SAFETY DATA SHEET

Pathfinder Lubricants Inc. (9 pages)

SECTION 1 – Chemical Product and Company Identification

Product:	TROPIX-EP2
Product Use:	Multi-purpose lubricating grease
Distributor:	Pathfinder Lubricants Inc. 12118 Rowan Place, Unit 1118, Richmond, British Columbia, Canada, V6V 2S6
Emergency: Telephone no.	CANUTEC: 613-996-6666 (call collect) (CANUTEC)
SDS prepared by: SDS prepared on:	Jimmy Tan, Telephone no. 604-273-9969; 1-800-363-6457 March 1, 2019

SECTION 2 – Hazards Identification

GHS Classification	Not a hazardous substance or mixture
GHS label elements	Not a hazardous substance or mixture
Other hazards	None known

SECTION 3 – Composition/Information on Ingredients

Chemical name	CAS no.	Concentration (%w/w)
Distillates (petroleum), solvent refined heavy paraffinic	64741-88-4	>= 50 - < 70
Calcium carbonate	471-34-1	>= 10 - <20
Benzenesulfonic acid, C10-16-alkyl derivs., calcium salts	68584-23-6	>= 1 - < 5
Calcium dodecylbenzenesulphonate	26264-06-2	>= 1 - < 3
Sulfonic acids, petroleum, calcium salts	61789-86-4	>= 1 - < 5

SECTION 4 – First Aid Measures

SKIN CONTACT: Wash off with warm water and soap. If skin irritation persists call a physician.

EYE CONTACT: Immediately flush eye(s) with plenty of water. If symptoms persist, call a physician.

INHALATION: If breathed in, move person into fresh air. If symptoms persist, call a physician.

INGESTION: Do NOT induce vomiting. Clean mouth with water and drink afterwards plenty of water. If symptoms persist, call a physician. Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed : Eye irritation

Notes to physician: For specialist advice physicians should contact the Poisons Information Service.

SECTION 5 – Fire Fighting Measures

Suitable extinguishing media	Small fires	Carbon dioxide (CO_2), Dry chemical, Dry sand
	Large fires	Foam, Water mist.
Unsuitable extinguishing media	High volume water jet	
Special hazards during fire fighting	Burning produces noxious and toxic fumes	
Further information	Fight fire with normal precautions from a reasonable distance. Keep away from fire, sparks and heated surfaces. Cool containers/tanks with water spray. Prevent fire extinguishing water from contaminating surface water or the ground water system	
Special protective equipment for firefighters	In the event of fire, wear self-contained breathing apparatus and full protective flameproof clothing.	

SECTION 6 – Accidental Release Measures

Personal precautions, protective equipment and emergency procedures	Wear suitable protective clothing, gloves and eye/face protec tion. Material can create slippery conditions. Use non-slip safety shoes in areas where spills or leaks can occur.
Environmental precautions	Prevent product from entering drains. Do not flush into surface water or sanitary sewer system.
Methods and materials for containment and cleaning up	Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).

	Shovel into suitable container for disposal. Large spills should be collected mechanically (remove by pumping) for disposal.

SECTION 7 – Handling and Storage

Handling procedures	Handle and open container with care. Heat only in areas with appropriate exhaust ventilation. Protect from contamination. Avoid contact with skin, eyes and clothing. Wear suitable protective equipment. Wash thoroughly after handling. Keep container closed when not in use.
Storage requirements	Keep container tightly closed in a dry and well-ventilated place. Store at room temperature in the original container.

SECTION 8 – Exposure Control/ Personal Protection

Components with workplace control parameters

Components	CAS no.	Value type (Form of exposure)	Control parameters/ Permissible concentration	Basis
We are not aware of any national exposure limit				
Distillates (petroleum), solvent refined heavy paraffinic	64741-88-4	TWA (Mist)	0.2 mg/m3	CA BC OEL
		TWA	0.2 mg/m3	CA BC OEL
		TWA (Mist)	1 mg/m3	CA BC OEL
		TWA (Mist)	5 mg/m3	CA AB OEL
		STEL (Mist)	10 mg/m3	CA AB OEL
		TWAEV (Mist)	5 mg/m3	CA QC OEL
		STEV (Mist)	10 mg/m3	CA QC OEL
		TWA (Mist)	1 mg/m3	CA BC OEL
Calcium carbonate	471-34-1	TWAEV (total dust)	10 mg/m3	CA QC OEL
		TWA	10 mg/m3 (Calcium)	CA AB OEL

		TWA	10 mg/m3 (Calcium carbonate)	CA AB OEL

Engineering controls	Effective exhaust ventilation system. Ensure that eyewash stations and safety showers are close to the workstation location.
Personal protective equipment	
Respiratory protection	Breathing apparatus needed only when aerosol or mist is formed. Respirator with combination filter for vapour/particulate (EN141)
Hand protection	Chemical resistant protective gloves
Eye protection	Safety glasses with side shields
Skin and body protection	Long sleeved clothing Protective suit
Hygiene measures	Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes and clothing. Wear suitable gloves and eye/face protection. When using do not eat, drink or smoke. Wash thoroughly after handling. Keep working clothes separately. Remove and wash contaminated clothing before re-use.

SECTION 9 – Physical and Chemical Properties

Appearance	Paste	Colour	Green
Odour	Mild, oily	Odour threshold	No data available
pH	Not applicable	Melting point	No data available
Boiling point/range	No data available	Flash point	>180°C
Evaporation rate	Not applicable	Upper explosion limit	No data available
Lower explosion limit	No data available	Vapour pressure	Not applicable
Relative vapour density	Not applicable	Relative density	No data available
Density	0.95-1.05 g/cm3 (25°C)	Solubility-water	Negligible
Solubility-other solvents	Partly soluble Solvent: organic solvents	Partition coefficient n-octanol/water	No data available
Auto-ignition temperature	No data available	Decomposition temperature	No data available
Viscosity, kinematic	Not applicable	Self-Accelerating decomposition temperature	Method: No information

		(SADT)	available
Oxidizing potential	No information available		

SECTION 10 – Stability and Reactivity

Chemical stability	No decomposition if stored and applied as directed
Incompatible materials	Oxidizing agents
Reactivity	No dangerous reactions known under conditions of normal use
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Heat, flames and sparks. Contamination

SECTION 11 – Toxicological Information

Acute Toxicity:

Product: Acute toxicity estimate: > 5,000 mg/kg
(Calculation method)

Components: **Calcium carbonate:**
Acute oral toxicity: LD50 (Rat): 6,450 mg/kg

Calcium dodecylbenzenesulphonate:
Acute dermal toxicity: LD50 (Rabbit): >4,199 mg/kg
(Based on data obtained from similar substances)

Sulfonic acids, petroleum, calcium salts:
Acute oral toxicity: LD50 (Rat male and female): >5,000 mg/kg
(Method: OECD Test Guidelines 401. GLP: yes)
Acute dermal toxicity: LD50 (Rabbit male and female): >4,000 mg/kg
(Method: OECD Test Guidelines 402. GLP: yes)

Skin corrosion/irritation:

Components: **Calcium carbonate:**
Rabbit: no skin irritation

Calcium dodecylbenzenesulphonate:
Rabbit: exposure time 4h. Skin irritation
(Information given is based on data obtained from similar substances)

Serious eye damage/ eye irritation:

Product: No eye irritation
(Information given is based on data obtained from similar substances)

Components:	**Calcium carbonate:** Rabbit: no eye irritation **Calcium dodecylbenzenesulphonate:** Rabbit: risk of serious damage to eyes. (Information given is based on data obtained from similar substances)
Respiratory or skin sensitization:	
Product:	Does not cause skin sensitization (Information given is based on data obtained from similar substances)
Components:	**Benzenesulfonic acid, C10-16-alkyl derivs., calcium salts:** Probability or evidence of low to moderate skin sensitization rate in humans. **Sulfonic acids, petroleum, calcium salts:** Probability or evidence of low to moderate skin sensitization rate in humans.
Reproductive toxicity:	
Components:	**Calcium carbonate:** Rat: oral: No toxicity to reproduction. No effects on or visa lactation.
Repeated dose toxicity:	
Product:	Information not available
Aspiration toxicity:	
Product:	No aspiration toxicity classification.
Further information:	
Product:	The product itself has not been tested.

SECTION 12 – Ecological Information

Ecotoxicity:	
Product:	Toxicity to fish: No data available.
Components:	**Calcium dodecylbenzezsulphonate:** Toxicity to fish: LC50 (Pimephales promelas): 22 mg/L. Exposure time 96 h. Static test with no analytical monitoring. Method: OECD Test Guideline 203, GLP: no. Information given is based on data obtained from similar substances. Toxicity to daphnia and other aquatic invertebrates: EC50 (Daphnia magna): 2.5mg/L. Exposure time: 48h. Static test. Method: OECD Test Guideline 202, GLP: no.

	Sulfonic acids, petroleum, calcium salts Toxicity to fish: LC50 (Cyprinodon variegatus): >10,000 mg/L. Exposure time 96 h. Static test. Method: OECD Test Guideline 203, GLP: yes. Toxicity to daphnia and other aquatic invertebrates: EC50 (Daphnia magna): >100mg/L. Exposure time: 48h. Static test. Method: OECD Test Guideline 202, GLP: yes. Toxicity to algae: EbC50 (Green algae): >100 mg/L Exposure time 72h. Static test. No analytical monitoring. Method: OECD Test Guideline 201. GLP: yes. ErC50 (Green algae): >100mg/L. Static test. No analytical monitoring. Method: OECD Test Guideline 201. GLP: yes.
Persistence and degradability:	
Product:	No data available.
Components:	**Calcium dodecylbenzenesulphonate:** Readily biodegradable. Concentration: 10 mg/L. Testing period: 28 d. Kinetic: 28d. 73%. Information given is based on data obtained from similar substances. **Sulfonic acids, petroleum calcium salts:** Not readily biodegradable. Aerobic. Inoculum: activated sludge. Biodegradation: 8.6%, Exposure time: 28d. GLP: yes.
Bioaccumulative potential:	
Product:	**No data available.**
Components:	**Calcium dodecylbenzenesulphonate:** Bioaccumulation: Species: Lepomis macrochrirus. Bioconcentration factor (BCF): 104. Exposure time: 21d. GLP: no.
Mobility in soil:	
Product:	No data available.
Other adverse effects:	
Product:	Results of PBT and vPvB assessment: This mixture contains no substances considered to be persistent, bioaccumulating and toxic (PBT)
Additional ecological information: The product itself has not been tested.	