

Version 1.0

Issue date: 03/02/2015

Revision date: 03/02/2015

SDS Record Number: CSSS-TCO-010-116190

**Section 1 Identification of the substance/mixture and of the company/undertaking****Product identifier:**

Identification on the label/Trade name: TO-4 60 Heavy Duty Transmission Fluid  
Additional identification: Not available  
Identification of the product: See section 3  
Index Number: Not available  
REACH registration No.: Not available

**Relevant identified uses of the substance and uses advised against:****Identified uses:**

Suitable for heavy-duty transmissions, gearboxes, final drives and hydraulic systems used in off-highway applications, where a Caterpillar TO-4 product is recommended.

**Uses advised against:**

Not available.

**Details of the supplier of the safety data sheet:**

Supplier(Manufacturer): SINOPEC LUBRICANT CO., LTD.  
Contact person(E-mail): csc.lube@sinopec.com  
Telephone: 86-400-810-9886  
Fax: 86-10-82410856

**Emergency telephone Number:**

86-400-810-9886 Only available during office hours (8:30a.m.-17:30p.m. Beijing Time Zone)

Available outside office hours? YES  NO

**Section 2 Hazards Identification****Classification of the substance/mixture:**

**GHS Classification** Not classified

**label elements:**

**Hazard Pictograms:** No hazard pictogram is used.  
**Signal Word(S):** No signal word is used.  
**Hazard Statement:** Not applicable.  
**Precautionary statement:** Not applicable.

**Other hazards:**

Not available.

**Section 3 Composition/information on ingredients**

**Substance/Mixture:** Mixture

**Ingredient(s):**

Chemical Name	Registration No.	CAS No.	EC No.	Concentration
Highly refined mineral oil	N/A	64742-65-0	265-169-7	90-99%
Additive package	N/A	-	-	<10%

**Section 4 First aid measures****Description of first aid measures:**

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

**In case of 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.

**In case of skin contact:**

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.

**In case of eyes contact:**

No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and flush eyes with water.

**In case of ingestion:**

No specific first aid measures are required. Do not induce vomiting. As a precaution, get medical advice.

**Most important symptoms and effects, both acute and delayed:**

The product is not classified as harmful to human health effect.

**Indication of any immediate medical attention and special treatment needed:**

If skin irritation or rash occurs, get medical advice/attention.

**Section 5 Fire-Fighting measures****Extinguishing media:****Suitable extinguishing media:**

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

**Unsuitable extinguishing media:**

Water.

**Special hazards arising from the substance or mixture**

In case of heat, fire and strong oxidants can lead to burning. Fumes, smoke, carbon monoxide, sulfur oxides, aldehydes, nitrogen oxides, phosphate, certain metal oxides and other decomposition products, in the case of incomplete combustion.

**Special fire fighting methods and special protective actions for fire-fighters:**

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:****For non-emergency personnel:**

Provide adequate ventilation. Avoid skin and eye contact. Refer to section 8 of SDS for personal protection details.

**For emergency responders:**

Wear an appropriate NIOSH/MSHA approved respirator if dust is generated.

**Environmental Precautions:**

Do not allow material to be released to the environment without proper governmental permits.

**Methods for Containment and Cleaning up:**

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.

**Reference to other sections:**

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for information on disposal.

**Additional information:**

Not applicable.

**Section 7 Handling and storage**

**Precautions for safe handling:**

**Protective measures:**

Containers, even those that have been emptied, may contain explosive vapours. Do NOT cut, drill, grind, weld or perform similar operations on or near containers. Electrostatic discharge may be generated during pumping - this may result in fire. Ensure electrical continuity by bonding and grounding (earthing) all equipment.

**Advice on general occupational hygiene:**

Do not eat, drink and smoke in work areas. Wash hands after use. Remove contaminated clothing and protective equipment before entering eating areas.

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

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.

**Specific end use(s):**

Not applicable.

**Section 8 Exposure Controls/Personal Protection**

**Control parameters:**

**OCCUPATIONAL EXPOSURE LIMITS (OEL)**

**INGREDIENT DATA:**

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
US ACGIH Threshold Limit Values (TLV)	Highly refined mineral oil	Mineral oil, excluding metal working fluids - Pure, highly and severely refined / Mineral oil, excluding metal working fluids - Poorly and mildly refined	5 mg/m <sup>3</sup>	Not Available	Not Available	TLV® Basis: URT irr

**EMERGENCY LIMITS:**

Ingredient	Material name	TEEL-1	TEEL-2	TEEL-3
Highly refined mineral oil	Pump oil	15 mg/m <sup>3</sup>	170 mg/m <sup>3</sup>	990 mg/m <sup>3</sup>

Ingredient	Original IDLH	Revised IDLH
Highly refined mineral oil	Not Available	Not Available

**Exposure controls:**

**Appropriate engineering controls:**

Provide adequate ventilation to control airborne concentrations below the exposure guidelines/limits.

