MADE IN HOLLAND

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

1.1. Product identifier

Product form : Mixture

Trade name : Vector 4

UFI : XSUJ-FTAS-PH6C-CXF8

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

1.2.1. Relevant identified uses

Intended for general public

Main use category : Consumer use,Industrial use,Professional use

Use of the substance/mixture : Brake Fluids

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Rymax Lubricants
Delweg 8
6902 PJ Zevenaar
The Netherlands
+31 (0) 316 740 856
info@rymax-lubricants.com
www.rymax-lubricants.com

1.4. Emergency telephone number

Emergency number : +31 (0) 316 740 856
This telephone number is available 24 hours per day, 7 days per week.

Country	Official advisory body	Address	Emergency number
	National Poisons Information Centre	Delweg 8 6902 PJ Zevenaar The Netherlands	+31 (0) 316 740 856

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Repr. 2 H361fd

Full text of H- and EUH-statements: see section 16

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) :

GHS08

Signal word : Warning

Hazardous ingredients : tris[2-[2-(2-methoxyethoxy)ethoxy]ethyl] orthoborate

Hazard statements (CLP) : H361fd - Suspected of damaging fertility. Suspected of damaging the unborn child.

Precautionary statements (CLP) : P101 - If medical advice is needed, have product container or label at hand.
P102 - Keep out of reach of children.
P201 - Obtain special instructions before use.
P280 - Wear protective gloves, protective clothing, eye protection, face protection.
P308+P313 - IF exposed or concerned: Get medical advice, medical attention.
P405 - Store locked up.
P501 - Dispose of contents and container to an approved waste disposal plant.

Extra phrases : EUH208 - Contains Dihydro-3-(tetrapropenyl)furan-2,5-dione. May produce an allergic reaction.

2.3. Other hazards

Other hazards : Results of PBT and vPvB assessment : Contains no PBT/vPvB substances ≥ 0.1% assessed in accordance with REACH Annex XIII.

Component	
Dihydro-3-(tetrapropenyl)furan-2,5-dione (26544-38-7)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

The mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not identified as 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 %

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Substance name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
tris[2-[2-(2-methoxyethoxy)ethoxy]ethyl] orthoborate	(CAS-No.) 30989-05-0 (EC-No.) 250-418-4 (REACH-no) 01-2119462824-33-0009	< 50	Repr. 2, H361fd

2-(2-(2-butoxyethoxy)ethoxy)ethanol	(CAS-No.) 143-22-6 (EC-No.) 205-592-6 (EC Index) 603-183-00-0 (REACH-no) 01-2119475107-38-XXXX	< 20	Eye Dam. 1, H318
2,2' -OXYBISETHANOL, DIETHYLENE GLYCOL	(CAS-No.) 111-46-6 (EC-No.) 203-872-2 (EC Index) 603-140-00-6 (REACH-no) 01-2119457857-21-xxxx / UK-06-5621547795-3-0015	< 10	Acute Tox. 4 (Oral), H302
2-(2-methoxyethoxy)ethanol substance with a Community workplace exposure limit	(CAS-No.) 111-77-3 (EC-No.) 203-906-6 (EC Index) 603-107-00-6 (REACH-no) 01-2119475100-52-xxxx/ UK-01-3871630072-8-0001	< 3	Repr. 1B, H360D
Dihydro-3-(tetrapropenyl)furan-2,5-dione	(CAS-No.) 26544-38-7 (EC-No.) 247-781-6 (REACH-no) 01-2119979080-37-XXXX	< 0,1	Eye Irrit. 2, H319 Skin Sens. 1A, H317 Aquatic Chronic 4, H413

Specific concentration limits:

Substance name	Product identifier	Specific concentration limits
2-(2-(2-butoxyethoxy)ethoxy)ethanol	(CAS-No.) 143-22-6 (EC-No.) 205-592-6 (EC Index) 603-183-00-0 (REACH-no) 01-2119475107-38-XXXX	(20 ≤C < 30) Eye Irrit. 2, H319 (30 ≤C < 100) Eye Dam. 1, H318
2-(2-methoxyethoxy)ethanol	(CAS-No.) 111-77-3 (EC-No.) 203-906-6 (EC Index) 603-107-00-6 (REACH-no) 01-2119475100-52-xxxx/ UK-01-3871630072-8-0001	(3 ≤C < 100) Repr. 1B, H360D

Full text of H- and EUH-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

Additional advice : First aider: Pay attention to self-protection!. Concerning personal protective equipment to use, see section 8. Never give anything by mouth to an unconscious person. In case of doubt or persistent symptoms, consult always a physician. Show this safety data sheet to the doctor in attendance.

