

**Opteon™ XP30 (R-514A) Refrigerant**

Version 2.0

Revision Date 06/15/2016

Ref. 130000143454

This SDS adheres to the standards and regulatory requirements of the United States and may not meet the regulatory requirements in other countries.

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	Opteon™ XP30 (R-514A) Refrigerant
Tradename/Synonym	:	Opteon XP30 R-514A XP30
Product Grade/Type	:	ASHRAE Refrigerant Number Designation: R-514A
Product Use	:	Refrigerant, Heat transfer fluids, For professional and industrial installation and use only.
Restrictions on use	:	Do not use product for anything outside of the above specified uses
Manufacturer/Supplier	:	The Chemours Company FC, LLC 1007 Market Street Wilmington, DE 19899 United States of America
Product Information	:	1-844-773-CHEM (outside the U.S. 1-302-773-1000)
Medical Emergency	:	1-866-595-1473 (outside the U.S. 1-302-773-2000)
Transport Emergency	:	CHEMTREC: +1-800-424-9300 (outside the U.S. +1-703-527-3887)

SECTION 2. HAZARDS IDENTIFICATION**Product hazard category**

Serious eye damage/eye irritation	Category 2B
Specific target organ toxicity - single exposure	Category 3



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Label content

Pictogram :



Signal word : Warning

Hazardous warnings : Causes eye irritation.
May cause drowsiness or dizziness.

Hazardous prevention measures : Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
Wash skin thoroughly after handling.
Use only outdoors or in a well-ventilated area.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
Call a POISON CENTER or doctor/ physician if you feel unwell.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/ attention.
Store in a well-ventilated place. Keep container tightly closed.
Store locked up.
Dispose of contents/ container to an approved waste disposal plant.

Other hazards

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

The following percentage of the mixture consists of ingredient(s) with unknown acute toxicity: 74.7 %

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SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS-No.	Concentration
(Z)-1,1,1,4,4,4-Hexafluoro-2-butene (HFO-1336mzz(Z))	692-49-9	74.7 %
trans-Dichloroethylene	156-60-5	25.3 %

SECTION 4. FIRST AID MEASURES

- General advice : Never give anything by mouth to an unconscious person. When symptoms persist or in all cases of doubt seek medical advice.
- Inhalation : Remove from exposure, lie down. Move to fresh air. Keep patient warm and at rest. Artificial respiration and/or oxygen may be necessary. Consult a physician.
- Skin contact : In case of contact, immediately flush skin with plenty of water for at least 15 minutes. Take off all contaminated clothing immediately. Consult a physician. Wash contaminated clothing before re-use. Treat for frostbite if necessary by gently warming affected area.
- Eye contact : In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician.
- Ingestion : Do NOT induce vomiting. Drink 1 or 2 glasses of water. Never give anything by mouth to an unconscious person. If a person vomits when lying on his back, place him in the recovery position. Call a physician.



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- Most important symptoms/effects, acute and delayed : Inhalation may provoke the following symptoms: Anaesthetic effects Light-headedness irregular heartbeat with a strange sensation in the chest, heart thumping, apprehension, feeling of fainting, dizziness or weakness
- Protection of first-aiders : If potential for exposure exists refer to Section 8 for specific personal protective equipment.
- 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. FIREFIGHTING MEASURES

- Suitable extinguishing media : Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
- Unsuitable extinguishing media : No applicable data available.
- Specific hazards : The product is not flammable.
- Special protective equipment for firefighters : Immediately evacuate personnel to safe areas. Wear self-contained breathing apparatus (SCBA). Wear full protective equipment.
- Further information : Vapors are heavier than air and may travel to source of ignition and flash back.

SECTION 6. ACCIDENTAL RELEASE MEASURES

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

- Safeguards (Personnel) : Evacuate personnel to safe areas. Ventilate the area. Refer to protective measures listed in sections 7 and 8.

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- Environmental precautions : Should not be released into the environment.
- Spill Cleanup : Dike spill. Soak up with sawdust, sand, oil dry or other absorbent material. Shovel or sweep up.
- Accidental Release Measures : Ventilate area, especially low or enclosed places where heavy vapours might collect.

