SAFETY DATA SHEET

According to Regulation (EC) No. 1907/2006

Version #: 02
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SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Trade name or designation of the mixture FERODO Brake Fluid

Registration number -

Synonyms Brake Fluid DOT 3 & DOT 4 (Boiling Points >260°C and Wet Boiling Points <165°C)

Product code FBX050E, FBX2000E, NLF050A, FBH100

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

Identified uses Hydraulic fluid in automotive brake/clutch system.

Uses advised against Uses other than the recommended use.

1.3. Details of the supplier of the safety data sheet

Manufacturer/Supplier

Company name Federal-Mogul Global Aftermarket EMEA bv

Address Prins Boudewijnlaan 5
B-2550 Kontich
Belgium

Telephone +32 3 450 83 10

Contact person Braking_EMEA@DRiV.com

1.4. Emergency telephone number

3E Global Incident Response Hotline

+44 20 35147487

Access code: 335908

General in EU 112 (Available 24 hours a day. SDS/Product information may not be available for the Emergency Service.)

Toxicology Information Service + 34 91 562 04 20 (Available 24 hours a day. SDS/Product information may not be available for the Emergency Service.)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

The mixture has been assessed and/or tested for its physical, health and environmental hazards and the following classification applies.

Classification according to Regulation (EC) No 1272/2008 as amended

Health hazards

Serious eye damage/eye irritation	Category 2	H319 - Causes serious eye irritation.
Reproductive toxicity (fertility, the unborn child)	Category 2	H361fd - Suspected of damaging fertility. Suspected of damaging the unborn child.

2.2. Label elements

Label according to Regulation (EC) No. 1272/2008 as amended

Contains: Tris[2-[2-(2-methoxyethoxy) ethoxy]ethyl] orthoborate

Hazard pictograms

Signal word Warning

Hazard statements

H319	Causes serious eye irritation.
H361fd	Suspected of damaging fertility. Suspected of damaging the unborn child.

Precautionary statements

Prevention

P101	If medical advice is needed, have product container or label at hand.
P102	Keep out of reach of children.
P264	Wash thoroughly after handling.

Response

P301 + P310	IF SWALLOWED: Immediately call a POISON CENTRE or doctor/physician.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Storage None.

Disposal

P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

Supplemental information on the label None.

2.3. Other hazards This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.
The mixture does not contain any substances included in the list established in accordance with REACH Article 59(1) for having endocrine disrupting properties at a concentration equal to or greater than 0.1% by weight.
The mixture does not contain any substances having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at a concentration equal to or greater than 0.1% by weight.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

General information

Chemical name	%	CAS-No. / EC No.	REACH Registration No.	Index No.	Notes
Triethylene glycol monobutyl ether	25 - 40	143-22-6 205-592-6	01-2119475107-38-XXXX	603-183-00-0	
Classification: Eye Dam. 1;H318					
Specific Concentration Limits: Eye Dam. 1;H318: C ≥ 30 %, Eye Irrit. 2;H319: 20 % ≤ C < 30 %					
Tris[2-[2-(2-methoxyethoxy) ethoxy]ethyl] orthoborate	15 - 25	30989-05-0 250-418-4	01-2119462824-33-XXXX	-	
Classification: Repr. 2;H361fd					
3,6,9,12-Tetraoxahexadecan-1-ol	5 - 10	1559-34-8 216-322-1	01-2120768763-41-XXXX	-	
Classification: Eye Irrit. 2;H319					
Diethylene glycol	5 - 10	111-46-6 203-872-2	01-2119457857-21-XXXX	603-140-00-6	
Classification: Acute Tox. 4;H302;(ATE: 500 mg/kg bw)					
2-(2-Butoxyethoxy)ethanol	1 - 3	112-34-5 203-961-6	01-2119475104-44-XXXX	603-096-00-8	#
Classification: Eye Irrit. 2;H319					
2-(2-Methoxyethoxy)ethanol	< 1	111-77-3 203-906-6	01-2119475100-52-XXXX	603-107-00-6	#
Classification: Repr. 1B;H360D					
Specific Concentration Limits: Repr. 1B;H360D: C ≥ 3 %					

List of abbreviations and symbols that may be used above

ATE: Acute toxicity estimate.
#: This substance has been assigned Community workplace exposure limit(s).

