

# SAFETY DATA SHEET

## SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

### PRODUCT

**Product Name:** MOBIL SHC GREASE 461 WT  
**Product Description:** Synthetic Base Stocks and Additives  
**Product Code:** 2015A0203093  
**Recommended Use:** Grease

### COMPANY IDENTIFICATION

**Supplier:** Esso (Thailand) Public Company Limited  
3195/17-29 Rama IV Road, Klong Ton  
Klong Toey District  
Bangkok 10110 Thailand

<b>24 Hour Emergency Telephone</b>	001-800-13-203-9987 / +1-703-527-3887
<b>Supplier General Contact</b>	662-407-4000
<b>FAX</b>	662-407-4800

## SECTION 2 HAZARDS IDENTIFICATION

This material is not hazardous according to regulatory guidelines (see (M)SDS Section 15).

**Contains:** 2,5-DIMERCAPTO-1,3,4-THIADIAZOLE DERIVATIVE, AMINES, C12-14-TERT-ALKYL May produce an allergic reaction.

**Other hazard information:**

### PHYSICAL / CHEMICAL HAZARDS

No significant hazards.

### HEALTH HAZARDS

High-pressure injection under skin may cause serious damage. Excessive exposure may result in eye, skin, or respiratory irritation.

### ENVIRONMENTAL HAZARDS

No significant hazards.

**NOTE:** This material should not be used for any other purpose than the intended use in Section 1 without expert advice. Health studies have shown that chemical exposure may cause potential human health risks which may vary from person to person.

**SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS**

This material is defined as a mixture.

**Hazardous Substance(s) or Complex Substance(s) required for disclosure**

Name	CAS#	Concentration *	GHS Hazard Codes
2,5-DIMERCAPTO-1,3,4-THIADIAZOLE DERIVATIVE	13539-13-4	0.1 - < 1%	H315, H317, H332
9-OCTADECENOIC ACID (Z)-, REACTION PRODUCTS WITH DIHYDRO-3-(DODECENYL)-2,5-FURANDIONE AND TRIETHYLENETETRAMINE	68478-81-9	0.1 - < 1%	H315, H361(D), H361(F), H413
AMINES, C12-14-TERT-ALKYL	68955-53-3	0.1 - < 0.25%	H302, H311, H317, H330(2), H314(1B), H400(M factor 1), H410(M factor 1)
BENZENAMINE, N-PHENYL-, REACTION PRODUCTS WITH 2,4,4-TRIMETHYLPENTENE	68411-46-1	1 - < 5%	H316, H402, H412
LITHIUM HYDROXIDE	1310-65-2	0.1 - < 1%	H302, H314(1B)
LONG-CHAIN ALKENYL AMINE	112-90-3	0.025 - < 0.1%	H302, H304, H335, H314(1B), H373, H400(M factor 10), H410(M factor 10)

\* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

**SECTION 4 FIRST AID MEASURES**

**INHALATION**

Under normal conditions of intended use, this material is not expected to be an inhalation hazard.

**SKIN CONTACT**

Wash contact areas with soap and water. Remove contaminated clothing. Launder contaminated clothing before reuse. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

**EYE CONTACT**

Flush thoroughly with water. If irritation occurs, get medical assistance.

**INGESTION**

Seek immediate medical attention.

**NOTE TO PHYSICIAN**

None

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<b>SECTION 5</b>	<b>FIRE FIGHTING MEASURES</b>
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**EXTINGUISHING MEDIA**

**Appropriate Extinguishing Media:** Use water fog, foam, dry chemical or carbon dioxide (CO<sub>2</sub>) to extinguish flames.

**Inappropriate Extinguishing Media:** Straight streams of water

**FIRE FIGHTING**

**Fire Fighting Instructions:** Evacuate area. Prevent run-off from fire control or dilution from entering streams, sewers or drinking water supply. Fire-fighters should use standard protective equipment and in enclosed spaces, self-contained breathing apparatus (SCBA). Use water spray to cool fire exposed surfaces and to protect personnel.

