【Material Safety Data Sheet】

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

Product Name	L- HS 46 Ultra Low Temperature Hydraulic Oil
Product Code	60196303
Product Usage:	Suitable for outdoor machinery in severe cold region in winter, and moderate/high pressure hydraulic system in conditions of large ambient temperature variation or severe condition, such as hydraulic system of engineering, construction, mining and oil field machineries as well as ships and vehicles
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 86-95388-3 Fax 86-10-82410856 E-mail csc.lube@sinopec.com
Website	http://english.sinolube.com

SECTION 2 COMPOSITION/ INFORMATION ON INGREDIENTS

This material is a mixture.

COMPONENTS	CAS NUMBER	AMOUNT
Highly refined mineral oil	Mixture	90 - 99 %weight
Phosphorodithioic acid, O,O-di-C1-14-alkyl esters, zinc salts	68649-42-3	0.3 – 0.6%weight

SECTION 3 HAZARDS IDENTIFICATION

IMMEDIATE HEALTH EFFECTS

Eye	Not expected to cause prolonged or significant eye irritation.
Skin	Contact with the skin is not expected to cause prolonged or significant irritation. Contact with the skin is not expected to cause an allergic skin response. Not expected to be harmful to internal organs if absorbed through the skin.
Ingestion	Not expected to be harmful if swallowed.
Inhalation	Not expected to be harmful if inhaled. Contains a petroleum-based mineral oil. May cause respiratory irritation or other pulmonary effects following prolonged or repeated inhalation of oil mist at airborne levels above the recommended mineral oil mist exposure limit. Symptoms of respiratory irritation may include coughing and difficulty breathing.

SECTION 4 FIRST AID MEASURES

Eye	No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and flush eyes with water.
Skin	No specific first aid measures are required. As a precaution, remove clothing and shoes if contaminated. To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.
Ingestion	No specific first aid measures are required. Do not induce vomiting. As a precaution, get medical advice.
Inhalation	No specific first aid measures are required. If exposed to excessive levels of material in the air, move the exposed person to fresh air. Get medical attention if coughing or respiratory discomfort occurs.

SECTION 5 FIRE FIGHTING MEASURES

Fire Classification:	OSHA Classification (29 CFR 1910.1200): Not classified by OSHA as flammable or combustible.
NFPA RATINGS:	Health: 0 Flammability: 1 Reactivity: 0

FLAMMABLE PROPERTIES:

Flashpoint:	(Cleveland Open Cup) 200 °C (392°F) Minimum
Auto ignition:	No data available
Flammability (Explosive) Limits (% by volume in air):	
Lower	Not Applicable
Upper	Not Applicable
Extinguishing Media:	Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

PROTECTION OF FIRE FIGHTERS:

Fire Fighting Instructions	This material will burn although it is not easily ignited. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.
Combustion Products:	Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Protective Measures:	Eliminate all sources of ignition in vicinity of spilled material.
Spill Management:	Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.

Reporting:	Report spills to local authorities and/or the U.S. Coast Guard's National Response Center at (800) 424-8802 as appropriate or required.

SECTION 7 HANDLING AND STORAGE

General Handling Information:

Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.

Static Hazard:	Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures. For more information, refer to OSHA Standard 29 CFR 1910.106, 'Flammable and Combustible Liquids', National Fire Protection Association (NFPA 77, 'Recommended Practice on Static Electricity', and/or the American Petroleum Institute (API) Recommended Practice 2003, 'Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents'.
Container Warnings:	Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

General Considerations:	Consider the potential hazards of this material (see Section 3), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.
Engineering Controls:	Use in a well-ventilated area.

PERSONAL PROTECTIVE EQUIPMENT

Eye/Face Protection:	No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields as a good safety practice.
Skin Protection:	No special protective clothing is normally required. Where splashing is possible, select protective clothing depending on operations conducted, physical requirements and other substances in the workplace. Suggested materials for protective gloves include: Neoprene, Nitrile Rubber.
Respiratory Protection:	No respiratory protection is normally required. No respiratory protection is ordinarily required under normal conditions of use. In accordance with good industrial hygiene

practices, precautions should be taken to avoid breathing of material..If user operations generate an oil mist, determine if airborne concentrations are below the occupational exposure limit for mineral oil mist. If not, wear an approved respirator that provides adequate protection from the measured concentrations of this material. For air-purifying respirators use a particulate cartridge. Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.

Occupational Exposure Limits:

Component	Agency	TWA	STEL	Ceiling	Notation
Highly refined mineral oil (C15 -C50)	ACGIH	5 mg/m^3	10 mg/m^3	--	--
Highly refined mineral oil (C15 -C50	OSHA Z-1	5 mg/m^3	--	--	--

Consult local authorities for appropriate values.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Attention: the data below are typical values and do not constitute a specification.