Composition comments Classification of this product as Serious eye irritation Category 2 (H319) is based on tests conducted on the product as a whole, rather than calculations based on ingredients.

All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume. The full text for all H-statements is displayed in section 16.

SECTION 4: First aid measures

General information Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. IF exposed or concerned: Get medical advice/attention.

4.1. Description of first aid measures

Inhalation Move injured person into fresh air and keep person calm under observation. Get medical attention if any discomfort continues.

Skin contact Remove contaminated clothes and rinse skin thoroughly with water. Get medical attention if irritation develops and persists.

Eye contact Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

Ingestion Rinse mouth thoroughly with water and give large amounts of milk or water, if person is conscious. Get medical attention if any discomfort continues.

4.2. Most important symptoms and effects, both acute and delayed Severe eye irritation. Exposed individuals may experience eye tearing, redness, and discomfort. Defats the skin. Central nervous system. Headaches, dizziness and nausea. May cause abdominal discomfort if swallowed.

4.3. Indication of any immediate medical attention and special treatment needed Provide general supportive measures and treat symptomatically. Symptoms may be delayed.

SECTION 5: Firefighting measures

General fire hazards Will burn if involved in a fire.

5.1. Extinguishing media

Suitable extinguishing media Alcohol resistant foam. Dry powder. Carbon dioxide (CO_2). Water mist.

Unsuitable extinguishing media Water jet.

5.2. Special hazards arising from the substance or mixture During fire, gases hazardous to health may be formed.

5.3. Advice for firefighters

Special protective equipment for firefighters Self-contained breathing apparatus and full protective clothing should be worn when fighting chemical fires. Selection of respiratory protection for firefighting: follow the general fire precautions indicated in the workplace.

Special fire fighting procedures Use standard firefighting procedures and consider the hazards of other involved materials. Containers close to fire should be removed immediately or cooled with water.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel Follow standard emergency procedure. Avoid breathing mist/vapours. Wear appropriate personal protective equipment (See Section 8).

For emergency responders Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Avoid contact with skin and eyes. Ensure adequate ventilation. Wear appropriate protective equipment and clothing during clean-up. Local authorities should be advised if significant spillages cannot be contained. Use personal protection recommended in Section 8 of the SDS.

6.2. Environmental precautions Avoid discharge into drains, water courses or onto the ground.

6.3. Methods and material for containment and cleaning up Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use.

6.4. Reference to other sections For personal protection, see section 8 of the SDS. For waste disposal, see section 13 of the SDS.

SECTION 7: Handling and storage

7.1. Precautions for safe handling Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid breathing mist/vapours. Avoid contact with skin and eyes. Avoid prolonged exposure. Pregnant or breastfeeding women must not handle this product. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. For personal protection, see Section 8 of the SDS.

7.2. Conditions for safe storage, including any incompatibilities Store locked up. Keep container in a well-ventilated place. Store between 15°C - 30°C (60°F - 86°F). Store away from incompatible materials (see section 10 of the SDS).

7.3. Specific end use(s) Hydraulic fluid in automotive brake/clutch system.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits

Spain. OELs. INSST, Límites de Exposición Profesional Para Agentes Químicos, Table 1-Valores Límites Ambientales (VLAs)

Components	Type	Value
2-(2-Butoxyethoxy)ethanol (CAS 112-34-5)	STEL	101,2 mg/m3
		15 ppm
	TWA	67,5 mg/m3
		10 ppm
2-(2-Methoxyethoxy)ethanol (CAS 111-77-3)	TWA	50,1 mg/m3
		10 ppm

EU. Indicative Exposure Limit Values in Directives 91/322/EEC, 2000/39/EC, 2006/15/EC, 2009/161/EU, 2017/164/EU

Components	Type	Value
2-(2-Butoxyethoxy)ethanol (CAS 112-34-5)	STEL	101,2 mg/m3
		15 ppm
	TWA	67,5 mg/m3
		10 ppm
2-(2-Methoxyethoxy)ethanol (CAS 111-77-3)	TWA	50,1 mg/m3
		10 ppm

Biological limit values No biological exposure limits noted for the ingredient(s).

