



Safety Data Sheet

Issue Date: 01-Feb-2007

Revision Date: 20-Feb-2015, 8-2023

Version 1

1. IDENTIFICATION

Product Identifier

Product Name MFA Oil Full Strength Antifreeze & Coolant Low Silicate

Other means of identification

SDS # JDS-7500-01

Product Code 7500, 7502

UN/ID No UN3082

Recommended use of the chemical and restrictions on use

Recommended Use

Antifreeze. For professional use only.

Details of the supplier of the safety data sheet

Supplier Address

MFA OIL
101 McKeown Parkway
Moberly, MO 65270

Emergency Telephone Number

Company Phone Number 800-827-0116

Emergency Telephone (24 hr) Chemtrec 1-800-424-9300 (North America) 1-703-527-3887 (International)

2. HAZARDS IDENTIFICATION

Appearance Green liquid

Physical State Liquid

Odor Mild

Classification

Acute toxicity - Oral	Category 4
Carcinogenicity	Category 1B
Reproductive toxicity	Category 1B
Specific target organ toxicity (repeated exposure)	Category 2

GHS Labeling Elements:**Signal Word****Danger****Hazard Statements**

Harmful if swallowed

May cause cancer

May damage fertility or the unborn child

May cause damage to organs through prolonged or repeated exposure

**Precautionary Statements - Prevention**

Obtain special instructions before use

Do not handle until all safety precautions have been read and understood

Use personal protective equipment as required

Wash face, hands and any exposed skin thoroughly after handling

Do not eat, drink or smoke when using this product Do

not breathe dust/fume/gas/mist/vapors/spray

Precautionary Statements - Response

If exposed or concerned: Get medical advice/attention

IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell Rinse mouth

Precautionary Statements - Storage Store

locked up

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Other Hazards

Harmful to aquatic life with long lasting effects

Toxic to aquatic life

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No	Weight-%
Ethylene glycol	107-21-1	>90
Diethylene glycol	111-46-6	<5
Sodium Nitrite	7632-00-0	<1

Sodium tetraborate pentahydrate	12179-04-3	<1
Sodium Nitrate	7631-99-4	<1

If Chemical Name/CAS No is "proprietary" and/or Weight-% is listed as a range, the specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. FIRST-AID MEASURES

First Aid Measures

Eye Contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Seek immediate medical attention/advice.
Skin Contact	In case of contact, immediately wash skin with soap and water or water for at least 15 minutes. Take off contaminated clothing. If skin irritation persists, call a physician.
Inhalation	Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.
Ingestion	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Rinse mouth. If spontaneous vomiting occurs, keep head below hips to prevent aspiration and monitor breathing.

Most important symptoms and effects

Symptoms	Causes painful stinging or burning of eyes and lids, watering of eyes. Overexposure by inhalation may cause CNS depression- drowsiness, dizziness, confusion or loss of coordination. Substance may cause slight skin irritation. May be harmful or fatal if swallowed. Contains ethylene glycol and/or diethylene glycol which are toxic when swallowed. A lethal dose for an adult is 1 ml per kilogram or about 4 ounces (1/2 cup). Severe kidney damage can occur as a result of ingestion. Ingestion may result in nausea, vomiting and abdominal cramps. Metabolic acidosis and cardiopulmonary effects can occur following ingestion. Overexposure may aggravate pre-existing disorders of the eyes, skin and respiratory system. May aggravate pre-existing liver and kidney disorders.
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Indication of any immediate medical attention and special treatment needed

Notes to Physician	IMMEDIATE TREATMENT IS EXTREMELY IMPORTANT! Ethylene Glycol (EG) and Diethylene Glycol (DEG) intoxication may initially produce behavioral changes, drowsiness, vomiting, diarrhea, thirst, and convulsions. EG and DEG are nephrotoxic. End stages of poisoning may include renal damage or failure with acidosis. Supportive measures, supplemented with hemodialysis if indicated, may limit the progression and severity of toxic effects. May cause cardiopulmonary effects. For ETHYLENE GLYCOL POISONING, intravenous ethanol is a recognized antidotal treatment; other antidotal treatments also exist for ethylene glycol poisoning.
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5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Water spray (fog). Carbon dioxide (CO₂). Dry chemical. Alcohol resistant foam.

Unsuitable Extinguishing Media Do not use a direct stream of water.

