Material Safety Data Sheet

Section 1. Chemical Product and Company Identification

Product Name: 77 Permawick
Synonyms: Mineral oil based lubricant with engineered fiber
Product Use: Bearing lubricant

Supplier/ Manufacturer: **Permawick Company**
255 E. Brown Street
Birmingham, Michigan 48009
Tel(248) 433-3500 Fax:(248) 594-3433

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

Criteria for Listing Components in the Composition Section:

Carcinogens are listed at 0.1% or greater.
Components considered hazardous by OSHA are listed at 1.0 % or greater.
Non-hazardous components are listed at 3.0 % or greater.
This is not intended to be a complete compositional disclosure.

Hazardous classification:

	CASRN	Percent (by wt.)
1. Solvent-refined heavy paraffinic distillate	64741-88-4	40-66%
2. Hydrotreated Light Distillate	64742-47-8	20-30%
3. Permawick Fiber	Proprietary	15-20%

See Section 8 for exposure limits (if applicable).

See section 8 for Exposure Guidelines

Section 3. Hazards Identification

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

This compound is not an acute or physical hazard under normal conditions of use.
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 if discomfort occurs. 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 : 441°F Method used: ASTM D92
Auto-ignition Point: 620°F (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 intermittant 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, clothing.

Storage:

Keep container tightly closed when not in use and during transport. 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. Do not attempt to refill or clean container since residue is difficult to remove.

Section 8. Exposure Controls / Personal Protection

OCCUPATIONAL EXPOSURE LIMITS:
When mists/aerosols can occur, the following are recommended: 5 mg/m3 (as oil mist)- ACGIH Threshold Limit Value (TLV), 10 mg/m3 (as oil mist) - ACGIH Short Term Exposure Limit (STEL), 5 mg/m3 (as oil mist) - OSHA Permissible Exposure Limit (PEL)

NOTE: Limits shown for guidance only. Follow applicable regulations.
VENTILATION: If mists are generated, use adequate ventilation, local exhaust or enclosures to control below exposure limits.
RESPIRATORY PROTECTION: If mists are generated, and/or when ventilation is not adequate, wear approved respirator.
EYE PROTECTION: If eye contact is likely, safety glasses with side shields or chemical type goggles should be worn.
SKIN PROTECTION: Not normally required. When splashing or liquid contact can occur frequently, wear oil resistant gloves and/or other protective clothing. Good personal hygiene practices should always be followed.

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 impermeable 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

Typical physical properties are given below. Consult Product Data Sheet for specific details.
Appearance: liquid Color:
clear, light orange Odor:
mild
Odor threshold-ppm: Ne
Ph: Na
Boiling point c(f): > 293(560)
Melting point c(f): Na
Flash point c(f): 224(435) (ASTM d-93)
Flammability (solids): Ne
Auto flammability: Na
Explosive properties: Na
Oxidizing properties: Na
Vapor pressure-mm hg 20 c: < 0.1
Vapor density: > 2.0
Evaporation rate: Ne
Relative density, 15/4 c: 0.88
Solubility in water: negligible
Partition coefficient: > 3.5
Viscosity at 40 c, cst: 79.0
Viscosity at 100 c, cst: Ne
Pour point c(f): -21(-5)
Freezing point c(f): Ne
Volatile organic compound: Ne
DMSO extract, ip-346 (wt.%): <3, for mineral oil only

Na=not applicable Ne=not established d=decomposes
For further technical information, contact your marketing representative

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: Product does not decompose at ambient temps

Section 11. Toxicological Properties

---ACUTE TOXICOLOGY---

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 and synthetic 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. Overexposure to oil mist may result in oil droplet deposition and/or granuloma formation. For mineral base oils: Base oils in this product are severely solvent refined and/or severely hydro-treated. 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.

Section 12. Ecological Information

ENVIRONMENTAL FATE AND EFFECTS:

In the absence of specific environmental data for this product, this assessment is based on information for representative products. When released into the environment, adsorption to sediment and soil will be the predominant behavior. Available ecotoxicity data (LL50 >1000 mg/L) indicates that adverse effects to aquatic organisms are not expected from this product. Bioaccumulation is unlikely due to the very low water solubility of this product, therefore bioavailability to aquatic organisms is minimal. This product is expected to be inherently biodegradable.

Section 13. Disposal Considerations

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.

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.

Section 14. Transportation Information

U.S. Department of Transportation:

DOT proper shipping name: not regulated
DOT classification: not regulated

Section 15. Regulatory Information

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.
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 no chemicals subject to the supplier notification requirements of SARA (313) toxic release program.
The following product ingredients are cited on the lists below:

CHEMICAL NAME	CAS NUMBER	LIST CITATIONS
*** NO REPORTABLE INGREDIENTS ***		
--- 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

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

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.

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.

This information presented herein is believed to be factual as it has been derived form 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 Permissable 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

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