

Name of the product	OCTAFLUOROPROPANE(C3F8)
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1. Chemical product and corporate information.

- A. Name of the product OCTAFLUOROPROPANE
- B. Recommended use of the product and limitation of the usage.
 Recommended use of the product No data available.
 Limitation of the usage: No data available.
- C. Supplier's information.(In case of imported product, state the supplier's information for emergency contact)
 Name of the corporate: FEWM Co. LTD
 Address: 53, Jeungpyeong2sandan-ro, Doan-myeon, Jeungpyeong-gun, Chungcheongbuk-do
 Emergency Contact: 043)838-9562

2. Hazards. Maleficence

- A. Hazards. Maleficence classification High-pressure gas: liquid gas.

- B. Cautionary statements including the measures for safety.

Symbolics



Signals

Hazards wordings

Preventional wordings

Prevention

Response

Storage

Disposal

C. Other hazards and maleficence not included in the standards of the category of hazards and maleficence (NFPA)

Warning

H280 Includes high-pressure gas: May explode on heating

No data available.

No data available.

P410+P403 Avoid sunlight and keep in a well-ventilated area.

No data available.

Sanitation

Fire	0
Reactivity	0

3. Title and content of the component

Name of the component	OCTAFLUOROPROPANE
Nickname (Trivial name)	OCTAFLUOROPROPANE
CAS no	76-19-7
Content (%)	100%

4. Emergency measures.

A. If in eyes

Take emergency medical measures.

B. If on skin

In case of contact with the liquid gas, melt the area with lukewarm water.

Remove the contaminated clothing and shoes and quarantine the contaminated area.

Take emergency medical measures.

When contact with the gas or the liquid gas, it may cause a burn, serious injury, frostbite.

In the case of hot material, place the area affected in a large amount of water or wash it off.

C. If inhaled

Take emergency medical measures.

Move it to the area with fresh air.

In case of not breathing, execute artificial respiration.

Keep warm and in rest.

Provide oxygen if breathing is difficult.

D. If swallowed.

Take emergency medical measures.

E. Major symptoms/result, acute and chronic

No data available.

F. Other cautions to doctor

Make sure that the medical personnel is aware of the material and take protective measures.

5. Measures in case of explosion, fire.

A. Recommended (prohibited) extinguisher.

Use dry sand or soil when extinguishment by smothering.

In the case of extinguishment concerned with this material, use alcohol foam, carbon dioxide or water spray.

B. Specific hazard from the chemical component

The vapor may cause dizziness or suffocation without awareness.

In the case of fire, irritating, corrosive, toxic gas may be formed.
It may burn partly but it is not easy to ignite.
The container may explode on heating.
Warning: part of it leave inflammable remains after vaporization.
Includes high-pressure gas: May explode on heating.

C. Protective equipment when fire-fighting and preventional measures.

Fight fire away from the region from a reasonable distance.
Use the appropriate extinguisher for the type of fire.
Handle damaged cylinder only by a specialist.
Stay away from the tank in flame in case of tank fire.
Immediately refrain in case of tank fire, if there is noise from the pressure relief equipment or discoloration to the tank.
In the case of tank fire, cool the container with a large amount of water after the extinguishment.
In case of tank fire, extinguish at the maximum distance or use an unmanned extinguisher.
In the case of tank fire, as there is a risk of freezing, do not wet the source of leakage or safety facility.
If not in danger, move the container from the area of fire.
Be careful as the damaged container may fly.
Be careful as the liquid gas spreads on the ground as it is heavier than the air.

6. Measures in case spillage

A. Required measures and protections to protect the body.

If possible, turn the container of the leakage and let it release as a gas rather than liquid.
Do not touch the spillage or walk around.
Let the material disperse.
Ventilate the contaminated area.
If not dangerous, stop the spillage.
Pay attention as part of it leaves flammable remains after vaporization.
Pay attention to the materials and conditions to avoid.
Do not wet the source of spillage directly.
Reduce the vapor using water spray, or avoid the contact of water with the spillage by disheveling the steam point.

B. Environmental measures.

Prevent entering the waterway, drainage, basement, confined area.
For fire fighting purposes, build embankment and collect water.

7. Handling and storage measures.

A. Safety measures.

Do not pressurize, cut, weld, solder, connect, pierce, grind or expose to heat, fire, spark, static or other sources of ignition.

As there could be remains of the material to the container after it has been emptied, hence follow all the MSDS/label preventional measures.

Pay attention to the material and conditions to avoid.

Work with reference to engineering maintenance and personal protection.

B. Safe storage measures.

Avoid direct sunlight and keep in a well-ventilated area.

The pressure of the container could rise when exposed to heat hence refrain from exposure to heat.

Pay attention to the material and conditions to avoid.

8. Prevention of spillage and personal protection.

A. Exposure standards of the chemical material, biological exposure standards etc.

Domestic Regulations No data available.

ACGIH Regulation No data available.

Biological exposure standards No data available.

B. Appropriate engineering maintenance. No data available.

C. Personal protection

Respiratory protection Use the respiratory protection that has completed the inspection by the Korea Occupational Safety and Health Agency as per the characteristics of the exposed material.

Eye protection No data available.

Hand protection No data available.

Body protection No data available.

9. Physicochemical characteristic.

A. External

Shape Liquid gas (Low pressure)

Color No color

B. Odor

No data available.

