



# Material Safety Data Sheet

The Toro Company  
8111 Lyndale Ave S  
Bloomington, MN 55420

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## Product Identification

<b>Product Name:</b>	Grease	<b>Parts Number:</b>
<b>Product type:</b>	Grease	108-1190, 505-7
<b>MSDS #</b>		
<b>Emergency Contact:</b>	Chemtrec : 1-800-424-9300	
<b>Contact Number:</b>	1-952-888-8801	

## Chemical Components

Chemical	CAS #	%	ACGIH TLV	OSHA PEL	Other
PHOSPHORODITHOIC ACID, O,O-DI C1-14-ALKYL ESTERS, ZINC SALTS (2:1) (ZDDP)	68649-42-3	1-5	This product does not contain any components which have recognized exposure limits.	This product does not contain any components which have recognized exposure limits.	

## Physical and Chemical Properties

Characteristics		Physical Properties		Hazards Description	Physical Dangers
<b>Physical State</b>	Grease	Vapor pressure	-mmHg 20 C: < 0.1	Under normal conditions of use, this product is not considered hazardous according to regulatory guidelines  STABILITY (THERMAL, LIGHT, ETC.): Stable. CONDITIONS TO AVOID: Extreme heat and high energy sources of ignition. INCOMPATIBILITY (MATERIALS TO AVOID): Strong oxidizers. HAZARDOUS DECOMPOSITION PRODUCTS: Product does not decompose at ambient temperatures. HAZARDOUS POLYMERIZATION: Will not occur.	<b>POTENTIAL HEALTH EFFECTS:</b> Under normal conditions of intended use, this product does not pose a risk to health. Excessive exposure may result in eye, skin or respiratory irritation.
<b>Color</b>	Dark Blue	pH	NA		
<b>Odor</b>	Mild	Boiling point/range:	C(F): > 316(600)		
<b>HMIS Rating</b>		Freezing point/range:	NE		
<b>Health:</b>	0	Vapor density	NE		
<b>Flammability:</b>	1	Evaporation rate	NE		
<b>Physical Hazard:</b>	0	Solubility in water	Negligible		
NOTE: MOST PHYSICAL PROPERTIES FOR OIL COMPONENT. DMSO EXTRACT, IP-346 (WT.%): <3, for mineral oil only NA=NOT APPLICABLE NE=NOT ESTABLISHED D=DECOMPOSES		VOC content:	< 1.00 (Wt. %); 0.083 lbs/gal		
		Flash Point C(F):	> 204(400) (ESTIMATED FOR OIL, ASTM D-92(COC))		
		ODOR THRESHOLD ppm:	NE		
		DROP POINT C(F):	> 260(500)		
		FLAMMABILITY (solids):	NE		
		AUTO FLAMMABILITY C(F):	NA		
		OXIDIZING PROPERTIES:	NA		
		EXPLOSIVE PROPERTIES:	NA		
		RELATIVE DENSITY, 15/4 C:	0.912		
		PARTITION COEFFICIENT:	> 3.5		
VISCOSITY AT 40 C, cSt:	220.0				
VISCOSITY AT 100 C, cSt:	> 16.0				
POUR POINT C(F):	NA				

## Health Hazards

Major Routes of Exposure:		Ingredients Considered Hazardous to Health	Potential Health Effects:
Inhalation	X	Under normal conditions of intended use, this product does not pose a risk to health. Excessive exposure may result in eye, skin or respiratory irritation.	<b>Inhalation:</b> Irritation
Skin	X		
Ingestion			<b>Skin:</b> Irritation
Eye	X		<b>Eye contact:</b> Irritation
			<b>Ingestion:</b>

First Aid Measures	Personal Protection
<p><b>EYE CONTACT:</b> Flush thoroughly with water. If irritation occurs, call a physician.</p> <p><b>SKIN CONTACT:</b> Wash contact areas with soap and water. Remove and clean oil soaked clothing daily and wash affected area.</p> <p><b>INJECTION INJURY WARNING:</b> 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.</p> <p><b>INHALATION:</b> Remove from further exposure. If respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, assist ventilation with mechanical device or use mouth-to-mouth resuscitation.</p> <p><b>INGESTION:</b> Not expected to be a problem. Seek medical attention if discomfort occurs. Do not induce vomiting.</p>	<p><b>VENTILATION:</b> Use adequate ventilation.</p> <p><b>RESPIRATORY PROTECTION:</b> No special requirements under ordinary conditions of use and with adequate ventilation.</p> <p><b>EYE PROTECTION:</b> Generally eye contact is unlikely with this type material. If eye contact is likely, safety glasses with side shields or chemical type goggles should be worn.</p> <p><b>SKIN PROTECTION:</b> If prolonged or repeated skin contact is likely, oil impervious gloves should be worn. Good personal hygiene practices should always be followed.</p>

