

SDS - Safety Data Sheet

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Identifier: ECOSE™ FR Fluid 46
Other means of identification: Fire Resistant Hydraulic Fluid
SDS Number: 534348
CAS Number: Blend
CHEMTREC: EMERGENCY CONTACT 1-800-424-9300 – CHEMTREC (24 Hours)

Supplier:
 Nu-Tier Brands, Inc., Tulsa, OK
 TECHNICAL CONTACT NUMBER: 918-550-8026, Ext. 507
 www.nu-tierbrands.com

2. HAZARDS IDENTIFICATION

Classified Hazards

GHS Phrases:

H302 – Harmful if swallowed
 H315 – Causes skin irritation
 H318 – Causes serious eye damage
 H373 – May cause damage to organs through prolonged or repeated exposure

GHS Precautionary Statements:

P260 – Do not breathe mist, spray, vapors
 P264 – Wash hands thoroughly after handling
 P270 – Do not eat, drink or smoke when using this product
 P280 – Wear eye protection, protective gloves
 P301+P312 – If swallowed: Call a doctor if you feel unwell
 P302+P352 – If on skin: Wash with plenty of water
 P305+P351+P338 – If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
 P310 – Immediately call a doctor
 P314 – Get medical advice/attention if you feel unwell
 P321 – Specific treatment (see First aid measures on this label)
 P330 – Rinse mouth
 P332+P313 – If skin irritation occurs: Get medical advice/attention
 P362+P364 – Take off contaminated clothing and wash it before reuse
 P501 – Dispose of contents/container to an authorized waste collection point

Label Elements



GHS Signal Word: DANGER



GHS Classifications:

Health, Acute toxicity, Category 4 Oral	H302
Health, Skin corrosion/irritation, Category 2	H315
Health, Serious eye damage/eye irritation, Category 1	H318
Specific target organ toxicity – Repeated exposure, Category 2	H373



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3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS	Concentration %	GHS-US Classification
Diethylene glycol	111-46-6	<70	Acute Tox. 4 (Oral), H302
Oxirane, 2-methyl-, polymer with oxirane, ether with 2-ethyl-2- (hydroxymethyl)-1, 3-propanediol (3:1)	52624-57-4	<20	Eye Dam. 1, H318
N,N-Diethylmonoethanolamine	108-01-0	<5	Flam. Liq. 3, H226 Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Dermal), H312 Acute Tox. 4 (Inhalation: dust, mist), H332 Skin Corr. 1B, H314 STOT SE 3, H335
Capric acid	334-48-5	<5	Skin Irrit. 2, H315 Eye Irrit. 2A, H319

*Chemical name, CAS number and/or exact concentration have been withheld as a trade secret

Full text of H-statements: see section 16

4. FIRST AID MEASURES

GENERAL: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

INHALATION: If you feel unwell, seek medical advice. If inhaled and if breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.

SKIN CONTACT: Wash with plenty of soap and water. Remove contaminated clothing and wash before reuse. Get medical attention if skin irritation occurs.

EYE CONTACT: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician if you feel unwell.

INGESTION: Rinse mouth. Do NOT induce vomiting. Call a POISON CENTER or doctor/physician if you feel unwell.

Most important symptoms and effects, both acute and delayed:

Symptoms/injuries:	Causes damage to organs.
Symptoms/injuries after inhalation:	Inhalation may cause irritation, coughing, shortness of breath. Irritation of the respiratory tract and the other mucous membranes.
Symptoms/injuries after skin contact:	Causes skin irritation
Symptoms/injuries after eye contact:	Causes serious eye damage
Symptoms/injuries after ingestion:	Swallowing a small quantity of this material will result in serious health hazard.

Indication of any immediate medical attention and special treatment needed:

All treatments should be based on observed signs and symptoms of distress in the patient.

5. FIREFIGHTING MEASURES

NFPA health hazard: 2 – intense or continued exposure could cause temporary incapacitation or possible residual injury unless prompt medical attention is given.

