Kurt J. Lesker Company
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MATERIAL SAFETY DATA SHEET

Trade Name: TKO 19

Date: August 3, 1998

CAS Number: 64741-88-4
Common name: Lubricating Oil
Commodity Code: 34-105

General Information: (412) 233-4200
Customer Service: (800) 245-1656
CHEMTREC Emergency: (800) 424-9300

MATERIAL HAZARD EVALUATION
(Per OSHA Hazard Communication Standard [29 CFR 1910.1200])

Health Precautions: Protect exposed skin from repeated or prolonged exposure.

Safety Precautions: This Material will burn when heated. Do not store material in open or unmarked containers.

HMIS Code: (Health: 0) (Flammability: 1) (Reactivity: 0)

SECTION 1.0 -- GENERIC COMPOSITION / COMPONENTS

Component	CAS#	%	Hazard Data	
Refined Petroleum Oil(s)	64741-88-4	100	Oral LD_{50}(rat):	>5g/kg
			Skin and Eye:	Essentially non-irritating
			Inhalation LC_{50}/4H (rat):	>5000mg/M^3
			Hazard data are based upon similar components	

SECTION 2.0 -- PHYSICAL DATA

PHYSICAL HAZARD CLASSIFICATION (per 29 CFR 1910.1200)

Combustible:	No	Flammable:	No	Pyrophoric:	No
Compressed Gas:	No	Organic Peroxide:	No	Reactivity:	No
Explosive:	No	Oxidizer:	No	Stable:	Yes

Boiling Point, 760 mm Hg, °C (°F0:	~383 (~721)
Specific Gravity (60//60°F) (H_20) = 1:	0.88
Vapor Density (Air = 1):	> 1
% Volatiles by Volume:	Negligible
Vapor Pressure, mm Hg (25°C):	~1.5×10^{-5}
Solubility in Water:	Negligible
Evaporation Rate (n- butyl acetate = 1):	< 1
pH of Undiluted Product:	NA
Appearance and Odor:	Amber liquid, mild petroleum odor

SECTION 3.0 -- FIRE AND EXPLOSION DATA

Flash Point, OC, °C (°F):	232 (450)
Flash Point, CC, °C (°F):	228 (441)
Auto-ignition Temperature, °C (°F):	ND
NFPA Rating:	Health: 0 Flammability: 1 Reactivity: 0
Flammable Limits (% by volume in air):	Lower: ND Upper: ND
Extinguishing Media:	CO_2, dry chemical, foam, water fog
Special Fire Fighting Procedure:	None
Unusual Fire or Explosion Hazard:	Water may cause frothing

SECTION 4.0 – REACTIVITY DATA

Stability:	Stable.
Conditions Contributing to Instability:	None.
Incompatibility:	Strong oxidants.
Hazardous Decomposition Products: (Thermal unless otherwise specified)	CO_2, CO under incomplete combustion.
Hazardous Polymerization:	Hazardous polymerization is not expected to occur.

SECTION 5.0 – SPILL, LEAK, AND DISPOSAL PROCEDURES

Procedure if Material is spilled:

- Remove sources of heat or ignition, provide ventilation, contain leak.
- **Small Spills:** Absorb released material with non-combustible absorbent. Place into containers for later disposal. (See Waste Disposal section below.)
- **Large Spills:** Evacuate area in the event of significant spills. Adequately ventilate area and determine potential exposure conditions. Exposure potential may require the use of respiratory protection. Use protective clothing. Contain spill in temporary dikes to avoid product migration and to assist in recovery. Do not allow material to escape into sewers, ground water, drainage ditches or surface waters.
- Control ignition sources around spill area. Use of a fire fighting foam blanket on spilled material will reduce vapor release and fire potential.
- Administer first aid as needed.
- Report spills as required to appropriate federal, state and local authorities.
- OSHA regulations may require establishing a regulated area with site control.

Waste Disposal:

- It is the responsibility of the user to determine if the material is a hazardous waste at the time of disposal.
- Transportation, treatment, storage and disposal of waste material must be in accordance with RCRA regulations (see 40 CFR 260 through 40 CFR 271).
- State and/or local regulations may be more restrictive.
- Contact the RCRA/Superfund Hotline at (800) 424-9246 or your regional US EPA office for guidance concerning case specific disposal issues.

SECTION 5.0 -- SPILL, LEAK, AND DISPOSAL PROCEDURES (Cont.)

