline 403



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Lowest observed adverse effect concentration (Dog): 250000 ppm

Test atmosphere: gas

Cardiac sensitisation threshold limit (Dog): 991,309 mg/m<sup>3</sup>

Test atmosphere: gas

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

### Skin corrosion/irritation

Not classified based on available information.

#### Components:

##### **(Z)-1,1,1,4,4,4-Hexafluoro-2-butene:**

Result : No skin irritation

##### **Trans-Dichloroethylene:**

Species : Rabbit  
Method : OECD Test Guideline 404  
Result : Mild skin irritation

### Serious eye damage/eye irritation

Causes eye irritation.

#### Components:

##### **(Z)-1,1,1,4,4,4-Hexafluoro-2-butene:**

Result : No eye irritation

##### **Trans-Dichloroethylene:**

Species : Rabbit  
Result : Irritation to eyes, reversing within 7 days  
Method : OECD Test Guideline 405

### Respiratory or skin sensitization

#### **Skin sensitization**

Not classified based on available information.

#### **Respiratory sensitization**

Not classified based on available information.

#### Components:

##### **(Z)-1,1,1,4,4,4-Hexafluoro-2-butene:**

Routes of exposure : Skin contact  
Result : negative

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### Germ cell mutagenicity

Not classified based on available information.

### Components:

#### **(Z)-1,1,1,4,4,4-Hexafluoro-2-butene:**

- Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)  
Method: OECD Test Guideline 471  
Result: negative
- Test Type: Chromosome aberration test in vitro  
Method: OECD Test Guideline 473  
Result: negative
- Test Type: In vitro mammalian cell gene mutation test  
Method: OECD Test Guideline 476  
Result: negative
- 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
- Germ cell mutagenicity - Assessment : Weight of evidence does not support classification as a germ cell mutagen.

#### **Trans-Dichloroethylene:**

- Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)  
Method: OECD Test Guideline 471  
Result: negative
- Test Type: In vitro mammalian cell gene mutation test  
Method: OECD Test Guideline 476  
Result: negative
- Test Type: Chromosome aberration test in vitro  
Method: OECD Test Guideline 473  
Result: negative
- Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)  
Species: Mouse  
Application Route: Ingestion  
Method: OECD Test Guideline 474  
Result: negative
- Germ cell mutagenicity - Assessment : Weight of evidence does not support classification as a germ cell mutagen.

### **Carcinogenicity**

Not classified based on available information.

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- IARC** No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
- OSHA** No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.
- NTP** No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

### Reproductive toxicity

Not classified based on available information.

#### Components:

##### **(Z)-1,1,1,4,4,4-Hexafluoro-2-butene:**

Effects on fertility : Test Type: Two-generation reproduction toxicity study  
Species: Rat  
Application Route: inhalation (vapor)  
Method: OECD Test Guideline 416  
Result: negative

Effects on fetal development : Test Type: Embryo-fetal development  
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, No effects on or via lactation

##### **Trans-Dichloroethylene:**

Effects on fetal development : Test Type: Embryo-fetal development  
Species: Rat  
Application Route: Inhalation  
Method: OECD Test Guideline 414  
Result: negative

### STOT-single exposure

May cause drowsiness or dizziness.

#### Components:

##### **Trans-Dichloroethylene:**

Assessment : May cause drowsiness or dizziness.

### STOT-repeated exposure

Not classified based on available information.

#### Components:

##### **(Z)-1,1,1,4,4,4-Hexafluoro-2-butene:**

Routes of exposure : inhalation (vapor)

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Assessment : No significant health effects observed in animals at concentrations of 1 mg/l/6h/d or less.

### Trans-Dichloroethylene:

Routes of exposure : Inhalation  
Assessment : No significant health effects observed in animals at concentrations of 250 ppmV/6h/d or less.

Routes of exposure : Ingestion  
Assessment : No significant health effects observed in animals at concentrations of 100 mg/kg bw or less.

### Repeated dose toxicity

#### Components:

##### (Z)-1,1,1,4,4,4-Hexafluoro-2-butene:

Species : Rat, male and female  
NOAEL : 33.5 mg/l  
LOAEL : 50.3 mg/l  
Application Route : inhalation (vapor)  
Exposure time : 90 d  
Method : OECD Test Guideline 413

##### Trans-Dichloroethylene:

Species : Rat, male and female  
NOAEL : 4000 ppm  
LOAEL : > 4000 ppm  
Application Route : Inhalation  
Exposure time : 90 Days  
Method : OECD Test Guideline 413

Species : Rat, male and female  
NOAEL : 3,210 mg/kg  
LOAEL : > 3,210 mg/kg  
Application Route : Ingestion  
Exposure time : 98 Days  
Method : OECD Test Guideline 408

### Aspiration toxicity

Not classified based on available information.