Color: Light to Brown
Physical State: Liquid
Odor: Petroleum odor
pH: Not Applicable
Vapor Pressure: <0.5Pa@20℃(Estimated value)
Vapor Density (Air = 1): >1 Minimum
Boiling Point: >280℃(Estimated value)
Solubility: Insoluble in water.
Freezing Point: Not Applicable
Density: 0.84 kg/l - 0.93 kg/l(20℃) (68°F)
Viscosity: 41.4mm^2/s – 50.6 mm^2/s @40℃(104°F)
Evaporation Rate: No data available
Pour Point -43℃(Typical)

SECTION 10 STABILITY AND REACTIVITY

Chemical Stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

Incompatibility With Other Materials:

May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

Hazardous Decomposition Products:

None known (None expected)

Hazardous Polymerization: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

IMMEDIATE HEALTH EFFECTS

Eye Irritation: The eye irritation hazard is based on evaluation of data for similar materials or

	product components.
Skin Irritation:	The skin irritation hazard is based on evaluation of data for similar materials or product components.
Skin Sensitization:	The skin sensitization hazard is based on evaluation of data for similar materials or product components.
Acute Dermal Toxicity:	The acute dermal toxicity hazard is based on evaluation of data for similar materials or product components.
Acute Oral Toxicity:	The acute oral toxicity hazard is based on evaluation of data for similar materials or product components.
Acute Inhalation Toxicity:	The acute inhalation toxicity hazard is based on evaluation of data for similar materials or product components.

ADDITIONAL TOXICOLOGY INFORMATION:

This product contains petroleum base oils which may be refined by various processes including severe solvent extraction, severe hydrocracking, or severe hydrotreating. None of the oils requires a cancer warning under the OSHA Hazard Communication Standard (29 CFR 1910.1200). These oils have not been listed in the National Toxicology Program (NTP) Annual Report nor have they been classified by the International Agency for Research on Cancer (IARC) as; carcinogenic to humans (Group 1), probably carcinogenic to humans (Group 2A), or possibly carcinogenic to humans (Group 2B). These oils have not been classified by the American Conference of Governmental Industrial Hygienists (ACGIH) as: confirmed human carcinogen (A1), suspected human carcinogen (A2), or confirmed animal carcinogen with unknown relevance to humans (A3). During use in engines, contamination of oil with low levels of cancer-causing combustion products occurs. Used motor oils have been shown to cause skin cancer in mice following repeated application and continuous exposure. Brief or intermittent skin contact with used motor oil is not expected to have serious effects in humans if the oil is thoroughly removed by washing with soap and water.

SECTION 12 ECOLOGICAL INFORMATION

Ecotoxicity	This material is not expected to be harmful to aquatic organisms. The ecotoxicity hazard is based on an evaluation of data for the components or a similar material.

ENVIRONMENTAL FATE

Ready Biodegradability:	This material is not expected to be readily biodegradable. The biodegradability of this material is based on an evaluation of data for the components or a similar material.

SECTION 13 DISPOSAL CONSIDERATIONS

Use material for its intended purpose or recycle if possible. Oil collection services are available for used oil recycling or disposal. Place contaminated materials in containers and dispose of in a manner consistent with applicable regulations. Contact your sales representative or local environmental or health authorities for approved disposal or recycling methods.

SECTION 14 TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

DOT Shipping Description: NOT REGULATED AS A HAZARDOUS MATERIAL UNDER 49 CFR

IMO/IMDG Shipping Description:

NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER THE IMDG CODE

ICAO/IATA Shipping Description:

NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER ICAO

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

NFPA Ratings: Health: 0 Flammability: 1 Reactivity: 0

HMIS Ratings: Health: 1 Flammability: 1 Reactivity: 0

(0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, *- Chronic Effect Indicator).

These values are obtained using the guidelines or published evaluations prepared by

	the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).
Label Recommendation	
	Label Category : Hydraulic Oil
Revision Statement	5.0
Revision Date:	March 01, 2020

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

TLV - Threshold Limit Value
TWA - Time Weighted Average
PEL - Permissible Exposure Limit
STEL - Short-term Exposure Limit
CAS - Chemical Abstract Service Number
ACGIH - American Conference of Governmental Industrial Hygienists
IMO/IMDG - International Maritime Dangerous Goods Code
API - American Petroleum Institute
MSDS - Material Safety Data Sheet
NFPA - National Fire Protection Association (USA)
DOT - Department of Transportation (USA)
OSHA - Occupational Safety and Health Administration
NTP - National Toxicology Program (USA)
IARC - International Agency for Research on Cancer

The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.