Specific Hazards Arising from the Chemical

Non-flammable. Containers may explode when heated. Material may ignite when preheated.

Hazardous Combustion Products Thermal decomposition products are highly dependent on combustion conditions. A complex mixture of airborne solids, liquids and gases will evolve when this material undergoes pyrolysis or combustion. Carbon Monoxide, Carbon Dioxide and other unidentified organic compounds may be formed upon combustion.

Sensitivity to Mechanical Impact Not sensitive.

Sensitivity to Static Discharge Not sensitive.

Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Keep unnecessary people away; isolate hazard area and deny entry. Use water spray to keep fire-exposed containers cool.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions Use personal protective equipment as required. Remove all sources of ignition. Ventilate affected area. Isolate hazard area. Keep unnecessary and unprotected personnel from entering.

Environmental Precautions Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information. See Section 13: DISPOSAL CONSIDERATIONS.

Methods and material for containment and cleaning up

Methods for Containment Prevent further leakage or spillage if safe to do so.

Methods for Clean-Up Contain and collect with an inert absorbent and place into an appropriate container for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling**Advice on Safe Handling**

Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Do not breathe dust/fume/gas/mist/vapors/spray. Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Use personal protection recommended in Section 8. Use only with adequate ventilation. Use explosionproof ventilation to prevent vapor accumulation. Ground all handling equipment to prevent sparking. Do not cut or weld on empty drums. Sufficient vapors from residues may be present to cause explosion and serious injury and/or death. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.

Conditions for safe storage, including any incompatibilities**Storage Conditions**

Keep containers tightly closed in a dry, cool and well-ventilated place. Store only in approved containers. Keep away from incompatible materials, open flames, and high temperatures. Do not store in unlabeled or mislabeled containers. Store locked up.

Packaging Materials

Empty containers retain product residue and can be hazardous.

Strong oxidizing agents.

Incompatible Materials

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Ethylene glycol 107-21-1	Ceiling: 100 mg/m ³ aerosol only	(vacated) Ceiling: 50 ppm (vacated) Ceiling: 125 mg/m ³	-
Sodium tetraborate pentahydrate 12179-04-3	STEL: 6 mg/m ³ inhalable fraction TWA: 2 mg/m ³ inhalable fraction	(vacated) TWA: 10 mg/m ³	TWA: 1 mg/m ³
Caustic Soda 1310-73-2	Ceiling: 2 mg/m ³	TWA: 2 mg/m ³ (vacated) Ceiling: 2 mg/m ³	IDLH: 10 mg/m ³ Ceiling: 2 mg/m ³

Appropriate engineering controls

Engineering Controls Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/Face Protection Tight sealing safety goggles.

Skin and Body Protection Use protective clothing chemically resistant to this material. Wear suitable gloves.

Respiratory Protection Ensure adequate ventilation, especially in confined areas. In case of inadequate ventilation wear respiratory protection. Follow respirator protection program requirements (OSHA 1910.134 and ANSI Z88.2).

General Hygiene Considerations Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical State	Liquid	Odor	Mild
Appearance	Green liquid	Odor Threshold	Not determined
Color	Green		

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	10.4	(50/50 solution in water at atmospheric pressure)
Melting Point/Freezing Point	-36.6 °C / -34 °F	(50/50 solution in water at atmospheric pressure)
Boiling Point/Boiling Range	163.8 °C / 327 °F	
Flash Point	Not determined	
Evaporation Rate	Not available	
Flammability (Solid, Gas)	n/a-liquid	

Upper Flammability Limits	Not determined
Lower Flammability Limit	Not determined
Vapor Pressure	Not determined
Vapor Density	Not determined
Specific Gravity	1.10-1.145
Water Solubility	Completely soluble
Solubility in other solvents	Not determined
Partition Coefficient	Not determined
Auto-ignition Temperature	Not determined
Decomposition Temperature	Not determined
Kinematic Viscosity	Not determined
Dynamic Viscosity	Not determined
Explosive Properties	Not determined
Oxidizing Properties	Not determined

10. STABILITY AND REACTIVITY

Reactivity

Not reactive under normal conditions.

Chemical Stability

Stable under recommended storage conditions.

Possibility of Hazardous Reactions None
under normal processing.

Conditions to Avoid

Heat, flames, ignition sources and incompatibles.

Incompatible Materials

Strong oxidizing agents.