Recommended monitoring procedures Follow standard monitoring procedures.

Derived no effect levels (DNELs)

General population

Components	Value	Assessment factor	Notes
2-(2-Butoxyethoxy)ethanol (CAS 112-34-5)			
Long-term, Systemic, Dermal	50 mg/kg bw/day	40	Repeated dose toxicity
Long-term, Systemic, Inhalation	40,5 mg/m3		respiratory tract irritation
Long-term, Systemic, Oral	5 mg/kg bw/day	40	Repeated dose toxicity
Short-term, Local, Inhalation	60,7 mg/m3		respiratory tract irritation
2-(2-Methoxyethoxy)ethanol (CAS 111-77-3)			
Long-term, Systemic, Dermal	1,33 mg/kg bw/day	30	Repeated dose toxicity
Long-term, Systemic, Inhalation	30,1 mg/m3		
Long-term, Systemic, Oral	7,5 mg/kg bw/day	120	Repeated dose toxicity
3,6,9,12-Tetraoxahexadecan-1-ol (CAS 1559-34-8)			
Long-term, Systemic, Oral	3 mg/kg bw/day	200	Repeated dose toxicity
Diethylene glycol (CAS 111-46-6)			
Long-term, Local, Inhalation	12 mg/m3	10	respiratory tract irritation
Long-term, Systemic, Dermal	21 mg/kg bw/day	210	Repeated dose toxicity
Long-term, Systemic, Inhalation	12 mg/m3		respiratory tract irritation
Triethylene glycol monobutyl ether (CAS 143-22-6)			
Long-term, Systemic, Dermal	125 mg/kg/day	40	Repeated dose toxicity
Long-term, Systemic, Inhalation	117 mg/m3	10	Repeated dose toxicity
Long-term, Systemic, Oral	12,5 mg/kg/day	40	Repeated dose toxicity
Tris[2-[2-(2-methoxyethoxy) ethoxy]ethyl] orthoborate (CAS 30989-05-0)			
Long-term, Systemic, Dermal	10 mg/kg	100	Repeated dose toxicity
Long-term, Systemic, Oral	10 mg/kg	100	Repeated dose toxicity

Workers

Components	Value	Assessment factor	Notes
2-(2-Butoxyethoxy)ethanol (CAS 112-34-5)			
Long-term, Systemic, Dermal	83 mg/kg bw/day	24	Repeated dose toxicity
Long-term, Systemic, Inhalation	67,5 mg/m3		respiratory tract irritation
Short-term, Local, Inhalation	101,2 mg/m3		respiratory tract irritation

2-(2-Methoxyethoxy)ethanol (CAS 111-77-3)

Long-term, Systemic, Dermal	2,22 mg/kg bw/day	18	Repeated dose toxicity
Long-term, Systemic, Inhalation	50,1 mg/m3		

Diethylene glycol (CAS 111-46-6)

Long-term, Local, Inhalation	60 mg/m3	2	respiratory tract irritation
Long-term, Systemic, Dermal	43 mg/kg bw/day	105	Repeated dose toxicity
Long-term, Systemic, Inhalation	44 mg/m3		

Triethylene glycol monobutyl ether (CAS 143-22-6)

Long-term, Systemic, Dermal	208 mg/kg/day	24	Repeated dose toxicity
Long-term, Systemic, Inhalation	195 mg/m3	6	Repeated dose toxicity

Tris[2-[2-(2-methoxyethoxy) ethoxy]ethyl] orthoborate (CAS 30989-05-0)

Long-term, Systemic, Dermal	16,7 mg/kg	60	Repeated dose toxicity

Predicted no effect concentrations (PNECs)

