

【Material Safety Data Sheet】**SECTION 1 PRODUCT AND COMPANY IDENTIFICATION**

Product Name Sinopec -40℃ Inverter Engine Coolant
Product Code 60506820
Product Usage: Used as heat transfer medium in inverter
Company Identification SINOPEC LUBRICANT CO., LTD.
Address No. 6 Anning Zhuang West Road, Haidian District, Beijing, P.R.China
Post Code 100085
Emergency Response Phone 86-800-810-9886
Fax 86-10-82410856
Website <http://english.sinolube.com>
E-mail csc.lube@sinopec.com
Effective date 2020-03-01

SECTION 2 COMPOSITION/ INFORMATION ON INGREDIENTS

This product is a mixture of additives, water and glycol.

COMPONENTS	CAS NUMBER	AMOUNT
Additive	Mixture	<5%weight
Water	7732-18-5	40-60%weight
Ethylene Glycol	107-21-1	40-60%weight

SECTION 3 HAZARDS IDENTIFICATION

GHS Hazards Type Non-hazardous
GHS Label Elements
Sign No data
Caution Words No data
Hazard Statement Physical hazards:
According to GHS, it is not classified as hazardous substances.
Health hazard:
According to GHS, it is not classified as health hazard substances.
Environmentally hazard:
According to GHS, it is not classified as environmentally hazard substances.
GHS Precautionary Statements
Precaution No data
Incident Response No data
Safe Storage No data

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Disposal	No data
Other Hazards	Not classified as flammable, but will combustible
Main Symptoms and Emergency Overview	Based on animal experiments, found no strong evidence to prove that the product Carcinogenic. Usually this product is no hazardous to health. Might be it stimulate to eyes, skin and respiratory when overexposure.

SECTION 4 FIRST AID MEASURES

General Information	Shouldn't become a health hazard when used under normal condition
The disposal of the Different Contact Manner	
Inhalation	Move exposed person from the contact area to fresh air and provide oxygen, and keep the respiratory tract unobstructed. If breathing is difficult, give oxygen, if breathing stops, carry out artificial respiration immediately and get medical treatment.
Skin	Take off contaminated clothes, wash with a large amount of flowing water, and seek medical advice if necessary.
Eye	Wash eyes with water for 15 minutes. If irritation occurs, get medical attention.
Ingestion	Urge vomiting immediately and receive medical treatment.
Main Symptoms(acute / delayed effect)	No data

SECTION 5 FIRE FIGHTING MEASURES

Special Risk	This product is not hazardous product. It may be to combustion when exposure to high temperature or fire.
Extinguishing Method and media	Foam extinguishers, carbon dioxide extinguishers, dry powder extinguishers, spray extinguishers, etc. Sand is only suitable for small fires.
Combustion Products	Incomplete combustion produces smoke, carbon monoxide, oxides, aldehydes and other decomposition components.
Forbidden Media	Water.
Firefighters Special Protective Equipment	Breathing apparatus must be worn when approaching the ignition point in a confined space.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Avoid contact with spilled or released material. Guide to the selection of personal protective equipment, see chapter 8 of the safety data sheet.

Disposal information, see chapter 13 of safety data sheet. Please comply with all applicable local or national regulations.

Emergency Response Procedures	Cut off the fire source, contact the operators immediately, and let the irrelevant personnel evacuate to the safety zone and isolate. Cut off the leakage source as much as possible to prevent entering into the sewer, drainage ditch, water body and other spaces. Observe the relevant firefighting procedures, refer to Chapter 8 of the safety technical instructions.
Protective Measures for Operators	In case of leakage, use protective equipment to protect the human body when removing the leakage liquid.
Environmental Protection Measures	No data
Spill Management	Disposal of the waste refer to chapter 13 of the safety data sheet. FOR LARGE SPILLS: Remove with vacuum truck or pump to storage/salvage vessels.

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FOR SMALL SPILLS: Soak up residue with an absorbent such as clay, sand or other suitable material. Place in non-leaking container and seal tightly for proper disposal

SECTION 7 HANDLING AND STORAGE

Handling

General Preventive Measures Avoid contact with skin for a long time or repeatedly, and wash thoroughly after contact. If there is a danger of inhaling steam, spray or smoke, please use partial exhaust ventilation. Handle with care to prevent damage to packaging and containers.

