

## Safety Data Sheet

L-CKD Heavy Duty Industrial Gear Oil 320

### SECTION 1. Identification

|                                                                 |                                                                                                                                                                                                                                                                           |
|-----------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| GHS product identifier:                                         | L-CKD Heavy Duty Industrial Gear Oil 320                                                                                                                                                                                                                                  |
| Other means of identification:                                  | See Section 3                                                                                                                                                                                                                                                             |
| Product Code                                                    | 60196464                                                                                                                                                                                                                                                                  |
| <b>Recommended use of the chemical and restrictions on use:</b> |                                                                                                                                                                                                                                                                           |
| Recommended use:                                                | Suitable for lubrication of various closed gear transmission system working in severe conditions in such industries as steel, cement, power, mining and so on; Suitable for circulation lubrication system combined spur gear, bevel gear, spiral bevel gear and bearing. |
| Recommended Restrictions:                                       | Not available.                                                                                                                                                                                                                                                            |
| <b>Supplier's details:</b>                                      |                                                                                                                                                                                                                                                                           |
| Supplier(Manufacturer):                                         | SINOPEC LUBRICANT CO.,LTD.                                                                                                                                                                                                                                                |
| Address:                                                        | No. 6 Anning Zhuang West Road, Haidian District, Beijing, P.R.China                                                                                                                                                                                                       |
| Post Code                                                       | 100085                                                                                                                                                                                                                                                                    |
| Contact person(E-mail):                                         | csc.lube@sinopec.com                                                                                                                                                                                                                                                      |
| Telephone:                                                      | 86-400-810-9886                                                                                                                                                                                                                                                           |
| Fax:                                                            | 86-10-82410856                                                                                                                                                                                                                                                            |
| Emergency phone number:                                         | 86-400-810-9886                                                                                                                                                                                                                                                           |

### SECTION 2. Hazards identification

**Classification of the substance or mixture:**

|                        |                |
|------------------------|----------------|
| Physical hazards:      | Not classified |
| Health hazards:        | Not classified |
| Environmental hazards: | Not classified |

**GHS label elements, including precautionary statements:**

|                      |                              |
|----------------------|------------------------------|
| Hazard Pictograms: : | No hazard pictogram is used. |
| Signal word:         | No signal word is used.      |
| Hazard statement:    | Not applicable.              |

**Precautionary statement:**

|             |                |
|-------------|----------------|
| Prevention: | Not applicable |
| Response:   | Not applicable |
| Storage:    | Not applicable |
| Disposal:   | Not applicable |

Other hazards which do not result in classification: Not applicable

### SECTION 3. Composition/information on ingredients

Chemical nature: Blend of mineral oil and additives.

**Hazardous components:**

| Chemical Name | Synonyms                                                | CAS No.    | Concentration (% w/w) |
|---------------|---------------------------------------------------------|------------|-----------------------|
| Amines        | C11-14-branched alkyl, monohexyl and dihexyl phosphates | 80939-62-4 | 0.1-0.5               |

## SECTION 4. First aid measures

### Description of necessary first-aid measures:

In all cases of doubt, or when symptoms persist, seek medical attention.

|                                                                                              |                                                                                                                                                                                                                                          |
|----------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>In case of inhalation:</b>                                                                | 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.                            |
| <b>In case of skin contact:</b>                                                              | 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. |
| <b>In case of eyes contact:</b>                                                              | Rinse the eyes with plenty of water.                                                                                                                                                                                                     |
| <b>In case of ingestion:</b>                                                                 | Clean mouth with water and drink plenty of water.                                                                                                                                                                                        |
| <b>Most important symptoms/effects, acute and delayed:</b>                                   | The product is not classified as harmful to human health effect.                                                                                                                                                                         |
| <b>Indication of immediate medical attention and special treatment needed, if necessary:</b> | If skin irritation or rash occurs, get medical advice/attention.                                                                                                                                                                         |

## SECTION 5. Fire-fighting measures

|                                                      |                                                                                                                                                                     |
|------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Suitable extinguishing media:</b>                 | Use water fog, foam, dry chemical or carbon dioxide to extinguish flames.                                                                                           |
| <b>Unsuitable extinguishing media:</b>               | Water.                                                                                                                                                              |
| <b>Specific hazards arising from the chemical:</b>   | In case of heat, fire and strong oxidants can lead to burning. Fumes, smoke, carbon monoxide, sulfur oxides, aldehydes, nitrogen oxides, phosphate, certain metal.  |
| <b>Special protective actions for fire-fighters:</b> | Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. |