Inhalation : Remove casualty to fresh air and keep warm and at rest. In case of doubt or persistent symptoms, consult always a physician.

Skin contact : Remove contaminated clothing and shoes. Gently wash with plenty of soap and water. In case of doubt or persistent symptoms, consult always a physician.

Eyes contact : Rinse immediately carefully and thoroughly with eye-bath or water. Remove contact lenses, if present and easy to do. Continue rinsing. In case of doubt or persistent symptoms, consult always a physician.

Ingestion : Rinse mouth thoroughly with water. Get medical advice/attention.

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

Inhalation : Health injuries are not known or expected under normal use.

Skin contact : May cause an allergic skin reaction. The following symptoms may occur: Redness.

Eyes contact : May cause eye irritation. The following symptoms may occur: Redness.

Ingestion : May cause gastrointestinal irritation, nausea, vomiting and diarrhoea.

Chronic symptoms : Suspected of damaging fertility. Suspected of damaging the unborn child.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : carbon dioxide (CO2), powder, alcohol-resistant foam, water spray.

Unsuitable extinguishing media : Strong water jet.

5.2. Special hazards arising from the substance or mixture

Specific hazards : Not flammable. Heating will cause a rise in pressure with a risk of bursting.

Hazardous decomposition products in case of fire : Carbon oxides (CO, CO2), BOx.

5.3. Advice for firefighters

Firefighting instructions : Evacuate area. Use water spray or fog for cooling exposed containers. Contain the extinguishing fluids by bunding. Prevent fire fighting water from entering the environment.

Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus.

Other information : Do not allow run-off from fire-fighting to enter drains or water courses. Dispose of waste in accordance with environmental legislation.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

For non-emergency personnel : Evacuate unnecessary personnel. Keep upwind. Provide adequate ventilation. Do not breathe vapours. Avoid contact with skin, eyes and clothing. Wear recommended personal protective equipment. Concerning personal protective equipment to use, see section 8.

6.1.2. For emergency responders

For emergency responders : Ensure procedures and training for emergency decontamination and disposal are in place. Concerning personal protective equipment to use, see section 8.

6.2. Environmental precautions

Do not allow to enter into surface water or drains. Notify authorities if product enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Stop leak if safe to do so. Dam up the liquid spill. Small quantities of liquid spill: take up in non-combustible absorbent material and shovel into container for disposal. Recover large spills by pumping (use an explosion proof or hand pump). Place in a suitable container for disposal in accordance with the waste regulations (see Section 13). This material and its container must be disposed of in a safe way, and as per local legislation.

6.4. Reference to other sections

Concerning personal protective equipment to use, see section 8. Concerning disposal elimination after cleaning, see section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Provide adequate ventilation. Do not breathe vapours. Avoid contact with skin, eyes and clothing. Use personal protective equipment as required. Concerning personal protective equipment to use, see section 8. Take any precaution to avoid mixing with Incompatible materials, Refer to Section 10 on Incompatible Materials. Ensure proper process control to avoid excess waste discharge (temperature, concentration, pH, time). Avoid release to the environment. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.

Hygiene measures : Keep good industrial hygiene. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Do not eat, drink or smoke when using this product. Keep away from food, drink and animal feedingstuffs. Remove contaminated clothes. Separate working clothes from town clothes. Launder separately. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store locked up. Store in a dry, cool and well-ventilated place. Do not store near or with any of the incompatible materials listed in section 10. Bund storage facilities to prevent soil and water pollution in the event of spillage.

Incompatible materials : Keep away from strong acids, strong bases and oxidizing agents.

Heat and ignition sources : Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Special rules on packaging : Tactile warning. Containers which are opened should be properly resealed and kept upright to prevent leakage. Keep container tight closed.

Packaging materials : Keep only in the original container.