Protective Measures During Repair and Maintenance of Contaminated Equipment:

- Refer to Section 7.0 -- Special Protection Information.
- Keep unnecessary persons from hazard area.
- Drain and purge equipment, as necessary, to remove material residues.
- Use gloves constructed of impervious materials such as neoprene or heavy nitrile and protective clothing if direct contact is anticipated.
- Provide ventilation to maintain exposure potential below applicable exposure levels.
- Eliminate heat and ignition sources.
- Remove contaminated clothing.
- Wash exposed skin thoroughly with soap and water.

SECTION 6.0 -- HEALTH HAZARD DATA

Health Hazard Classification (Per 29 CFR 1910.1200):

HIGHLY TOXIC:	No	SENSITIZER:	No
TOXIC:	No	REPRODUCTIVE EFFECTS:	No
CORROSIVE:	No	MUTAGEN:	No
IRRITANT:	No	TARGET ORGAN:	No

Carcinogen:

Product/Component	CAS No.	%	NTP	IARC	OSHA	Other
TKO 19	Mixture	100	No	No	No	No

Toxicity Summary: Generally of a low order of toxicity.

Major Route of Entry: Inhalation of incidental mists, skin contact with liquids.

Acute Exposure Symptoms:

INHALATION: In enclosed spaces or when hot, vapors may reach concentrations sufficient to cause drowsiness, dizziness, headache, nausea, or lung irritation. Elevated mist concentrations well above applicable workplace levels can cause severe lung damage.

DERMAL: This material may cause mild transient skin irritation.

EYE: This material may cause mild transient eye irritation.

INGESTION: If swallowed, there is a risk of aspirating this material into the lungs. Aspirated material
can cause severe lung damage. Upon ingestion, slight gastrointestinal discomfort, diarrhea, and headache can occur.

INJECTION: Injection under the skin, in muscle or into the blood stream may cause irritation, inflammation, swelling or severe, permanent tissue damage. Most damage occurs during the first few hours.

SECTION 6.0 -- HEALTH HAZARD DATA (Cont.)

Chronic Exposure Symptoms:

Prolonged and/or frequent contact can cause drying, cracking (dermatitis) or folliculitis or Skin irritation. Repeated or prolonged overexposure to oil mists can result in oil granuloma formation, respiratory tract irritation and an increased risk of infection.

Other Special Effects:

None Expected.

Medical Conditions Aggravated by Exposure:

None.

First Aid and Emergency Procedures for Acute Effect:

Inhalation: Move victim to fresh air. If victim is not breathing, immediately begin rescue breathing. If breathing is difficult, 100 percent humidified oxygen should be administered by a qualified individual. Seek medical attention immediately.

Dermal: Remove contaminated clothing. Wash exposed skin with soap and water. Launder clothing before use. Seek medical attention if tissue appears damaged or if irritation persists.

Eyes: Flush eyes with cool water while occasionally lifting and lowering eyelids. Seek medical attention if excessive tearing, irritation or pain persists.

Ingestion: Do not induce vomiting unless directed by a physician. Never give anything by mouth to a person who is not fully conscious. Seek medical attention immediately.

Injection: Injection under the skin, in muscle or into the blood stream is a medical emergency. Seek medical attention immediately.

Notes to Physicians:

The viscosity the product represented by this MSDS is approximately 350 SUS at 100°F. Upon ingestion, there is a low risk of aspiration into the lungs. Removal by gastric lavage should be considered. Subcutaneous or intramuscular injection requires prompt surgical debridement.

SECTION 7.0 – SPECIAL PROTECTION INFORMATION

Ventilation Requirements:

Use in well-ventilated area. In confined space, mechanical ventilation may be required to keep levels of certain components below applicable workplace exposure levels as evaluated by designated and properly trained personnel.

SECTION 7.0 – SPECIAL PROTECTION INFORMATION (Cont.)

Applicable Workplace Exposure Levels:

Chemical Component	ACGIH TLV TWA ppm(mg/M^3)	ACGIH TLV STEL/ Ceiling © ppm(mg/M^3)	ACGIH TLV Skin notation?	OSHA PEL TWA ppm(mg/M^3)	OSHA PEL STEL/ Ceiling © ppm(mg/M^3)	OSHA PEL Skin notation
Oil Mist, Mineral	(5)	(10)	No	(5)	NE	No

Specific Personal Protective Equipment:

Personal protective equipment should be selected based upon the conditions under which this material is used. A hazard assessment of the work area for PPE requirements should be conducted by a qualified professional pursuant to OSHA regulations.

Respirator: At elevated temperatures, vapor or mist concentrations may exceed applicable workplace exposure levels. Use a NIOSH or MSHA approved organic vapor/mist chemical cartridge when elevated airborne concentrations are anticipated.