Precautions for safety disposal Operators must be specially trained and strictly abide by the operation specifications. Avoid contact with oxidants. Equip with corresponding quantity of fire-fighting equipment and leakage emergency treatment equipment. Protective shoes shall be worn when loading and unloading 200L barreled products. Empty containers may contain harmful substances.

Storage Do not store in open or unlabeled containers. Store in a cool, dry place with adequate ventilation. Keep away from open flames and high temperatures. Suggest do not to be stored in the galvanized container.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Allowable Concentration No data

Engineering Controls Provide good natural ventilation conditions.

Personal Protective Equipment Personal protective equipment shall meet the relevant national standards. Specific content consult the supplier of personal protective equipment.

Respiratory Protection If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, an approved respirator must be worn.

Hand protection Use protective gloves which are chemically resistant to this material.

Eye protection Chemical goggles, or safety glasses with side shields.

Personal Protection Use protective clothing and shoes which are chemically resistant to this material.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Distinctive
Odor	No odor
pH	7.5~11.0
Melting Point	Not Applicable
Pour Point	No data
Boiling Point	109.5℃(typical data)
Flash Point	No data
Explosion Limit	No data
Vapour Pressure	No data
Vapour Density	No data
Density	1076 kg/ m3(typical data)
Solubility	Soluble in water
Octanol/ Water Partition	No data
Coefficient	
Decomposition Temperature	No data
Freezing Point	-41.0℃(typical data)

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SECTION 10 STABILITY AND REACTIVITY

Chemical Stability	Stable (at room temperature)
Incompatibility With Other Materials	Contact with strong oxidant
Conditions to Avoid	Extreme temperature, sunlight exposure, contact with strong oxidant and fire source
Incompatible Materials	Strong oxidant
Hazardous Decomposition	May react with strong oxidizing agents
Product	Hazardous decomposition will not form under normal storage conditions

SECTION 11 TOXICOLOGICAL INFORMATION

Acute Dermal Toxicity	LD ₅₀ /Oral/Mouse:>2000mg/kg Primary skin irritation/Rabbit/OECD 404:No irritation Primary mucous membrane irritation/Rabbit eyes/OECD 405:No irritation
Skin irritation or Corrosion	Mild irritation
Eye irritation or Corrosion	Long-term exposure can cause eye irritation
Inhalation Hazards	Mild irritation
Respiratory or Skin Sensitization	No data
Germ Cell Mutagenicity	No data
Reproductive Toxicity	No data
Specific target Organ Toxicity——Disposable Contact	No data
Specific target Organ Toxicity——Disposable Contact——Repeated contact	No data
Additional Information	No data

SECTION 12 ECOLOGICAL INFORMATION

Ecotoxicity	Though long time infiltration, it may produce ecological toxicity
Persistence and Degradability	This product is expected to be inherently biodegradable
Potential Bioaccumulation	This product has the water solubility; but bioavailability and bioaccumulation to aquatic organisms is minimal.
Mobility	When released into the environment, adsorption to sediment and soil will be the predominant behavior.

SECTION 13 DISPOSAL CONSIDERATIONS

Waste Disposal	It should be recycled or recycled as far as possible, or disposed of by an approved recycling facility, or at an appropriate government waste disposal facility.
Disposal of Containers	Uncontaminated container can be recycled.

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Containers that cannot be cleaned must be discarded and disposed of by a waste collector approved by relevant laws and regulations.

Note to Release Please use personal protective equipment. Keep waste away from soil or into drains. Transport means, recycling devices, treatment or storage equipment approved by the authority shall be used for waste turnover or storage.

SECTION 14 TRANSPORT INFORMATION

Land, sea and air transport process, the product is not classified as dangerous goods.

UN Dangerous Goods Code	Not	Applicable
UN Shipping Name	Not	Applicable
UN Hazard type	Not	Applicable
Packing Group	Not	Applicable
Marine Pollutant	Not	Applicable

SECTION 15 REGULATORY INFORMATION

EPCRA 311/312 CATEGORIES:

1. Immediate (Acute) Health Effects:	NO
2. Delayed (Chronic) Health Effects:	NO
3. Fire Hazard:	NO
4. Sudden Release of Pressure Hazard:	NO
5. Reactivity Hazard:	NO

REGULATORY LISTS SEARCHED:

01-1=IARC Group 1 03=EPCRA 313
 01-2A=IARC Group 2A 04=CA Proposition 65
 01-2B=IARC Group 2B 05=MA RTK
 02=NTP Carcinogen 06=NJ RTK
 07=PA RTK

No components of this material were found on the regulatory lists above.

Chemical Inventories All components comply with the following chemical inventory requirements: AICS (Australia), DSL (Canada), EINECS (European Union), KECI (Korea), PICCS (Philippines), TSCA (United States).

One or more components does not comply with the following chemical inventory Requirements: ENCS (Japan).

Additional notifications in Canada may be required 90 days prior to use other than as a lubricating oil additive.

NEW JERSEY RTK CLASSIFICATION:

Under the New Jersey Right-to-Know Act L. 1983 Chapter 315 N.J.S.A. 34:5A-1 et. seq., the product is to be identified as follows: PETROLEUM OIL (Motor oil)

WHMIS Classification This product is not considered a controlled product according to the criteria of the Canadian Controlled Products Regulations.

SECTION 16 OTHER INFORMATION

Revision Date:	March 01,2020
MSDS Version Number	5
Other Information	Other information and manuals can be obtained through the sales department and technical department.
Amendment Statement	The information provided is based on our understanding of the existing data. Desc

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ription of the product solely for the purpose of complying with requirements of the health, safety and environment. We don't provide any guarantee of the specific characteristics of the product.

SAFETY DATA SHEET

R-410A Refrigerant

Sinochem Environmental Protection Chemicals(Taicang) Co., Ltd.

SDS

- According to GHS (Seventh Revised Edition)

Section 1 Product and Company Identification

> Product Identifier

Product Name	R-410A Refrigerant
Synonyms	-
CAS No.	-
EC No.	-
Molecular Formula	-

> Relevant Identified Uses of the Substance or Mixture and Uses Advised Against

Relevant Identified Uses	Please consult manufacturer.
Uses Advised Against	Please consult manufacturer.

> Details of the Supplier of the Safety Data Sheet

Applicant Name	Sinochem Environmental Protection Chemicals(Taicang) Co., Ltd.
Application Address	No.18 Binjiang South Road, Port Development Zone, Taicang, Jiangsu, China
Applicant Post Code	215433
Applicant Telephone	+86-512-53713126
Applicant Fax	+86-512-53713199
Applicant E-mail	chenyongzhi@sinochem.com
Supplier Name	Sinochem Environmental Protection Chemicals(Taicang) Co., Ltd.
Supplier Address	No.18 Binjiang South Road, Port Development Zone, Taicang, Jiangsu, China
Supplier Post Code	215433
Supplier Telephone	+86-512-53713126
Supplier Fax	+86-512-53713199
Supplier E-mail	chenyongzhi@sinochem.com

> Emergency Phone Number

Emergency Phone Number	+86-512-53713126
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Section 2 Hazards Identification

Hazard class and label elements of the product according to GHS (the seventh revised edition):

> GHS Hazard Class

Gases Under Pressure	Liquefied gas
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> GHS Label Elements

Pictogram



Signal Word

Warning

> Hazard Statements

H280

Contains gas under pressure; may explode if heated

> Precautionary Statements

Prevention

Not applicable

Response

Not applicable

Storage

P410+P403

Protect from sunlight. Store in a well-ventilated place.

Disposal

Not applicable

Section 3 Composition/Information on Ingredients

Component	Concentration (weight percent, %)	CAS No.	EC No.
Difluoromethane	Commercial secrets	75-10-5	200-839-4
Pentafluoroethane	Commercial secrets	354-33-6	206-557-8

Section 4 First Aid Measures

> Description of First Aid Measures

General Advice

Immediate medical attention is required. Show this safety data sheet (SDS) to the doctor in attendance.

Eye Contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician if feel uncomfortable.

Skin Contact

Take off contaminated clothing and shoes immediately. Wash off with plenty of water for at least 15 minutes and consult a physician if feel uncomfortable.

Ingestion

Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a physician or Poison Control Center immediately.

Inhalation

Move victim into fresh air. If breathing is difficult, give oxygen. Do not use mouth to mouth resuscitation if victim ingested or inhaled the substance. If not breathing, give artificial respiration and consult a physician immediately.

Protecting of First-aiders

Ensure that medical personnel are aware of the substance involved. Take precautions to protect themselves and prevent spread of contamination.

> Most Important Symptoms and Effects, both Acute and Delayed

- 1 Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure.