7.3. Specific end use(s)

brake fluids.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

2,2' -OXYBISETHANOL, DIETHYLENE GLYCOL (111-46-6)		
Austria	MAK (OEL TWA)	44 mg/m³
Austria	MAK (OEL TWA) [ppm]	10 ppm
Austria	MAK (OEL STEL)	176 mg/m³
Austria	MAK (OEL STEL) [ppm]	40 ppm
Bulgaria	OEL TWA	10 mg/m³
Croatia	GVI (OEL TWA) [1]	101 mg/m³
Croatia	GVI (OEL TWA) [2]	23 ppm
Denmark	OEL TWA [1]	11 mg/m³
Denmark	OEL TWA [2]	2,5 ppm
Estonia	OEL TWA	45 mg/m³
Estonia	OEL TWA [ppm]	10 ppm
Estonia	OEL STEL	90 mg/m³
Estonia	OEL STEL [ppm]	20 ppm

2,2' -OXYBISETHANOL, DIETHYLENE GLYCOL (111-46-6)		
Germany	Occupational exposure limit value (mg/m³) (TRGS900)	44 mg/m³ (the risk of damage to the embryo or fetus can be excluded when AGW and BGW values are observed)
Germany	Occupational exposure limit value (ppm) (TRGS900)	10 ppm (the risk of damage to the embryo or fetus can be excluded when AGW and BGW values are observed)
Ireland	OEL TWA [1]	100 mg/m³
Ireland	OEL TWA [2]	23 ppm
Ireland	OEL STEL	300 mg/m³ (calculated)
Ireland	OEL STEL [ppm]	69 ppm (calculated)
Latvia	OEL TWA	10 mg/m³
Lithuania	IPRV (OEL TWA)	45 mg/m³ (2,2-Oxydiethanol)
Lithuania	IPRV (OEL TWA) [ppm]	10 ppm (2,2-Oxydiethanol)
Lithuania	TPRV (OEL STEL)	90 mg/m³ (2,2-Oxydiethanol)
Lithuania	TPRV (OEL STEL) [ppm]	20 ppm (2,2-Oxydiethanol)
Poland	NDS (OEL TWA)	10 mg/m³ (inhalable fraction)
Romania	OEL TWA	500 mg/m³
Romania	OEL TWA [ppm]	115 ppm
Romania	OEL STEL	800 mg/m³
Romania	OEL STEL [ppm]	184 ppm
Slovakia	NPHV (OEL TWA) [1]	44 mg/m³
Slovakia	NPHV (OEL TWA) [2]	10 ppm
Slovakia	NPHV (OEL C)	90 mg/m³
Slovenia	OEL TWA	44 mg/m³
Slovenia	OEL TWA [ppm]	10 ppm
Slovenia	OEL STEL	176 mg/m³
Slovenia	OEL STEL [ppm]	40 ppm
Sweden	NGV (OEL TWA)	45 mg/m³
Sweden	NGV (OEL TWA) [ppm]	10 ppm
Sweden	KTV (OEL STEL)	90 mg/m³
Sweden	KTV (OEL STEL) [ppm]	20 ppm
United Kingdom	WEL TWA (OEL TWA) [1]	101 mg/m³
United Kingdom	WEL TWA (OEL TWA) [2]	23 ppm
United Kingdom	WEL STEL (OEL STEL)	303 mg/m³ (calculated)
United Kingdom	WEL STEL (OEL STEL) [ppm]	69 ppm (calculated)
Switzerland	MAK (OEL TWA) [1]	44 mg/m³ (aerosol, vapour)
Switzerland	MAK (OEL TWA) [2]	10 ppm (aerosol, vapour)
Switzerland	KZGW (OEL STEL)	176 mg/m³ (aerosol, vapour)
Switzerland	KZGW (OEL STEL) [ppm]	40 ppm (aerosol, vapour)
Australia	OES TWA [1]	100 mg/m³