## SECTION 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures:

|                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|---------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>For non-emergency personnel:</b>                           | Provide adequate ventilation. Avoid skin and eye contact. Refer to section 8 of SDS for personal protection details.                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>For emergency responders:</b>                              | Wear an appropriate NIOSH/MSHA approved respirator if dust is generated.                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Environmental precautions:</b>                             | Do not allow material to be released to the environment without proper governmental permits.                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Methods and materials for containment and cleaning up:</b> | 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. |
| <b>Reference to other sections:</b>                           | See Section 7 for information on safe handling.<br>See Section 8 for information on personal protection equipment.<br>See Section 13 for information on disposal.                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Additional information:</b>                                | Not applicable.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

## SECTION 7. Handling and storage

**Precautions for safe handling:**

Provide good ventilation. Prevent electrostatic charge - sources of ignition should be kept well clear - fire extinguishers should be kept handy. Avoid contact with skin and eyes. Avoid prolonged exposure. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. When using, do not eat, drink or smoke. Wash hands thoroughly after handling.

**Conditions for safe storage, including any incompatibilities:**

Store in tightly closed original container in a dry, cool and well-ventilated place. 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

**Control parameters:**

Not available.

**Appropriate engineering controls:**

Use in a well-ventilated area.

**Individual protection measures, such as personal protective equipment (PPE):**
**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.

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.

**Skin 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.

**Respiratory protection:**
**Thermal hazards:**

Wear suitable protective clothing to prevent heat.

## SECTION 9. Physical and chemical properties and safety characteristics

**Appearance:**
**Physical state:**

Yellow to brown transparent oily liquid

**Form:**

Liquid

**Color:**

Yellow to brown

**Odor:**

Odorless or slight odor

**Melting point/ freezing point:**

Not available

**Boiling point or initial boiling point and boiling range:**

> 280 °C (typ)

**Flammability:**

Not available

**Lower and upper explosion limit / flammability limit:**

Not available

**Flash point:**

230 °C (open cup) (typ)

**Auto-ignition temperature:**

>260°C

|                                                           |                                                      |
|-----------------------------------------------------------|------------------------------------------------------|
| <b>Decomposition temperature:</b>                         | Not available                                        |
| <b>PH:</b>                                                | Not available                                        |
| <b>Kinematic viscosity:</b>                               | 288 mm/s <sup>2</sup> - 352 mm/s <sup>2</sup> (40°C) |
| <b>Solubility :</b>                                       | Soluble in hydrocarbon solvents; insoluble in water  |
| <b>Partition coefficient n-octanol/water (log value):</b> | > 6 (estimated value)                                |
| <b>Vapor pressure:</b>                                    | <0.5MPa(40°C)                                        |
| <b>Density and/or relative density:</b>                   | 0.88 kg/l - 0.93 kg/l(20°C)                          |
| <b>Relative vapour density:</b>                           | >1(air=1)                                            |
| <b>Particle characteristics:</b>                          | Not available                                        |
| <b>Molecular weight:</b>                                  | Not available                                        |
| <b>Molecular formula:</b>                                 | Not available                                        |
| <b>Explosiveness:</b>                                     | Not explosive                                        |
| <b>Oxidising properties:</b>                              | Not oxidizing                                        |

## SECTION 10. Stability and reactivity

|                                            |                                                                                                                                      |
|--------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| <b>Reactivity:</b>                         | The substance is stable under normal storage and handling conditions.                                                                |
| <b>Chemical stability:</b>                 | This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure. |
| <b>Possibility of hazardous reactions:</b> | No dangerous reaction known under conditions of normal use.                                                                          |
| <b>Conditions to avoid:</b>                | Contact with incompatible materials.                                                                                                 |
| <b>Incompatible materials:</b>             | May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.                                 |
| <b>Hazardous decomposition products:</b>   | None known (None expected).                                                                                                          |

## SECTION 11. Toxicological information

|                                           |                              |
|-------------------------------------------|------------------------------|
| <b>Acute toxicity:</b>                    |                              |
| LD50(Oral, Rat):                          | > 5000 mg/kg bw              |
| LD50(Dermal, Rabbit):                     | > 5000 mg/kg bw              |
| LC50(Inhalation, Rat):                    | > 10000 mg/m <sup>3</sup> bw |
| <b>Skin corrosion/Irritation:</b>         | Not classified               |
| <b>Serious eye damage/irritation:</b>     | Not classified               |
| <b>Respiratory or skin sensitization:</b> | Not classified               |
| <b>Germ cell mutagenicity:</b>            | Not classified               |
| <b>Carcinogenicity:</b>                   | Not classified               |
| <b>Reproductive toxicity:</b>             | Not classified               |
| <b>STOT- single exposure:</b>             | Not classified               |
| <b>STOT-repeated exposure:</b>            | Not classified               |
| <b>Aspiration hazard:</b>                 | Not classified               |

