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**S-OIL PROCESS OIL 350**

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**1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING****1.1. Product identifier**

Product name	S-OIL PROCESS OIL 350
Pure substance/mixture	Mixture

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

Recommended Use	Process oil.
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**1.3. Details of the supplier of the safety data sheet**

Supplier	S-OIL CORPORATION 192, Baekbeom-ro, Mapo-gu, Seoul 04196, Korea
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**For further information, please contact:**

Contact Point	HSSEQ
E-mail Address	dolyoo@stlc.co.kr

**1.4. Emergency telephone number**

Korea	+82 2 3772 5655
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**2. HAZARDS IDENTIFICATION****2.1. Classification of the substance or mixture****Classification**

Not classified.

**Symbol(s)**

Not classified

**2.2. Label elements**

Labelled according to	Not classified.
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**2.3. hazards Statement**

Not classified.

**2.4. Precautionary Statements**

Not classified.

**2.5. Other hazards**

Physical-Chemical Properties	Contaminated surfaces will be extremely slippery.
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Environmental properties	Should not be released into the environment.
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**3. COMPOSITION/INFORMATION ON INGREDIENTS****3.1. Mixture**

Chemical Name	CAS-No	EC-No	Weight %
Distillates (petroleum), hydrotreated heavy paraffinic	64742-54-7	265-157-1	100

**Additional information** Product containing mineral oil with less than 3% DMSO extract as measured by IP 346

**4. FIRST AID MEASURES****4.1. Description of first-aid measures**

<b>General advice</b>	IN CASE OF SERIOUS OR PERSISTENT CONDITIONS, CALL A DOCTOR OR EMERGENCY MEDICAL CARE.
<b>Eye contact</b>	Rinse thoroughly with plenty of water, also under the eyelids.
<b>Skin contact</b>	Remove contaminated clothing and shoes. Wash skin with soap and water. Wash contaminated clothing before reuse. High pressure jets may cause skin damage. In this case, the casualty should be sent immediately to hospital.
<b>Inhalation</b>	Move to fresh air.
<b>Ingestion</b>	Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Call a physician or Poison Control Center immediately.

**4.2. Most important symptoms and effects, both acute and delayed**

<b>Eye contact</b>	Not classified.
<b>Skin contact</b>	Not classified. High pressure injection of the products under the skin may have very serious consequences even though no symptom or injury may be apparent.
<b>Inhalation</b>	Not classified. Inhalation of vapors in high concentration may cause irritation of respiratory system.
<b>Ingestion</b>	Not classified. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

**4.3. Indication of immediate medical attention and special treatment needed, if necessary**

**Notes to physician** Treat symptomatically.

**5. FIRE-FIGHTING MEASURES****5.1. Extinguishing media**

<b>Suitable extinguishing media</b>	Carbon dioxide (CO <sub>2</sub> ). ABC powder. Foam. Water spray or fog.
<b>Unsuitable extinguishing media</b>	Do not use a solid water stream as it may scatter and spread fire.

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

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**Special Hazard** Incomplete combustion and thermolysis may produce gases of varying toxicity such as carbon monoxide, carbon dioxide, various hydrocarbons, aldehydes and soot. These maybe highly dangerous if inhaled in confined spaces or at high concentration.

**5.3. Advice for fire-fighters**

**Special protective equipment for fire-fighters** Wear self-contained breathing apparatus and protective suit.

**Other information** Cool containers / tanks with water spray. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

**6. ACCIDENTAL RELEASE MEASURES****6.1. Personal precautions, protective equipment and emergency procedures**

**General Information** Do not touch or walk through spilled material. Contaminated surfaces will be extremely slippery. Use personal protective equipment. Ensure adequate ventilation. Remove all sources of ignition.

**6.2. Environmental precautions**

**General Information** Do not allow material to contaminate ground water system. Try to prevent the material from entering drains or water courses.  
Local authorities should be advised if significant spillages cannot be contained.

**6.3. Methods and material for containment and cleaning up**

**Methods for containment** Dam up. Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). Keep in suitable, closed containers for disposal.

**6.4. Reference to other sections**

**Personal Protective Equipment** See Section 8 for more detail.

**Waste treatment** See section 13.

**7. HANDLING AND STORAGE****7.1. Precautions for safe handling**

**Advice on safe handling** When using, do not eat, drink or smoke. For personal protection see section 8. Use only in well-ventilated areas. Do not breathe vapors or spray mist. Avoid contact with skin, eyes and clothing.

