



Safety Data Sheet

Product : S-OIL DRAGON GEAR EP 90 Page : 1/6
Issue : 1 Date : 2012-10-10
Invalidates and replaces the issue of : 2012-10-10

PRODUCT LABELS

LABELLING (standard or EU): Not applicable
TRANSPORT LABELLING : Not applicable

1. Product and company identification

Commercial name: S-OIL DRAGON GEAR EP 90
Product application: Manual transmission and gear box oil
Company name: S-OIL TOTAL LUBRICANTS CO., LTD.
Address: (3F Ace Tower, Sunhwa-dong) 3F, 92 Tongil-ro, Jung-gu, SEOUL, KOREA
Emergency number of the company : 82 (2)6320-2000
Fax: 82 (2)6320-2100

2. Composition / information on ingredients

PREPARATION:

Chemical nature:

Contents	CASNo.	wt%
SEVERELY HYDROTREATED HEAVY PARAFFINIC DISTILLATE	64742-54-7	> 94
MIXED PERFORMANCE ADDITIVE	Mixture	2.5 ~ 4.0
POLYMER, ESTERS OF METHACRYLIC ACID AND MIXED LONG CHAIN ALCOHOLS	Mixture	0.1 ~ 1.0
POLYMERIZED DIMETHYL SILICONE FLUID	Mixture	0.03 ~ 1.00

Substances contributing to hazards : None to our knowledge, in normal use
Impurities contributing to hazards: None to our knowledge

3. Hazard identification

- Adverse human health effects : Under normal conditions of use, the product holds no danger of intoxication
- Environmental effects : Don't reject this product into the environment
- Physical and chemical hazards : No specific risk of fire or explosion under normal conditions of use

4. First-aid measures

IN CASE OF SERIOUS MANIFESTATIONS, CALL IN A DOCTOR OR EMERGENCY MEDICAL CARE

Route of exposure :

- Inhalation : Inhalation of heavy concentrations of vapour, fumes or spray, may cause mild irritation of the throat.
Transport the person into fresh air, keep warm and allow to rest
- Contact with the skin : If the skin is exposed to high-pressure spray, the product may enter the human organism. In all such cases the affected person must be taken to hospital, even if no sign of injury can be detected
Immediately remove all soiled or stained clothing
Wash the affected area immediately and repeatedly with soap and water.



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- Contact with the eyes : Keep eyes open and rinse immediately and repeatedly with water for at least 15 minutes
- Ingestion : Possible risk of vomiting and diarrhea
Do not induce vomiting to avoid the risk of aspiration into the respiratory tract
Give nothing to drink
- Aspiration : If the product is believed to have entered the lungs (in case of vomiting, for example), take the person to hospital for immediate care
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5. Fire-fighting measures

- Flash point: See heading 9
- Fire extinguishers:
- suitable : Foam, carbon dioxide (CO₂), powder
 - not suitable : do not use water jets (stick jets) for extinguishing fire since they could help to spread the flames.
- Specific hazards: Incomplete combustion and thermolysis produce toxic gases such as CO, CO₂, various hydrocarbons, aldehydes and soot. These are highly dangerous if inhaled
- Firefighter protection: An insulated breathing apparatus must be worn in confined premises with heavy concentrations of fumes and gases
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6. Accidental release measures

See also heading 8 and 13:

After spillage / leakage:

- on soil: Surfaces on which the product has been spilled may become slippery
Avoid discharge of the material in a stream or a sewer or cause ground contamination.
recovery by physical means
Contain and collect the spilled product with sand or any other inert material.
In the event of a major spill, inform the competent authorities if the situation cannot be brought under control rapidly and efficiently
 - on water: Use floating absorbent material to be removed mechanically
If the material has been discharged into a stream or a sewer, inform the authorities of the possible presence of floating materials
If the material has been discharged into a stream or a sewer, inform the authorities
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7. Handling and storage

HANDLING:

- Technical measures:

. prevention of user exposure:

Provide adequate ventilation in case of the potential formation of vapour, fumes, mist or spray
Take all measures to reduce the risk of exposure, in particular to used or waste product
Keep away from flammable material; keep away from food and beverages

. Prevention of fire and explosion:

Empty containers may contain flammable or explosive vapours
There is a fire hazard associated with rags, paper or any other material used to remove spills which become soaked with product
Avoid accumulate of these: they are to be disposed off safely after use



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- Precautions : Avoid static electricity build up with connection to earth.
Set up machinery and equipment so as to avoid the risk of accidental spills or splashes onto hot machine parts and electrical contacts (on joint failure, for example)
Prevent oil leaks in pressure circuits resulting in a fine inflammable spray (the flammability limit for oil mist is depressed when concentrations of about 45 g/m³ are reached)

Safe handling advice : Avoid contact with strong oxidizing agents
Use only hydrocarbon-resistant containers, joints, pipes etc...

