

E. F. Products, Inc.

MATERIAL SAFETY DATA SHEET

MSDS: 481

SECTION 1: CHEMICAL PRODUCT AND COMPANY INFORMATION

Company: E F Products, Inc. 1860 Crown Drive, Suite 1400 Dallas, Texas 75234 Phone No.: 1-888-396-0422 CHEMTREC Phone No.: 1-800-298-9164	HAZARD RATING Health 1 Fire: 1 Reactivity: 0 Special: -- Toxicity: 1	SCALE <i>0 = Insignificant</i> <i>1 = Slight</i> <i>2 = Moderate</i> <i>3 = High</i> <i>4 = Extreme</i>
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Product Description: Automotive Refrigerant Lubrication Oil

Name: 481 Quest R-134A Universal Ester Oil, 8 fl oz
(Standard package contains 8 fl oz)

Product Code: 481
MSDS Date: 05-22-06
Supersedes: 05-18-06

SECTION 2: COMPOSITION AND INFORMATION ON INGREDIENTS

No.	Description	CAS Reg. No.	Units	Amount
1	Polyol Esters	NA	% vol	80-100
2	Proprietary Ingredients	NA	% vol	0-20

SECTION 3: HAZARDS INFORMATION

Portals of Entry: Ingestion, eye contact, skin contact, and dermal absorption.

Inhalation: Inhalation of vapor concentrations should not occur at STP conditions.

Eye Contact: Liquid splashes may cause eye irritation.

Skin Contact: Frequent contact can cause skin irritations, dermatitis, oil acne, absorption of certain components can occur.

Ingestion: The product, if ingested, could cause nausea, gastrointestinal disturbances, headaches, drowsiness, vertigo, abdominal pain, and dizziness.

Delayed Effects: Prolonged and repeated overexposure can cause irritation of the respiratory tract and mucous membranes, central nervous system (CNS) effects, blood dysfunction, and kidney effects.

HEALTH EFFECTS FROM OVEREXPOSURE:

Primary Routes of Exposure: Skin contact.

SECTION 4: FIRST AID MEASURES

Inhalation: Inhalation under normal exposure should not cause problems; however if inhalation has resulted in symptoms, move patient to fresh air. If breathing is difficult, give oxygen. Give artificial respiration if breathing has stopped. Get prompt medical attention.

Eye Contact: Immediately flush eyes with a large amount of water for at least 15 minutes. If symptoms exist and/or persist, get prompt medical attention.

Skin Contact: Wash affected skin areas thoroughly with soap and water. Remove contaminated clothing. If skin irritation persists, see a physician.

Ingestion: If swallowed, give large quantities of water to drink. Induce vomiting. Careful gastric lavage may be indicated. Immediately see a physician. Never give anything by mouth nor induce vomiting of an unconscious person.

SECTION 5: FIRE FIGHTING MEASURES

Unusual Hazards: Toxic fumes are generated when material is exposed to fire and fire conditions.

Extinguishing Agents: Use the following extinguishing media when fighting fires involving this material: polar solvent foam, carbon dioxide, dry chemical, and water spray. Product is immiscible and insoluble in water and has a lower specific gravity than water; therefore, product will float on water surface.

Personal Protective Equipment: Wear self-contained breathing apparatus and full protective gear.

Special Precautions: Use water spray to cool large containers exposed to fire. Vapors are denser than air and will have a tendency to accumulate in lower areas which can cause the vapors to concentrate and suffocate. If the product is exposed to fire or an ignition source that results in flammability, extinguish with polar solvent foam, carbon dioxide, dry chemical, and water spray.