## SECTION 12. Ecological information

### Toxicity:

Highly refined mineral oil (CAS: 64742-44-5):

| Acute toxicity |              | Time | Species | Method   | Evaluation | Remarks |
|----------------|--------------|------|---------|----------|------------|---------|
| LL50           | > 100 mg/L   | 96h  | Fish    | OECD 203 | N/A        | N/A     |
| LL50           | > 10000 mg/L | 48h  | Daphnia | OECD 202 | N/A        | N/A     |
| EC50           | N/A          | 72h  | Algae   | OECD 201 | N/A        | N/A     |

isopropanol (CAS: 67-63-0):

| Acute toxicity |                        | Time | Species | Method   | Evaluation | Remarks |
|----------------|------------------------|------|---------|----------|------------|---------|
| LC50           | 9640 mg/L - 10000 mg/L | 96h  | Fish    | OECD 203 | N/A        | N/A     |
| LC50           | > 10000 mg/L           | 24h  | Daphnia | OECD 202 | N/A        | N/A     |
| EC50           | N/A                    | 72h  | Algae   | OECD 201 | N/A        | N/A     |

**Persistence and degradability:**

This product is expected to be inherently biodegradable.

**Bioaccumulative potential:**

Bioaccumulation is unlikely due to the very low water solubility of this product; therefore bioavailability to aquatic organisms is minimal.

**Mobility in soil:**

When released into the environment, adsorption to sediment and soil will be the predominant behavior.

**Results of PBT&vPvB assessment:**

No data available.

**Other adverse effects:**

No data available.

## SECTION 13. Disposal considerations

**Disposal methods:**

The material should be disposed of by incineration in a chemical incinerator in compliance with national and regional requirements.

If empty container retains product residues, all label precautions must be observed.

Return for reuse or dispose according to national or local regulations.

## SECTION 14. Transport information

|                                                                                 | Land transport(ADR/RID) | Sea transport (IMDG) | Air transport (ICAO/IATA) |
|---------------------------------------------------------------------------------|-------------------------|----------------------|---------------------------|
| <b>UN-Number</b>                                                                | Not regulated           | Not regulated        | Not regulated             |
| <b>UN Proper shipping name</b>                                                  | Not regulated           | Not regulated        | Not regulated             |
| <b>Transport hazard class(es)</b>                                               | Not regulated           | Not regulated        | Not regulated             |
| <b>Packing group, if applicable</b>                                             | Not regulated           | Not regulated        | Not regulated             |
| <b>Environmental hazards</b>                                                    | No                      | No                   | No                        |
| <b>Special precautions for user</b>                                             | See section 2           | See section 2        | See section 2             |
| <b>Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code</b> | Not regulated           | Not regulated        | Not regulated             |

## SECTION 15. Regulatory information

**Safety, health and environmental regulations specific for the product in question:**

| Country(s) or region | Inventory name                                                         | On inventory (yes/no)* |
|----------------------|------------------------------------------------------------------------|------------------------|
| Australia            | Australian Inventory of Chemical Substances (AICS)                     | Yes                    |
| Canada               | Domestic Substances List (DSL)                                         | Yes                    |
| Canada               | Non-Domestic Substances List (NDSL)                                    | No                     |
| China                | Inventory of Existing Chemical Substances in China (IECSC)             | Yes                    |
| Europe               | European Inventory of Existing Commercial Chemical Substances (EINECS) | Yes                    |
| Europe               | European List of Notified Chemical Substances (ELINCS)                 | No                     |
| Japan                | Inventory of Existing and New Chemical Substances                      | Yes                    |

|                             |                                                                   |     |
|-----------------------------|-------------------------------------------------------------------|-----|
|                             | (ENCS)                                                            |     |
| Korea                       | Existing Chemicals List (ECL)                                     | Yes |
| New Zealand                 | New Zealand Inventory                                             | Yes |
| Philippines                 | Philippine Inventory of Chemicals and Chemical Substances (PICCS) | Yes |
| United States & Puerto Rico | Toxic Substances Control Act (TSCA) Inventory                     | Yes |

\*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

## SECTION 16. Other information

|                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>The date of preparation of the latest revision of the SDS:</b> | Version 1.0 Amended by GHS rev 9 on MAY 2023                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Legend to abbreviations and acronyms used in the SDS:</b>      | <p>ADR: European Agreement Concerning the International Carriage of Dangerous Goods by Road</p> <p>RID: Regulations Concerning the International Transport of Dangerous Goods by Rail (European law)</p> <p>IMDG: International Maritime Dangerous Goods</p> <p>EINECS: European Inventory of Existing commercial Chemical Substances</p> <p>IATA: International Air Transport Association</p> <p>ICAO-TI: International Civil Aviation Organization 《The International Civil Aviation Covenant》(ICAO)</p> <p>CAS: Chemical Abstracts Service</p> <p>LC50: Lethal Concentration 50</p> <p>EC50: Concentration for 50% of maximal effect</p> <p>LD50: Lethal dose 50%</p> |
| <b>References and sources for data used to compile the SDS:</b>   | The European Chemicals Agency                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |