



Material Safety Data Sheet

The Toro Company
8111 Lyndale Ave S
Bloomington, MN 55420

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Product Identification

Product Name:	Toro 2 Cycle Oil	Parts Number:
Product type:	Motor oil	100-3595, 38900, 38901, 38902, 38904, 51680
MSDS #	625704417	
Emergency Contact:	Chemtrec : 1-800-424-9300	
Contact Number:	1-952-888-8801	

Chemical Components

Chemical	CAS #	%	ACGIH TLV	OSHA PEL	Other
Highly-refined petroleum lubricant oils	Various	60 -100			
Distillates (petroleum), hydrotreated light	64742-47-8	10 - 30			
Long chain carboxylic acid, reaction products with ethylene amines	Proprietary	7 - 13			
Solvent naphtha (petroleum), heavy aromatic	64742-94-5	<1			
Petroleum Hydrocarbon Distillates			100 ppm	500 ppm	
Oil Mist, Mineral			5 mg/m ³	5 mg/m ³	STEL 10 mg/m ³

Physical and Chemical Properties

Characteristics		Physical Properties		Hazards Description	Physical Dangers
Physical State	Liquid	Vapor pressure	<0.1 kPa (<1 mm Hg) (at 20°C)	Combustible Liquid. Heated material can release vapor that can cause flash fire. Chemical Stability; Stable. Materials Incompatibility; Strong oxidizers.	Spills may create a slipping hazard. Keep away from heat and ignition sources. Store in a cool well-ventilated place.
Color	Blue green	pH	Not applicable		
Odor	petroleum	Boiling point/range:	Not available.		
		Melting point/range:	Not available.		
		Specific gravity	0.87 (Water = 1)		

HMIS Rating		Vapor density	>1 (Air = 1)		
Health:	1	Viscosity (cSt @ 40°C)	37		
Flammability:	2	Solubility in water	Negligible solubility in cold water.		
Physical Hazard:	0	Volatility	AP 175 g/l VOC (w/v)		
		Flash Point	Closed cup: 71°C (160°F). (Pensky-Martens.) Open cup: 94°C (201°F) (Cleveland.).		
		Additional Properties	Gravity, °API (ASTM D287) = 31.9 @ 60° F Density = 7.21 Lbs/gal. Viscosity (ASTM D2161) = 189 SUS @ 100° F		

Health Hazards

Major Routes of Exposure:		Ingredients Considered Hazardous to Health	Potential Health Effects:
Inhalation	X	<p>WARNING: Contains Petroleum Distillates. Harmful if swallowed - Can enter lungs and cause damage. If swallowed, DO NOT induce vomiting. Call a physician immediately.</p> <p>Prolonged and/or repeated skin contact may cause irritation and inflammation. Symptoms include defatting, redness, dryness, blistering eczema-like lesions, scaly dermatitis, and/or more serious skin disorders. Chronic effects of ingestion and subsequent aspiration into the lungs may cause pneumatocele (lung cavity) formation and chronic lung dysfunction</p> <p>Disorders of the following organs or organ systems that may be aggravated by significant exposure to this material or its components include: Skin, Respiratory System, Liver, Kidneys, Central Nervous System (CNS)</p> <p>May cause damage to the following organs: upper respiratory tract, skin, eye, lens or cornea</p> <p>This product is not known to contain any components at concentrations above 0.1% which are considered carcinogenic by OSHA, IARC or NTP.</p>	<p>Inhalation. At elevated temperatures or in enclosed spaces, product mist or vapors may irritate the mucous membranes of the nose, the throat, bronchi, and lungs</p>
Skin	X		<p>Skin contact This product can cause mild, transient skin irritation. The severity of irritation will depend on the amount of material that is applied to the skin and the speed and thoroughness that it is removed. Symptoms include redness, itching, and burning of the skin. Repeated or prolonged skin contact can produce moderate irritation (dermatitis).</p>
Ingestion			<p>Eye contact: This product can cause transient mild eye irritation with short-term contact with liquid sprays or mists. Symptoms include stinging, watering, redness, and swelling</p>
			<p>Ingestion: If swallowed, large volumes of material can cause generalized depression, headache, drowsiness, nausea, vomiting and diarrhea. Smaller doses can cause a laxative effect. If aspirated into the lungs, liquid can cause lung damage.</p>