**Hazardous Combustion Products:** Aldehydes, Incomplete combustion products, Oxides of carbon, Smoke, Fume, Sulphur oxides

**FLAMMABILITY PROPERTIES**

**Flash Point [Method]:** >149°C (300°F) [EST. FOR OIL, ASTM D-92 (COC)]

**Flammable Limits (Approximate volume % in air):** LEL: N/D UEL: N/D

**Autoignition Temperature:** N/D

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<b>SECTION 6</b>	<b>ACCIDENTAL RELEASE MEASURES</b>
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**NOTIFICATION PROCEDURES**

In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations.

**PROTECTIVE MEASURES**

Avoid contact with spilled material. See Section 5 for fire fighting information. See the Hazard Identification Section for Significant Hazards. See Section 4 for First Aid Advice. See Section 8 for advice on the minimum requirements for personal protective equipment. Additional protective measures may be necessary, depending on the specific circumstances and/or the expert judgment of the emergency responders.

**SPILL MANAGEMENT**

**Land Spill:** Stop leak if you can do so without risk. Scrape up spilled material with shovels into a suitable container for recycle or disposal.

**Water Spill:** Stop leak if you can do so without risk. Confine the spill immediately with booms. Warn other shipping. Skim from surface

Water spill and land spill recommendations are based on the most likely spill scenario for this material; however, geographic conditions, wind, temperature, (and in the case of a water spill) wave and current direction and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted. Note: Local regulations may prescribe or limit action to be taken.

Product Name: MOBIL SHC GREASE 461 WT  
 Revision Date: 29 Nov 2022  
 Page 4 of 9

**ENVIRONMENTAL PRECAUTIONS**

Prevent entry into waterways, sewers, basements or confined areas.

**SECTION 7 HANDLING AND STORAGE**

**HANDLING**

Avoid all personal contact. Prevent small spills and leakage to avoid slip hazard.

**Static Accumulator:** This material is not a static accumulator.

**STORAGE**

Do not store in open or unlabelled containers. Keep away from incompatible materials.

**SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION**

**EXPOSURE LIMIT VALUES**

**Exposure limits/standards (Note: Exposure limits are not additive)**

Substance Name	Form	Limit/Standard	Note	Source
LITHIUM HYDROXIDE		Ceiling 1 mg/m <sup>3</sup>		OARS WEEL

NOTE: Limits/standards shown for guidance only. Follow applicable regulations.

**ENGINEERING CONTROLS**

The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Control measures to consider:  
 No special requirements under ordinary conditions of use and with adequate ventilation.

**PERSONAL PROTECTION**

Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration and ventilation. Information on the selection of protective equipment for use with this material, as provided below, is based upon intended, normal usage.

**Respiratory Protection:** If engineering controls do not maintain airborne contaminant concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable. Types of respirators to be considered for this material include:  
 No protection is ordinarily required under normal conditions of use and with adequate ventilation.

For high airborne concentrations, use an approved supplied-air respirator, operated in positive pressure mode. Supplied air respirators with an escape bottle may be appropriate when oxygen levels are inadequate, gas/vapour warning properties are poor, or if air purifying filter capacity/rating may be exceeded.

**Hand Protection:** Any specific glove information provided is based on published literature and glove

Product Name: MOBIL SHC GREASE 461 WT

Revision Date: 29 Nov 2022

Page 5 of 9

manufacturer data. Glove suitability and breakthrough time will differ depending on the specific use conditions. Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions. Inspect and replace worn or damaged gloves. The types of gloves to be considered for this material include:

Chemical resistant gloves are recommended. Nitrile

**Eye Protection:** If contact is likely, safety glasses with side shields are recommended.

**Skin and Body Protection:** Any specific clothing information provided is based on published literature or manufacturer data. The types of clothing to be considered for this material include:

Chemical/oil resistant clothing is recommended.

**Specific Hygiene Measures:** Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

## ENVIRONMENTAL CONTROLS

Comply with applicable environmental regulations limiting discharge to air, water and soil. Protect the environment by applying appropriate control measures to prevent or limit emissions.

## SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

**Note:** Physical and chemical properties are provided for safety, health and environmental considerations only and may not fully represent product specifications. Contact the Supplier for additional information.