Components	Value	Assessment factor	Notes
2-(2-Butoxyethoxy)ethanol (CAS 112-34-5)			
Freshwater	1,1 mg/l	1000	
Marine water	0,11 mg/l	10000	
Secondary poisoning	56 mg/kg	90	Oral
Sediment (freshwater)	4,4 mg/kg		
Sediment (marine water)	0,44 mg/kg		
Soil	0,32 mg/kg		
STP	200 mg/l	10	
2-(2-Methoxyethoxy)ethanol (CAS 111-77-3)			
Freshwater	12 mg/l	100	
Intermittent releases	12 mg/l		
Marine water	1,2 mg/l	1000	
Secondary poisoning	0,09 g/kg	200	Oral
Sediment (freshwater)	44,4 mg/kg		
Sediment (marine water)	0,44 mg/kg		
Soil	2,1 mg/kg		
STP	10000 mg/l	1	
3,6,9,12-Tetraoxahexadecan-1-ol (CAS 1559-34-8)			
Freshwater	2,5 mg/l	1000	
Marine water	0,25 mg/l	1000	
Sediment (freshwater)	9,49 mg/kg		
Sediment (marine water)	0,9 mg/kg		
Soil	0,46 mg/kg		
Diethylene glycol (CAS 111-46-6)			
Freshwater	10 mg/l	10	
Intermittent releases	10 mg/l		
Marine water	1 mg/l	100	
Sediment (freshwater)	20,9 mg/kg		
Sediment (marine water)	2,09 mg/kg		
Soil	1,53 mg/kg		
STP	199,5 mg/l	10	
Triethylene glycol monobutyl ether (CAS 143-22-6)			
Freshwater	2 mg/l	50	
Intermittent releases	8,4 mg/l		
Marine water	0,2 mg/l	500	
Secondary poisoning	111 mg/kg	90	Oral
Sediment (freshwater)	7,7 mg/kg		
Sediment (marine water)	0,77 mg/kg		
Soil	0,47 mg/kg		
STP	200 mg/l	10	
Tris[2-[2-(2-methoxyethoxy) ethoxy]ethyl] orthoborate (CAS 30989-05-0)			
Freshwater	0,211 mg/l	1000	
Intermittent releases	2,112 mg/l		
Marine water	0,021 mg/l	10000	
Sediment (freshwater)	0,76 mg/kg		
Sediment (marine water)	0,076 mg/kg		
Soil	0,028 mg/kg		
STP	100 mg/l	10	

Exposure guidelines

Spain OELs: Skin designation

2-(2-Methoxyethoxy)ethanol (CAS 111-77-3)	Can be absorbed through the skin.

8.2. Exposure controls

Appropriate engineering controls	Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide easy access to water supply and eye wash facilities.

Individual protection measures, such as personal protective equipment

General information	Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.
Eye/face protection	Wear safety glasses with side shields (or goggles). Eye protection should meet standard EN 166.
Skin protection	
- Hand protection	Wear appropriate chemical resistant gloves. Full contact: Glove material: Butyl rubber. Use gloves with breakthrough time of >480 minutes. Minimum glove thickness 0.3 mm. Nitrile. Use gloves with breakthrough time of > 480 minutes. Minimum glove thickness 0.2 mm. Always wear chemical-resistant protective gloves that comply with EN 374 to handle this product. Observe good industrial hygiene practices and wash gloves with soap and water before removing them. Assess the working conditions and always consult your glove supplier for information on the most suitable type of glove for each task and the required material, thickness, and breakthrough time specifications. The use of type-B gloves in accordance with EN 374 is recommended as a minimum protection against intermittent or splash contact. Consult your supplier to find the most suitable option for the product in question. The requirements of EN 388 must be taken into account for applications involving mechanical hazards with the risk of abrasion or incision. The requirements outlined in EN 407 must be taken into consideration for tasks involving thermal hazards.
- Other	Wear appropriate clothing to prevent repeated or prolonged skin contact.
Respiratory protection	In case of inadequate ventilation or when the product is heated, use suitable respiratory equipment with gas filter (type A2). Respiratory protection should meet standard EN 14387. Appropriate respirator selection should be made by a qualified professional.
Thermal hazards	When material is heated, wear gloves to protect against thermal burns.
Hygiene measures	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. Observe any medical surveillance requirements.
Environmental exposure controls	Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. Fume scrubbers, filters or engineering modifications to the process equipment may be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Liquid.
Form	Liquid.
Colour	Amber.
Odour	Mild.
Odour threshold	Property has not been measured.
Melting point/freezing point	< -50 °C (< -58 °F)
Boiling point or initial boiling point and boiling range	> 260 °C (> 500 °F)
Flammability	Will burn if involved in a fire.
Upper/lower flammability or explosive limits	
Explosive limit - lower (%)	Property has not been measured.
Explosive limit – upper (%)	Property has not been measured.
Flash point	> 100 °C (> 212 °F)
Auto-ignition temperature	> 280 °C (> 536 °F)
Decomposition temperature	300 °C (572 °F)
pH	7 - 10,5
Kinematic viscosity	5 - 10 cSt (20 °C (68 °F))

Solubility

Solubility (water)	Soluble in water.
Partition coefficient (n-octanol/water) (log value)	1,5
Vapour pressure	1 mbar

Density and/or relative density

Relative density	1,02 - 1,07
Vapour density	Property has not been measured.
Particle characteristics	Not applicable, material is a liquid.

9.2. Other information

9.2.1. Information with regard to physical hazard classes	No relevant additional information available.

9.2.2. Other safety characteristics

Evaporation rate	0,01 (n-butylacetate = 100)
Viscosity	Property has not been measured.

SECTION 10: Stability and reactivity

10.1. Reactivity	The product is stable and non reactive under normal conditions of use, storage and transport.
10.2. Chemical stability	Stable under normal temperature conditions. Glycol Ethers can form peroxides on storage – do not distil to dryness.
10.3. Possibility of hazardous reactions	Will not occur.
10.4. Conditions to avoid	Avoid exposure to high temperatures or direct sunlight. Contact with incompatible materials.
10.5. Incompatible materials	Strong oxidizers, strong acids, and strong bases. Strong reducing agents.
10.6. Hazardous decomposition products	Fire or high temperatures create: Carbon monoxide. Carbon dioxide.

SECTION 11: Toxicological information

General information	Occupational exposure to the substance or mixture may cause adverse effects.

Information on likely routes of exposure

Inhalation	Glycol does not easily form a vapour at normal temperatures. Therefore, it must be heated or misted before inhalation exposure can occur.
Skin contact	Prolonged or repeated contact may dry skin and cause dermatitis.
Eye contact	Causes serious eye irritation.
Ingestion	May cause discomfort if swallowed.
Symptoms	Severe eye irritation. Exposed individuals may experience eye tearing, redness, and discomfort. Defats the skin. Central nervous system. May cause abdominal discomfort if swallowed. Headaches, dizziness and nausea.

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity

Product	Species	Test Results
FERODO Brake Fluid (CAS Mixture)		
Acute		
Dermal		
LD50	Rabbit	> 3000 mg/kg
Oral		
LD50	Rat	> 5000 mg/kg

Components	Species	Test Results
2-(2-Butoxyethoxy)ethanol (CAS 112-34-5)		
Acute		
Dermal		
LD50	Rabbit	2700 mg/kg
Oral		
LD50	Rat	4500 mg/kg

Components	Species	Test Results
2-(2-Methoxyethoxy)ethanol (CAS 111-77-3)		
Acute		
Dermal		
LD50	Rabbit	8980 ml/kg
Oral		
LD50	Rat	6700 ml/kg
Diethylene glycol (CAS 111-46-6)		
Acute		
Oral		
LD50	Rat	16500 mg/kg
Triethylene glycol monobutyl ether (CAS 143-22-6)		
Acute		
Dermal		
LD50	Rabbit	3540 mg/kg
Oral		
LD50	Rat	5300 mg/kg

Skin corrosion/irritation	Based on available data, the classification criteria are not met.
Serious eye damage/eye irritation	Causes serious eye irritation.
Respiratory sensitisation	Based on available data, the classification criteria are not met.
Skin sensitisation	Based on available data, the classification criteria are not met.
Germ cell mutagenicity	Based on available data, the classification criteria are not met.
Carcinogenicity	Based on available data, the classification criteria are not met.
Reproductive toxicity	Suspected of damaging fertility. Suspected of damaging the unborn child.
Specific target organ toxicity - single exposure	Based on available data, the classification criteria are not met.
Specific target organ toxicity - repeated exposure	Based on available data, the classification criteria are not met.
Aspiration hazard	Based on available data, the classification criteria are not met.
Mixture versus substance information	No information available.

11.2. Information on other hazards

Endocrine disrupting properties	This mixture does not contain any substances having endocrine disrupting properties with respect to human health as assessed in accordance with the criteria set out in Regulations (EC) No 1907/2006, (EU) No 2017/2100 and (EU) 2018/605, at a concentration equal to or greater than 0.1% by weight.
Other information	Glycol ethers: Some glycol ethers cause adverse effects in animals that include the reproductive system, offspring, blood, kidney and liver.

SECTION 12: Ecological information

12.1. Toxicity Based on available data, the classification criteria are not met for hazardous to the aquatic environment.

Product		Species	Test Results
FERODO Brake Fluid (CAS Mixture)			
Acute			
	LC50	Fish, Rainbow Trout (Oncorhynchus mykiss)	> 100 mg/l, 96 hours

Components		Species	Test Results
Diethylene glycol (CAS 111-46-6)			
Aquatic			
Algae	NOEC	Algae	100 mg/l, 72 hours
Acute			
Crustacea	EC50	Aquatic invertebrates	100000 mg/l, 24 hours
Fish	LC50	Fish	7520 mg/l, 96 hours

Components		Species	Test Results
Chronic			
Crustacea	EC50	Aquatic invertebrates	33911 mg/kg/D, 21 days

Triethylene glycol monobutyl ether (CAS 143-22-6)

Aquatic			
Acute			
Fish	LC50	Pimephales promelas	2400 mg/l, 96 hours

12.2. Persistence and degradability Expected to be inherently biodegradable. Expected to be readily biodegradable. (OECD 302B).

12.3. Bioaccumulative potential The product is not expected to bioaccumulate.

Partition coefficient n-octanol/water (log Kow)

FERODO Brake Fluid	1,5
2-(2-Butoxyethoxy)ethanol (CAS 112-34-5)	0,56
2-(2-Methoxyethoxy)ethanol (CAS 111-77-3)	-1,18
Diethylene glycol (CAS 111-46-6)	-1,47
Triethylene glycol monobutyl ether (CAS 143-22-6)	0,02

Bioconcentration factor (BCF) Not available.

12.4. Mobility in soil This product is water soluble and may disperse in soil.

12.5. Results of PBT and vPvB assessment This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6. Endocrine disrupting properties This mixture does not contain any substances having endocrine disrupting properties with respect to the environment as assessed in accordance with the criteria set out in Regulations (EC) No 1907/2006, (EU) No 2017/2100 and (EU) 2018/605, at a concentration equal to or greater than 0.1% by weight.

12.7. Other adverse effects None known.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Residual waste Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

EU waste code 16 01 13*
The Waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Disposal methods/information Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.

Special precautions Dispose in accordance with all applicable regulations.

SECTION 14: Transport information

ADR

14.1. UN number Not regulated as dangerous goods.

14.2. UN proper shipping name Not regulated as dangerous goods.

14.3. Transport hazard class(es)

Class Not assigned.

Subsidiary hazard -

Hazard No. (ADR) Not assigned.

Tunnel restriction code Not assigned.

14.4. Packing group -

14.5. Environmental hazards No.

14.6. Special precautions for user Not assigned.

RID

14.1. UN number Not regulated as dangerous goods.

14.2. UN proper shipping name Not regulated as dangerous goods.

14.3. Transport hazard class(es)

Class Not assigned.

Subsidiary hazard -

14.4. Packing group -
14.5. Environmental hazards No.
14.6. Special precautions for user Not assigned.

ADN

14.1. UN number Not regulated as dangerous goods.
14.2. UN proper shipping name Not regulated as dangerous goods.
14.3. Transport hazard class(es)
Class Not assigned.
Subsidiary hazard -
14.4. Packing group -
14.5. Environmental hazards No.
14.6. Special precautions for user Not assigned.

IATA

14.1. UN number Not regulated as dangerous goods.
14.2. UN proper shipping name Not regulated as dangerous goods.
14.3. Transport hazard class(es)
Class Not assigned.
Subsidiary hazard -
14.4. Packing group -
14.5. Environmental hazards No.
14.6. Special precautions for user Not assigned.