First Aid Measures	Accidental Release Measures	Personal Protection
<p>Inhalation: Vaporization is not expected at ambient temperatures. This material is not expected to cause inhalation-related disorders under anticipated conditions of use. In case of overexposure, move the person to fresh air.</p> <p>Eye Contact: Check for and remove contact lenses. Flush eyes with cool, clean, low-pressure water while occasionally lifting and lowering eyelids. Seek medical attention if excessive tearing, redness, or pain persists.</p> <p>Skin Contact: If burned by hot material, cool skin by quenching with large amounts of cool water. For contact with product at ambient temperatures, remove contaminated shoes and clothing. Wipe off excess material. Wash exposed skin with mild soap and water. Seek medical attention if tissue appears damaged or if pain or irritation persists. Thoroughly clean contaminated clothing before reuse. Clean or discard contaminated leather goods. If material is injected under the skin, seek medical attention immediately.</p> <p>Ingestion: Do not induce vomiting unless directed to by a physician. Do not give anything to drink unless directed to by a physician. Never give anything by mouth to a person who is not fully conscious. Seek medical attention immediately.</p> <p>Notes to Physician: INGESTION: The viscosity range of the product(s) represented by this MSDS is greater than 100 SUS at 100°F. There is a low risk of aspiration upon ingestion. Careful gastric lavage or emesis may be considered to evacuate large quantities of material.</p>		<p>Engineering Controls Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of mists and/or vapors below the recommended exposure limits (see below). An eye wash station and safety shower should be located near the work-station</p> <p>Personal Protective Equipment Personal protective equipment should be selected based upon the conditions under which this material is used. A hazard assessment of the work area for PPE requirements should be conducted by a qualified professional pursuant to OSHA regulations. The following pictograms represent the minimum requirements for personal protective equipment. For certain operations, additional PPE may be required.</p> <div style="display: flex; justify-content: space-around; align-items: center;">    </div> <p>Eye Protection: Safety glasses equipped with side shields are recommended as minimum protection in industrial settings. Wear goggles if splashing or spraying is anticipated. Wear goggles and face shield if material is heated above 125°F (51°C). Have suitable eye wash water available.</p> <p>Hand Protection: Avoid skin contact. Use heavy duty gloves constructed of chemical resistant materials such as Viton® or heavy nitrile rubber. Wash hands with plenty of mild soap and water before eating, drinking, smoking, use of toilet facilities or leaving work. DO NOT use gasoline, kerosene, solvents or harsh abrasives as skin cleaners</p> <p>Body Protection: Use clean protective clothing if splashing or spraying conditions are present. Protective clothing may include long-sleeve outer garment, apron, or lab coat. If significant contact occurs, remove oil-contaminated clothing as soon as possible and promptly shower. Launder contaminated clothing before reuse or discard. Wear heat protective boots and protective clothing when handling material at elevated temperatures</p> <p>Respiratory Protection: The need for respiratory protection is not anticipated under normal use conditions and with adequate ventilation. If elevated airborne concentrations above applicable workplace exposure levels are anticipated, a NIOSH-approved organic vapor respirator equipped with a dust/mist prefilter should be used. Protection factors vary depending upon the type of respirator used. Respirators should be used in accordance with OSHA requirements (29 CFR 1910.134).</p> <p>General Comments: Use good personal hygiene practices. Wash hands and other exposed skin areas with plenty of mild soap and water before eating, drinking, smoking, use of toilet facilities, or leaving work. DO NOT use gasoline, kerosene, solvents or harsh abrasives as skin cleaners. Since specific exposure standards/control limits have not been established for this product, the "Oil Mist, Mineral" exposure limits shown below are suggested</p>

		as minimum control guidelines.
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Fire and Explosion Hazards

