



MATERIAL SAFETY DATA SHEET

1 PRODUCT AND COMPANY IDENTIFICATION

Product Name: Component A, Mix of Glycols and Glycol Ethers

Product No.: MRX8233005476

Manufacturer Name:
Federal Mogul World Headquarters
26555 Northwestern Highway
Southfield, Michigan 48033

Emergency Telephone:
24hr EP (INFOTRAC): 1-800-535-5053
International: (001) 352-323-3500

Non-emergency Telephone:

1-248-354-9844

Intended Use: Brake Fluid

Contact Person: MSDS Request (voicemail)
1-248-354-9844

2 HAZARDS IDENTIFICATION

Emergency Overview

Physical State: Liquid

Color: Colorless

Odor: Ether

WARNING!

Causes skin and eye irritation. May be harmful if swallowed.

Potential Health Effects

Inhalation: May cause slight respiratory tract irritation.

Eye Contact: Severely irritating to eyes. Exposed may experience eye tearing, redness, and discomfort.

Skin Contact: Severely irritating to skin. Exposure may cause redness, itching and inflammation.

Ingestion: May be harmful if swallowed. May cause central nervous system depression.

Chronic Health Effects: May cause central nervous system depression. Danger of adverse health effects by prolonged exposure. May impair fertility. May cause harm to the unborn child. May cause damage to the liver and kidneys. Ethylene glycol: Known or suspected teratogen. Suspected embryo toxin. Chronic kidney hazard.

Target Organ(s): | Central nervous system. | Eye | Kidney | Liver | Reproductive system

| Skin |

OSHA Regulatory Status: When used for its intended purpose, this material is classified as hazardous in accordance with OSHA 29CFR 1910.1200.

Environment: The environmental hazard of the product is considered to be limited.

3	COMPOSITION / INFORMATION ON INGREDIENTS
----------	---

General Information: The product is a mixture.

Chemical Name	CAS-No.	Concentration*
Triethylene glycol monobutyl ether	143-22-6	10 - 30%
†Polyethylene glycol	25322-68-3	20 - 30%
†Diethylene glycol monoethyl ether	111-90-0	10 - 15%
†Triethylene glycol ethyl ether	112-50-5	5 - 10%
†Triethylene glycol methyl ether	112-35-6	5 - 10%
†2-(2-butoxyethoxy)ethanol	112-34-5	5 - 10%
2-(2-propoxyethoxy)ethanol	6881-94-3	1 - 5%
†Ethylene glycol	107-21-1	1 - 5%
†2-(2-methoxyethoxy)ethanol	111-77-3	1 - 5%

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.
† This chemical is hazardous according to OSHA/WHMIS criteria.

4	FIRST AID MEASURES
----------	---------------------------

Inhalation: If symptomatic, move to fresh air. Get medical attention if symptoms persist.

Eye Contact: Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention immediately.

Skin Contact: Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention immediately.

Ingestion: Rinse mouth thoroughly. Drink plenty of water. Do not induce vomiting. If vomiting occurs, the head should be kept low so that stomach vomit doesn't enter the lungs. Get medical attention.

5	FIRE-FIGHTING MEASURES
----------	-------------------------------

Extinguishing Media: Water spray, dry powder or carbon dioxide.

Unsuitable Extinguishing Media: None.

Special Fire Fighting Procedures: Use standard firefighting procedures and consider the hazards of other involved materials.

Unusual Fire & Explosion Hazards: None known.

Hazardous Combustion Products: Carbon Dioxide, Carbon Monoxide

Protective Measures: Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Flammability Class: NFPA Rating Fire = 1.

6	ACCIDENTAL RELEASE MEASURES
----------	------------------------------------

Personal Precautions: Avoid contact with skin and eyes. Wear suitable protective clothing and gloves. See Section 8 of the MSDS for Personal Protective Equipment.

Spill Cleanup Methods: Absorb spillage with non-combustible, absorbent material. Collect in containers and seal securely.

Environmental Precautions: Avoid discharge into drains, water courses or onto the ground.

Notification Procedures: Inform Authorities if large amounts are involved.

7	HANDLING AND STORAGE
----------	-----------------------------

Handling: All handling to take place in well-ventilated area. Avoid contact with eyes, skin, and clothing. Do not eat, drink or smoke when using the product. Wash thoroughly after handling.

Storage: Store in a cool and well-ventilated place. Keep containers tightly closed.

8	EXPOSURE CONTROLS / PERSONAL PROTECTION
----------	--

Exposure Limits:

Chemical Name	Source	Type	Exposure Limits	Notes
Diethylene glycol monoethyl ether	AIHA WEEL	TWA	25 ppm 140 mg/m ³	
Ethylene glycol (Aerosol.)	ACGIH	Ceiling	100 mg/m ³	

Engineering Controls: Provide adequate ventilation. Provide easy access to water supply and eye wash facilities.