**Individual protection measures, such as personal protective equipment:**

**Eye/face protection:**

No special eye protection is normally required. Where splashing is possible, wear

<b>Hand protection:</b>	safety glasses with side shields as a good safety practice. Use protective gloves which is chemically resistant to this material.
<b>Body protection:</b>	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.
<b>Respiratory protection:</b>	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.
<b>Thermal hazards:</b>	Wear suitable protective clothing to prevent heat.
<b>Environmental exposure controls:</b>	Avoid discharge into the environment. According to local regulations, Federal and official regulations.

## Section 9 Physical and chemical properties

### Information on basic physical and chemical properties:

<b>Appearance:</b>	Yellow to brown transparent oily liquid
<b>Colour:</b>	Yellow to brown
<b>Odour:</b>	Odorless or slight odor
<b>Odour threshold:</b>	Not available
<b>pH:</b>	Not available
<b>Melting point/range (°C):</b>	Not available
<b>Boiling point/range (°C):</b>	> 280 °C (typ)
<b>Flash point (°C):</b>	250 °C (open cup) (typ)
<b>Evaporation rate:</b>	Not available
<b>Flammability limit - lower (%):</b>	Not available
<b>Flammability (solid, gas):</b>	Not available
<b>Ignition temperature (°C):</b>	Not available
<b>Upper/lower flammability/explosive limits:</b>	Not available
<b>Vapour pressure (40°C):</b>	<0.5Pa(20°C)
<b>Vapour density:</b>	>1(air=1)
<b>Density:</b>	0.84 kg/l - 0.93 kg/l(20°C)
<b>Bulk density (kg/m<sup>3</sup>):</b>	Not available
<b>Water solubility (g/l):</b>	Insoluble
<b>n-Octanol/Water (log Po/w):</b>	> 6 (estimated value)
<b>Auto-ignition temperature:</b>	>320°C
<b>Decomposition temperature:</b>	Not available
<b>Viscosity:</b>	10.6 mm/s <sup>2</sup> -12.5 mm/s <sup>2</sup> (100°C)

<b>Explosive properties:</b>	Non explosive
<b>Oxidising properties:</b>	Not oxidizing
<b>Molecular Formula:</b>	Not available
<b>Molecular Weight:</b>	Not available
<b>Other information:</b>	
<b>Fat solubility(solvent– oil to be specified) etc:</b>	Not available
<b>Surface tension:</b>	Not available
<b>Dissociation constant in water( pKa):</b>	Not available
<b>Oxidation-reduction Potential:</b>	Not available
<b>Specific gravity:</b>	Not available

## Section 10 Stability and reactivity

<b>Reactivity:</b>	The substance is stable under normal storage and handling conditions.
<b>Chemical stability:</b>	Stable at room temperature in closed containers under normal storage and handling conditions.
<b>Possibility of hazardous reactions:</b>	Contact with strong oxidants can lead to burning.
<b>Conditions to avoid:</b>	Extreme heat and high energy sources of ignition and strong oxidizers.
<b>Incompatible materials:</b>	Strong oxidizing agents.
<b>Hazardous decomposition products:</b>	Fumes, smoke, carbon monoxide, sulfur oxides, aldehydes, nitrogen oxides, phosphate, certain metal oxides and other decomposition products, in the case of incomplete combustion.

## Section 11 Toxicological information

<b>Toxicokinetics, metabolism and distribution:</b>	
<b>Non-human toxicological data:</b>	Not available
<b>Information on toxicological effects:</b>	
<b>Acute toxicity:</b>	
<b>LD50(Oral, Rat):</b>	> 5000 mg/kg bw
<b>LD50(Dermal, Rabbit):</b>	> 5000 mg/kg bw
<b>LC50(Inhalation, Rat):</b>	> 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

## Section 12 Ecological information

**Toxicity:** Highly refined mineral oil (CAS: 64742-65-0):

Acute toxicity	Time	Species	Method	Evaluation	Remarks
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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

<b>Persistence and degradability:</b>	This product is expected to be inherently biodegradable.
<b>Bioaccumulative potential:</b>	Bioaccumulation is unlikely due to the very low water solubility of this product; therefore bioavailability to aquatic organisms is minimal.
<b>Mobility in soil:</b>	When released into the environment, adsorption to sediment and soil will be the predominant behavior.
<b>Results of PBT&amp;vPvB assessment:</b>	Not available.
<b>Other adverse effects:</b>	Not available.

### Section 13 Disposal considerations

<b>Waste treatment methods:</b>	The material should be disposed of by incineration in a chemical incinerator in compliance with national and regional requirements.
<b>Product / Packaging disposal:</b>	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</b>	Not regulated	Not regulated	Not regulated
<b>Packaging group</b>	Not regulated	Not regulated	Not regulated
<b>Environmental hazards</b>	No	No	No
<b>Special precautions for user</b>	See section 2.2	See section 2.2	See section 2.2
<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 Regulation information

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

<b>Highly refined mineral oil (64742-65-0) is found on the following regulatory lists</b>	"Not Applicable"
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### Section 16 Other information

#### Further information:

This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product.

#### Notice to reader:

Employers should use this information only as a supplement to other information gathered by them, and should make independent

judgment of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.