IMDG

14.1. UN number Not regulated as dangerous goods.
14.2. UN proper shipping name Not regulated as dangerous goods.
14.3. Transport hazard class(es)
Class Not assigned.
Subsidiary hazard -
14.4. Packing group -
14.5. Environmental hazards
Marine pollutant No.
EmS Not assigned.
14.6. Special precautions for user Not assigned.

14.7. Maritime transport in bulk according to IMO instruments Not applicable.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

EU regulations

Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I and II, as amended

Not listed.

Regulation (EU) 2019/1021 On persistent organic pollutants (recast), as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 1 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 2 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 3 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex V as amended

Not listed.

Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry, as amended

Not listed.

Regulation (EC) No. 1907/2006, REACH Article 59(10) Candidate List as currently published by ECHA

Not listed.

Authorisations

Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorisation, as amended

Not listed.

Restrictions on use

Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use, as amended - Conditions of restriction given for the associated entry number should be considered

2-(2-Butoxyethoxy)ethanol (CAS 112-34-5)	55
2-(2-Methoxyethoxy)ethanol (CAS 111-77-3)	30
Tris[2-[2-(2-methoxyethoxy) ethoxy]ethyl] orthoborate (CAS 30989-05-0)	75

Directive 2004/37/EC: on the protection of workers from the risks related to exposure to carcinogens and mutagens at work, as amended.

2-(2-Methoxyethoxy)ethanol (CAS 111-77-3)

Regulation 2019/1148 on Marketing and Use of Explosive Precursors, Annex I, as amended

Not listed.

Regulation 2019/1148 on Marketing and Use of Explosive Precursors, Annex II, as amended

Not listed.

Other regulations

The product is classified and labelled in accordance with Regulation (EC) 1272/2008 (CLP Regulation) as amended.
This Safety Data Sheet complies with the requirements of Regulation (EC) No 1907/2006, as amended.

National regulations

Follow national regulation for work with chemical agents in accordance with Directive 98/24/EC, as amended.
According to Directive 92/85/EEC as amended, pregnant women should not work with the product, if there is the least risk of exposure.

15.2. Chemical safety assessment

No Chemical Safety Assessment has been carried out.

SECTION 16: Other information

List of abbreviations

ADN: European Agreement Concerning the International Carriage of Dangerous Goods by Inland Waterways.
ADR: Agreement concerning the International Carriage of Dangerous Goods by Road.
CAS: Chemical Abstract Service.
CEN: European Committee for Standardization.
DNEL: Derived No-Effect Level.
EC50: Effective Concentration, 50%.
IATA: International Air Transport Association.
IMDG: International Maritime Dangerous Goods.
IMO: International Maritime Organization.
LC50: Lethal Concentration, 50%.
LD50: Lethal Dose, 50%.
NOEC: No observed effect concentration.
PBT: Persistent, bioaccumulative and toxic.
PNEC: Predicted No-Effect Concentration.
RID: Regulations concerning the International Carriage of Dangerous Goods by Rail.
STEL: Short-term Exposure Limit.
TWA: Time Weighted Average.
vPvB: Very persistent and very bioaccumulative.

References

HSDB® - Hazardous Substances Data Bank
ECHA: European Chemical Agency.
Registry of Toxic Effects of Chemical Substances (RTECS)

Information on evaluation method leading to the classification of mixture

The classification for health and environmental hazards is derived by a combination of calculation methods and test data, if available.
Classification of this product as Serious eye irritation Category 2 (H319) is based on tests conducted on the product as a whole, rather than calculations based on ingredients.

Full text of any statements, which are not written out in full under sections 2 to 15

H302 Harmful if swallowed.
H318 Causes serious eye damage.
H319 Causes serious eye irritation.
H360D May damage the unborn child.
H361fd Suspected of damaging fertility. Suspected of damaging the unborn child.

This SDS contains revisions in the following section(s):

1, 16.

Training information

Follow training instructions when handling this material.

Further information

UFI: 2P00-X05G-900A-P0U2

Disclaimer

The information provided on this data sheet was abstracted from supplier 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.