Respiratory Protection: Respiratory protection must be used if air contamination exceeds acceptable level. If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. In the United States of America, if respirators are used, a program should be instituted to assure compliance with OSHA Standard 63 FR 1152, January 8, 1998. Use a NIOSH-approved respirator (See 29 CFR 1910.134, respiratory protection standard). Respirator type: High-efficiency particulate respirator.

Eye Protection: Wear approved safety goggles.

Hand Protection: Wear chemical-resistant gloves. Contact glove manufacturer for specific information.

Skin Protection: Wear appropriate clothing to prevent any possibility of skin contact.

Hygiene Measures: Do not eat, drink or smoke when using the product. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

Environmental Exposure Controls: Environmental manager must be informed of all major spillages.

9	PHYSICAL AND CHEMICAL PROPERTIES
----------	---

Color: Colorless

Odor: Ether

Odor Threshold: No data available.

Physical State: Liquid

pH: 7 - 11

Melting Point: No data available.

Freezing Point: No data available.

Boiling Point: >205°C (401°F)

Flash Point: No data available.

Evaporation Rate: No data available.

Flammability Limit - Upper (%): No data available.

Flammability Limit - Lower (%): No data available.

Vapor Pressure: No data available.

Vapor Density (Air=1): No data available.

Specific Gravity: 1.018 - 1.03 (20°C)

Solubility in Water: Soluble

Solubility (Other): No data available.

Partition Coefficient (n-Octanol/water): No data available.

Autoignition Temperature: No data available.

Decomposition Temperature: No data available.

10	STABILITY AND REACTIVITY
-----------	---------------------------------

Stability: This product is stable under expected conditions of use.

Conditions to Avoid: Avoid exposure to high temperatures or direct sunlight.

Incompatible Materials: Strong oxidizing agents.

Hazardous Decomposition Products:

At Elevated Temperatures:	Carbon Oxides
---------------------------	---------------

Possibility of Hazardous Reactions: Will not occur.

11	TOXICOLOGICAL INFORMATION
-----------	----------------------------------

Specified Substance(s)

Acute Toxicity:

Component Chemical Name	Test Results
2-(2-butoxyethoxy)ethanol	Dermal LD50 (Rabbit): 2700 mg/kg
2-(2-butoxyethoxy)ethanol	Oral LD50 (Rat): 5600 mg/kg

Diethylene glycol monoethyl ether	Oral LD50 (Rat): 7500 mg/kg
2-(2-methoxyethoxy)ethanol	Dermal LD50 (Rabbit): 2.5 ml/kg
2-(2-methoxyethoxy)ethanol	Oral LD50 (Rat): 4 ml/kg
Ethylene glycol	Dermal LD50 (Rabbit): 9.3 mg/kg
Ethylene glycol	Oral LD50 (Rat): 4700 mg/kg
Triethylene glycol monobutyl ether	Dermal LD50 (Rabbit): 3.57 ml/kg
Triethylene glycol monobutyl ether	Oral LD50 (Rat): 5300 mg/kg
Triethylene glycol ethyl ether	Dermal LD50 (Rabbit): 8000 mg/kg
Triethylene glycol ethyl ether	Oral LD50 (Rat): 7750 mg/kg
Triethylene glycol methyl ether	Dermal LD50 (Rabbit): 7100 mg/kg
Triethylene glycol methyl ether	Oral LD50 (Rat): 11300 mg/kg

Chronic Toxicity: Ethylene glycol: Known or suspected teratogen. Suspected embryo toxin.
Chronic kidney hazard.

Listed Carcinogens:

Chemical Name	IARC	NTP	OSHA	ACGIH
Ethylene glycol	Not Listed	Not Listed	Not Listed	A4

IARC: 1 = Carcinogenic to Humans; 2A = Probably Carcinogenic to Humans; 2B = Possibly Carcinogenic to Humans; 3 = Not classifiable as to carcinogenicity to humans; 4 = Probably not carcinogenic to humans; Not listed = Not evaluated by IARC.

ACGIH: A1 = Confirmed Human Carcinogen; A2 = Suspected Human Carcinogen; A3 = Confirmed Animal Carcinogen; A4 = Not classifiable as a human carcinogen; A5 = Not suspected to be a human carcinogen; Not listed = Not evaluated by ACGIH.

Product Information

Other Acute: Causes severe skin and eye irritation. May be harmful if swallowed.

Chronic Toxicity: May cause central nervous system depression. Danger of adverse health effects by prolonged exposure. May impair fertility. May cause harm to the unborn child. May cause damage to the liver and kidneys.

12 ECOLOGICAL INFORMATION

Ecotoxicity: The environmental hazard of the product is considered to be limited.

