

SECTION 1: Identification

1.1. Identification

Product form : Mixtures
 Product name : RelaTECH FR Flash 200
 SDS # : 437
 Product Code: : 951470200FR

1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended use : Water/Glycol Hydraulic Fluid
 Restrictions on use : No additional information available

1.3. Details of the supplier of the safety data sheet

For: RelaDyne
 8280 Montgomery Road,
 Suite 101
 Cincinnati, OH 45236

1.4. Emergency telephone number

Emergency number : INFOTRAC 800-535-5053

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS-US classification

Acute toxicity (oral), Category 4 H302
 Skin corrosion/irritation, Category 2 H315
 Serious eye damage/eye irritation, Category 1 H318
 Specific target organ toxicity — Repeated exposure, Category 2 H373

Full text of H statements : see section 16

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US) :



Signal word (GHS-US) :

Danger

Hazard statements (GHS-US) :

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

Precautionary statements (GHS-US) :

P260 - Do not breathe mist, spray, vapours
 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 Collection point

2.3. Other hazards

No additional information available

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2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	GHS-US classification
Diethylene glycol	(CAS-No.) 111-46-6	40 – 50	Acute Tox. 4 (Oral), H302 STOT RE 2, H373
Oxirane, 2-methyl-, polymer with oxirane, ether with 2-ethyl-2-(hydroxymethyl)-1,3-propanediol (3:1)	(CAS-No.) 52624-57-4	10 – 15	Eye Dam. 1, H318
N,N-Dimethylethanolamine	(CAS-No.) 108-01-0	1 – 2	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	(CAS-No.) 334-48-5	1 – 2	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 hazard classes and H-statements : see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

- 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).
- First-aid measures after 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.
- First-aid measures after skin contact : Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation occurs: Get medical advice/attention.
- First-aid measures after 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.
- First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting. Call a POISON CENTER or doctor/physician if you feel unwell.

4.2. Most important symptoms and effects, both acute and delayed

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

4.3. 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.

SECTION 5: Fire-fighting measures

5.1. 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.

5.2. 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.

5.3. Advice for firefighters

- Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire fighting water from entering the environment.
- Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection. Wear fire/flammable resistant/retardant clothing. Wear a self contained breathing apparatus.

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SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

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

6.1.2. For emergency responders

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

6.2. Environmental precautions

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

6.3. 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.

6.4. Reference to other sections

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

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Provide good ventilation in process area to prevent formation of vapour. Avoid breathing mist/vapour/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.

7.2. 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.

SECTION 8: Exposure controls/personal protection

8.1. 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

8.2. Exposure controls

- Appropriate engineering controls : Avoid creating mist or spray. Avoid splashing. Eyewash stations. Provide local exhaust ventilation of 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.

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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.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Colour	: red Orange
Odour	: Amine-like
Odour threshold	: No data available
pH	: 9 - 10
Melting point	: < -40 °C
Freezing point	: < -40 °C
Boiling point	: Foams
Flash point	: None
Relative evaporation rate (butylacetate=1)	: No data available
Flammability (solid, gas)	: No data available
Explosive limits	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Vapour pressure	: < 0.01 mm Hg @ 20°C
Relative density	: No data available
Relative vapour 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

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Hazardous polymerization will not occur.

10.2. Chemical stability

Stable at ambient temperature and under normal conditions of use.

10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4. Conditions to avoid

Exposure to extremely high temperatures. Heat. Keep away from sources of ignition.

10.5. Incompatible materials

Strong acids. Strong bases. Strong oxidizing agents.

10.6. Hazardous decomposition products

Aldehydes. alcohols. Ethers. Thermal decomposition generates : Carbon monoxide. Carbon oxides (CO, CO₂). Nitrogen oxides.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Likely routes of exposure	: Inhalation; Skin and eye contact
Acute toxicity	: Oral: Harmful if swallowed.

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ATE US (oral)	1063.334 mg/kg bodyweight
Diethylene glycol (111-46-6)	
LD50 dermal rat	13300 mg/kg
LC50 inhalation rat (mg/l)	> 4.6 mg/l/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)	1.500 mg/l/4h

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

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : No ecotoxicological data about this product are known.

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

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N,N-Dimethylethanolamine (108-01-0)	
EC50 other aquatic organisms 1	34.47 mg/l

12.2. Persistence and degradability

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Biochemical oxygen demand (BOD)	1.44 ppm
Chemical oxygen demand (COD)	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.

12.3. Bioaccumulative potential

RelaTECH FR Flash 200	
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.

12.4. Mobility in soil

RelaTECH FR Flash 200	
Ecology - soil	No additional information available.

12.5. Other adverse effects

Other information : No additional information available.

SECTION 13: Disposal considerations

13.1. 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 CFR261.4 (b)(4)).
- Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT
Not regulated.

Transport by sea

Not regulated.

Air transport

Not regulated.

SECTION 15: Regulatory information

15.1. US Federal regulations

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All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

This product or mixture is not known to contain a toxic chemical or chemicals in excess of the applicable de minimis concentration as specified in 40 CFR §372.38(a) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

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

EPA TSCA Regulatory Flag

XU - XU - indicates a substance exempt from reporting under the Inventory Update Reporting Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(C)).

15.2. 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 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)

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)
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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)

15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

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

U.S. - New Jersey - Right to Know Hazardous Substance List

SECTION 16: Other information

Revision date	: 05/06/2018
Data sources	: ACGIH (American Conference of Government Industrial Hygienists). 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 .
Other information	: None.

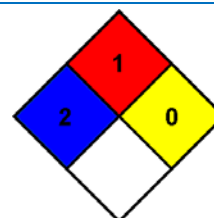
Full text of H-statements:

H226	Flammable liquid and vapour
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

Abbreviations and acronyms:

	ACGIH (American Conference of Government Industrial Hygienists)
	ATE: Acute Toxicity Estimate
	CAS (Chemical Abstracts Service) number
	CLP: Classification, Labelling, 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
	STEL: Short Term Exposure Limits
	TSCA: Toxic Substances Control Act
	TWA: Time Weighted Average

NFPA health hazard	: 2 - Materials that, under emergency conditions, can cause temporary incapacitation or residual injury.
NFPA fire hazard	: 1 - Materials that must be preheated before ignition can occur.
NFPA reactivity	: 0 - Normally stable, even under fire exposure conditions, and not reactive with water.



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Indication of changes:

Composition/information on ingredients.

SDS prepared by: RelaDyne, LLC.

This Safety Data Sheet is prepared according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012. The information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.