Extinguishing Media	Special Fire Fighting Procedures	Unusual Fire and Explosion Hazards
<p>SMALL FIRE: Use dry chemicals, carbon dioxide, foam, or inert gas (nitrogen). Carbon dioxide and inert gas can displace oxygen. Use caution when applying carbon dioxide or inert gas in confined spaces.</p> <p>LARGE FIRE: Use foam, water fog, or water spray. Water fog and spray are effective in cooling containers and adjacent structures. However, water can cause frothing and/or may not extinguish the fire. Water can be used to cool the external walls of vessels to prevent excessive pressure, autoignition or explosion. DO NOT use a solid stream of water directly on the fire as the water may spread the fire to a larger area.</p>	<p>NFPA Class-III A combustible liquid</p> <p>Flash Point; Closed cup: 71°C (160°F). (Pensky-Martens.) Open cup: 94°C (201°F) (Cleveland.).</p> <p>Firefighters must use full bunker gear including NIOSH-approved positive pressure self-contained breathing apparatus to protect against potential hazardous combustion or decomposition products and oxygen deficiencies. Withdraw immediately from the area if there is a rising sound from a venting safety device or discoloration of vessels, tanks, or pipelines.</p>	<p>OSHA Physical Hazard Classification; Combustible</p> <p>Hazardous Combustion Products; Carbon dioxide, carbon monoxide, smoke, fumes, unburned hydrocarbons and oxides of sulfur and/or nitrogen.</p> <p>Special Properties; This material will release vapors when heated above the flash point temperature that can ignite when exposed to a source of ignition. In enclosed spaces, vapors can ignite with explosive force. Mists or sprays may burn at temperatures below the flash point</p>

Handling and Storage

Accidental Release /Spill Measures to Take	Precautions for Storage	Handling
<p>Do not touch damaged containers or spilled material unless wearing appropriate protective equipment. Slipping hazard; do not walk through spilled material. Stop leak if you can do so without risk. For small spills, absorb or cover with dry earth, sand, or other inert non-combustible absorbent material and place into waste containers for later disposal. Contain large spills to maximize product recovery or disposal. Prevent entry into waterways or sewers. In urban area, cleanup spill as soon as possible. In natural environments, seek cleanup advice from specialists to minimize physical habitat damage. This material will float on water. Absorbent pads and similar materials can be used. Comply with all laws and regulations.</p>	<p>Keep container tightly closed. Store in a cool, dry, well-ventilated area. Store only in approved containers. Do not store with oxidizing agents. Do not store at elevated temperatures or in direct sunlight. Protect containers against physical damage. Head space in tanks and other containers may contain vapor in the flammable range. Vapor may be ignited by static discharge. Storage area must meet OSHA requirements and applicable fire codes. Additional information regarding the design and control of hazards associated with the handling and storage of flammable and combustible liquids may be found in professional and industrial documents including, but not</p>	<p>A spill or leak can cause an immediate fire or explosion hazard. Keep containers closed and do not handle or store near heat, sparks, or any other potential ignition sources. Avoid contact with oxidizing agents. Do not breathe vapor. Use only with adequate ventilation and personal protection. Never siphon by mouth. Avoid contact with eyes, skin, and clothing. Prevent contact with food and tobacco products. Do not take internally. When performing repairs and maintenance on contaminated equipment, keep unnecessary persons away from the area. Eliminate all potential ignition sources. Drain and purge equipment, as necessary, to remove material residues. Follow proper entry procedures, including compliance with 29 CFR 1910.146 prior to entering confined spaces such as tanks or pits. Use gloves constructed of impervious materials and protective clothing if direct contact is anticipated. Provide ventilation to maintain exposure potential below applicable exposure limits. Use appropriate respiratory protection when</p>

	<p>limited to, the National Fire Protection Association (NFPA) publications NFPA 30 ("Flammable and Combustible Liquid Code"), NFPA 77 ("Recommended Practice on Static Electricity") and the American Petroleum Institute (API) Recommended Practice 2003, "Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents' (liquids)."</p>	<p>concentrations exceed any established occupational exposure level (See Section 8). Promptly remove contaminated clothing. Wash exposed skin thoroughly with soap and water after handling. Non equilibrium conditions may increase the fire hazard associated with this product. Always bond receiving containers to the fill pipe before and during loading. Always confirm that receiving container is properly grounded. Bonding and grounding alone may be inadequate to eliminate fire and explosion hazards. Carefully review operations that may increase the risks such as tank and container filling, tank cleaning, sampling, gauging, loading, filtering, mixing, agitation, etc. In addition to bonding and grounding, efforts to mitigate the hazards may include, but are not limited to, ventilation, inerting and/or reduction of transfer velocities. Always keep nozzle in contact with the container throughout the loading process. Do NOT fill any portable container in or on a vehicle. Do NOT use compressed air for filling, discharging or other handling operations. Product container is not designed for elevated pressure. Do not pressurize, cut, weld, braze solder, drill, or grind on containers. Do not expose product containers to flames, sparks, heat or other potential ignition sources. Empty containers may contain product residues that can ignite with explosive force. Observe label precautions. Consult appropriate federal, state and local authorities before reusing, reconditioning, reclaiming, recycling or disposing of empty containers and/or waste residues of this product.</p>
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Disposal/Transportation