Hazardous Decomposition Products

Thermal decomposition products are highly dependent on combustion conditions. A complex mixture of airborne solids, liquids and gases will evolve when this material undergoes pyrolysis or combustion. Carbon Monoxide, Carbon Dioxide and other unidentified organic compounds may be formed upon combustion.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure**Product Information**

Eye Contact	Avoid contact with eyes.
Skin Contact	Avoid contact with skin.
Inhalation	Avoid breathing vapors or mists.
Ingestion	Harmful if swallowed.

Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Ethylene glycol 107-21-1	= 4000 mg/kg (Rat)	= 9530 µL/kg (Rabbit)	-
Diethylene glycol 111-46-6	= 12565 mg/kg (Rat)	= 11890 mg/kg (Rabbit)	-
Sodium Nitrite 7632-00-0	= 85 mg/kg (Rat)	-	= 5.5 mg/L (Rat) 4 h
Caustic Soda 1310-73-2	-	= 1350 mg/kg (Rabbit)	-
Sodium Nitrate 7631-99-4	= 1267 mg/kg (Rat)	-	-
D-Sodium Silicate Solution 1344-09-8	= 1153 mg/kg (Rat)	> 4640 mg/kg (Rabbit)	-
Sodium 2-Mercaptobenzothiazole 2492-26-4	= 750 mg/kg (Rat)	> 1250 mg/kg (Rabbit)	-

Information on physical, chemical and toxicological effects

Symptoms Please see section 4 of this SDS for symptoms.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Carcinogenicity May cause cancer. Nitrate or nitrite (ingested) under conditions that result in endogenous nitrosation are considered IARC group 2A carcinogens.

Chemical Name	ACGIH	IARC	NTP	OSHA
Sodium Nitrite 7632-00-0		Group 2A		X
Sodium Nitrate 7631-99-4		Group 2A		X

Legend

IARC (International Agency for Research on Cancer) Group

2A - Probably Carcinogenic to Humans

OSHA (Occupational Safety and Health Administration of the US Department of Labor)

X - Present

Reproductive toxicity	May damage fertility or the unborn child.
STOT - repeated exposure	May cause damage to organs through prolonged or repeated exposure.

Numerical measures of toxicity

Not determined

12. ECOLOGICAL INFORMATION**Ecotoxicity**

Harmful to aquatic life with long-lasting effects.

Component Information

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Ethylene glycol 107-21-1	6500 - 13000: 96 h Pseudokirchneriella subcapitata mg/L EC50	41000: 96 h Oncorhynchus mykiss mg/L LC50 14 - 18: 96 h Oncorhynchus mykiss mL/L LC50 static 27540: 96 h Lepomis macrochirus mg/L LC50 static 40761: 96 h Oncorhynchus mykiss mg/L LC50 static 40000 - 60000: 96 h Pimephales promelas mg/L LC50 static 16000: 96 h Poecilia reticulata mg/L LC50 static	EC50 = 10000 mg/L 16 h EC50 = 620 mg/L 30 min EC50 = 620.0 mg/L 30 min	46300: 48 h Daphnia magna mg/L EC50
Diethylene glycol 111-46-6		75200: 96 h Pimephales promelas mg/L LC50 flow-through	EC50 = 29228 mg/L 15 min	84000: 48 h Daphnia magna mg/L EC50
Sodium Nitrite 7632-00-0		0.19: 96 h Oncorhynchus mykiss mg/L LC50 flow-through 0.092 - 0.13: 96 h Oncorhynchus mykiss mg/L LC50 flow-through 0.4 - 0.6: 96 h Oncorhynchus mykiss mg/L LC50 semi-static 0.65 - 1: 96 h Oncorhynchus mykiss mg/L LC50 static 2.3: 96 h Pimephales promelas mg/L LC50 flow-through 20: 96 h Pimephales promelas mg/L LC50 static		
Caustic Soda 1310-73-2		45.4: 96 h Oncorhynchus mykiss mg/L LC50 static		
Sodium Nitrate 7631-99-4		2000: 96 h Lepomis macrochirus mg/L LC50 static 994.4 - 1107: 96 h Oncorhynchus mykiss mg/L LC50 static		
D-Sodium Silicate Solution 1344-09-8		301 - 478: 96 h Lepomis macrochirus mg/L LC50 3185: 96 h Brachydanio rerio mg/L LC50 semi-static		216: 96 h Daphnia magna mg/L EC50
Sodium 2-Mercaptobenzothiazole 2492-26-4	0.3: 96 h Pseudokirchneriella subcapitata mg/L EC50	0.3 - 1.1: 96 h Oncorhynchus mykiss mg/L LC50 static 3.8: 96 h Lepomis macrochirus mg/L LC50 static		1.9 - 5.1: 48 h Daphnia magna mg/L EC50 Static

Persistence/Degradability Not determined.

