

Material Safety Data Sheet

Section 1. Chemical Product and Company Identification

Product Name: TFL18 oil
Synonyms: Mineral oil based lubricant
Product Use: Mineral oil based lubricant for bearings

Supplier/ Manufacturer: **Permawick Company**
255 E. Brown Street, Suite 100
Birmingham, Michigan 48009
Tel(248) 433-3500 Fax:(248) 433-1824

Emergency Phone Numbers:

Monday - Friday, 8 am – 4:30 p.m. (EST) (812) 376-0703
Chemtrec 24 hr. : (800) 424-9300 (US and Canada)

Information Contacts:

For technical information, contact your sales representative.

Section 2. Composition / Information on Ingredients

This is not intended to be a complete compositional disclosure.

Hazardous classification:

	<u>CASRN</u>	<u>Percent (by wt.)</u>
1. Refined mineral oil	Proprietary	80-99%
2. Additives	Proprietary	<3.0%

See section 8 for Exposure Guidelines

Section 3. Hazards Identification

******Emergency Overview******

Potential Health Effects, Signs and Symptoms of Exposure:

Inhalation: Irritation possible. Fumes from heated material may cause irritation. Sprays or mists may be irritating to the upper respiratory tract.

Ingestion: May cause gastrointestinal irritation.

Eye Contact: May cause tearing, reddening, or swelling.

Skin

Contact: Prolonged or repeated contact may result in defatting, and/or drying of the skin which may lead to skin irritation and dermatitis. Harmful if absorbed through the skin.

Medical Conditions aggravated by exposure: None

Section 4. First Aid Measures

FIRST AID

Eye Contact: Immediately flush eyes with plenty of water. If irritation develops or persists seek medical attention immediately.

Ingestion: Call a physician or poison control center immediately. Only induce vomiting at the instruction of a physician.

Inhalation: Immediately remove victim to fresh air. If victim has stopped breathing give artificial respiration, preferably by mouth to mouth. Get medical attention immediately.

Skin

Contact: Wash affected area immediately with soap and plenty of water. Remove contaminated clothing and wash clothing before reuse. If symptoms occur obtain medical attention immediately.

Section 5. Fire Fighting Measures

Flash Point : 178°C

Method used: ASTM D92

Auto-ignition Point: >320°C (estimated)

Lower explosive limit: not available

Upper explosive limit: N/A

NFPA rating:
none

Other Flammable Properties:

Can burn in a fire and form carbon dioxide and some carbon monoxide.

Extinguishing Media: Water spray or fog, foam, dry chemical or CO2.

Fire Fighting Precautions and Procedure:

Firefighters should wear self - contained breathing apparatus (MSHA / NIOSHA approved or equivalent) in the positive - pressure mode with full protective gear especially when there is the possibility of exposure to smoke, fumes or hazardous decomposition of products. Frothing may occur and may be quite violent. Water spray carefully applied has frequently been used with success in extinguishing such fires by causing the frothing to occur only on the surface and this foaming action blankets and extinguishes the fire (NFPA 325M - 1984). Containers can build up pressure if exposed to heat (fire). Cool with water spray.

Section 6. Accidental Release Measures

Spill or Release Procedures:

Ventilate area. Absorb spill with inert material and place in appropriate chemical waste container. Obey any federal, state, and local laws and regulations. U.S. Coast Guard regulations require immediate reporting of spills that could reach any waterway including intermittent dry creeks. Do not flush into sewers discharging into domestic water systems or natural waterways. Use personal protective equipment (Sec.8). Spilled material will cause a slippery surface. Avoid trips and falls.

Section 7. Handling and Storage -

Handling:

Thoroughly wash after handling. Use adequate ventilation and avoid breathing vapor or mist. Avoid contact with eyes, skin, and clothing.

Storage:

Keep container tightly closed when not in use and during transport. Store at 0°C to 50°C. For containers or container lining use mild steel or HDPE. Avoid PVC lining

Section 8. Exposure Controls / Personal Protection

Exposure Guidelines:

<u>Component</u>	<u>CAS#</u>	<u>Exposure Limits</u>	
Hydrocracked Group II Paraffinic 5 mg/m ³ (oil mist)		Proprietary	OSHA PEL: ACGIH TLV-TWA: 5 mg/m ³ (oil mist) ACGIH: TLV-STEL: 10 mg/m ³ (oil mist)

Engineering Controls:

Adequate ventilation must be provided to control concentrations below exposure guidelines.

Personal Protective Equipment:

Eye/Face Protection:

Use chemical splash goggles or other approved eye protection.

Skin Protection:

Wear nitrile gloves to minimize skin contact.

Respiratory Protection:

Where exposure is likely to exceed acceptable criteria, use NIOSH/OSHA approve respiratory equipment. Respirators should be selected based on the form and concentration of contaminant in air with OSHA concentration of contaminant in air and in accordance with OSHA (29 CFR 1910.134).

