Material Safety Data Sheet

Section 1. Chemical Product and Company Identification

Product Name: Permawick 420PP-820
Synonyms: Mineral oil based lubricant with engineered natural fiber
Product Use: Bearing Lubricant

Supplier/ Manufacturer:

Permawick Company
255 E. Brown Street, Suite 100
Birmingham, Michigan 48009
Phone: (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

This is not intended to be a complete compositional disclosure.

Hazardous classification:

	CASRN	Percent (by wt.)
1. Paraffinic base oil	Proprietary	60 - 80%
2. Natural Fiber	Proprietary	15 – 20%
2. Zinc alkyldithiophosphate	Proprietary	0.5-0.9%
3. Diphenylamine	122-39-4	0.1-0.4%
4. Molybdenum Polysulfide Alky dithiocarbamide complex	Proprietary	0.4-0.8%

See section 8 for Exposure Guidelines

Section 3. Hazards Identification

****Emergency Overview****

May cause chronic health effects based on data with lab animals. 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: 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 : 220°C Method used: ASTM D92
Auto-ignition Point: 350°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.

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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
Hydro-cracked Group II Paraffininc 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)
Hydrogen Sulfide		ACGIH TLV-STL 15ppm ACGIH TLV-TWA 10ppm

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 (420 Oil Only)

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	0.83 - 0.87
Density:	see specific gravity
pH:	Not available
Viscosity:	13.5- 15.5 Cst@ 100°C 90-100Cst @ 40°C
Evaporation Rate:	slower than Butyl Acetate
Evaporation Loss (Ethyl Ether = 1):	< 1.0@100°C for 22hrs 1000x slower
Solubility in water:	Negligible
Appearance & color:	Amber viscous 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

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Oral Toxicity	The LD50 in rats is > 5000 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.
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.

-- CHRONIC EXPOSURE--

Chronic Toxicity	Repeated swallowing of a component contained in this product may cause destruction of the stomach lining. Repeated dose toxicity studies in the rat with a component contained in this product revealed liver and thyroid enlargement. These effects were considered adaptive in nature and were reversible upon cessation of treatment.
Carcinogenicity	This product is formulated with mineral oils which are considered to be severely refined and not considered to be carcinogenic under IARC. All of the oils in this product have been demonstrated to contain less than 3% extractables by the IP 346 test.
Mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Reproductive Toxicity	No data available to indicate either product or components present at greater than 0.1% that may cause reproductive toxicity.
Teratogenicity	There are conflicting reports in the literature concerning the teratogenicity of diphenylamine. However, because the predominant route of exposure was oral (via gavage or diet) and relatively high dose levels were administered in the studies where positive effects were observed, it would not seem to present a workplace hazard.

Section 12. Ecological Information

Ecotoxicity	High concentrations of component additives may have a long tern adverse effect in marine environments.
Freshwater	Not determined

Invertebrates Toxicity	
Algal Inhibition	No data.
Saltwater Fish Toxicity	Not determined.
Saltwater Invertebrates Toxicity	Not determined.
Bacteria Toxicity	Not determined.
Miscellaneous Toxicity	Not determined.

-- ENVIRONMENTAL FATE--

Biodegradation	A component –expected to be inherently biodegradeable
Bioaccumulation	Not dtermined
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
AIR (IATA)	not regulated
SEA (IMDG)	not regulated

Section 15. Regulatory Information

National Chemical Inventory Listings:
AICS, IECSC, DSL, EINCS, ELINCS, ENCS, KECI, PICCS, TSCA
EPCRA: This material contains no extremely hazardous materials

U.S. TSCA Inventory	All components of this material are on the US TSCA Inventory or are exempt.
Other TSCA Reg.	Section 8d N/A Section 8d N/A
SARA Ext. Haz. Subst.	This product does not contain greater than 1.0% of any chemical substance on the SARA Extremely Hazardous Substances list.
SARA Section 313	
Toxic Release Inventory	Zinc Compounds at less than 1%
	Diphenylamine is list on TSCA 4, TSCA 12b, PA RTK
	Trace metal impurities is list on CA P65 CARC, CA P65 REPRO

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TDG Regulated Limit.	None known.
CERCLA Hazardous Substances	None known.
Cal. Prop. 65	This product contains the following chemical(s) known to the state of California to cause cancer and/or birth defects based on maximum impurity levels of components: < 0.1 ppm arsenic < 0.1 ppm cadmium < 0.1 ppm lead
U.S. Fuel Registration	Not applicable.
U.S. Dept of Agriculture	This product has not been filed with the USDA to support H2 approvals.
NSF Nonfood Compounds Registration	This product has not been filed with the NSF to support H1 or H2 approvals.
EEC EINECS	All components comply with the EU 7th Amendment and are approved for EU sales. Permawick must maintain records of all imports of this product into the EU. Third party importers are asked to report every import to the Permawick company

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 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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