### GENERAL INFORMATION

**Physical State:** Solid  
**Form:** Semi-fluid  
**Colour:** Colourless  
**Odour:** Characteristic  
**Odour Threshold:** N/D

### IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

**Relative Density (at 15 °C):** 0.88  
**Flammability (Solid, Gas):** N/A  
**Flash Point [Method]:** >149°C (300°F) [EST. FOR OIL, ASTM D-92 (COC)]  
**Flammable Limits (Approximate volume % in air):** LEL: N/D UEL: N/D  
**Autoignition Temperature:** N/D  
**Boiling Point / Range:** > 204°C (399°F)  
**Decomposition Temperature:** N/D  
**Vapour Density (Air = 1):** N/D  
**Vapour Pressure:** < 0.013 kPa (0.1 mm Hg) at 20 °C  
**Evaporation Rate (n-butyl acetate = 1):** N/D  
**pH:** N/A  
**Log Pow (n-Octanol/Water Partition Coefficient):** > 3.5  
**Solubility in Water:** Slight  
**Viscosity:** 460 cSt (460 mm<sup>2</sup>/sec) at 40°C | 55.3 cSt (55.3 mm<sup>2</sup>/sec) at 100°C [ASTM D 445]

Product Name: MOBIL SHC GREASE 461 WT  
 Revision Date: 29 Nov 2022  
 Page 6 of 9

**Oxidizing Properties:** See Hazards Identification Section.

**OTHER INFORMATION**

**Freezing Point:** N/D  
**Melting Point:** N/D

NOTE: Most physical properties above are for the oil component in the material.

<b>SECTION 10</b>	<b>STABILITY AND REACTIVITY</b>
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**STABILITY:** Material is stable under normal conditions.

**CONDITIONS TO AVOID:** Excessive heat. High energy sources of ignition.

**MATERIALS TO AVOID:** Strong oxidisers

**HAZARDOUS DECOMPOSITION PRODUCTS:** Material does not decompose at ambient temperatures.

**POSSIBILITY OF HAZARDOUS REACTIONS:** Hazardous polymerization will not occur.

<b>SECTION 11</b>	<b>TOXICOLOGICAL INFORMATION</b>
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**ACUTE TOXICITY**

<b>Route of Exposure</b>	<b>Conclusion / Remarks</b>
<b>Inhalation</b>	
Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Irritation: No end point data for material.	Negligible hazard at ambient/normal handling temperatures.
<b>Ingestion</b>	
Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
<b>Skin</b>	
Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Irritation: No end point data for material.	Negligible irritation to skin at ambient temperatures. Based on assessment of the components.
<b>Eye</b>	
Irritation: No end point data for material.	May cause mild, short-lasting discomfort to eyes. Based on assessment of the components.

**OTHER HEALTH EFFECTS FROM SHORT AND LONG TERM EXPOSURE**

Anticipated health effects from sub-chronic, chronic, respiratory or skin sensitization, mutagenicity, reproductive toxicity, carcinogenicity, target organ toxicity (single exposure or repeated exposure), aspiration toxicity and other effects based on human experience and/or experimental data.

**For the product itself:**

Product Name: MOBIL SHC GREASE 461 WT

Revision Date: 29 Nov 2022

Page 7 of 9

Component concentrations in this formulation would not be expected to cause skin sensitization, based on tests of the components, this formulation, or similar formulations.

**Contains:**

An ingredient or ingredients that are classified as a reproductive toxicant.

Synthetic base oils: Not expected to cause significant health effects under conditions of normal use, based on laboratory studies with the same or similar materials. Not mutagenic or genotoxic. Not sensitising in test animals and humans.

**IARC Classification:**

The following ingredients are cited on the lists below: None.

--REGULATORY LISTS SEARCHED--

1 = IARC 1

2 = IARC 2A

3 = IARC 2B

<b>SECTION 12</b>	<b>ECOLOGICAL INFORMATION</b>
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The information given is based on data for the material, components of the material, or for similar materials, through the application of bridging principals.

**ECOTOXICITY**

Material -- Not expected to be harmful to aquatic organisms.

**MOBILITY**

Base oil component -- Low solubility and floats and is expected to migrate from water to the land. Expected to partition to sediment and wastewater solids.