NFPA fire hazard: 1 – must be preheated before ignition can occur

NFPA reactivity: 0 – normally stable, even under fire exposure conditions, and not reactive with water



EXTINGUISHING MEDIA:

Suitable extinguishing media: Large fires: fog, foam, water spray. Small fires: Dry powder, carbon dioxide, sand.

Unsuitable extinguishing media: Do not use a solid water stream as it may scatter and spread fire.

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SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE:

Fire hazard: No specific fire or explosion hazard
 Explosion hazard: Product is not explosive
 Reactivity: Hazardous polymerization will not occur

ADVICE FOR FIREFIGHTERS:

Firefighting instructions: Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Avoid (reject) fire-fighting water to enter environment.
 Protection during firefighting: Do not enter fire area without proper protective equipment, including respiratory protection. Wear fire/flame resistant/retardant clothing. Wear a self container breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES:

FOR NON-EMERGENCY PERSONNEL

Protective equipment: Avoid all eye and skin contact and do not breathe vapor and mist. Wear suitable clothing and gloves. Nitrile gloves. Chemical goggles or safety glasses.
 Emergency procedures: Evacuate unnecessary personnel.

FOR EMERGENCY RESPONDERS

Protective equipment: Equip cleanup crew with proper protection. Avoid all eye and skin contact and do not breathe vapor and mist. Wear suitable protective clothing and gloves. Nitrile rubber. Chemical goggles or face shield with safety glasses.
 Emergency procedures: Ventilate area.

ENVIRONMENTAL PRECAUTIONS

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

METHODS AND MATERIAL FOR CONTAINMENT AND CLEANING UP

For containment: Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams. Absorb and/or contain spill with inert material, then place in suitable container.
 Methods for cleaning up: Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage.

REFERENCE TO OTHER SECTIONS

Section 13: disposal information. Section 7: safe handling. Section 8: personal protective equipment.

7. HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING

Precautions for safe handling: Provide good ventilation in process area to prevent formation of vapor. Avoid breathing mist/vapor/spray. Avoid contact with skin and eyes. Do not eat, drink or smoke when using this product. Keep away from sources of ignition – No smoking.
 Hygiene measures: Do not eat, drink or smoke when using this product. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Contaminated work clothing should not be allowed out of the workplace.

CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES

Storage conditions: Keep only in the original container in a cool well ventilated place. Keep away from heat, flame, and sources of ignition. Keep container closed when not in use.
 Incompatible products: Strong bases. Strong acids. Strong oxidizers.
 Incompatible materials: Sources of ignition. Heat sources.

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8. EXPOSURE CONTROLS / PERSONAL PROTECTION

CONTROL PARAMETERS

Diethylene glycol (111-46-6)
Not applicable
Oxirane, 2-methyl-, polymer with oxirane, ether with 2-ethyl-2-(hydroxymethyl)-1,3-propanediol (3:1) (52624-57-4)
Not applicable
capric acid (334-48-5)
Not applicable
N,N-Dimethylethanolamine (108-01-0)
Not applicable

EXPOSURE CONTROLS:

Appropriate engineering controls:	Avoid creating mist or spray. Avoid splashing. Eyewash stations. Provide local exhaust Ventilation or closed transfer systems to minimize exposures.
Personal protective equipment:	Avoid all unnecessary exposure.
Hand protection:	Wear suitable gloves. Nitrile rubber gloves. Neoprene gloves. PVC
Eye protection:	Chemical goggles or face shield. Use splash goggles when eye contact due to splashing is possible.
Skin and body protection:	Wear suitable protective clothing. Impervious clothing.
Respiratory protection:	Where exposure through inhalation may occur from use, respiratory protection equipment is recommended. Use an approved respirator equipped with oil/mist cartridges.
Other information:	Do not eat, drink or smoke during use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	: Liquid
Color	: red Orange
Odor	: Amine-like
Odor threshold	: No data available
pH	: 9 - 10
Melting point	: < -40 °C
Freezing point	: < -40 °C
Boiling point	: Foams
Flash point	: None
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: No data available
Explosive limits	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available
Vapor pressure	: < 0.01 mm Hg @ 20°C
Relative density	: No data available
Relative vapor density at 20 °C	: No data available
Density	: 1.0874
Solubility	: Soluble in water.
Log Pow	: No data available
Auto-ignition temperature	: 260 °C
Decomposition temperature	: No data available
Viscosity	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available

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10. STABILITY AND REACTIVITY

REACTIVITY: Hazardous polymerization will not occur.
CHEMICAL STABILITY: Stable at ambient temperatures and under normal conditions of use.
POSSIBILITY OF HAZARDOUS REACTIONS: Hazardous polymerization will not occur.
CONDITIONS TO AVOID: Exposure to extremely high temperatures. Heat. Keep away from sources of ignition.
INCOMPATIBLE MATERIALS: Strong acids. Strong bases. Strong oxidizing agents.
HAZARDOUS DECOMPOSITION PRODUCTS: Aldehydes. Alcohols. Ethers. Thermal decomposition generates: Carbon monoxide. Carbon oxides (CO, CO₂). Nitrogen oxides.

11. TOXICOLOGICAL INFORMATION

ECOSE™ FR Fluid 46	
ATE US (oral)	735.823 mg/kg bodyweight
Diethylene glycol (111-46-6)	
LD50 dermal rat	1330 mg/kg
LC50 inhalation rat (mg/l)	>4.6 mg/1/4h
ATE US (oral)	500.000 mg/kg bodyweight
ATE US (dermal)	13300.000 mg/kg bodyweight
Oxirane, 2-methyl-, polymer with oxirane, ether with 2-ethyl-2-(hydroxymethyl)-1, 3-propanediol (3:1) (52624-57-4)	
LD50 oral rat	>2000 mg/kg bodyweight no mortality occurred
Capric acid (334-48-5)	
LD50 oral rat	10000 mg/kg
LD50 dermal rabbit	>5000 mg/kg bodyweight
N,N-Dimethylethanolamine (108-01-0)	
LD50 oral rat	1187 mg/kg
LD50 dermal rabbit	>3000 mg/kg
LC50 inhalation rat (mg/l)	6080 mg/m ³ 4 hours
ATE US (oral)	1187.000 mg/kg bodyweight
ATE US (dermal)	1100.000 mg/kg bodyweight
ATE US (dust, mist)	1.5 mg/l/4h

Skin corrosion/irritation:	Causes skin irritation
Serious eye damage/irritation:	Causes serious eye damage
Respiratory or skin sensitization:	Not classified
Germ cell mutagenicity:	Not classified
Carcinogenicity:	Not classified
Reproductive toxicity:	Not classified
Specific target organ toxicity (single exposure):	Not classified
Specific target organ toxicity (repeated exposure):	May cause damage to organs through prolonged or repeated exposure
Aspiration hazard:	Not classified
Symptoms/injuries after inhalation:	Inhalation may cause irritation, coughing, shortness of breath. Irritation of the respiratory tract and the other mucous membranes.
Symptoms/injuries after skin contact:	Causes skin irritation
Symptoms/injuries after eye contact:	Causes serious eye damage
Symptoms/injuries after ingestion:	Swallowing a small quantity of this material will result in serious health hazard

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12. ECOLOGICAL INFORMATION

Toxicity

Diethylene glycol (111-46-6)	
LC50 fish 1	75200 mg/l
EC50 Daphnia 1	>10000 mg/l
Oxirane, 2-methyl-, polymer with oxirane, ether with 2-ethyl-2-(hydroxymethyl)-1, 3-propanediol (3:1) (52624-57-4)	
LC50 fish 1	>10000 mg/l
Capric acid (334-48-5)	
LC50 fish 1	>100 mg/l
EC50 other aquatic organisms 1	>100 mg/l
N,N-Dimethylethanolamine (108-01-0)	
LC50 fish 1	146.63 mg/l
EC50 Daphnia 1	98.37 mg/l
EC50 other aquatic organisms 1	34.47 mg/l