> Indication of Any Immediate Medical Attention and Special Treatment Needed

- 1 Treat symptomatically.
- 2 Symptoms may be delayed.

> Extinguishing Media**Section 5 Fire Fighting Measures****Suitable Extinguishing Media**

Dry chemical or carbon dioxide.

Unsuitable**Extinguishing Media**

Do not use a solid water stream as it may scatter or spread fire.

> Specific Hazards Arising from the Substance or Mixture

- 1 High concentrations of gas may cause asphyxiation without warning.
- 2 Contact with gas may cause burns, severe injury and/ or frostbite.
- 3 Containers may explode when heated.
- 4 Fire exposed containers may vent contents through pressure relief valves.
- 5 May expansion or decompose explosively when heated or involved in fire.

> Advice for Firefighters

- 1 As in any fire, wear self-contained breathing apparatus (MSHA/NIOSH approved or equivalent) and full protective gear.
- 2 Fight fire from a safe distance, with adequate cover.
- 3 Prevent fire extinguishing water from contaminating surface water or the ground water system.

Section 6 Accidental Release Measure**> Personal Precautions, Protective Equipment and Emergency Procedures**

- 1 Ensure adequate ventilation. Remove all sources of ignition.
- 2 Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.
- 3 Use personal protective equipment. Avoid breathing vapours, mist, gas or dust.

> Environmental Precautions

- 1 Prevent further leakage or spillage if safe to do so.
- 2 Discharge into the environment must be avoided.

> Methods and Materials for Containment and Cleaning Up

- 1 Absorb spilled material in dry sand or inert absorbent. In case of large amount of spillage, contain a spill by bunding.
- 2 Adhered or collected material should be promptly disposed of, in accordance with appropriate laws and regulations.
- 3 Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.

Section 7 Handling and Storage**> Precautions for Handling**

- 1 Handling is performed in a well ventilated place.
- 2 Wear suitable protective equipment.
- 3 Avoid contact with skin and eyes.
- 4 Keep away from heat/sparks/open flames/ hot surfaces.
- 5 Take precautionary measures against static discharges.

> Precautions for Storage

- 1 Keep containers tightly closed.
- 2 Keep containers in a dry, cool and well-ventilated place.
- 3 Keep away from heat/sparks/open flames/ hot surfaces.
- 4 Store away from incompatible materials and foodstuff containers.

Section 8 Exposure Controls/Personal Protection

> Control Parameters**Occupational Exposure Limit Values**

Component	Country/Region	Limit Value - Eight Hours		Limit Value - Short Term	
		ppm	mg/m ³	ppm	mg/m ³
Pentafluoroethane 354-33-6	Sweden	500	2500	750	3750 (1

Biological Limit Values

No information available

Monitoring Methods

- 1 EN 14042 Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents.
- 2 GBZ/T 160.1~GBZ/T 160.81-2004 Determination of toxic substances in workplace air (Series standard) .

> Engineering Controls

- 1 Ensure adequate ventilation, especially in confined areas.
- 2 Ensure that eyewash stations and safety showers are close to the workstation location.
- 3 Use explosion-proof electrical/ventilating/lighting/equipment.
- 4 Set up emergency exit and necessary risk-elimination area.

> Personal Protection Equipment

Eye Protection	Tightly fitting safety goggles (approved by EN 166(EU) or NIOSH (US).
Hand Protection	Wear protective gloves (such as butyl rubber) , passing the tests according to EN 374(EU),US F739 or AS/NZS 2161.1 standard.
Respiratory protection	If exposure limits are exceeded or if irritation or other symptoms are experienced, use a full-face respirator with multi-purpose combination (US) or type AXBEK (EN 14387) respirator cartridges.
Skin and Body Protection	Wear fire/flame resistant/retardant clothing and antistatic boots.