Bioaccumulation Not determined.

Mobility

Chemical Name	Partition Coefficient
Ethylene glycol 107-21-1	-1.93
Diethylene glycol 111-46-6	-1.98
Sodium Nitrite 7632-00-0	-3.7
Sodium Nitrate 7631-99-4	-3.8
Sodium 2-Mercaptobenzothiazole 2492-26-4	-0.46

Other Adverse Effects Not determined

13. DISPOSAL CONSIDERATIONS

Waste Treatment Methods

Disposal of Wastes Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated Packaging Disposal should be in accordance with applicable regional, national and local laws and regulations.

California Hazardous Waste Status

Chemical Name	California Hazardous Waste Status
Sodium Nitrite 7632-00-0	Toxic Ignitable Reactive
Caustic Soda 1310-73-2	Toxic Corrosive
Sodium Nitrate 7631-99-4	Toxic Ignitable Reactive

14. TRANSPORT INFORMATION

Note Please see current shipping paper for most up to date shipping information, including exemptions and special circumstances.

DOT

UN/ID No UN3082
Proper Shipping Name Environmentally hazardous substance, liquid, n.o.s. (Ethylene glycol)
Hazard Class 9
Subsidiary Hazard Class III
Reportable Quantity (RQ) Regulated in Packages Containing >5000 lb. of ethylene glycol

IATA

Not regulated

IMDG**Marine Pollutant**

This material may meet the definition of a marine pollutant

15. REGULATORY INFORMATION**International Inventories**

Chemical Name	TSCA	DSL	NDSL	EINECS	ELINCS	ENCS	IECSC	KECL	PICCS	AICS
Ethylene glycol	Present	X		Present		Present	X	Present	X	X
Diethylene glycol	Present	X		Present		Present	X	Present	X	X
Sodium Nitrite	Present	X		Present		Present	X	Present	X	X
Sodium tetraborate pentahydrate						Present	X		X	
Sodium Nitrate	Present	X		Present		Present	X	Present	X	X

Legend:*TSCA - United States Toxic Substances Control Act Section 8(b) Inventory**DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List**EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances**ENCS - Japan Existing and New Chemical Substances**IECSC - China Inventory of Existing Chemical Substances**KECL - Korean Existing and Evaluated Chemical Substances**PICCS - Philippines Inventory of Chemicals and Chemical Substances**AICS - Australian Inventory of Chemical Substances***US Federal Regulations****CERCLA**

Chemical Name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Ethylene glycol 107-21-1	5000 lb		RQ 5000 lb final RQ RQ 2270 kg final RQ
Sodium Nitrite 7632-00-0	100 lb		RQ 100 lb final RQ RQ 45.4 kg final RQ
Caustic Soda 1310-73-2	1000 lb		RQ 1000 lb final RQ RQ 454 kg final RQ

SARA 311/312 Hazard Categories

Acute Health Hazard	Yes
Chronic Health Hazard	Yes
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical Name	CAS No	Weight-%	SARA 313 - Threshold Values %
Ethylene glycol - 107-21-1	107-21-1	>90	1.0
Sodium Nitrite - 7632-00-0	7632-00-0	<1	1.0

Sodium Nitrate - 7631-99-4	7631-99-4	<1	1.0
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CWA (Clean Water Act)

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Sodium Nitrite	100 lb			X
Caustic Soda	1000 lb			X

US State Regulations**U.S. State Right-to-Know Regulations**

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Ethylene glycol 107-21-1	X	X	X
Diethylene glycol 111-46-6			X
Sodium Nitrite 7632-00-0	X	X	X
Sodium tetraborate pentahydrate 12179-04-3		X	
Caustic Soda 1310-73-2	X	X	X
Sodium Nitrate 7631-99-4	X	X	X

16. OTHER INFORMATION**NFPA****Health Hazards**

3

Flammability

1

Instability

0

Special Hazards

Not determined

HMIS**Health Hazards**

Not determined

Flammability

Not determined

Physical Hazards

Not determined

Personal Protection

Not determined

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Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet