

【Material Safety Data Sheet】

SECTION 1 IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Product Name Marine System Oil 3008
Product Number 148821

1.2 Relevant identified uses of the substance or mixture and uses advised against

Product Use: Oil suitable for crankcase lubrication of low speed crosshead marine engines

1.3 Details of the supplier of the safety data sheet

Company Identification LUBRICANT COMPANY,SINOPEC CORP.
Producer Address No. 6 Anning Zhuang West Road, Haidian District, Beijing, P.R.China
Post number 100085
E-mail marinetech.lube@sinopec.com
Website <http://english.sinolube.com>

1.4 Emergency telephone number

Emergency Response Phone 86-800-810-9886
Fax 86-10-62917732

SECTION 2 HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

DSD/DPD CLASSIFICATION:Not classified as dangerous according to EU regulatory guidelines.

2.2 Label elements

Under the criteria of Directive 1999/45/EC (dangerous preparations):

Not classified

- contains: Calcium long chain alkaryl sulfonate. May produce an allergic reaction.

2.3 Other hazards

Not applicable.

SECTION 3 COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Mixtures

This material is a mixture.

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COMPONENTS	EC NUMBER	SYMBOL / RISK PHRASES	AMOUNT
Highly refined mineral oil (C15 -C50)	*	None	70 - 99%weight
Polyolefin polyamine succinimide, polyol	Polymer	R53	0 - 3 %weight
Calcium branched chain alkyl phenate sulfide	291-829-9	R53	0 - 2 %weight
Zinc alkyl dithiophosphate	272-028-3	Xi/R38, Xi/R41, N/R51/53	0 - 2 %weight
Zinc alkyl dithiophosphate	272-028-3	Xi/R41, N/R51/53	0 - 2 %weight

*Contains one or more of the following EINECS numbers: 265-090-8, 265-091-3, 265-096-0, 265-097-6, 265-098-1, 265-101-6, 265-155-0, 265-156-6, 265-157-1, 265-158-7, 265-159-2, 265-160-8, 265-161-3, 265-166-0, 265-169-7, 265-176-5, 276-735-8, 276-736-3, 276-737-9, 276-738-4, 278-012-2. The full text of all R-phrases is shown in Section 16.

COMPONENTS	CAS NUMBER	EC NUMBER	REGISTRATION NUMBER	CLP CLASSIFICATION	AMOUNT
Highly refined mineral oil (C15 - C50)	Mixture	*	**	None	70 - 99 %weight
Polyolefin polyamine succinimide, polyol	147880-09-9	Polymer	**	Aquatic Chronic 4/H413	0 - 3 %weight
Calcium branched chain alkyl phenate sulfide	Trade secret	291-829-9	01-2119524004-5 6-0000	Aquatic Chronic 4/H413	0 - 2 %weight
Zinc alkyl dithiophosphate	68649-42-3	272-028-3	**	Aquatic Chronic 2/H411; Eye Dam. 1/H318; Skin Irrit. 2/H315	0 - 2 %weight
Zinc alkyl dithiophosphate	68649-42-3	272-028-3	01-2119657973-2 3-0000	Aquatic Chronic 2/H411; Eye Dam. 1/H318	0 - 2 %weight

The full text of all CLP H-statements is shown in Section 16.

*Contains one or more of the following EINECS numbers: 265-090-8, 265-091-3, 265-096-0, 265-097-6, 265-098-1, 265-101-6, 265-155-0, 265-156-6, 265-157-1, 265-158-7, 265-159-2, 265-160-8, 265-161-3, 265-166-0, 265-169-7, 265-176-5, 276-735-8, 276-736-3, 276-737-9, 276-738-4, 278-012-2.

**Not available or substance is not currently required for registration under REACH.

SECTION 4 FIRST AID MEASURES

4.1 Description of 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

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the air, move the exposed person to fresh air. Get medical attention if coughing or respiratory discomfort occurs.

4.2 Most important symptoms and effects, both acute and delayed

IMMEDIATE SYMPTOMS AND HEALTH EFFECTS

Eye: Not expected to cause prolonged or significant eye irritation.
Skin: Contact with the skin is not expected to be harmful.
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.

