Material Safety Data Sheet

Section 1. Chemical Product and Company Identification

Product Name: 250 Permawick
Synonyms: Synthetic hydrocarbon and mineral oil based lubricant
Product Use: Bearing lubricant

Supplier/Manufacturer: **Permawick Company**
255 E. Brown Street, Suite 100
Birmingham, Michigan 48009
Tel (248) 433-3500 Fax (248) 594-3433

Emergency Phone Numbers*:*

(812) 376-0703 -- Monday - Friday, 8 am – 4:30 p.m. (EST) Chemtrec 24 hr. : (800) 424-9300 (U.S. 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	10 - 28
2.	Hydrotreated heavy paraffinic distillate	64742-54-7	20 - 33
3.	Zinc alkyldithiophosphate	68649-42-3	1 - 2.99
4.	Diisodecyl azelate	28472-97-1	1 – 30
5.	Permawick Fiber	Proprietary	15-20%

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. Under fire conditions there is a possibility of toxic phosphorous oxide vapors being released.

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: Irritant. 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:	415 F	Method used:	ASTM D92
Auto-ignition Point:	620 F (estimated)		
Lower explosive limit:	not available	Upper explosive limit:	not available
NFPA rating:	none		

Other Flammable Properties:

If in a fire can form oxides of carbon, sulfur, and nitrogen with small amounts of aromatic and aliphatic hydrocarbons. See Sec. 10.

Extinguishing Media: Water spray or fog, foam, dry chemical or CO_2.

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.

Section 8. Exposure Controls/Personal Protection

Exposure Guidelines:

Component	*CAS#*	*Exposure Limits*
Solvent - refined heavy paraffinic distillate	64741-88-4	OSHA PEL: 5 mg/m^3 (oil mist) ACGIH TLV-TWA: 5 mg/m^3 (oil mist) ACGIH: TLV-STEL: 10 mg/m^3 (oil mist)
Hydrotreated heavy paraffinic distillate (oil mist)	64742-54-7	OSHA PEL: 5 mg/m^3 ACGIH TLV-TWA: 5 mg/m^3 (oil mist) ACGIH TLV-STEL: 10 mg/m^3 (oil mist)
Diisodecyl Azelate	28472-97-1	None noted
Zinc alkyldithiophosphate	68649-42-3	OSHA PEL: 5 mg/m^3 (oil mist) ACGIH 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 impermeable gloves to minimize skin contact.

Respiratory Protection: Where exposure is likely to exceed acceptable criteria, use NIOSH/ OSHA approved 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

Boiling Point	:	>600 F @ 760 mm Hg pressure
Pour Point	:	-50 F (ASTM D-97)
Vapor Pressure	:	< 0.05 mm Hg @ 300 F
Vapor Density (Air = 1)	:	heavier than air
Specific Gravity @ 60/60 F	:	0.955
Density	:	see specific gravity
pH	:	Not available
Viscosity	:	263 SUS @ 100 F 60 SUS @ 210 F
Evaporation Rate	:	slower than Butyl Acetate
Solubility in water	:	Negligible
Appearance and color	:	Amber viscous liquid
Odor	:	mild odor
% volatiles by volume	:	0
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, hydrogen sulfide, alkyl mercaptans, and sulfides. Under combustible conditions, oxides of the following elements will be formed: Phosphorus,

sulfur, zinc, nitrogen. Small amounts of aromatic and aliphatic hydrocarbons.

Section 11. Toxicological Properties

Inhalation: Testing not conducted.
Ingestion: LD50: > 15 g/kg (rat) - Nontoxic
Dermal: LD50: > 5 g/kg (rabbits) - Nontoxic
Mutagenicity: No data available.

Carcinogens: no ***NTP*:** no ***IARC:*** no

Other Toxicological Information:

Based on testing of similar products by dermal application to rats 5 days/week for 90 days at doses significantly higher than those expected during industrial exposure, evaluations including microscopic examination of internal organs and clinical chemistry of body fluids, showed no adverse effects.

The base oils in this product are severely solvent refined and/or severely hydrotreated. Two year mouse skin painting studies of similar oils showed no evidence of carcinogenic effects.

Section 12. Ecological Information

Ecological Fate: No data available

Environmental Effects:
96 hr. LC50 (Rainbow trout) = 0.75 (0.54 - 1.04) mg/l (ICG / T79 - 069)
96 hr. LC50 (Fathead minnow) =100 mg/l (ICG/T79 - 069)
48 hr. LC50 (Daphnia Magna) = 0.27 mg/l (ICG/T79 - 069)
96 hr. LC50 (Bluegill Sunfish) = 7000 mg/l (ICG/T79 - 069)

Section 13. Disposal Considerations

Disposal Method: All recovered material should be packaged, labelled, 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

Section 15. Regulatory Information

U.S. Federal Regulations

OSHA:

Preparation of this document is in accordance with the MSDS requirements of the OSHA Hazard Communication Standard.

SARA Section 311 / 312:
Hazard classification: none

SARA Section 302:
Extremely hazardous substances: none

SARA Section 313:
This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372:
From 0.4-0.45 % , Zinc compounds; contains < 0.05 % as Zinc.

TSCA:
This product or its components are listed in the TSCA inventory.

This product contains n-methyl pyrrolidine (CAS 872-50-4) which is currently undergoing review and testing under TSCA Section 4. Notification to the U.S. EPA Office of Toxic Substances is required prior to export of this material from the United States.

CERCLA-*Hazardous Materials:* None reported

OSHA *Hazard Communication Standard*: Contains a component listed by OSHA.
Contains a component listed by ACGIH.

RCRA:
The unused product is not specifically listed by the E.P.A. as a hazardous waste (40 CFR, Part 261D). The used product may be regulated by state or local laws.

State Regulations - None

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: 01/10/97
Supersedes: 04/15/96

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*