SECTION 7. HANDLING AND STORAGE

- Handling (Personnel) : Avoid breathing vapours or mist. Avoid contact with skin, eyes and clothing. Provide sufficient air exchange and/or exhaust in work rooms. For personal protection see section 8.
- Handling (Physical Aspects) : The product should not be mixed with air for leak testing or used with air for any other purpose above atmospheric pressure.
- Dust explosion class : Not applicable
- Storage : Keep containers tightly closed and in an upright position. Store in a clean, dry place. Keep away from direct sunlight. Do not heat cylinder above 52°C (126°F) to avoid over pressurizing the cylinder. Do not expose drums to direct heat or temperature above 49°C (120°F) to avoid pressurizing and possibly distorting the drums. <49°C (<120°F) (drums) <52°C (<126°F) (cylinders)
The product has an indefinite shelf life when stored properly.
- Storage period : > 10 yr
- Storage temperature : < 49 °C (< 120 °F)

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

- Engineering controls : General mechanical ventilation is normally adequate but use local exhaust where necessary to maintain exposures below acceptable limits.
- Personal protective equipment



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- Respiratory protection : Where there is potential for airborne exposures in excess of applicable limits, wear NIOSH approved respiratory protection.
- Hand protection : Additional protection: Impervious gloves
- Eye protection : Wear safety glasses or coverall chemical splash goggles. Additionally wear a face shield where the possibility exists for face contact due to splashing, spraying or airborne contact with this material.
- Skin and body protection : Where there is potential for skin contact have available and wear as appropriate impervious gloves, apron, pants, and jacket.
- Protective measures : Self-contained breathing apparatus (SCBA) is required if a large release occurs.

Exposure Guidelines Exposure Limit Values

(Z)-1,1,1,4,4,4-Hexafluoro-2-butene ()	500 ppm	Time Weighted Average (TWA):
trans-Dichloroethylene Permissible exposure limit:	(OSHA) 200 ppm	790 mg/m3 8 hr. TWA
TLV	(ACGIH) 200 ppm	TWA

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance
- Physical state : liquid
- Form : liquid
- Color : clear
- Odor : slight, ether-like

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Odor threshold	: No applicable data available.
pH	: neutral
Melting point/range	: No applicable data available.
Boiling point/boiling range	: Boiling point 29.1 °C (84.4 °F)
Flash point	: closed cup Method: ASTM D 56 does not flash
Evaporation rate	: No applicable data available.
Flammability (solid, gas)	: No applicable data available.
Upper explosion limit	: Method: None per ASTM E681-98
Lower explosion limit	: Method: None per ASTM E681-98
Vapor pressure	: 871.4 hPa at 25 °C (77 °F)
Vapor density	: 5.01 at 30 °C (86 °F) (Air = 1.0)
Density	: 1.308 g/cm ³ at 25 °C (77 °F)
Specific gravity (Relative density)	: 1.31 at 25 °C (77 °F)
Water solubility	: No applicable data available.
Solubility(ies)	: No applicable data available.
Partition coefficient: n-octanol/water	: No applicable data available.
Auto-ignition temperature	: No applicable data available.

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Decomposition temperature : No applicable data available.

Viscosity, kinematic : No applicable data available.

Viscosity, dynamic : No applicable data available.

SECTION 10. STABILITY AND REACTIVITY

Reactivity : Decomposes on heating.

Chemical stability : The product is chemically stable under recommended conditions of storage, use and temperature.
No decomposition if stored and applied as directed.

Possibility of hazardous reactions : Hazardous polymerization will not occur.

Conditions to avoid : Avoid open flames and high temperatures.

Incompatible materials : Incompatible with oxidizing agents.

Hazardous decomposition products : Hazardous thermal decomposition products:: Carbon oxides, Hydrogen chloride, Hydrogen fluoride

SECTION 11. TOXICOLOGICAL INFORMATION**(Z)-1,1,1,4,4,4-Hexafluoro-2-butene (HFO-1336mzz(Z))**

Inhalation : An LC50/inhalation/4h/rat could not be determined because no mortality of rats was observed at the maximum achievable concentration.

Inhalation Low Observed Adverse Effect Concentration (LOAEC) : 25000 ppm , Dog
Cardiac sensitizationInhalation No Observed Adverse Effect Concentration : 12500 ppm , Dog
Cardiac sensitization

Dermal : no data available

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Oral	:	no data available
Skin irritation	:	No skin irritation, Rabbit Due to its physical properties, there is no potential for adverse effects.
Eye irritation	:	Not expected to cause eye irritation based on expert review of the properties of the substance.
Repeated dose toxicity	:	Inhalation Rat - 90 d vapour NOAEL: 33.5 mg/l Method: OECD Test Guideline 413 No toxicologically significant effects were found.
Carcinogenicity	:	no data available
Mutagenicity	:	Animal testing did not show any mutagenic effects. Tests on bacterial or mammalian cell cultures did not show mutagenic effects.
Reproductive toxicity	:	No toxicity to reproduction
Teratogenicity	:	No toxicity to reproduction No effects on or via lactation
Further information	:	Cardiac sensitisation threshold limit : 167500 mg/m ³
trans-Dichloroethylene Inhalation 4 h LC50	:	95.4 mg/l , Rat Target Organs: Central nervous system
Dermal LD50	:	> 5,000 mg/kg , Rabbit
Oral LD50	:	7,902 mg/kg , Rat Target Organs: Central nervous system Central nervous system effects Respiratory effects