DELAYED OR OTHER SYMPTOMS AND HEALTH EFFECTS: Not classified.

4.3 Indication of any immediate medical attention and special treatment needed

Not applicable.

SECTION 5 FIRE FIGHTING MEASURES

5.1 Extinguishing media

Use water fog, foam, dry chemical or carbon dioxide (CO₂) to extinguish flames.

5.2 Special hazards arising from the substance or mixture

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. Combustion may form oxides of: Zinc, Phosphorus, Calcium, Sulfur .

5.3 Advice for firefighters

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.

SECTION 6 ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Eliminate all sources of ignition in vicinity of spilled material. Refer to Sections 5 and 8 for more information.

6.2 Environmental precautions

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.

6.3 Methods and material for containment and cleaning up

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

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contaminated soil and dispose of in a manner consistent with applicable requirements. Place other contaminated materials in disposable containers and dispose of in a manner consistent with applicable requirements. Report spills to local authorities as appropriate or required.

6.4 Reference to other sections

See sections 8 and 13.

SECTION 7 HANDLING AND STORAGE

7.1 Precautions for safe handling

Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling. Do not taste or swallow.

7.2 Conditions for safe storage, including any incompatibilities

General Handling Information:

Avoid contaminating soil or releasing this material into sewage and rainage 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.

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.

7.3 Specific end use(s):

Diesel Engine Oil

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

GENERAL CONSIDERATIONS:

Consider the potential hazards of this material (see Section 2), 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. Refer to appropriate CEN standards.

8.1 Control parameters

Occupational Exposure Limits:

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Component	Country/ Agency	TWA	STEL	Ceiling	Notation
Highly refined mineral oil (C15 - C50)	United Kingdom	5 mg/m3	10 mg/m3	--	--

8.2 Exposure controls

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: 4H (PE/EVAL), Nitrile Rubber, Silver Shield, Viton.

Respiratory Protection: No respiratory protection is normally required. 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.

ENVIRONMENTAL EXPOSURE CONTROLS:

See relevant Community environmental protection legislation or the Annex, as applicable.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

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

9.1 Information on basic physical and chemical properties

Appearance

- Color:** Light to Brown
- Physical State:** Liquid
- Odor:** Petroleum odor
- Odor Threshold:** No data available
- pH:** Not Applicable
- Freezing Point:** Not Applicable
- Initial Boiling Point:** >315°C (315°F)
- Flashpoint:** (Cleveland Open Cup) 215 °C (419 °F) Minimum
- Evaporation Rate:** No data available
- Flammability (solid, gas):** No Data Available
- Flammability (Explosive) Limits (% by volume in air):**
Lower: Not Applicable Upper: Not Applicable
- Vapor Pressure:** <0.01 mmHg @ 37.8 °C (100 °F)
- Vapor Density (Air = 1):** >1
- Density:** 0.89 kg/l @ 15°C (59°F) (Typical)
- Solubility:** Soluble in hydrocarbons; insoluble in water
- Partition coefficient: n-octanol/water:**
No data available
- Auto-ignition** No data available

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temperature:

Decomposition temperature:

No Data Available

Viscosity: 9.3 mm²/s @ 100°C (212°F) Minimum

Explosive Properties: No Data Available

Oxidising properties: No Data Available

9.2 Other Information:

No Data Available

SECTION 10 STABILITY AND REACTIVITY

10.1 Reactivity:

This material is not expected to react.

10.2 Chemical Stability:

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

10.3 Possibility of hazardous reactions:

Hazardous polymerization will not occur.

10.4 Conditions to Avoid:

Not applicable

10.5 Incompatible materials to avoid:

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

10.6 Hazardous decomposition products:

Hydrogen Sulfide (Elevated temperatures), None known(None expected)

SECTION 11 TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Serious Eye Damage/Irritation:

The eye irritation hazard is based on evaluation of data for product components.

Skin Corrosion/Irritation: The skin irritation hazard is based on evaluation of data for product components.

Skin Sensitization: The skin sensitization hazard is based on evaluation of data for product components.

Acute Dermal Toxicity: The acute dermal toxicity hazard is based on evaluation of data for product components.

Acute Oral Toxicity: The acute oral toxicity hazard is based on evaluation of data for product components.