**Prevention of fire and explosion** Take precautionary measures against static discharges. Ground/bond containers, tanks and transfer/receiving equipment.

**Hygiene measures** Ensure the application of strict rules of hygiene by the personnel exposed to the risk of contact with the product. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product. Do not use abrasives, solvents or fuels. Do not dry hands with rags that have been contaminated with product. Do not put product contaminated rags into workwear pockets.

**7.2. Conditions for safe storage, including any incompatibilities**

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**Technical measures/Storage conditions**

Keep away from food, drink and animal feeding stuffs. Keep in a banded area. Keep container tightly closed. Keep preferably in the original container. Otherwise reproduce all indication of the regulation label on the new container. Do not remove the hazard labels of the containers (even if they are empty). Design the installations in order to avoid accidental emissions of product (due to seal breakage, for example) onto hot casings or electrical contacts. Protect from frost, heat and sunlight. Protect from moisture.

**Materials to Avoid**

Strong oxidizing agents.

**7.3. Specific end uses****8. EXPOSURE CONTROLS/PERSONAL PROTECTION****8.1. Control parameters****Exposure limits**

Mineral oil mist :  
USA: OSHA (PEL) TWA 5 mg/m<sup>3</sup>, NIOSH (REL) TWA 5 mg/m<sup>3</sup>, STEL 10 mg/m<sup>3</sup>, ACGIH (TLV) TWA 5 mg/m<sup>3</sup> (highly refined)

**Legend**

See section 16.

**8.2. Exposure controls****Occupational Exposure Controls****Engineering Measures**

Apply technical measures to comply with the occupational exposure limits. When working in confined spaces (tanks, containers, etc.), ensure that there is a supply of air suitable for breathing and wear the recommended equipment.

**Personal Protective Equipment****General Information**

If the product is used in mixtures, it is recommended that you contact the appropriate protective equipment suppliers. These recommendations apply to the product as supplied.

**Respiratory protection**

None under normal use conditions. When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. Respirator with combination filter for vapour/particulate (EN 14387). The use of breathing apparatus must comply strictly with the manufacturer's instructions and the regulations governing their choices and uses.

**Eye Protection**

If splashes are likely to occur, wear: Safety glasses with side-shields.

**Skin and body protection**

Wear suitable protective clothing. Protective shoes or boots. Long sleeved clothing.

**Hand Protection**

Hydrocarbon-proof gloves. Fluorinated rubber. Nitrile rubber. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion. If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the EC approved gloves.

**Environmental exposure controls****General Information**

The product should not be allowed to enter drains, water courses or the soil.

**9. PHYSICAL AND CHEMICAL PROPERTIES****9.1. Information on basic physical and chemical properties**

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Color		Bright and clear	
Physical State @20°C		liquid	
Odor		Characteristic	
<b><u>Property</u></b>	<b><u>Values</u></b>	<b><u>Remarks</u></b>	<b><u>Method</u></b>
pH		Not applicable	
Boiling point/boiling range		Not applicable	
Flash point	<b>240 °C</b> 464 °F		Cleveland Open Cup (COC) Cleveland Open Cup (COC)
Evaporation rate		No information available	
Flammability Limits in Air		No information available	
Vapor Pressure		No information available	
Vapor density		No information available	
Density	860 kg/m <sup>3</sup>	@ 15 °C	
Water solubility		Insoluble	
Solubility in other solvents		No information available	
logPow		No information available	
Autoignition temperature		No information available	
Viscosity, kinematic	66.9 mm <sup>2</sup> /s	@ 40 °C	
Explosive properties	Not explosive		
Oxidizing Properties	Not applicable		
Possibility of hazardous reactions	Not applicable		

**9.2. Other information**
**10. STABILITY AND REACTIVITY**
**10.1. Reactivity**

General Information No information available.

**10.2. Chemical stability**

Stability Stable under recommended storage conditions.

**10.3. Possibility of hazardous reactions**

Hazardous Reactions None under normal processing.

**10.4. Conditions to Avoid**

Conditions to Avoid Heat (temperatures above flash point), sparks, ignition points, flames, static electricity.)

**10.5. Incompatible Materials**

Materials to Avoid Strong oxidizing agents.

**10.6. Hazardous Decomposition Products**

Hazardous Decomposition Product None under normal use.

