

# MATERIAL SAFETY DATA SHEET

## DRAGON CI-4/SL 15W40

Date of the previous version: 2015-03-19

Revision Date: 2015-03-19

Version 1.00

### 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

#### 1.1. Product identifier

Product name DRAGON CI-4/SL 15W40  
Pure substance/mixture Mixture

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

Recommended Use Diesel engine oil.

#### 1.3. Details of the supplier of the safety data sheet

Manufacturer S-OIL CORPORATION  
192, Baekbeom-ro, Mapo-gu,  
Seoul 121-805, Korea

#### For further information, please contact:

Contact Point HSSEQ  
E-mail Address dolyoo@s-oil-total.com

#### 1.4. Emergency telephone number

Korea +82 2 6320 2000

### 2. HAZARDS IDENTIFICATION

#### 2.1. Classification of the substance or mixture

GHS Classification

#### 2.2. Label elements

GHS label elements, including precautionary statements

Symbol(s) Not Classified

Signal Words Not Classified

#### 2.3. GHS Hazards Statement

Not Classified

#### 2.4. GHS Precautionary Statements

Prevention Not Classified

Response Not Classified

Storage Not Classified

Disposal Not Classified

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

Chemical Name	CAS-No	EC-No	Weight %
SEVERELY HYDROTREATED HEAVY PARAFFINIC DISTILLATE	64742-54-7	-	> 75.0
LUBRICANT ADDITIVE	Mixture	-	8.0 ~ 13.0
VISCOSITY MODIFIER ADDITIVE	Mixture	-	8.0 ~ 13.0
POLYMERIZED DIMETHYL SILICONE FLUID	Mixture	-	0.10 ~ 0.30

**Hazardous ingredients** Do not contain hazardous substance nor substance with European workplace exposure limits in concentration above regulatory thresholds**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****General advice** IN CASE OF SERIOUS OR PERSISTENT CONDITIONS, CALL A DOCTOR OR EMERGENCY MEDICAL CARE.**Eye contact** Rinse thoroughly with plenty of water, also under the eyelids.**Skin contact** 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.**Inhalation** Move to fresh air.**Ingestion** 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****Eye contact** Not classified.**Skin contact** 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.**Inhalation** Not classified. Inhalation of vapors in high concentration may cause irritation of respiratory system.**Ingestion** Not classified. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.**4.3. Indication of immediate medical attention and special treatment needed, if necessary**

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Notes to physician                      Treat symptomatically.

### 5. FIRE-FIGHTING MEASURES

#### 5.1. Extinguishing media

Suitable extinguishing media                      Carbon dioxide (CO<sub>2</sub>). ABC powder. Foam. Water spray or fog.

Unsuitable extinguishing media                      Do not use a solid water stream as it may scatter and spread fire.

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

Special Hazard                      Incomplete combustion and thermolysis may produce gases of varying toxicity such as carbon monoxide, carbon dioxide, various hydrocarbons, aldehydes and soot. These may be 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 reaching rivers, streams, lakes, ponds, or water courses. Local authorities should be advised if significant spillages cannot be immediately cleaned up.

#### 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.

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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****Technical measures/Storage conditions**

Keep away from food, drink and animal feedingstuffs. Keep in a bunded 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                      Oil mist : 10mg/m<sup>3</sup>, for 15 minutes  
Oil mist : 5mg/m<sup>3</sup>, for 8 hours

Legend                                      See section 16.

Exposure limits (Component Information)

**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.

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<b>Eye Protection</b>	If splashes are likely to occur, wear: Safety glasses with side-shields.
<b>Skin and body protection</b>	Wear suitable protective clothing. Protective shoes or boots. Long sleeved clothing.
<b>Hand Protection</b>	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

Color		Yellow to amber	
Physical State @20°C		liquid	
Odor		Characteristic	
<u>Property</u>	<u>Values</u>	<u>Remarks</u>	<u>Method</u>
pH		Not applicable	
Boiling point/boiling range		Not applicable	
Flash point	238 °C		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	878kg/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	15.35 mm <sup>2</sup> /s	@ 100 °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.

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### **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**

#### **Acute toxicity Local effects Product Information**

**Skin contact** . 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.

**Eye contact** . Not classified.

**Inhalation** . Not classified. Inhalation of vapors in high concentration may cause irritation of respiratory system

**Ingestion** . Not classified. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

#### **Acute toxicity- Component Information**

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
LUBRICANT ADDITIVE	> 10000mg/kg (Rat)	> 2000mg/kg (Rabbit)	
VISCOSITY MODIFIER ADDITIVE	> 5000mg/kg (Rat)	> 5000mg/kg (Rabbit)	

#### **Sensitization**

##### **Sensitization**

LUBRICANT ADDITIVE Nose, throat and lung irritant. Based on data from similar materials.  
Weak to moderate eye irritant. Does not meet Canadian D2B or EU R36 criteria. Based on data from components or similar materials.  
Skin irritant. Based on data from components or similar materials. Prolonged or repeated skin contact as from clothing wet with material may cause dermatitis. Symptoms may include redness, edema, drying, and cracking of the skin.

VISCOSITY MODIFIER ADDITIVE Fumes or vapor from heated polymer may be toxic and/or irritating to eyes, skin, mucous membrane and respiratory tract

#### **Specific effects**

##### **Carcinogenicity**

LUBRICANT ADDITIVE This product contains mineral oils which are considered to be severely refined and not considered to be carcinogenic under IARC. All of the oils in this product have been demonstrated to contain less than 3% extractables by the IP 346 test.

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VISCOSITY MODIFIER  
ADDITIVE

No data available to indicate any components present at greater than 0.1% may present a carcinogenic hazard.

**Mutagenicity**

LUBRICANT ADDITIVE

No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

VISCOSITY MODIFIER  
ADDITIVE

No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

**Reproductive toxicity**

LUBRICANT ADDITIVE

This product contains para-dodecylphenol. Rats given high, repeated daily doses of para-dodecylphenol by oral intubation experienced adverse reproductive effects. The relevance of these effects to humans is uncertain.

VISCOSITY MODIFIER  
ADDITIVE

No data available to indicate either product or components present at greater than 0.1% that may cause reproductive toxicity.

**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).

**12. ECOLOGICAL INFORMATION**

**12.1. Toxicity**

Not classified.

**Aquatic toxicity - Product Information**

No information available.

**Aquatic toxicity - Component Information**

Chemical Name	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates	Toxicity to fish	Toxicity to microorganisms
LUBRICANT ADDITIVE		Chronic effects expected at < 1 mg/L	LC50 10 - 100 mg/L	
VISCOSITY MODIFIER ADDITIVE			LC50 > 1000 mg/L	EC50 > 1000 ppm

**Effects on terrestrial organisms**

No information available.

**General Information**

No information available.

**12.2. Persistence and degradability**

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**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. Dispose of in accordance with the European Directives on waste and hazardous waste. Dispose of in accordance with local regulations.

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

**EWC Waste Disposal No.** The following Waste Codes are only suggestions: 13 01 10. According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user based on the application for which the product was used.

**14. TRANSPORT INFORMATION**

**ADR/RID** Not regulated

**IMDG/IMO** Not regulated

**ICAO/IATA** Not regulated

**ADN** Not regulated



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**15. REGULATORY INFORMATION****15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****European Union****International Inventories****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

Revision Date: 2015-03-19

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

This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006

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