Persistence and degradability

ECOSE™ FR Fluid 46	
Biochemical oxygen demand (BOD)	0.57 5d (1.44 ppm)
Chemical oxygen demand (COD)	12.6% (2.52 ppm)
Diethylene glycol (111-46-6)	
Persistence and degradability	Readily biodegradable
Capric acid (334-48-5)	
Persistence and degradability	Readily biodegradable
N,N-Dimethylethanolamine (108-01-0)	
Persistence and degradability	Readily biodegradable

Bioaccumulative potential

ECOSE™ FR Fluid 46	
Bioaccumulative potential	Not established
Diethylene glycol (111-46-6)	
Bioconcentration factor (BCF REACH)	100
Log Pow	-1.98
Bioaccumulative potential	Not expected to bioaccumulate
Capric acid (334-48-5)	
Log Pow	4.09
N,N-Dimethylethanolamine (108-01-0)	
Log Pow	-0.55
Bioaccumulative potential	This product is not bioaccumulating

Mobility in soil

No additional information available

Other adverse effects

No additional information available

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Sewage disposal recommendations: Do not dispose of waste into sewer
 Waste disposal recommendations: Dispose in a safe manner in accordance with local/national regulations
 Additional information: In its present state, this product is not a hazardous waste according to Federal Regulations (40 CFR 261.4 (b)(4))
 Ecology – waste materials: Avoid release to the environment

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14. TRANSPORTATION INFORMATION

Department of Transportation (DOT)

In accordance with DOT

Not considered a dangerous good for transport regulations

TDG

No additional information available

Transport by sea

No additional information available

Air transport

No additional information available

15. REGULATORY INFORMATION

US Federal Regulations

Diethylene glycol (111-46-6)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Oxirane, 2-methyl-, polymer with oxirane, ether with 2-ethyl-2-(hydroxymethyl)-1, 3-propanediol (3:1) (52624-57-4)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Capric acid (334-48-5)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

N,N-Dimethylethanolamine (108-01-0)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

International Regulations

CANADA

Diethylene glycol (111-46-6)

Listed on the Canadian DSL (Domestic Substances List) inventory

Oxirane, 2-methyl-, polymer with oxirane, ether with 2-ethyl-2-(hydroxymethyl)-1, 3-propanediol (3:1) (52624-57-4)

Listed on the Canadian DSL (Domestic Substances List) inventory

Capric acid (334-48-5)

Listed on the Canadian DSL (Domestic Substances List) inventory

N,N-Dimethylethanolamine (108-01-0)

Listed on the Canadian DSL (Domestic Substances List) inventory

EU Regulations

Diethylene glycol (111-46-6)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Oxirane, 2-methyl-, polymer with oxirane, ether with 2-ethyl-2-(hydroxymethyl)-1, 3-propanediol (3:1) (52624-57-4)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Capric acid (334-48-5)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

N,N-Dimethylethanolamine (108-01-0)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

National Regulations

Diethylene glycol (111-46-6)

Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory

Listed on the AICS (Australian Inventory of Chemical Substances)

Listed on the Taiwan National Chemical Inventory

Listed on NZIoC (New Zealand Inventory of Chemicals)

Listed on KECI (Korean Existing Chemicals Inventory)

Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)

Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)

Oxirane, 2-methyl-, polymer with oxirane, ether with 2-ethyl-2-(hydroxymethyl)-1, 3-propanediol (3:1) (52624-57-4)

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Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on Taiwan National Chemical inventory
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on KECI (Korean Existing Chemicals Inventory)
Capric acid (334-48-5)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on KECI (Korean Existing Chemicals Inventory)
Listed on Taiwan National Chemical Inventory
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on NZIoC (New Zealand Inventory of Chemicals)
N,N-Dimethylethanolamine (108-01-0)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on KECI (Korean Existing Chemicals Inventory)
Listed on Taiwan National Chemical Inventory
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on NZIoC (New Zealand Inventory of Chemicals)

US State Regulations

No additional information available

16. OTHER INFORMATION

The data in this Material Safety Data Sheet relates only to the specific material designated herein.