FIRE AND EXPLOSIVE PROPERTIES:

PROPERTY	PACKAGED PRODUCT
STP Flash Point (°C); [°F]:	Non-Flammable at STP
Flash Point (°C); [°F]:	> 250; > 482
Auto-Ignition Temperature (°C):	>400
Lower Explosive Limit (ppm):	Non-Flammable at STP
Upper Explosive Limit (ppm):	Non-Flammable at STP

SECTION 6: ACCIDENTAL SPILL OR LEAK RELEASE INFORMATION

Personal Protection: Appropriate protective equipment must be worn when handling a large spill of this material. See the PERSONAL PROTECTION MEASURES Section for recommendations. If exposed to material during clean-up operations, see the FIRST AID PROCEDURES Section for actions to follow.

Procedures: Evacuate the spill area. Floor may be slippery if product has wetted the floor; use care to avoid falling. Ventilate the spill area. Avoid breathing vapor. Contain material spills immediately with inert adsorption materials. Transfer liquids and solid adsorption materials and diking material to separate suitable containers for recovery or disposal.

CAUTION: Keep spills and cleaning runoff out of municipal sewers and open bodies of water.

SECTION 7: HANDLING AND STORAGE

Storage Conditions: Store in a cool, well ventilated place. Keep containers dry. Store product away from reactive and corrosive materials. The minimum recommended storage temperature for this material is -29° C/ -20° F. The maximum storage temperature is 49° C/ 120° F.

Handling Procedures: Do not mix product with air or oxygen under pressure. Avoid exposure of product to flame or very hot surfaces. Vapors can be evolved when material is being used in processing operations. See FACILITY CONTROL MEASURES Section for types of ventilation required.

SECTION 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION

Respiratory Protection: A respiratory protection program meeting OSHA 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use. If respiratory protection is needed, use, MSHA-NIOSH approved respirator for organic vapors. None required if airborne concentrations are maintained below the TWA/TLV's listed in the COMPONENT EXPOSURE INFORMATION Section.

Up to 10 times the TWA/TLV: Wear a half-mask, air purifying respirator.

Up to 1000 ppm organic vapor: Wear an approved full-face piece, air-purifying respirator.

Above 1000 ppm organic vapor or unknown: Wear an approved positive pressure mode, or an approved full-face piece airline respirator in the positive pressure mode with emergency escape provisions.

Air purifying respirators should be equipped with organic vapor cartridges.

Eye Protection: Use eye goggles and/or face shield.

Hand Protection: The gloves listed below may provide protection against permeation. Gloves of other chemically resistant materials may not provide adequate protection: Polyvinyl alcohol and Viton.

Gloves should be removed and replaced immediately if there is any indication of degradation or chemical breakthrough.

Other Protection: Use chemically resistant apron or other impervious clothing to avoid prolonged or repeated skin contact.

FACILITY CONTROL MEASURES:

Ventilation: Use normal local exhaust ventilation with a minimum capture velocity of 100 ft/min (30 m/min) at the point of vapor evolution.

Other Protective Equipment: Facilities storing and utilizing this material should be equipped with an eyewash facility and a safety shower.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES
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TYPICAL PHYSICAL PROPERTIES:

PROPERTY	METRIC UNITS	ENGLISH UNITS
Appearance:	Oily Liquid	Oily Liquid
Color:	Amber	Amber
State:	Liquid	Liquid
Odor Characteristics:	Oily Hydrocarbon	Oily Hydrocarbon
Viscosity (CP @ 20° C); [CP @ 68° F]:	108	108
Specific Gravity (d/do 4°C); [d/do 39°F]	1.046	1.046
Density (gr/cm ³); [lb/gal]	1.05	8.74
Vapor Density (Air = 1.0):	NA	NA
Vapor Pressure (mm Hg @ 20° C); [psia]:	< 0.1	< 0.1
Melting Point (°C); [°F]:	< -33 °C	< -30 °F
Boiling Point (°C); [°F]:	NA	NA
Solubility in Water (gr/100 cm ³); [lb/100 in ³]:	0; Insoluble	0; Insoluble
Evaporation Rate (n-butyl acetate = 1.0):	< 0.1	< 0.1
pH (product or water extract)	NA	NA
Percent Volatility (% wt):	0	0

SECTION 10: STABILITY AND REACTIVITY

Stability: Stable under normal conditions.