Specified Substance(s)

Chemical Name	Test
2-(2-methoxyethoxy)ethanol	LC50 (96 hour(s), Bluegill Sunfish): 7500 ppm (m)
Ethylene glycol	LC50 (24 hour(s), Goldfish): 5000 mg/l
Ethylene glycol	LC50 (96 hour(s), Rainbow Trout): 18500 mg/l

Mobility: The product is water soluble and may spread in water systems.

Persistence and Degradability: No data available.

Bioaccumulation Potential: No data available.

Other Adverse Effects: No data available.

13 DISPOSAL CONSIDERATIONS

General Information: Dispose in accordance with applicable federal, state, and local regulations.

Disposal Methods: Disposal recommendations are based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

Container: Since emptied containers retain product residue, follow label warnings even after container is emptied.

14	TRANSPORT INFORMATION
-----------	------------------------------

DOT Not Regulated

TDG Not Regulated

IATA Not Regulated

IMDG Not Regulated

15	REGULATORY INFORMATION
-----------	-------------------------------

Canadian Controlled Products Regulations: This product has been classified according to the hazard criteria of the Canadian Controlled Products Regulations, Section 33, and the MSDS contains all required information.

WHMIS Classification: D2A, D2B

Mexican Dangerous Statement: This is a Mexican "dangerous" product.

Inventory Status: All ingredients are either listed or exempt from listing on EINECS, DSL or TSCA.

US Regulations

CERCLA Hazardous Substance List (40 CFR 302.4): None

SARA Title III

Section 302 Extremely Hazardous Substances (40 CFR 355, Appendix A): None

Section 311/312 (40 CFR 370):

☒ Acute (Immediate) ☒ Chronic (Delayed) ☐ Fire ☐ Reactive ☐ Pressure Generating

Section 313 Toxic Release Inventory (40 CFR 372):

Chemical Name	CAS-No.	Concentration
2-(2-methoxyethoxy)ethanol	111-77-3	1 - 5%
Diethylene glycol monoethyl ether	111-90-0	10 - 15%
Triethylene glycol monobutyl ether	143-22-6	10 - 30%
Ethylene glycol	107-21-1	1 - 5%
2-(2-butoxyethoxy)ethanol	112-34-5	5 - 10%
Triethylene glycol ethyl ether	112-50-5	5 - 10%

Triethylene glycol methyl ether	112-35-6	5 - 10%
2-(2-propoxyethoxy)ethanol	6881-94-3	1 - 5%

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130): None

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3): None

Drug Enforcement Act: None

TSCA: No component is listed on TSCA Sections 4(a), 5(a)(2), 5(e) or 12(b).

State Regulations

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): None

Massachusetts Right-To-Know List: 2-(2-methoxyethoxy)ethanol; Ethylene glycol

Michigan Critical Materials List (Michigan Natural Resources and Environmental Protection Act (Act. 451 of 1994)): None

Minnesota Hazardous Substances List: Diethylene glycol monoethyl ether; Ethylene glycol; Polyethylene glycol

New Jersey Right-To-Know List: 2-(2-butoxyethoxy)ethanol; 2-(2-methoxyethoxy)ethanol; 2-(2-propoxyethoxy)ethanol; Diethylene glycol monoethyl ether; Ethylene glycol; Triethylene glycol ethyl ether; Triethylene glycol methyl ether; Triethylene glycol monobutyl ether

Pennsylvania Right-To-Know List: 2-(2-butoxyethoxy)ethanol; 2-(2-methoxyethoxy)ethanol; 2-(2-propoxyethoxy)ethanol; Diethylene glycol monoethyl ether; Ethylene glycol; Triethylene glycol ethyl ether; Triethylene glycol methyl ether; Triethylene glycol monobutyl ether

Rhode Island Right-To-Know List: Ethylene glycol

16	OTHER INFORMATION
-----------	--------------------------

HAZARD RATINGS

	Health Hazard	Fire Hazard	Reactivity Hazard	Special Hazard
NFPA	2	1	0	0

	Health Hazard	Fire Hazard	Reactivity Hazard	Personal Protection
HMIS	2*	1	0	C

0 - Minimal; 1- Slight; 2 - Moderate; 3 - Serious; 4 - Severe * - Chronic Health Effect
C - Safety Glasses, Gloves & Apron H - Goggles, Gloves, Apron & Vapor Respirator

Issued by: Federal Mogul Corporation

Issue Date: 20-Jan-2007

Supersedes Date:

SDS No.: Comp.A

Disclaimer: The information provided on this data sheet was abstracted from supplier material safety data sheets and standard references in occupational health and toxicology. Federal-Mogul makes no

representation or warranty with respect to the information obtained from such references. The information is however, as of the date provided, true and accurate to the best of Federal-Mogul's knowledge, and should be used to make an independent determination of the methods to safeguard workers and the environment.