Other Protective Equipment:

In order to identify additional Personal Protective Equipment requirements, the recommendation is made that a hazard assessment in accordance with the OSHA PPE Standard (29 CFR 1910.132) be conducted before product use.

Section 9. Physical and Chemical Properties

Pour Point:	-40°C (ASTM D-97)
Vapor Pressure:	< 0.05 mm Hg @ 20°C <0.1
Vapor Density - (Air = 1):	heavier than air
Specific Gravity: @ 60 / 60 [°] F	0.874
Density:	see specific gravity
pH:	Not available
Viscosity:	18cSt @40°C
Evaporation Loss	< 1.0@100°C for 22hrs
Solubility in water:	Negligible
Appearance & color:	Yellow liquid
Odor:	mild odor
% volatiles by volume:	Not available
Volatility by weight:	not available

Section 10. Stability and Reactivity

Stability: Stable under normal storage conditions.

Hazardous Polymerization: Will not occur during normal conditions

Conditions to avoid: Mechanical impact: none Static discharge: none

Material Incompatibility: Avoid chlorine, fluorine, acids and other strong oxidizers

Hazardous Decomposition Products:
Carbon Dioxide, Carbon Monoxide, Aldehydes, Under combustion conditions, oxides of the following elements will be formed: N/A

Section 11. Toxicological Properties

Oral Toxicity	The LD50 in rats is > 2000 mg/kg. Based on data from components or similar materials.
Eye Irritation	Moderate to strong eye irritation. Based on data from components or similar material.
Skin Irritation	Not expected to be a primary 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.
Dermal Toxicity	The LD50 in rabbits is > 2000 mg/Kg. Based on data from components or similar materials.
Inhalation Toxicity	Not expected to be a toxic inhalation hazard. Based on data available from components or similar materials.

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Respiratory Irritation If material is misted or if vapors are generated from heating, exposure may cause irritation of mucous membranes and the upper respiratory tract similar to that observed with mineral oil. Based on data from components or similar materials. Under good industrial hygiene practices where all exposure limits are observed, respiratory irritation should not be a problem.

Dermal Sensitization No data available to indicate product or components may be a skin sensitizer.

Inhalation Sensitization No data available to indicate product or components may be respiratory sensitizers.

Section 12. Ecological Information

Freshwater Fish Toxicity Not determined.

Freshwater Invertebrates Toxicity Not determined.

Algal Inhibition Not determined.

Saltwater Fish Toxicity Not determined.

Saltwater Invertebrates Toxicity Not determined.

Bacteria Toxicity Not determined.

Miscellaneous Toxicity Not determined.

-- ENVIRONMENTAL FATE--

Biodegradation Not readily biodegradable, Major constituents are expected to be biodegradable, but product contains components that may persist in the environment

Bioaccumulation Has potential to Bioaccumulation

Soil Mobility Not determined.

Section 13. Disposal Considerations

Disposal Method: All recovered material should be packaged, labeled, transported, and disposed or reclaimed in accordance with federal, state and local regulations. Incineration is the preferred method. Reclaim where possible.

Section 14. Transportation Information

U.S. Department of Transportation:

DOT proper shipping name: not regulated
DOT classification: not regulated
Not dangerous under UN, IMO, ADR/RID and IATA/ICAO codes

Section 15. Regulatory Information

MITI (JAPAN) all components are listed

Section 16. Other Information

HMIS Rating System: Health : 1 Flammability: 1 Reactivity: 0
Ratings key: 4 = Highest hazard , 0 = Lowest hazard, * = Chronic Health Hazard

Revision summary:

This is the first issue of this MSDS in the ANSI Z400.1 - 1993 format
Approval date : 1/10/97
Supersedes: 4/15/96

This information presented herein is believed to be factual as it has been derived from works and opinions of persons believed to be qualified experts; however, nothing contained in this information is to be taken as warranty or representation for which Permawick bears legal responsibility. Conditions of use and suitability of the product for particular uses are beyond our control. Any recommendations should be reviewed by the user in the specific context of the intended use to determine whether they are appropriate. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents.

ACGIH: American Conference of Governmental Industrial Hygienists
ANSI: American National Standards Institute
CASRN: Chemical Abstracts Service Registry Number
CERCLA: Comprehensive Emergency Response, Compensation and Liability Act
HMIS: Hazardous Material Identification System
IARC: International Agency for Resource and Conservation
NTP: National Toxicology Program
OSHA: Occupational Health and Safety Organization
PEL: OSHA Permissible Exposure Limit
RCRA: Resource Conservation and Recovery Act
SARA: Superfund Amendment Reauthorization Act
STEL: Short Term Exposure Limit
TLV: Threshold Limit Values
TSCA: Toxic Substances Control Act
TWA: Time Weighted Average