Hazardous Decomposition Products: Thermal decomposition may yield toxic decomposition products which include alkyl low molecular weight components, COx, organic pyrolytic components.

Hazardous Polymerization: Product will not undergo hazardous polymerization.

Incompatibility: Avoid contact with strong oxidizing and reducing agents.

SECTION 11: TOXICOLOGICAL INFORMATION

ACCIDENT PREVENTION INFORMATION:

COMPONENT EXPOSURE INFORMATION:

Component Information:

No.	Description	CAS Reg. No.	Units	Max. Amount Amount
1	Polyalkylene Glycol	NA	% vol	100
2	Proprietary Ingredients	NA	% vol	20

Exposure Information for Specific Component:

No.	Health Flam. Reactivity			Component Units	OSHA		ACGIH			
	Rating	Rating	Rating		TWA	STEL	TWA	STEL	IDLH	HAP
1	1	1	0	ppm	NA	NA	NA	NA	NA	No
2	1	0	0	ppm	NA	NA	NA	NA	NA	No

NA: Not Available; ppm: parts per million

Note: 1 ppm equals 3.8 mg/m³; 5 ppm equals 19 mg/m³; 10 ppm equals 38 mg/m³; 100 ppm equals 380 mg/m³.

SECTION 12: ECOLOGICAL INFORMATION

Persistence and Degradation: Ecological toxicity has not been determined. This product is not readily biodegradable.

SECTION 13: DISPOSAL INFORMATION

WASTE DISPOSAL:

Procedure: For disposal, dispose this material at a facility that complies with local, state, and federal regulations. Dispose product by incineration in an approved chemical waste facility. Avoid land filling liquids.

SECTION 14: TRANSPORTATION INFORMATION

DOT Hazard Description:

Proper Shipping Name: NA
Hazard Class: NA
Identification Number: NA
Packing Group: NA
Hazardous Substance (RQ): NA
Placard/Label: NA

SECTION 15: REGULATORY INFORMATION

EPA Regulation:
SARA SECTION 311/312 HAZARDS: Acute Health, Chronic Health

All components of this product are on or exempt from the TSCA list.

TSCA 12(b) COMPONENTS: None

SARA Title III Section 313 Supplier Notification: If this product contains the indicated “*” toxic chemical(s) subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 and of 40 CFR 372. This information must be included in all MSDSs that are copied and distributed for this material.

SARA TITLE III INGREDIENTS	CAS NO.	% WT.	REGULATION SECTION	RQ (LBS)
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None

The Reportable Quantity “RQ” of product does not apply. Based on the composition of SARA Title III ingredients and the RQs of ingredients, listed above, none are restrictive of the product composition. Typically this product is packaged in 8 fl oz containers.

SARA 311/312 HAZARD CATEGORIES: None

SARA 302 EXTREMELY HAZARDOUS SUBSTANCES: None

CERCLA HAZARDOUS SUBSTANCES: None

State Regulations: This product meets requirements of Southern California AQMD Rule 443.1 and Similar Regulations California Proposition 65: This product contains the following chemical known to the State of California to cause cancer: None

SECTION 16: OTHER INFORMATION

All information, recommendations, and suggestions made by E F Products, Inc. (“Company”) appearing herein concerning our product are based upon tests and data believed to be reliable. However, because of the variable characteristics of analytical procedures and samples, and the inability to control its customers’ uses of the information and recommendations, or the related products or materials, Company makes NO WARRANTY, EXPRESS OR IMPLIED as to the accuracy of the information or recommendations or that such are fit for any general or specific purpose, whatsoever. Company shall have NO LIABILITY arising from the use by its customers or any third parties of the information and recommendations, and it shall be each customer’s sole responsibility to determine the suitability for its own use of any information or recommendations provided by Company.