Eyes: Use safety glasses. Use chemical splash goggles if splashing is anticipated.

Dermal: Use gloves constructed of impervious materials such as heavy nitrile rubber or neoprene if frequent or prolonged contact is expected.

Clothing or Equipment: Wear body-covering work clothes to avoid prolonged or repeated exposure. Launder contaminated work clothes before reuse.

SECTION 8.0 – TRANSPORTATION AND SPECIAL PRECAUTIONS

Storage: Store in a cool, dry, well ventilated area. Do not apply heat or flame to container. Keep separate from strong oxidizing agents.

Caution: Empty containers may contain product residues which could ignite with explosive force. Consult appropriate federal, state and local authorities before reusing, reconditioning, Reclaiming, recycling, or disposing of empty containers and/or waste residues of this product.

US Department of Transportation Information:

PROPER SHIPPING NAME	Petroleum Lubricating Oils
HAZARD CLASS	Non-Hazardous
HAZARD IDENTIFICATION NUMBER	None Assigned
PACKAGING GROUP	None Assigned
PLACARD	None
COMPATIBILITY CATEGORY	Group 33
CHRIS CODE	OMN

SECTION 9.0 – ENVIRONMENTAL DATA

TITLE III of the Superfund Amendments and Reauthorization Act of 1986 (SARA):

Section 313 - Toxic Chemicals:

This product is not known to contain any components in concentrations above *de minimis* levels that are Listed as toxic chemicals in 40 CFR Part 372 pursuant to the requirements of Section 313 SARA.

Section 311/312 – Hazard Categories:

This product may meet one or more of the criteria for the hazard categories defined in 40 CFR Part 370 as established by Sections 311 and 312 of SARA as indicated below:

Immediate (Acute) Health Hazard:	No	Sudden Release of Pressure Hazard:	No
Delayed (Chronic) Health Hazard:	No	Reactive hazard:	No
Fire Hazard:	No		

Section 302 – Extremely Hazardous Substances:

This product is not known to contain any components in concentrations greater than one percent that are listed as Extremely Hazardous substances in 40 CFR 355 pursuant to the requirements of Section 302(a) of SARA.

Clean Water Act (CWA):

Under the CWA, discharges of crude oil and petroleum products to surface waters without federal and state permits must be reported immediately to the National Response Center at (800) 424-8802.

Comprehensive Environmental Response, Compensation, or Liability Act (CERCLA) Section 102 Hazardous Substances:

As defined by CERCLA, the term "hazardous substance" does not include petroleum, including crude oil or any fraction thereof which is not otherwise specifically listed or designated as a hazardous substance.

Toxic Substances Control Act (TSCA):

Reported in TSCA inventory as:	Product	Components
Solvent Refined Paraffinic Distillates	X	

SECTION 10 – LABELING

Note: This product has been determined not to be a physical or a health hazard as defined by the OSHA Hazard Communication Standard.

ALL STATEMENTS, INFORMATION, AND DATA PROVIDED IN THIS MATERIAL SAFETY DATA SHEET ARE BELIEVED TO BE ACCURATE AND RELIABLE , BUT ARE PRESENTED WITHOUT GUARANTEE, REPRESENTATION, WARRANTY, OR RESPONSIBILITY OF ANY KIND, EXPRESSED OR IMPLIED. ANY AND ALL REPRESENTAIONS AND/OR

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Typical Properties:	**TKO 19**
ISO VG No.	68

Gravity, °API, ASTM D 287	29.5
Pounds Per Gallon	7.32
Flash Point, ASTM D 92, °F(°C), Min.	450 (232)
Fire Point, ASTM D 92, °F(°C)	510 (266)
Viscosity, ASTM D 445, cSt at 40°C	63.5-70.5
cSt at 100°C	8.7
ASTM D 2161, SUS at 100°F	340-375
SUS at 210°F	55
Viscosity Index, ASTM D 2270, Min.	92
Pour Point, ASTM D 97, °F(°C), Max.	+10 (-12)
Color, Max., ASTM D 1500	1.5
Neutralization No.	0.05
Copper Strip Corrosion, Max	
ASTM D 130 - 3hrs at 212°F	1
Carbon Residue, Conradson, m %, ASTM D 189	<0.02
Vapor Pressure, 77°F (25°C), Torr	10^{-6}
Distillation, ASTM D 1160	
ABP	721
10%	826
20%	845
30%	854
40%	863
50%	873
60%	884
70%	895
80%	910
90%	936
EP	1004
% Recovered	99.5

Note: The values listed above are typical. They do not indicate a specification.

9/19/97