**11. TOXICOLOGICAL INFORMATION**
**11.1. Information on toxicological effects**

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**Acute toxicity Local effects Product Information**

<b>Skin contact</b>	. Not classified. High pressure injection of the products under the skin may have very serious consequences even though no symptom or injury may be apparent.
<b>Eye contact</b>	. Not classified.
<b>Inhalation</b>	. Not classified. Inhalation of vapors in high concentration may cause irritation of respiratory system
<b>Ingestion</b>	. Not classified. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

**Acute toxicity- Component Information**

Chemical name	Oral	Dermal	Inhalation
Distillates (petroleum), hydrotreated heavy paraffinic	LD50 > 5000 mg/kg bw (rat – OECD 420)	LD50 > 5000 mg/kg bw (rabbit – OECD 402)	LC50 (4h) > 5 mg/l (aerosol) (rat – OECD 403)

**Sensitization**

**Sensitization** Not classified as a sensitizer.

**Specific effects**

**Carcinogenicity** This product is not classified carcinogenic.  
**Mutagenicity** This product is not classified as mutagenic.  
**Reproductive toxicity** This product does not present any known or suspected reproductive hazards.

**Repeated Dose Toxicity**

**Subchronic toxicity** No information available.

**Target Organ Effects (STOT)**

**Target Organ Effects (STOT)** No information available.

**Other information**

**Other adverse effects** Characteristic skin lesions (pimples) may develop following prolonged and repeated exposures (contact with contaminated clothing).

<b>12. ECOLOGICAL INFORMATION</b>
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**12.1. Toxicity**

Not classified.

**Acute aquatic toxicity - Product Information**

No information available.

**Acute aquatic toxicity - Component Information**

Chemical name	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates	Toxicity to fish
Distillates (petroleum), hydrotreated heavy paraffinic	EL50 (48h) > 100 mg/l (Pseudokirchnerella subcapitata – OECD 201)	EL50 (48h) > 10000 mg/l (Daphnia magna – OECD 202)	LL50 (96h) > 100 mg/l (Oncorhynchus mykiss – OECD 203)

**Chronic aquatic toxicity • Product Information**

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No information available.

**Chronic aquatic toxicity • Component Information**

Chemical name	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates	Toxicity to fish
Distillates (petroleum), hydrotreated heavy paraffinic	-	NOEL (21d) 10 mg/l (Daphnia magna – QSAR Petrotox)	NOEL (14/28d) > 1000 mg/l (Oncorhynchus mykiss – QSAR Petrotox)

**Effects on terrestrial organisms**

No information available.

**General Information**

No information available.

**12.2. Persistence and degradability**
**General Information**

Persistence No information available.

degradability No information available.

**12.3. Bioaccumulative potential**
**Product Information**

No information available.

**logPow**

No information available

**12.4. Mobility in soil**
**Soil** Given its physical and chemical characteristics, the product generally shows low soil mobility.

**Air** Loss by evaporation is limited.

**Water** Insoluble. The product spreads on the surface of the water.

**12.5. Results of PBT and vPvB assessment**

PBT and vPvB assessment No information available.

**12.6. Other adverse effects**

General Information No information available

**13. DISPOSAL CONSIDERATIONS**
**13.1. Waste treatment methods**
**Waste from Residues / Unused Products** Should not be released into the environment. Do not empty into drains. Dispose of in accordance with all applicable national environmental laws and regulations. Where possible recycling is preferred to disposal or incineration.

**Contaminated packaging** Empty containers should be taken to an approved waste handling site for recycling or disposal.

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Other information Refer to section 8 for safety and protective measures for disposal personnel.

**14. TRANSPORT INFORMATION****ADR/RID** Not regulated**IMDG/IMO** Not regulated**ICAO/IATA** Not regulated**ADN** Not regulated**15. REGULATORY INFORMATION****15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****International Inventories**EINECS/ELINCS  
TSCA  
KECL**Further information****15.2. Chemical Safety Assessment**

Chemical Safety Assessment No information available

**16. OTHER INFORMATION**Full text of R-phrases referred to under sections 2 and 3  
No information available**Abbreviations, acronyms**

Legend Section 8

+	Sensitizer	*	Skin designation
**	Hazard Designation	C:	Carcinogen
M:	Mutagen	R:	Toxic to reproduction

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Revision Note \*\*\* Indicates updated section.

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 is accurate to the best of knowledge at the date indicated above. 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 activity. The user bears sole liability for the precautions required when using the product. The regulatory texts indicated herein are intended to aid the user to fulfil 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 the safety data sheet