STORAGE:

- Technical measures : Make the necessary arrangements and take all measures to prevent water and ground pollution

- Storage conditions :

. Suitable: Store at room temperature, protected against contact with water and moisture, and away from any source of ignition
Keep containers closed when not in use

. To be avoided: Do not store exposed to the elements

- Incompatible products : Dangerous reaction with strong oxidizing agents

- Packaging materials :

. Recommended: Use only hydrocarbon-resistant containers, joints, pipes, etc.
Keep in original container if possible
Otherwise, transfer all indications on the regulatory label to the new container

8. Exposure controls / personal protection

Engineering measures: Use the product in well-ventilated premises
When working on enclosed place (tanks, reservoirs...), make sure that atmosphere is not suffocating and/or wear recommend equipment

- Control parameters:

. Occupational exposure limit: . oil mist : 10mg/m³, for 15 minutes
. oil mist : 5mg/m³, for 8 hours

Personal protective equipment:

- Hand protection: Impermeable hydrocarbon-proof gloves
recommended material: nitrile , neoprene

- Eye protection: Goggles, in case of splashing

- Skin and body different hand protection: As required, wear a face mask, hydrocarbon-proof clothing, and safety boots (when handling drums)
Don't wear ring, watch or similar thing which will be able to hold the product and may give rise to some skin diseases

Industrial hygiene: Avoid prolonged and repeated contact with the skin, especially with used or waste product
Immediately remove all soiled or stained clothing.
If the product comes into contact with the skin, wash the affected area immediately and repeatedly with soap and water
Use no abrasives, solvents or petroleum spirit
Do not use cloths stained with the product to dry hands
Don't put the product-soaked rags in the pockets of working clothes

9. Physical and chemical properties

- Appearance:



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Physical state:	Liquid
- Colour:	Yellow to amber
- Odour:	Characteristic.
- pH:	Not applicable
- Specific temperatures of change in state	
- Flash point:	$\geq 220^{\circ}\text{C}$ (ISO 2592)
- Auto-ignition temperature:	$> 260^{\circ}\text{C}$ (ASTM E 659) This temperature may be significantly lower under particular conditions (oxidation on high surface areas)
- Explosion limits:	Not applicable
- Density:	About 889 kg/m ³ at 15 $^{\circ}\text{C}$
- Solubility:	
in water:	Insoluble and immiscible
in organic solvents:	Soluble in many common solvents
- Viscosity:	Kinematic viscosity at 100 $^{\circ}\text{C}$: about 17.45 mm ² /s
- Partition coefficient (Log Pow) :	Log Pow > 6 Temperature 20 $^{\circ}\text{C}$

10. Stability and reactivity

Stability:	The product is stable under normal temperatures of storage, handling and use
Dangerous reactions:	Not dangerous reaction known under normal conditions of use, to refer to the technical notice
- Conditions to avoid:	Heat (temperatures above flash point), sparks, ignition points, flames, static electricity
- Materials to avoid:	Avoid contact with strong oxidizing
Dangerous decomposition products:	Incomplete combustion and thermolysis produce more or less toxic gases such as CO, CO ₂ , various hydrocarbons, aldehydes and soot

11. Toxicological information

ACUTE TOXICITY/LOCAL EFFECTS:

- Inhalation:	Risk is improbable under normal conditions of use Inhalation of important concentration of vapour or aerosols may cause irritation of the upper respiratory tract.
- Contact with the skin:	Risk is improbable under normal conditions of use If the skin is exposed to high-pressure spray, the product may enter the human organism. In all such cases the affected person must be taken to hospital, even if no sign of injury can be detected
- Ingestion:	In case of ingestion of small quantities, no important effect observed. in case of ingestion of larger amounts: abdominal pain, diarrhea, ...

SENSITIZATION:

To our knowledge, the product don't induce sensitization

CHRONIC TOXICITY OR LONG-TERM TOXICITY:

- Contact with the skin:	Characteristic skin affections (oil blisters) may develop following prolonged and repeated exposure through contact with stained clothing
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- Carcinogenicity : The product is formulated from ingredients considered to be non-carcinogenic

12. Ecological information

Mobility:

- Air: There is a slow loss by evaporation.

- Ground: Given its physical and chemical characteristics, the product generally shows little mobility in the ground

- Water: The product is insoluble; it spreads on the surface of the water

Persistence and degradability: Experimental data on the finished product are not available
However, the "mineral oil" portion of the virgin product is intrinsically biodegradable. Particular ingredients may not be biodegradable

Ecotoxicity: The virgin product is considered to present no danger for land-growing organisms.
It is considered to present a little danger for aquatic life.
no information available for used product
Experimental data on the finished product are not available

13. Disposal considerations

Waste disposal : Dispose in a safe manner in accordance with local/national regulations
If need be, collection by an authorized waste contractor and regeneration or incineration in an approved installation

Used packaging disposal : Conform to the regulation in effect

Waste class : 13-02-02 (non-chlorinated engine, gear, lubricating oils)

14. Transport information

UN Number : Unregulated

Road (ADR) / Rail (RID)/ River (ADNR): Not restricted for transport.

Marine (IMO-IMDG): Not restricted for transport.

Airline (ICAO / IATA): Not restricted for transport

15. Regulatory information

EUROPEAN REGULATIONS:

- EC labelling:

- Symbol(s): None

- R Phrase(s): None

- S Phrase(s): None

16. Other information

This data sheet conforms to standards defined by directives 91/155, 93/112/EEC & 2001/58/EC Data sheet required pursuant to Art.14 of directive 1999/45/EC.

Date of current version: 10/10/2012



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"This Safety Data Sheet serves to complete but not to replace the technical product sheets. The information contained herein is given in good faith and accurate to the best of our knowledge at the date indicated hereabove.

It is understood by the user that any use of the product for purposes other than those for which it was designed entails potential risk.

The information given herein in no way dispenses the user from knowing and applying all provisions regulating his or her activity. The user bears liability for the precautions required when using the product.

The regulatory texts indicated herein are intended to aid the user to fulfill his obligations. This list is not to be considered complete and exhaustive. It is the user's responsibility to ensure that he is subject to no other obligations than those mentioned."

End of document.

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