C. Odor threshold No data available.

D. pH No data available.

E. Melting point/ freezing point -147.70 C

F. Initial boiling point and boiling point range -36.6 C

G. Ignition point No data available.

H. Vaporization speed No data available.

I. Inflammability (solid, vapor) No data available.

J. Upper limit or lower limit of the range of ignition or explosion -/-

K. Steam pressure	6630 mmHg
L. Solubility	5.7 mg/l
M. Vapor density	No data available
N. Specific gravity	1.29
O. n-octanol-water partition coefficient	No data available.
P. Auto-ignition temperature	No data available.
Q. Decomposition temperature	No data available.
R. Viscosity	No data available.
S. Molecular weight	180.019

10. Stability and reactivity

A. Chemical stability and hazardous reactivity

Includes high-pressure gas: May explode on heating

In the case of fire, irritating, corrosive, toxic gas may be formed.

The vapor may cause dizziness or suffocation without awareness.

It may burn partly but it is not easy to ignite.

B. Conditions to avoid Heat

C. Materials to avoid No data available

D. Harmful decomposed product Irritating, corrosive, toxic gas.

11. Toxicological information.

A. Information on routes of exposure of high possibility.

No data available.

B. Health hazards information.

Acute toxicity

Oral No data available.

Skin No data available.

Inhalation No data available.

Skin corrosion or irritation Minor irritation when Draize test on Rabbit.

Serious eye damage or irritation No data available.

Respiratory sensitization No data available.

Skin sensitizations No data available.

Carcinogenicity No data available.

Occupation safety and health acts No Data Available.

Notice of Ministry of Employment and Labor No Data Available.

IARC No Data Available.

OSHA No Data Available.

ACGIH A4 (Fluorides)

NTP	No data available.
EU CLP	No data available.
Germ-cell mutagenicity	No data available.
Reproductive toxicity	No data available.
Specific target organ systemic toxicity (Single exposure)	No data available.
Specific target organ systemic toxicity (Repeated exposure)	No data available.
Aspirations respiratory tract hazards	No data available.

12. Effects on the environment.

A. Ecotoxicity

Fish	LC50 12.343 mg/l 96 hr.
Crustacean	No data available.
Algae	EC50 9.528 mg/l 96 hr.

B. Persistent and biodegradable.

Persistent	No data available.
Degradability	No data available.

C. Bio-accumulative potential

Condenasability	BCF 50.49
Biodegradability	No data available.

D. Mobility in soil No data available

E. Other adverse effects No data available

13. Disposal considerations.

A. Methods of waste disposal

Dispose of the content and container as per the regulations if stated in the waste control act.

B. Cautious measures when disposal.

Dispose of the content and container as per the regulations if stated in the waste control act.

14. Information required for the transport.

A. UN No.	2424
B. Proper shipping name	Octafluoropropane (Refrigerant gas R218)
C. Transportation hazard classification	2.2
D. If applied, the packing group	-
E. Marin pollution (Marine pollutant material)	No data available.

- F. Special transport measures to the transport or the transportation and precautionary conditions that the user should know.

Emergency measures in case of fire	F-C
Emergency measures in case of spillage	S-V

15. Legal regulatory status.

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| A. Regulations by occupation safety and health acts | Not Applicable |
| B. Regulations by Chemicals control Act | Not Applicable. |
| C. Regulations by Safety Control of Dangerous Substances | Not Applicable. |
| D. Regulations by waste control act | Not Applicable. |
| E. Regulations by domestic and foreign law. | |
| Other domestic regulations. | Not Applicable. |
| Persistent organic pollutants control act | Not Applicable. |

Foreign regulations

The USA knowledge management (OSHA Regulations)	Not Applicable.
The USA knowledge management (CERCLA Regulations)	Not Applicable.
The USA knowledge management (EPCRA 302 Regulations)	Not Applicable.
The USA knowledge management (EPCRA 304 Regulations)	Not Applicable.
The USA knowledge management (EPCRA 313 Regulations)	Not Applicable.
The USA knowledge management (EPCRA 302 Regulations)	Not Applicable.
The USA knowledge management (Materials of Rotterdam agreement)	Not Applicable.
The USA knowledge management (Materials of Stockholm agreement)	Not Applicable.
The USA knowledge management (Materials of Montreal protocol)	Not Applicable.
EU Classification(result of definite classification)	Not Applicable.
EU Classification (Hazard text)	Not Applicable.
EU Classification (Safety text)	Not Applicable.

16. Other information.

A. Source of reference.

National Institute of Technology and Evaluation (NITE)
http://www.safe.nite.go.jp/ghs/h18_bunrul.html (E. Melting/freezing point)
 National Institute of Technology and Evaluation (NITE)
http://www.safe.nite.go.jp/ghs/h18_bunrul.html (F. Initial boiling point and boiling point scope)
 National Institute of Technology and Evaluation (NITE)
http://www.safe.nite.go.jp/ghs/h18_bunrul.html (K. Steam Pressure)
 National Institute of Technology and Evaluation (NITE)
http://www.safe.nite.go.jp/ghs/h18_bunrul.html (L.Solubility)
 CRC (S. Molecular weight)

Corporate Solution From Thomson Micromedex (<http://csi.micromedex.com>) (skin corrosiveness or irritability)

Ecological Structure Activity Relationships (ECOSAR) (fish)

Ecological Structure Activity Relationships (ECOSAR) (Algae)

Quantitative Structure Activity Relation (QSAR) (Condensability)

Emergency Response Guidebook (2008)

The Chemical Database, The Department of Chemistry at the University of Akron
(<http://ull.chemistry.uakron.edu/erd>)

B. Initial date of preparation 1st August 2017

C. Number of revision and first date of issue

Number of revision times

Last date of revision 0

D. Miscellaneous

The issued Material safety data sheet (MSDA) is document edited and partly amended by referencing the MSDS provided by Korea Occupational Safety and Health Agency
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