## Fire and Explosion Hazards

Extinguishing Media	Special Fire Fighting Procedures	Unusual Fire and Explosion Hazards
Carbon dioxide, foam, dry chemical and water fog.	Water or foam may cause frothing. Use water to keep fire exposed containers cool. Water spray may be used to flush spills away from exposure. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply. <b>SPECIAL PROTECTIVE EQUIPMENT:</b> For fires in enclosed areas, fire fighters must use self-contained breathing apparatus.	<p>None.</p> <p><b>COMBUSTION PRODUCTS:</b> Fumes, smoke, carbon monoxide, sulfur oxides, aldehydes and other decomposition products, in the case of incomplete combustion.</p> <p>Flash Point C(F): &gt; 204(400) (ESTIMATED FOR OIL, ASTM D-92 (COC)).</p> <p>Flammable Limits (approx.% vol.in air) - LEL: NE, UEL: NE</p>

## Handling and Storage

Accidental Release /Spill Measures to Take	Precautions for Storage	Handling
<p>NOTIFICATION PROCEDURES: Report spills/releases as required to appropriate authorities. U.S. Coast Guard and EPA regulations require immediate reporting of spills/releases that could reach any waterway including intermittent dry creeks. Report spill/release to Coast Guard National Response Center toll free number (800)424-8802. In case of accident or road spill notify CHEMTREC (800) 424-9300.</p> <p>PROCEDURES IF MATERIAL IS RELEASED OR SPILLED:</p> <p>LAND SPILL: Shut off source taking normal safety precautions. Take measures to minimize the effects on ground water. Recover by pumping or contain spilled material with sand or other suitable absorbent and remove mechanically into containers.</p> <p>WATER SPILL: Confine the spill immediately with booms. Warn other ships in the vicinity. Notify port and other relevant authorities. Remove from the surface by skimming or with suitable absorbents. If permitted by regulatory authorities the use of suitable dispersants should be considered where recommended in local oil spill procedures.</p> <p>ENVIRONMENTAL PRECAUTIONS: Prevent material from entering sewers, water sources or low lying areas; advise the relevant authorities if it has, or if it contaminates soil/vegetation.</p>	<p>Keep containers closed when not in use. Do not store in open or unlabelled containers. Store away from strong oxidizing agents and combustible materials. Do not store near heat, sparks, flame or strong oxidants.</p> <p>SPECIAL PRECAUTIONS: Prevent small spills and leakages to avoid slip hazard.</p> <p>EMPTY CONTAINER WARNING: Empty containers retain residue (liquid and/or vapor) and can be dangerous. DO NOT PRESSURIZE, 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.</p> <p>Do not attempt to refill or clean container since residue is difficult to remove.</p> <p>Empty drums should be completely drained, properly bunged and promptly returned to a drum reconditioner. All containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations.</p>	<p>High pressure injection under the skin may occur due to the rupture of pressurized lines. Always seek medical attention. No special precautions are necessary beyond normal good hygiene practices.</p>

## Disposal/Transportation

Disposal Method	Transportation
<p>WASTE DISPOSAL: Product is suitable for burning in an enclosed, controlled burner for fuel value. Such burning may be limited pursuant to the Resource Conservation and Recovery Act. In addition, the product is suitable for processing by an approved recycling facility or can be disposed of at an appropriate government waste disposal facility. Use of these methods is subject to user compliance with applicable laws and regulations and consideration of product characteristics at time of disposal.</p> <p>RCRA INFORMATION: The unused product, in our opinion, is not specifically listed by the EPA as a hazardous waste (40 CFR, Part 261D), nor is it formulated to contain materials which are listed hazardous wastes. It does not exhibit the hazardous characteristics of ignitability, corrosivity, or reactivity. The unused product is not formulated with substances covered by the Toxicity Characteristic Leaching Procedure (TCLP). However, used product may be regulated.</p>	<p>USA DOT: NOT REGULATED BY USA DOT. RID/ADR: NOT REGULATED BY RID/ADR. IMO: NOT REGULATED BY IMO. IATA: NOT REGULATED BY IATA.</p>

## Regulations

US OSHA HAZARD COMMUNICATION STANDARD: When used for its intended purposes, this product is not classified as hazardous in accordance with OSHA 29 CFR 1910.1200. EU Labeling: Product is not dangerous as defined by the European Union Dangerous Substances/Preparations Directives. EU labeling not required.

Governmental Inventory Status: All components comply with TSCA, EINECS/ELINCS and AICS.

U.S. Superfund Amendments and Reauthorization Act (SARA) Title III: This product contains no "EXTREMELY HAZARDOUS SUBSTANCES".

SARA (311/312) REPORTABLE HAZARD CATEGORIES: None.

This product contains the following SARA (313) Toxic Release Chemicals:

CHEMICAL NAME CAS NUMBER CONC.