**ECOLOGICAL DATA**

**Ecotoxicity**

Test	Duration	Organism Type	Test Results
Aquatic - Acute Toxicity	48 hour(s)	Ceriodaphnia dubia	LL50 >110 mg/l: data for the material
Aquatic - Acute Toxicity	96 hour(s)	Pimephales promelas	LL50 >110 mg/l: data for the material
Aquatic - Acute Toxicity	72 hour(s)	Pseudokirchneriella subcapitata	ErL50 >110 mg/l: data for the material

<b>SECTION 13</b>	<b>DISPOSAL CONSIDERATIONS</b>
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Disposal recommendations based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

**DISPOSAL RECOMMENDATIONS**

Product is suitable for burning in an enclosed controlled burner for fuel value or disposal by supervised incineration at very high temperatures to prevent formation of undesirable combustion products.

Product Name: MOBIL SHC GREASE 461 WT  
Revision Date: 29 Nov 2022  
Page 8 of 9

**Empty Container Warning** Empty Container Warning (where applicable): Empty containers may contain residue and can be dangerous. Do not attempt to refill or clean containers without proper instructions. Empty drums should be completely drained and safely stored until appropriately reconditioned or disposed. Empty containers should be taken for recycling, recovery, or disposal through suitably qualified or licensed contractor and in accordance with governmental regulations. DO NOT PRESSURISE, 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.

<b>SECTION 14</b>	<b>TRANSPORT INFORMATION</b>
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**LAND** : Not Regulated for Land Transport

**SEA (IMDG):** Not Regulated for Sea Transport according to IMDG-Code

**Marine Pollutant:** No

**AIR (IATA):** Not Regulated for Air Transport

<b>SECTION 15</b>	<b>REGULATORY INFORMATION</b>
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This material is not considered hazardous according to the classification criteria of the Hazard Classification and Communication System for Hazardous Materials BE 2555.

**REGULATORY STATUS AND APPLICABLE LAWS AND REGULATIONS**

**Hazardous Substance Act BE2535:** Not Regulated

**Listed or exempt from listing/notification on the following chemical inventories :** AIIC, DSL, ENCS, IECSC, ISHL, KECI, TCSI, TSCA

**Special Cases:**

<b>Inventory</b>	<b>Status</b>
PICCS	Restrictions Apply

<b>SECTION 16</b>	<b>OTHER INFORMATION</b>
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**N/D = Not determined, N/A = Not applicable**

**KEY TO THE H-CODES CONTAINED IN SECTION 3 OF THIS DOCUMENT (for information only):**

H302: Harmful if swallowed; Acute Tox Oral, Cat 4

H304: May be fatal if swallowed and enters airways; Aspiration, Cat 1

H311: Toxic in contact with skin; Acute Tox Dermal, Cat 3

H314(1B): Causes severe skin burns and eye damage; Skin Corr/Irritation, Cat 1B



Product Name: MOBIL SHC GREASE 461 WT

Revision Date: 29 Nov 2022

Page 9 of 9

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H315: Causes skin irritation; Skin Corr/Irritation, Cat 2  
H316: Causes mild skin irritation; Skin Corr/Irritation, Cat 3  
H317: May cause allergic skin reaction; Skin Sensitisation, Cat 1  
H330(2): Fatal if inhaled; Acute Tox Inh, Cat 2  
H332: Harmful if inhaled; Acute Tox Inh, Cat 4  
H335: May cause respiratory irritation; Target Organ Single, Resp Irr  
H361(D): Suspected of damaging the unborn child; Repro Tox, Cat 2 (Develop)  
H361(F): Suspected of damaging fertility; Repro Tox, Cat 2 (Fertility)  
H373: May cause damage to organs through prolonged or repeated exposure; Target Organ, Repeated, Cat 2  
H400: Very toxic to aquatic life; Acute Env Tox, Cat 1  
H402: Harmful to aquatic life; Acute Env Tox, Cat 3  
H410: Very toxic to aquatic life with long lasting effects; Chronic Env Tox, Cat 1  
H412: Harmful to aquatic life with long lasting effects; Chronic Env Tox, Cat 3  
H413: May cause long lasting harmful effects to aquatic life; Chronic Env Tox, Cat 4

**THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:**

Section 12: Environmental tox table in section 12 information was added.

Section 16: HCode Key information was modified.

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