

MATERIAL SAFETY DATA SHEET

Tire Derived Oil

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: Tire Derived Oil
Chemical Synonym: Tire Oil
Chemical Family: Petroleum Product
Chemical Formula: N/A
Manufacturer: Emergency Telephone Numbers:
Conrad Industries Health: 360-748-4924
121 Melhart Rd. Transportation/Chemtrec: 800-424-9300
Chehalis, WA 98532 MSDS Assistance: 360-748-4924
NFPA classification: health/2/hazardous, fire/3/flammability, reactivity/0/stable
Date of MSDS preparation or update: 11/15/03

2. COMPOSITION/INFORMATION ON INGREDIENTS

Mixture of saturated and unsaturated hydrocarbons.

PEL - Permissible Exposure Limit			OSHA		WA State		ACGIH		
Chemical Constituents	Cas #	% by Weight	TWA	STEL	TWA	STEL	TWA	STEL	IDLH
Benzene	71-43-2	1-5	1	5	1	5	10	NA	3,000
Ethyl Benzene	100-41-4	5-10	100	NA	100	125	100	125	2,000
Naphthalene	91-20-3	<5	10	NA	10	15	10	15	500
n-Pentane	109-66-0	<5	1,000	NA	600	750	600	750	5,000
Styrene	100-42-5	3-6	100	NA	50	100	50	100	5,000
Toluene	100-88-3	7-10	100	150	100	150	50	NA	2,000

TWA, STEL, IDLH in parts per million

TLV - Threshold Limit Value - maximum full time concentration

TWA - Time Weighted Average - 8 hour period

STEL - Short Term Exposure Limit - 15 minutes/60 minute interval/4 times per day maximum

IDLH - Immediate Danger to Life and Health - 30 minute exposure threshold

Styrene: 200 ppm ceiling; 600 ppm maximum peak for 5 minutes in any 3 hours

Toluene: 300 ppm ceiling; 500 ppm maximum peak for 10 minutes in any 3 hours

3. HAZARDS IDENTIFICATION

Tire derived oil is a dark brown liquid with a strong unique and recognizable odor. The degree of airborne exposure is dependent upon the area open for vapors to escape and the temperature of the oil.

Eyes: ACUTE - Mild to severe irritation, redness, burning, blurred vision. CHRONIC - Not determined

Skin: ACUTE - Mild irritation, burning, drying, flaking, staining. CHRONIC - Not determined

Inhalation: ACUTE - Over exposure can cause dizziness, disorientation, headache, nausea, fatigue and lung congestion. CHRONIC - Continued inhalation can adversely affect liver, kidney and lungs.

Ingestion: ACUTE - Over exposure can cause irritation to mouth, throat, stomach, headache, gastrointestinal irritation, narcosis, vomiting, diarrhea, jaundice, coma and hemolytic anemia. CHRONIC - Benzene is a carcinogen. Benzene exposure increased the incidence of leukemia in exposure levels of 210 to 650 ppm. Daily mean styrene exposure levels of 10 to 300 ppm resulted in adverse effects on Visio-motor speed, memory and intellectual function. Toluene exposure of pregnant employees has resulted in adverse fetal developmental effects.

4. FIRST AID MEASURES

Eyes: Flush with eye solution or large amounts of water. Continue until irritation subsides. Get medical attention immediately.

Skin: Immediately wash with warm water and soap. Remove contaminated clothing. Get medical attention if symptoms occur. Wash contaminated clothing before reuse.

Inhalation: Remove to fresh air. Get medical attention if symptoms occur.

Ingestion: Seek medical attention. Do not induce vomiting. Do not give mouth-to-mouth.

5. FIRE FIGHTING MEASURES

Flash Point: 60°F

Method: Pensky Martens Closed Cup

Flammability Limits: Not Determined

Special Fire Fighting Procedures: Wear protective gear including oxygen-breathing apparatus.

Extinguishing Media: Foam, CO₂, dry chemical, water fog to control vapors. Stop flow of oil.

Unusual Fire And Explosion Hazard: Not Determined.

6. ACCIDENTAL RELEASE MEASURES

Small Spill Control and Recovery: Oil absorbent should be used to contain and soak up oil. Do not use a combustible material. Wear

appropriate personal protective equipment.

Large Spill Control and Recovery: Safely eliminate the source of the leak. Eliminate ignition sources. Prevent runoff from entering storm sewers and ditches. Water fog or cover can be used to control vapors.

7. HANDLING AND STORAGE

Stability: Material is stable under normal storage and handling situations.

Incompatibility: Avoid contact with acids and oxidizing agents.

Hazardous Decomposition Products: CO, H₂S

Hazardous Polymerization: Not Determined.

Storage: Store in tight sealed container at ambient temperature in well ventilated areas. Do not store near flame or heat.

Handling: Only in well ventilated areas. Keep container closed when not dispensing product. Avoid body contact. Use grounding and bonding devices when transferring material.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls: Use process enclosures, explosion proof local exhaust and general ventilation to maintain airborne concentrations below the applicable exposure limits. Store away from heat and flame.

Administrative Controls: Training must be conducted before routine and non-routine handling.

Respiratory Protection: Maintain atmospheric levels below exposure limits. SCBA or respirator with organic vapor cartridge when liquid is warm.

Protective Equipment: Apron or overalls to prevent staining and exposure to skin.

Protective Gloves: Rubber nitrile, viton.