Acute Inhalation Toxicity:

The acute inhalation toxicity hazard is based on evaluation of data for product components.

Germ Cell Mutagenicity: The hazard evaluation is based on data for components or a similar material.

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Carcinogenicity: The hazard evaluation is based on data for components or a similar material.

Reproductive Toxicity: The hazard evaluation is based on data for components or a similar material.

Specific Target Organ Toxicity - Single Exposure:

The hazard evaluation is based on data for components or a similar material.

Specific Target Organ Toxicity - Repeated Exposure:

The hazard evaluation is based on data for components or a similar material.

ADDITIONAL TOXICOLOGY INFORMATION:

In accordance with the Directive 94/69/EC (21st ATP to DSD), Nota L, reference IP 346/92: "DMSO Extraction Method", we have determined that the base oils used in this preparation are not carcinogenic. 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

12.1 Toxicity

This material is not expected to be harmful to aquatic organisms. The product has not been tested. The statement has been derived from the properties of the individual components.

12.2 Persistence and degradability

This material is not expected to be readily biodegradable. The product has not been tested. The statement has been derived from the properties of the individual components.

12.3 Bioaccumulative potential

Bioconcentration Factor: No Data Available Octanol/Water Partition Coefficient: No data available

12.4 Mobility in soil

No data available.

12.5 Results of PBT and vPvB assessment

This product is not, or does not contain, a substance that is a potential PBT or a vPvB.

12.6 Other adverse effects

No other adverse effects identified.

SECTION 13 DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

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. In accordance with European Waste Catalogue (E.W.C.) the codification is the following: 13 02 05

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SECTION 14 TRANSPORT INFORMATION

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

ADR/RID

NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT

- 14.1 UN number: Not applicable
- 14.2 UN proper shipping name: Not applicable
- 14.3 Transport hazard class(es): Not applicable
- 14.4 Packing group: Not applicable
- 14.5 Environmental hazards: Not applicable
- 14.6 Special precautions for user: Not applicable

ICAO

NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT

- 14.1 UN number: Not applicable
- 14.2 UN proper shipping name: Not applicable
- 14.3 Transport hazard class(es): Not applicable
- 14.4 Packing group: Not applicable
- 14.5 Environmental hazards: Not applicable
- 14.6 Special precautions for user: Not applicable

IMO

NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT

- 14.1 UN number: Not applicable
- 14.2 UN proper shipping name: Not applicable
- 14.3 Transport hazard class(es): Not applicable
- 14.4 Packing group: Not applicable
- 14.5 Environmental hazards: Not applicable
- 14.6 Special precautions for user: Not applicable

SECTION 15 REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

REGULATORY LISTS SEARCHED:

- 01=EU. Directive 76/769/EEC: Restrictions on the marketing and use of certain dangerous substances.
- 02=EU Directive 90/394/EEC: Carcinogens at work.
- 03=EU Directive 92/85/EEC: Pregnant or breastfeeding workers.
- 04=EU Directive 96/82/EC (Seveso II): Article 9.
- 05=EU Directive 96/82/EC (Seveso II): Articles 6 and 7.
- 06=EU Directive 98/24/EC: Chemical agents at work.
- 07=EU Directive 2004/37/EC: On the protection of workers.
- 08=EU Regulation EC No. 689/2008: Annex 1, Part 1.
- 09=EU Regulation EC No. 689/2008: Annex 1, Part 2.
- 10=EU Regulation EC No. 689/2008: Annex 1, Part 3.
- 11=EU Regulation EC No. 850/2004: Prohibiting and restricting persistent organic pollutants (POPs).
- 12=EU REACH, Annex XVII: Restrictions on manufacture, placing on the market and

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use of certain dangerous substances, mixture & article.
13=EU REACH, Annex XIV: Candidate List of Substances of Very High Concern for Authorization (SVHC).

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).

15.2 Chemical safety assessment

No chemical safety assessment.

SECTION 16 OTHER INFORMATION

Revision Statement This revision updates the following sections of this Material Safety Data Sheet:
5,8,15,16

Revision Date: DECEMBER 20, 2012

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 | CVX - Chevron |
| 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.