This information is furnished without warranty, expressed or implied, except that it is accurate to the best knowledge of Nu-Tier Brands, Inc. The data on this sheet are related only to the specific material designated herein. Nu-Tier Brands, Inc. assumes no legal responsibility for use or reliance upon these data.

End-use applications **NOT** supported by Nu-Tier Brands, Inc. for monoethylene glycol, diethylene glycol and triethylene glycol. These limitations include products restricted by law, applications in which may raise unacceptable risks, and other applications which Nu-Tier Brands, Inc. has decided not to, including minimizing unnecessary risk and liabilities to the company. Nu-Tier Brands, Inc. does not knowingly market these products into these non-supported applications. This list is not all-inclusive, and Nu-Tier Brands, Inc. reserves the right to modify the same at any time.

- The use of production of tobacco and in the manufacture of tobacco products (including but not limited to additives, humectants, filters, inks, and paper)
- The use for the generation of artificial smoke/theatrical fogs/mist. This includes applications such as artificial/e-cigarettes.
- The use as ingredient in fuel for warming foods (Sterno™-like application) or in fuel for heating an enclosed space where human exposure is possible.
- The use in fire extinguishing sprinkler systems.
- The use in the manufacture of munitions.
- The use in the production of de-icers for use on roadways, sidewalks and in aircraft lavatories.
- The use as a component of heat transfer fluids in systems where the heat transfer fluids could infiltrate (i.e., via an exchanger leak, backflow prevention failure, or other means) a potable water.
- The use as a non-reacted component in a formulation for direct internal or external human/animal contact, including, but not limited to ingestion, inhalation, and skin contact and in medical/veterinary devices and medical/veterinary. Examples of some such applications are uses as a direct component in foods, beverages, pharmaceuticals, cosmetics, personal care products or children's products.
- The use for consumer or hospital usage for deodorizing or air "purifying" purposes by spraying as an aerosol.

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- The use as a non-reacted component in adhesives, plasticizers, and softening agents for packaging having direct contact with food or beverage.
- The use as a non-reacted component in the formulation of glues, pastes, ice/heat packs or other items where the potential for significant human contact and/or ingestion exists (including but not limited to children's school glue/paste or arts/craft glue/paste, toys, children products).
- The use as a fluid for pressure testing piping.

Revision date: July 28, 2016

Data sources: ACGIH 2000

European Chemicals Agency (ECHA) Registered Substances list. Accessed at <http://echa.europa.eu/>.

Krister Forsberg and S.Z. Mansdorf, "Quick Selection Guide to Chemical Protective Clothing", Fifth Edition

National Fire Protection Association; Fire Protection Guide to Hazardous Materials; 10th edition. OSHA 29CFR 1910.1200 Hazard Communication Standard. TSCA Chemical Substance Inventory. Accessed at <http://www.epa.gov/oppt/existingchemicals/pubs/tscainventory/howto.html>.

Abbreviations and acronyms:

ACGIH (American Conference of Government Industrial Hygienists)

ATE (Acute Toxicity Estimate)

CAS (Chemical Abstracts Service) number

CLP (Classification, Labeling, Packaging)

EC50 (Environmental Concentration associated with a response by 50% of the test population)

GHS (Globally Harmonized System of Classification and Labeling of Chemicals)

OSHA (Occupational Safety & Health Administration)

LD50 (Lethal Dose for 50% of the test population)

TSCA (Toxic Substances Control Act)

Other information:

None

Full text of H-statements:

H226	Flammable liquid and vapor
H302	Harmful if swallowed
H312	Harmful in contact with skin
H314	Causes severe skin burns and eye damage
H315	Causes skin irritation
H318	Causes serious eye damage
H319	Causes serious eye irritation
H332	Harmful if inhaled
H335	May cause respiratory irritation
H373	May cause damage to organs through prolonged or repeated exposure
H411	Toxic to aquatic life with long lasting effects

END OF MSDS