

SAFETY DATA SHEET



Opteon™ XP30 (R-514A) Refrigerant

Version 8.4	Revision Date: 2023/10/25	SDS Number (Internal): 2020078-00025	MSDS number: AA00152-0000143454 Date of last issue: 2023/10/19 Date of first issue: 2017/10/03
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1. PRODUCT AND COMPANY IDENTIFICATION

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

SDS-Identcode : 130000143454

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.
Do not use product for anything outside of the above specified uses

Manufacturer or supplier's details

Company : Chemours Korea Inc.

Address : 12FL, Majestarcity Tower 1, 12, Seocho-daero 38-gil, Seocho-gu, Seoul 06655, Korea

Telephone : 82-2-2015-5000

Emergency telephone number : 080-880-0454

Telefax : 82-2-2015-5091

2. HAZARDS IDENTIFICATION

GHS Classification

Serious eye damage/eye irritation : Category 2B

Specific target organ toxicity - single exposure : Category 3 (Narcotic effects)

Long-term (chronic) aquatic hazard : Category 3

GHS label elements

Hazard pictograms :



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Signal word : Warning

Hazard statements : H320 Causes eye irritation.
H336 May cause drowsiness or dizziness.
H412 Harmful to aquatic life with long lasting effects.

Precautionary statements : **Prevention:**
P261 Avoid breathing mist or vapours.
P264 Wash skin thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P273 Avoid release to the environment.

Response:
P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ 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 advice/ attention.

Storage:
P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.

Disposal:
P501 Dispose of contents/ container according to waste-related laws

Other hazards which do not result in classification

Vapours 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.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

Chemical name	Common Name	CAS-No.	Concentration (% w/w)
(Z)-1,1,1,4,4,4-Hexafluoro-2-butene#	No data available	692-49-9	74.7
Trans-Dichloroethylene	No data available	156-60-5	25.3

Voluntarily-disclosed substance

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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.
In case of eye contact	: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. If easy to do, remove contact lens, if worn. Get medical attention.
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.
If inhaled	: If inhaled, remove to fresh air. Get medical attention if symptoms occur.
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 sensitisation 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,

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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.

5. FIREFIGHTING MEASURES

Suitable and unsuitable extinguishing media

Suitable extinguishing media : Water spray
Alcohol-resistant foam
Carbon dioxide (CO₂)
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
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 firefighters : In the event of fire, wear self-contained breathing apparatus.
Use personal protective equipment.

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.

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Methods and materials for containment and cleaning up : Soak up with inert absorbent material.
For large spills, provide dyking or other appropriate containment to keep material from spreading. If dyked 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.

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 vapours.
Do not swallow.
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
Valve protection caps and valve outlet threaded plugs must remain in place unless container is secured with valve outlet piped to use point.
Use a check valve or trap in the discharge line to prevent hazardous back flow into the cylinder.
Use a pressure reducing regulator when connecting cylinder to lower pressure (<3000 psig) piping or systems.
Never attempt to lift cylinder by its cap.
Do not drag, slide or roll cylinders.
Use a suitable hand truck for cylinder movement.
Take care to prevent spills, waste and minimize release to the environment.

Conditions for safe storage : Cylinders should be stored upright and firmly secured to prevent falling or being knocked over.
Separate full containers from empty containers.
Do not store near combustible materials.
Avoid area where salt or other corrosive materials are present.
Do not expose drums to direct heat or temperature above 46°C (115°F) to avoid pressurizing and possibly distorting the drums.

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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 labelled 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 : < 46 °C

Storage period : > 10 yr

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

Keep away from direct sunlight.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Trans-Dichloroethylene	156-60-5	TWA	200 ppm	ACGIH

Other ingredients, which are listed in section 3 but not listed in this section, do not have established occupational exposure limit values.

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

Personal protective equipment. Among the following personal protective equipment, the PPEs which require safety certification need to be certified by KOSHA.

Respiratory protection : Use respiratory protection (air supplied respirator) unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines.

Filter type : Organic gas and low boiling vapour type

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

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Hand protection Material	: Heat resistant gloves
Remarks	: Choose gloves to protect hands against chemicals depending on the concentration and quantity of the hazardous substance and 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!
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.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: liquid
Colour	: clear
Odour	: slight, ether-like
Odour Threshold	: No data available
pH	: 7
Melting point/freezing point	: No data available
Initial boiling point and boiling range	: 29.1 °C
Flash point	: Method: ASTM D 56 does not flash
Evaporation rate	: No data available

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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.
Vapour pressure	: 871.4 hPa (25 °C)
Solubility(ies) Water solubility	: No data available
Relative vapour density	: 5.01 (Air = 1.0)
Relative density	: 1.31 (25 °C)
Density	: 1.308 g/cm ³ (25 °C)
Partition coefficient: n-octanol/water	: Not applicable
Auto-ignition 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.
Molecular weight	: No data available
Particle size	: Not applicable

10. STABILITY AND REACTIVITY

Chemical stability and possibility of hazardous reactions	: Not classified as a reactivity hazard. Stable under normal conditions. None known.
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Conditions to avoid : None known.

Incompatible materials : None.

Hazardous decomposition products : No hazardous decomposition products are known.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure : Inhalation
Skin contact
Ingestion
Eye contact

Health hazard information

Acute toxicity

No data available

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: vapour
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/m³
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: vapour
Method: OECD Test Guideline 403

Lowest observed adverse effect concentration (Dog): 250000 ppm
Test atmosphere: gas

Cardiac sensitisation threshold limit (Dog): 991,309 mg/m³

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Test atmosphere: gas

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

Skin corrosion/irritation

No data available

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 sensitisation

Respiratory sensitisation

No data available

Skin sensitisation

No data available

Components:

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

Exposure routes : Skin contact
Result : negative

Carcinogenicity

No data available

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Components:

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

No data available

Trans-Dichloroethylene:

No data available

Germ cell mutagenicity

No data available

Components:

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

No data available

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 (vapour) 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:

No data available

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
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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.

Reproductive toxicity

No data available

Components:

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

No data available

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

Effects on foetal development : Test Type: Embryo-foetal development
Species: Rat
Application Route: inhalation (vapour)
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:

No data available

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

STOT - single exposure

May cause drowsiness or dizziness.

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Components:

Trans-Dichloroethylene:

Assessment : May cause drowsiness or dizziness.

STOT - repeated exposure

No data available

Components:

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

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

Trans-Dichloroethylene:

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

Exposure routes : 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 (vapour)
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

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Method : OECD Test Guideline 408

Aspiration toxicity

No data available

Components:

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

No aspiration toxicity classification

Experience with human exposure

No data available

Toxicology, Metabolism, Distribution

No data available

Neurological effects

No data available

Further information

No data available

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

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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:

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

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13. DISPOSAL CONSIDERATIONS

Disposal methods

- Waste from residues : Dispose of contents and container according to wastes control act.
- 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.

Disposal precautions

Dispose of contents and container according to wastes control act.

14. TRANSPORT INFORMATION

International Regulations

UNRTDG

- UN number : Not applicable
- Proper shipping name : Not applicable
- Class : Not applicable
- Subsidiary risk : Not applicable
- Packing group : Not applicable
- Labels : Not applicable

IATA-DGR

- UN/ID No. : Not applicable
- Proper shipping name : Not applicable
- Class : Not applicable
- Subsidiary risk : Not applicable
- Packing group : Not applicable
- Labels : Not applicable
- Packing instruction (cargo aircraft) : Not applicable
- Packing instruction (passenger aircraft) : Not applicable

IMDG-Code

- UN number : Not applicable
- Proper shipping name : Not applicable
- Class : Not applicable
- Subsidiary risk : Not applicable
- Packing group : Not applicable
- Labels : Not applicable
- EmS Code : Not applicable
- Marine pollutant : Not applicable

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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National Regulations

Refer to section 15 for specific national regulation.

Special precautions for user

Not applicable

15. REGULATORY INFORMATION

National regulatory information

Regulation under the Occupational Safety and Health Act

Harmful Substances Prohibited from Manufacturing

Not applicable

Harmful Substances Required Permission for Manufacture

Not applicable

Harmful Agents to be kept below Occupational Exposure Limits

Not applicable

Harmful Agents Required to be kept below Permission Levels

Not applicable

Hazardous substances requiring management

Chemical name	CAS-No.	Threshold limits (%)
1,2-Dichloroethylene	156-60-5	≥ 1 %

Special Management Materials

Not applicable

Controlled Substances Subject to Environment Monitoring

Chemical name	CAS-No.	Threshold limits (%)
1,2-Dichloroethylene	156-60-5	≥ 1 %

Controlled Substances Subject to Health Examination

Chemical name	CAS-No.	Threshold limits (%)
1,2-Dichloroethylene	156-60-5	≥ 1 %

Hazardous Substances Subject to Process Safety Management (PSM) Reporting Obligation

Not applicable

Regulation under the Chemicals Control Act

Toxic Chemicals

Not applicable

Restricted Chemicals

Not applicable

Prohibited Chemicals

Not applicable

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Toxic Release Inventory

Not applicable

Accident Precaution Chemicals

Not applicable

Dangerous Substances Safety Management Act

Not Applicable to Dangerous Materials

Wastes Control Act

Industrial general wastes

Follow article 13 of the act to dispose the product waste

16. OTHER INFORMATION

Other information : Opteon™ and any associated logos are trademarks or copyrights of The Chemours Company FC, LLC.
Chemours™ and the Chemours Logo are trademarks of The Chemours Company.
Before use read Chemours safety information.
For further information contact the local Chemours office or nominated distributors.

Further information

Sources of key data used to compile the Safety Data Sheet : Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agency, <http://echa.europa.eu/>

Issuing date : 2017/10/03

Revision number and date

Number of Revision : 24

Revision Date : 2023/10/25

Date format : yyyy/mm/dd

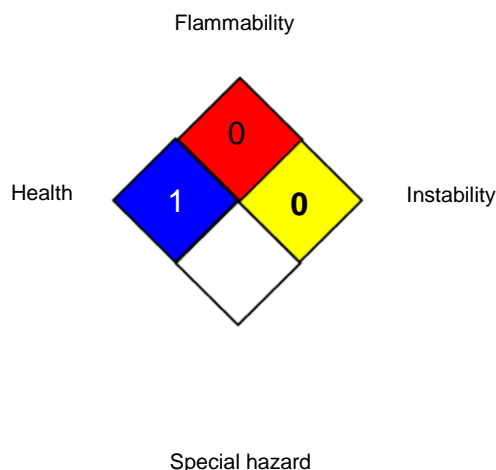
SAFETY DATA SHEET



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Version 8.4	Revision Date: 2023/10/25	SDS Number (Internal): 2020078-00025	MSDS number: AA00152-0000143454 Date of last issue: 2023/10/19 Date of first issue: 2017/10/03
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NFPA:



Full text of other abbreviations

ACGIH : USA. ACGIH Threshold Limit Values (TLV)

ACGIH / TWA : 8-hour, time-weighted average

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 - Trans-

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portation of Dangerous Goods; 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; WHMIS - Workplace Hazardous Materials Information System

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.

KR / EN

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Decree of the Ministry of Environment Under the Act on the Registration and Evaluation, Etc. of Chemical Substances [Annex No. 26]

Chemical Safety Information(Risk Information)

(Seal)

Provider	Company name: Chemours Korea Inc.	Business Reg. No.: 220-88-81323		
	Name : Rim Young Gyu (Company Rep.)	Name of Person in charge and Contact no.: 02-2015-5051		
	Address : 12FL, Majestarcity Tower 1, 12, Seocho-daero 38-gil, Seocho-gu, Seoul, Korea (Business location)			

Chemical information	Chemical name(generic name)	Confidential		
	Identification No. (CAS No., etc.)	Confidential	Trade name	Please refer to product name in SDS
	Registration number(※ May be omitted for non phase in substances)	54-2007-02281	Usage	49. Stabilizers
	Whether hazardous chemical substance is contained	[] Toxic substance [] Authorization substance [] Restricted substance [] Prohibited substance [] designated and published substance by Minister of Envi- ronment according to Article 10, Paragraph 2, Item 1 of AREC [] Physical hazard [] health hazard [] environment hazard classified according to Annex 7 of AREC		

※ In the case of trade secret under Article 2, Paragraph 2 of the Unfair Competition Prevention and Trade Secret Act, such as the relevant chemical substance's chemical composition and amount of the chemical substance contained, it's required to mark relevant information is trade secret

Risk in-formation	Item		Description
	usage (identified usage in supply chain)		This substance is not subject to risk assessment
	Manufacturing process(working	hours and frequency of use	

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	environment)	used amount per hour of task	
		other working conditions related to relevant use	
measures to reduce risk		reduction measure regarding human exposure(including exposure rout)	
		reduction measure regarding human exposure(including exposure rout)	
		Waste management measures	
exposure information and instruction for downstream user		estimated exposure under optimal working condition	