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Skin irritation	:	Mild skin irritation, Rabbit
Eye irritation	:	Irritation to eyes, reversing within 7 days, Rabbit
Repeated dose toxicity	:	Inhalation Rat - 90 d gas NOAEL: 4000, Method: OECD Test Guideline 413 No toxicologically significant effects were found.
Mutagenicity	:	Animal testing did not show any mutagenic effects. Tests on bacterial or mammalian cell cultures did not show mutagenic effects.
Teratogenicity	:	Animal testing showed effects on embryo-fetal development at levels equal to or above those causing maternal toxicity.
Further information	:	Cardiac sensitisation threshold limit : 793047 mg/m3

Carcinogenicity

The carcinogenicity classifications for this product and/or its ingredients have been determined according to HazCom 2012, Appendix A.6. The classifications may differ from those listed in the National Toxicology Program (NTP) Report on Carcinogens (latest edition) or those found to be a potential carcinogen in the International Agency for Research on Cancer (IARC) Monographs (latest edition).

None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, or OSHA, as a carcinogen.

SECTION 12. ECOLOGICAL INFORMATION**Aquatic Toxicity****(Z)-1,1,1,4,4,4-Hexafluoro-2-butene (HFO-1336mzz(Z))**96 h LC50 : *Oryzias latipes* (Orange-red killifish) 76.1 mg/l OECD Test Guideline 20372 h ErC50 : *Pseudokirchneriella subcapitata* (green algae) > 23.7 mg/l OECD

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Test Guideline 201

72 h NOEC	:	Pseudokirchneriella subcapitata (green algae) 6.92 mg/l
48 h EC50	:	Daphnia magna (Water flea) 22.5 mg/l OECD Test Guideline 202
21 d	:	NOEC Daphnia magna (Water flea) 10 mg/l OECD Test Guideline 211

trans-Dichloroethylene

96 h LC50	:	Lepomis macrochirus (Bluegill sunfish) 135 mg/l
72 h EC50	:	Pseudokirchneriella subcapitata (green algae) 36.36 mg/l
48 h EC50	:	Daphnia magna (Water flea) 220 mg/l

Environmental Fate

(Z)-1,1,1,4,4,4-Hexafluoro-2-butene (HFO-1336mzz(Z))

Biodegradability : Not biodegradable 0 % OECD Test Guideline 301D

SECTION 13. DISPOSAL CONSIDERATIONS

Waste disposal methods - Product	:	Comply with applicable Federal, State/Provincial and Local Regulations. Can be used after re-conditioning. In accordance with local and national regulations. If recycling is not practicable, dispose of in compliance with local regulations. The product should not be allowed to enter drains, water courses or the soil.
Contaminated packaging	:	Empty pressure vessels should be returned to the supplier.

SECTION 14. TRANSPORT INFORMATION



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Not classified as dangerous in the meaning of transport regulations.

SECTION 15. REGULATORY INFORMATION

TSCA : Listed

This material contains one or more substances which are subject to a TSCA Section 5 Consent Order or Significant New Use Rule (SNUR).
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:

2-Butene, 1,1,1,4,4,4-hexafluoro-, (2Z)- (CAS No. 692-49-9)

Contact your local Chemours sales or technical representative for more information.

SARA 313 Regulated Chemical(s) : trans-Dichloroethylene

PA Right to Know Regulated Chemical(s) : Substances on the Pennsylvania Hazardous Substances List present at a concentration of 1% or more (0.01% for Special Hazardous Substances):
trans-Dichloroethylene

NJ Right to Know Regulated Chemical(s) : Substances on the New Jersey Workplace Hazardous Substance List present at a concentration of 1% or more (0.1% for substances identified as carcinogens, mutagens or teratogens): trans-Dichloroethylene

CERCLA Reportable Quantity : 3953 lbs
Based on the percentage composition of this chemical in the product.:
trans-Dichloroethylene



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California Prop. 65 : Chemicals known to the State of California to cause cancer, birth defects or any other harm: none known

SECTION 16. OTHER INFORMATION

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