#### Components:

##### (Z)-1,1,1,4,4,4-Hexafluoro-2-butene:

No aspiration toxicity classification

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### SECTION 12. ECOLOGICAL INFORMATION

#### Ecotoxicity

##### Components:

##### **(Z)-1,1,1,4,4,4-Hexafluoro-2-butene:**

- Toxicity to fish : LC50 (*Oryzias latipes* (Japanese medaka)): 76.1 mg/l  
Exposure time: 96 h  
Method: OECD Test Guideline 203
- Toxicity to daphnia and other aquatic invertebrates : EC50 (*Daphnia magna* (Water flea)): 22.5 mg/l  
Exposure time: 48 h  
Method: OECD Test Guideline 202
- Toxicity to algae/aquatic plants : ErC50 (*Pseudokirchneriella subcapitata* (green algae)): > 23.7 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201
- NOEC (*Pseudokirchneriella subcapitata* (green algae)): 6.92 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201
- Toxicity to fish (Chronic toxicity) : NOEC (*Gobiocypris rarus* (rare gudgeon)): 10 mg/l  
Exposure time: 32 d  
Method: OECD Test Guideline 210
- Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (*Daphnia magna* (Water flea)): 10 mg/l  
Exposure time: 21 d  
Method: OECD Test Guideline 211

##### **Trans-Dichloroethylene:**

- Toxicity to fish : LC50 (*Lepomis macrochirus* (Bluegill sunfish)): 135 mg/l  
Exposure time: 96 h  
Remarks: Based on data from similar materials
- Toxicity to daphnia and other aquatic invertebrates : EC50 (*Daphnia magna* (Water flea)): 220 mg/l  
Exposure time: 48 h  
Method: EPA-660/3-75-009
- Toxicity to algae/aquatic plants : EbC50 (*Pseudokirchneriella subcapitata* (green algae)): 36.36 mg/l  
Exposure time: 48 h  
Method: OECD Test Guideline 201

#### Persistence and degradability

##### Components:

##### **(Z)-1,1,1,4,4,4-Hexafluoro-2-butene:**

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Biodegradability : Result: Not readily biodegradable.  
Method: OECD Test Guideline 302C

### Trans-Dichloroethylene:

Biodegradability : Result: not rapidly degradable  
Method: OECD Test Guideline 301D

### Bioaccumulative potential

#### Components:

#### (Z)-1,1,1,4,4,4-Hexafluoro-2-butene:

Partition coefficient: n-octanol/water : log Pow: 2.3

#### Trans-Dichloroethylene:

Partition coefficient: n-octanol/water : log Pow: 2.06

### Mobility in soil

No data available

### Other adverse effects

No data available

## SECTION 13. DISPOSAL CONSIDERATIONS

### Disposal methods

Waste from residues : Dispose of in accordance with local regulations.  
Do not dispose of waste into sewer.

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.

## 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

#### 49 CFR

UN/ID/NA number	:	UN 3082
Proper shipping name	:	Environmentally hazardous substance, liquid, n.o.s. (Trans-Dichloroethylene)
Class	:	9
Packing group	:	III
Labels	:	CLASS 9
ERG Code	:	171
Marine pollutant	:	no
Remarks	:	THE ABOVE INFORMATION ONLY APPLIES TO PACKAGE SIZES WHERE THE HAZARDOUS SUBSTANCE MEETS THE REPORTABLE QUANTITY.

### 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.

## SECTION 15. REGULATORY INFORMATION

### CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Trans-Dichloroethylene	156-60-5	1000	4016

### SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

### SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

**SARA 311/312 Hazards** : Serious eye damage or eye irritation  
Specific target organ toxicity (single or repeated exposure)

**SARA 313** : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

### US State Regulations

#### Pennsylvania Right To Know

(Z)-1,1,1,4,4,4-Hexafluoro-2-butene	692-49-9
Trans-Dichloroethylene	156-60-5
1,2-Butylene oxide	106-88-7

#### California List of Hazardous Substances

Trans-Dichloroethylene	156-60-5
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### Additional regulatory information

(Z)-1,1,1,4,4,4-Hexafluoro-2-butene	692-49-9
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The United States Environmental Protection Agency (USEPA) has established a Significant New Use Rule (SNUR) for one of the components in this product.

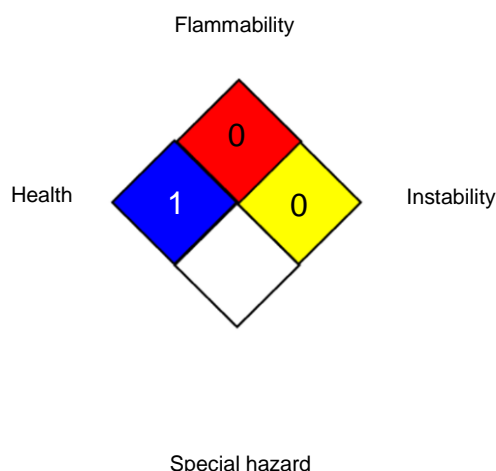
See 40 CFR § 721.10830

This material contains one or more substances which requires export notification under TSCA Section 12(b) and 40 CFR Part 707 Subpart D:

### SECTION 16. OTHER INFORMATION

#### Further information

##### NFPA 704:



##### HMIS® IV:

HEALTH	/	1
FLAMMABILITY		0
PHYSICAL HAZARD		0

HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "\*" represents a chronic hazard, while the "/" represents the absence of a chronic hazard.

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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)
US WEEL	:	USA. Workplace Environmental Exposure Levels (WEEL)
ACGIH / TWA	:	8-hour, time-weighted average
US WEEL / TWA	:	8-hr TWA

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; 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; HMIS - Hazardous Materials Identification System; IARC -



# SAFETY DATA SHEET

according to the OSHA Hazard Communication Standard



## Opteon™ XP30 (R-514A) Refrigerant

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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; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; 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; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - 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

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, <http://echa.europa.eu/>

Revision Date : 09/25/2023

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 is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only to the specific material identified at the top of this SDS and may not be valid when the SDS material is used in combination with any other materials or in any process, unless specified in the text. Material users should review the information and recommendations in the specific context of their intended manner of handling, use, processing and storage, including an assessment of the appropriateness of the SDS material in the user's end product, if applicable.

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