Disposal Method	Transportation
<p>Hazard characteristic and regulatory waste stream classification can change with product use. Accordingly, it is the responsibility of the user to determine the proper storage, transportation, treatment and/or disposal methodologies for spent materials and residues at the time of disposition. Conditions of use may cause this material to become a "hazardous waste", as defined by federal or state regulations. It is the responsibility of the user to determine if the material is a "hazardous waste" at the time of disposal. Transportation, treatment, storage, and disposal of waste material must be conducted in accordance with RCRA regulations (see 40 CFR 260 through 40 CFR 271). State and/or local regulations may be more restrictive. Contact your regional US EPA office for guidance concerning case specific disposal issues. Empty drums and pails retain residue. DO NOT pressurize, cut, weld, braze, solder, drill, grind, or expose this product's empty container to heat, flame, or other ignition sources. DO NOT attempt to clean it. Empty drums and pails should be drained completely, properly</p>	<p>US DOT Status; A U.S. Department of Transportation regulated material. Proper Shipping Name; UN1268, Petroleum Distillates, n.o.s., Combustible Liquid [This product has a flash point temperature between 60.5° to 93°C (141° and 200°F). Bulk shipments of this product are regulated.] Hazard Class; Combustible liquid. Packing Group; Combustible liquid UN/NA Number; UN1268 Reportable Quantity; A Reportable Quantity (RQ) has not been established for this material. Emergency Response Guide No. ; 128 MARPOL III Status; Not a DOT "Marine Pollutant" per 49 CFR 171.8 Oil: The product(s) represented by this MSDS is (are) regulated as "oil" under 49 CFR Part 130. Shipments by rail or highway in packaging having a capacity of 3500</p>

bunged or sealed, and promptly sent to a reconditioner.	gallons or more or in a quantity greater 42,000 gallons are subject to these requirements. In addition, mixtures containing 10% or more of this product may be subject to these requirements.
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Regulations

TSCA Inventory; This product and/or its components are listed on the Toxic Substances Control Act (TSCA) inventory. **SARA 302/304 Emergency Planning and Notification;** The Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires facilities subject to Subparts 302 and 304 to submit emergency planning and notification information based on Threshold Planning Quantities (TPQs) and Reportable Quantities (RQs) for "Extremely Hazardous Substances" listed in 40 CFR 302.4 and 40 CFR 355. No components were identified. **SARA 311/312 Hazard Identification;** The Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires facilities subject to this subpart to submit aggregate information on chemicals by "Hazard Category" as defined in 40 CFR 370.2. This material would be classified under the following hazard categories: Fire, Acute (Immediate) Health Hazard, Chronic (Delayed) Health Hazard **SARA 313 Toxic Chemical Notification and Release Reporting;** This product contains the following components in concentrations above *de minimis* levels that are listed as toxic chemicals in 40 CFR Part 372 pursuant to the requirements of Section 313 of SARA: No components were identified. **CERCLA;** The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) requires notification of the National Response Center concerning release of quantities of "hazardous substances" equal to or greater than the reportable quantities (RQ's) listed in 40 CFR 302.4. As defined by CERCLA, the term "hazardous substance" does not include petroleum, including crude oil or any fraction thereof which is not otherwise specifically designated in 40 CFR 302.4. This product or refinery stream is not known to contain chemical substances subject to this statute. However, it is recommended that you contact state and local authorities to determine if there are any other reporting requirements in the event of a spill. **Clean Water Act (CWA);** This material is classified as an oil under Section 311 of the Clean Water Act (CWA) and the Oil Pollution Act of 1990 (OPA). Discharges or spills which produce a visible sheen on waters of the United States, their adjoining shorelines, or into conduits leading to surface waters must be reported to the EPA's National Response Center at (800) 424-8802. **California Proposition 65;** This material may contain the following components which are known to the State of California to cause cancer, birth defects or other reproductive harm, and may be subject to the requirements of California Proposition 65 (CA Health & Safety Code Section 25249.5): Naphthalene: <0.01% Ethylbenzene: <0.01% **New Jersey Right-to-Know Label;** Petroleum Oil (Two Cycle Engine Oil)