Eye Protection: Goggles, safety glasses, face shield. Full face respirator with organic vapor cartridge if eye irritation occurs.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Dark Brown
Physical State :	Liquid
Odor:	Aromatic, Pungent
Ph:	4.7
Specific Gravity(H ₂ O=1):	0.958
Viscosity:	45.8@100F
Volatiles By Vol. %:	60%
Boiling Point:	185 °F.
Vapor Pressure(mm/hg):	Not Determined
Vapor Density(air=1):	Not Determined
Flash Point:	60 °F.
Auto Ignition Temp:	800 °F.
Evaporation Rate(Butyl Acetate=1):	Not Determined
Solubility in Water:	Not Determined

10. STABILITY AND REACTIVITY

Chemical stability: Stable under normal storage and handling situations.

Incompatibility: Avoid contact with acids and oxidizing agents.

Hazardous decomposition products: Carbon Monoxide

Hazardous polymerization: Not determined

11. TOXICOLOGY/CARCINOGENITY INFORMATION

Toxicology: Nervous system, blood disorders, liver and kidney damage.

Eyes: Mild to severe irritation.

Skin: Lethal limits at dermal LD₅₀s in rabbits: >8,263 mg/kg benzene, 17,800 mg/kg ethyl benzene, >20 gm/kg naphthalene, and 14 mg/kg toluene.

Inhalation: LC₅₀s for rats: 10,000ppm benzene, 4,000 ppm ethyl benzene, 126,667ppm 1.3-butadiene, 24hm/m³ styrene. LC₅₀s for mice: 9,980 ppm benzene, 400 ppm toluene, 115,111ppm 1.3-butadiene .

Ingestion: LD₅₀s for rats: 930 mg/kg benzene, 3,500 mg/kg ethyl benzene, 1,250 mg/kg naphthalene, 5,000 mg/kg styrene. LD₅₀s for mice: 4,700 mg/kg benzene, 354 mg/kg naphthalene, 316 mg/kg styrene, 1.12 mg/kg toluene.

Subchronic: Rats exposed to 13.6, 136, 408, 680 mg/kg/day ethyl benzene in 182-day oral bioassay indicate liver and kidney damage at and above 408 mg/kg/day. Rat oral exposure to 0, 312, 625, 1,250, 2,500, 5,000 mg/kg toluene for 13 weeks. Death occurred within one week at 5,000 dose and within test period at 2,500. No deaths occurred at lower dosages. Toxic affects included prostration, hyperactivity, ataxia, piloerection, lacrimation, excessive salivation, body tremors.

12. ECOLOGICAL INFORMATION

Ecotoxicological information: Acute lowest effect levels for freshwater organisms: 5,300 ug/L benzene, 32,000 ug/L ethyl benzene, 2,300 ug/L naphthalene, 17,500 ug/L toluene. Product has the potential to cause large fish kills if released in substantial quantities to waterways (i.e., potentially dangerous to aquatic organisms). However, long term or chronic effects are not expected because of the anticipated short half-life of the product in the environment.

Distribution: The chemical constituents that comprise this product are volatile in nature and are expected to be readily released to the atmosphere from water and soil. It is expected that the bio concentration potential of the product is low; therefore, retention in plants and animals is expected to be minimal.

Chemical fate information: Degradation is expected in the environment. Biodegradation is expected if the conditions are favorable.

13. DISPOSAL CONSIDERATIONS

RCRA hazardous waste if discarded (D001 or D018). A determination will have to be made by the end user to whether the waste is D001 or D018. If waste is D108, it may be subject to land disposal restrictions under 40 CFR 268, "Land Disposal Restriction". Waste must be disposed of in accordance with federal, state, and local environmental control regulations.

Empty containers retain residue and can be dangerous; therefore, they must be handled with care. Empty drums should be completely drained, properly closed and promptly returned to a drum reconditioner. All other containers should be disposed of in an environmentally safe manner in accordance with governmental regulations.

Do not pressurize, cut, weld, braze solder, drill, grind or expose to heat, sparks, static electricity or other sources of ignition; they may cause injury or death.

14. TRANSPORTATION INFORMATION

DOT Shipping name:	Flammable Liquid, n.o.s.
Technical shipping name:	Tire Derived Oil
DOT Hazard class:	3
UN/NA Number:	UN 1993
DOT Label:	Flammable Liquid
DOT Placard:	Flammable
Product Label:	Tire Derived Oil
Packing Group:	II

15. REGULATORY INFORMATION

OSHA Status: This product is considered hazardous under the criteria of the Federal OSHA Hazard Communications Standard 29 CFR 1910.1200.

CERCLA Reportable quantities:

Chemical Constituents:	% by weight .	RQ(lbs)
Benzene	1-5	10
Ethyl Benzene	5-10	1,000
Naphthalene	<5	1,000
n-Pentane	<5	none
Styrene	15-25	1,000
Toluene	8-14	1,000

Extremely hazardous substances: None

Hazard categories: Immediate health hazard; fire hazard.

Toxic Chemicals: Benzene, Ethyl Benzene, Naphthalene, Styrene, Toluene.

RCRA status: RCRA hazardous waste if discarded (D001 or D018).

16. OTHER INFORMATION

Conrad Industries, Inc. provides the information in this MSDS in good faith. The MSDS represents an evaluation of Tire Derived Oil on available analytical, OSHA and industrial hygiene information. No evaluation of potential additive or synergistic effects were considered in the development of this MSDS. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for particular purpose or use.