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PHOSPHORODITHOIC ACID, O,O-DI 68649-42-3 1.3%

C1-14-ALKYL ESTERS, ZINC SALTS

(2:1) (ZDDP)

The following product ingredients are cited on the lists below:

CHEMICAL NAME CAS NUMBER LIST CITATIONS

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LITHIUM HYDROXIDE MONOHYDRATE 1310-66-3 22 (0.05%)

XYLENES (0.07%) 1330-20-7 22

ZINC (ELEMENTAL ANALYSIS) (0.18%) 7440-66-6 22

LITHIUM-SOAP THICKENER (6.14%) 7620-77-1 22

ZINC DINONYLNAPHTHALENE SULFONATE 28016-00-4 22 (0.40%)

PHOSPHORODITHOIC ACID, O,O-DI 68649-42-3 18, 20, 21, 22, 24,

C1-14-ALKYL ESTERS, ZINC SALTS (2: 25 1) (ZDDP) (1.29%)

FATTY ACIDS, C16-22, LITHIUM SALTS 68783-36-8 22 (0.76%)

--- REGULATORY LISTS SEARCHED ---

1=ACGIH ALL 6=IARC 1 11=TSCA 4 16=CA P65 CARC 21=LA RTK

2=ACGIH A1 7=IARC 2A 12=TSCA 5a2 17=CA P65 REPRO 22=MI 293

3=ACGIH A2 8=IARC 2B 13=TSCA 5e 18=CA RTK 23=MN RTK

4=NTP CARC 9=OSHA CARC 14=TSCA 6 19=FL RTK 24=NJ RTK

5=NTP SUS 10=OSHA Z 15=TSCA 12b 20=IL RTK 25=PA RTK

26=RI RTK

Code key: CARC=Carcinogen; SUS=Suspected Carcinogen; REPRO=Reproductive

## Toxicology Information

ORAL TOXICITY (RATS): Practically non-toxic (LD50: greater than 2000 mg/kg). ---Based on testing of similar products and/or the components.

DERMAL TOXICITY (RABBITS): Practically non-toxic (LD50: greater than 2000 mg/kg). ---Based on testing of similar products and/or the components.

INHALATION TOXICITY (RATS): Practically non-toxic (LC50: greater than 5 mg/l). ---Based on testing of similar products and/or the components.

EYE IRRITATION (RABBITS): Practically non-irritating. (Draize score: greater than 6 but 15 or less). ---Based on testing of similar products and/or the components.

SKIN IRRITATION (RABBITS): Practically non-irritating. (Primary Irritation Index: greater than 0.5 but less than 3). ---Based on testing of similar products and/or the components.

OTHER ACUTE TOXICITY DATA: Although an acute inhalation study was not performed with this product, a variety of mineral oils and synthetic base oils, such as those in this product have been tested. These samples had virtually no effect other than a nonspecific inflammatory response in the lung to the aerosolized mineral oil. The presence of additives in other tested formulations (in approximately the same amounts as in the present formulation) did not alter the observed effects.

---SUBCHRONIC TOXICOLOGY (SUMMARY)---

No significant adverse effects were found in studies using repeated dermal applications of similar formulations to the skin of laboratory animals for 13 weeks at doses significantly higher than those expected during normal industrial exposure. The animals were evaluated extensively for effects of exposure (hematology, serum chemistry, urinalysis, organ weights, microscopic examination of tissues etc.).

---REPRODUCTIVE TOXICOLOGY (SUMMARY)---

No teratogenic effects would be expected from dermal exposure, based on laboratory developmental toxicity studies of major components in this formulation and/or materials of similar composition.

---CHRONIC TOXICOLOGY (SUMMARY)---

Repeated and/or prolonged exposure may cause irritation to the skin, eyes or respiratory tract. For mineral base oils: Base oils in this product are severely solvent refined and/or severely hydrotreated. Chronic mouse skin painting studies of severely treated oils showed no evidence of carcinogenic effects. These results are confirmed on a continuing basis using various screening methods such as Modified Ames Test, IP-346, and/or other analytical methods. For synthetic base oils: The base oils in this product have been tested in the Ames assay and other tests of mutagenicity with negative results. These base oils are not expected to be carcinogenic with chronic dermal exposures.

---SENSITIZATION (SUMMARY)---

Not expected to be sensitizing based on tests of this product, components, or similar products.

## Ecological Information

ENVIRONMENTAL FATE AND EFFECTS:

This environmental assessment was conducted using information on the individual components as no test data was available for this specific formulation.

ECOTOXICITY: The major components in the formulation show no aquatic toxicity at 1000 mg/L loading, therefore long-term adverse effects in the aquatic environment are not expected.

MOBILITY: Not established.

PERSISTENCE AND DEGRADABILITY: This product is expected to be inherently biodegradable, as the principal components have been shown to degrade at slow to moderate rates.

BIOACCUMULATIVE POTENTIAL: Not established.

## Other Information

USE: AUTOMOTIVE GREASE

NOTE: PRODUCTS OF EXXON MOBIL CORPORATION AND ITS AFFILIATED COMPANIES ARE NOT FORMULATED TO CONTAIN PCBS.

Health studies have shown that many hydrocarbons pose potential human health risks which may vary from person to person. Information provided on this MSDS reflects intended use. This product should not be used for other applications. In any case, the following advice should be considered:

INDUSTRIAL LABEL

Under normal conditions of intended use, this product does not pose a risk to health. Excessive exposure may result in eye, skin or respiratory irritation. Always observe good hygiene measures.

**First Aid:** Wash skin with soap and water. Flush eyes with water. If overcome by fumes or vapor, remove to fresh air. If ingested do not induce vomiting. If symptoms persist seek medical assistance. Read and understand the MSDS before using this product.