Toxicology Information

Highly-refined petroleum lubricant oils:

ORAL (LD50): Acute: >5000 mg/kg [Rat].

DERMAL (LD50): Acute: >2000 mg/kg [Rabbit].

Mineral oil mists derived from highly refined oils are reported to have low acute and sub-acute toxicities in animals. Effects from single and short-term repeated exposures to high concentrations of mineral oil mists well above applicable workplace exposure levels include lung inflammatory reaction, lipoid granuloma formation and lipoid pneumonia. In acute and sub-acute studies involving exposures to lower concentrations of mineral oil mists at or near current work place exposure levels produced no significant toxicological effects. In long term studies (up to two years) no carcinogenic effects have been reported in any animal species tested.

Distillates (petroleum), hydrotreated light:

ORAL (LD50): Acute: >5000 mg/kg [Rat].

DERMAL (LD50): Acute: >2000 mg/kg [Rabbit].

Studies on laboratory animals have associated similar materials with eye and respiratory tract irritation. Repeated exposure to elevated concentrations of hydrocarbon solvents can produce a variety of transient CNS effects (e.g., dizziness, headache, narcosis, etc). Studies on laboratory animals have shown similar materials to cause skin irritation after repeated or prolonged contact. Repeated direct application of similar materials to the skin can produce defatting dermatitis and kidney damage in laboratory animals. The most common effects observed in repeated dose animal studies with mineral spirits are kidney changes that are consistent with an alpha 2u-globulin-mediated process that is not regarded as relevant to humans. Certain studies have reported effects in the liver as well as hematological or urine

chemistry changes. In general, these effects have not to been shown to be dose-related.

Long chain carboxylic acid, reaction products with ethylene amine: s

ORAL (LD50): Acute: >5000 mg/kg [Rat].

DERMAL (LD50): Acute: >2000 mg/kg [Rabbit].

This material is not associated with significant toxicity to rats based on repeated dose studies up to 1000 mg/kg/day. Further, neither fertility nor reproduction were adversely affected in rats after administration up to 1000 mg/kg/day based on screening studies.

MSDS

Ecological Information

Ecotoxicity; Analysis for ecological effects has not been conducted on this product. However, if spilled, this product and any contaminated soil or water may be harmful to human, animal, and aquatic life. Also, the coating action associated with petroleum and petroleum products can be harmful or fatal to aquatic life and waterfowl.

Environmental Fate; An environmental fate analysis is not available for this specific product. Plants and animals may experience harmful or fatal effects when coated with petroleum products.

Petroleum-based (mineral) lubricating oils normally will float on water. In stagnant or slow-flowing waterways, an oil layer can cover a large surface area. As a result, this oil layer might limit or eliminate natural atmospheric oxygen transport into the water. With time, if not removed, oxygen depletion in the waterway may be sufficient to cause a fish kill or create an anaerobic environment.

ABBREVIATIONS

IARC: International Agency for Research on Cancer

NIOSH: National Institute of Occupational Safety and Health

NPCA: National Paint and Coating Manufacturers Association

NFPA: National Fire Protection Association

NTP: National Toxicology Program

OSHA: Occupational Safety and Health Administration

HMIS: Hazardous Materials Information System

EPA: US Environmental Protection Agency

AP: Approximately EQ: Equal >: Greater Than <: Less Than

NA: Not Applicable ND: No Data NE: Not Established

AIHA: American Industrial Hygiene Association

ACGIH: American Conference of Governmental Industrial Hygienists

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