Section 9 Physical and Chemical Properties

Appearance: Colorless, odor-free liquefied gas	Odor: No information available
Odor Threshold: No information available	pH: Not applicable
Melting Point/Freezing Point (°C): No information available	Initial Boiling Point and Boiling Range (°C): No information available
Flash Point (°C)(Closed Cup): Not applicable	Evaporation Rate: Not applicable
Flammability: No information available	Upper/lower explosive limits[% (v/v)]: Upper limit: No information available; Lower limit: No information available
Vapor Pressure (MPa): Not applicable	Relative Vapour Density(Air = 1): Not applicable

Relative Density(Water= 1): Not applicable
n-Octanol/Water Partition Coefficient: Not applicable
Decomposition Temperature (°C): No information available
Particle characteristics: Not applicable

Solubility: No information available
Auto-Ignition Temperature(°C): No information available
Kinematic Viscosity (mm²/s): Not applicable

Section 10 Stability and Reactivity

Reactivity	Contact with incompatible substances can cause decomposition or other chemical reactions.
Chemical Stability	Stable under proper operation and storage conditions.
Possibility of Hazardous Reactions	No information available
Conditions to Avoid	Incompatible materials, heat, flame and spark.
Incompatible Materials	No information available
Hazardous Decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11 Toxicological Information

> Acute Toxicity

Component	CAS No.	LD ₅₀ (Oral)	LD ₅₀ (Dermal)	LC ₅₀ (Inhalation, 4h)
Pentafluoroethane	354-33-6	No information available	No information available	2910mg/L(Rat)
Difluoromethane	75-10-5	No information available	No information available	1890mg/L(Rat)

> Skin Corrosion/Irritation

No information available

> Serious Eye Damage/Irritation

No information available

> Skin Sensitization

No information available

> Respiratory Sensitization

No information available

> Germ Cell Mutagenicity

No information available

> Carcinogenicity

ID	CAS No.	Component	IARC	NTP
1	75-10-5	Difluoromethane	Not Listed	Not Listed
2	354-33-6	Pentafluoroethane	Not Listed	Not Listed

> Reproductive Toxicity

No information available

> Reproductive Toxicity (Additional)

No information available

> STOT-Single Exposure

No information available

> STOT-Repeated Exposure

No information available

> Aspiration Hazard

No information available

Section 12 Ecological Information

> Acute Aquatic Toxicity

No information available

> Chronic Aquatic Toxicity

No information available

> Others

Persistence and Degradability Bioaccumulative Potential

No information available

Mobility in Soil

No information available

Results of PBT and vPvB Assessment

Difluoromethane does not meet the criteria for PBT and vPvB according to Regulation (EC) No 1907/2006, annex XIII.
Pentafluoroethane does not meet the criteria for PBT and vPvB according to Regulation (EC) No 1907/2006, annex XIII.

Section 13 Disposal Considerations

Waste Chemicals

Before disposal should refer to the relevant national and local laws and regulation. Recommend the use of incineration disposal.

Contaminated Packaging Disposal Recommendations

Containers may still present chemical hazard when empty. Keep away from hot and ignition source of fire. Return to supplier for recycling if possible. Refer to section 13.1 and 13.2.

Section 14 Transport Information

Transporting Label



Marine pollutant	None
UN Number	3163
UN Proper Shipping Name	LIQUEFIED GAS, N.O.S.
Transport Hazard Class	2.2
Transport Subsidiary Hazard Class	None
Packing Group	Not applicable

Section 15 Regulatory Information

> International Chemical Inventory

Component	EINECS	TSCA	DSL	IECSC	NZIoC	PICCS	KECI	AICS	ENCS
Difluoromethane	✓	✓	✗	✓	✓	✓	✓	✓	✗
Pentafluoroethane	✓	✓	✗	✓	✓	✓	✓	✓	✗

【EINECS】 European Inventory of Existing Commercial Chemical Substances.

【TSCA】 United States Toxic Substances Control Act Inventory.

【DSL】 Canadian Domestic Substances List.

【IECSC】 China Inventory of Existing Chemical Substances.

【NZIoC】 New Zealand Inventory of Chemicals.

【PICCS】 Philippines Inventory of Chemicals and Chemical Substances.

【KECI】 Existing and Evaluated Chemical Substances.

【AICS】 Australia Inventory of Chemical Substances.

【ENCS】 Existing And New Chemical Substances.

Note

"✓" Indicates that the substance included in the regulations

"✗" That no data or included in the regulations

Section 16 Additional Information

Creation Date	2018/05/14
Revision Date	2018/05/14
Reason for Revision	-

> Disclaimer

This Safety Data Sheet (SDS) was prepared according to UN GHS (the 7th revised edition). The data included was derived from international authoritative database and provided by the enterprise. Other information was based on the present state of our knowledge. We try to ensure the correctness of all information. However, due to the diversity of information sources and the limitations of our knowledge, this document is only for user's reference. Users should make their independent judgment of suitability of this information for their particular purposes. We do not assume responsibility for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product.