2,2' -OXYBISETHANOL, DIETHYLENE GLYCOL (111-46-6)		
Australia	OES TWA [2]	23 ppm
2-(2-methoxyethoxy)ethanol (111-77-3)		
EU	IOEL TWA	50,1 mg/m³
EU	IOEL TWA [ppm]	10 ppm
EU	Remark	Possibility of significant uptake through the skin
Austria	MAK (OEL TWA)	50,1 mg/m³
Austria	MAK (OEL TWA) [ppm]	10 ppm
Belgium	OEL TWA	50,1 mg/m³
Belgium	OEL TWA [ppm]	10 ppm
Bulgaria	OEL TWA	50,1 mg/m³
Bulgaria	OEL TWA [ppm]	10 ppm
Croatia	GVI (OEL TWA) [1]	50,1 mg/m³
Croatia	GVI (OEL TWA) [2]	10 ppm
Cyprus	OEL TWA	50,1 mg/m³
Cyprus	OEL TWA [ppm]	10 ppm
Czech Republic	PEL (OEL TWA)	50 mg/m³
Denmark	OEL TWA [1]	50 mg/m³
Denmark	OEL TWA [2]	10 ppm
Finland	HTP (OEL TWA) [1]	50 mg/m³
Finland	HTP (OEL TWA) [2]	10 ppm
France	VME (OEL TWA)	50,1 mg/m³ (indicative limit)
France	VME (OEL TWA) [ppm]	10 ppm (indicative limit)
Germany	Occupational exposure limit value (mg/m³) (TRGS900)	50 mg/m³ (the risk of damage to the embryo or fetus can be excluded when AGW and BGW values are observed)
Germany	Occupational exposure limit value (ppm) (TRGS900)	10 ppm (the risk of damage to the embryo or fetus can be excluded when AGW and BGW values are observed)
Gibraltar	OEL TWA	50,1 mg/m³
Gibraltar	OEL TWA [ppm]	10 ppm
Greece	OEL TWA	50,1 mg/m³
Greece	OEL TWA [ppm]	10 ppm
Hungary	AK (OEL TWA)	50,1 mg/m³
Ireland	OEL TWA [1]	50,1 mg/m³
Ireland	OEL TWA [2]	10 ppm
Ireland	OEL STEL	150,3 mg/m³ (calculated)
Ireland	OEL STEL [ppm]	30 ppm (calculated)
Italy	OEL TWA	50,1 mg/m³
Italy	OEL TWA [ppm]	10 ppm
Latvia	OEL TWA	50,1 mg/m³
Latvia	OEL TWA [ppm]	10 ppm

2-(2-methoxyethoxy)ethanol (111-77-3)		
Lithuania	IPRV (OEL TWA)	50,1 mg/m³
Lithuania	IPRV (OEL TWA) [ppm]	10 ppm
Luxembourg	OEL TWA	50,1 mg/m³
Luxembourg	OEL TWA [ppm]	10 ppm
Malta	OEL TWA	50,1 mg/m³
Malta	OEL TWA [ppm]	10 ppm
Netherlands	TGG-8u (OEL TWA)	45 mg/m³
Poland	NDS (OEL TWA)	50 mg/m³
Portugal	OEL TWA	50,1 mg/m³ (indicative limit value)
Portugal	OEL TWA [ppm]	10 ppm (indicative limit value)
Romania	OEL TWA	50,1 mg/m³
Romania	OEL TWA [ppm]	10 ppm
Slovakia	NPHV (OEL TWA) [1]	50,1 mg/m³
Slovakia	NPHV (OEL TWA) [2]	10 ppm
Slovenia	OEL TWA	50,1 mg/m³
Slovenia	OEL TWA [ppm]	10 ppm
Spain	VLA-ED (OEL TWA) [1]	50,1 mg/m³ (indicative limit value)
Spain	VLA-ED (OEL TWA) [2]	10 ppm (indicative limit value)
Sweden	NGV (OEL TWA)	50 mg/m³
Sweden	NGV (OEL TWA) [ppm]	10 ppm
United Kingdom	WEL TWA (OEL TWA) [1]	50,1 mg/m³
United Kingdom	WEL TWA (OEL TWA) [2]	10 ppm
United Kingdom	WEL STEL (OEL STEL)	150,3 mg/m³ (calculated)
United Kingdom	WEL STEL (OEL STEL) [ppm]	30 ppm (calculated)
Norway	Grenseverdi (OEL TWA) [1]	50 mg/m³
Norway	Grenseverdi (OEL TWA) [2]	10 ppm
Norway	Korttidsverdi (OEL STEL)	75 mg/m³ (value calculated)
Norway	Korttidsverdi (OEL STEL) [ppm]	20 ppm (value calculated)

Additional information : Personal air monitoring :. Room air monitoring. Recommended monitoring procedures

8.2. Exposure controls

Engineering measure(s) : Provide adequate ventilation. Organisational measures to prevent/limit releases, dispersion and exposure. See Section 7 for information on safe handling .

Personal protective equipment : The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hand protection	:	In case of repeated or prolonged exposure : Suitable material: Nitrile rubber. Thickness of the glove material: >0,3 mm. Breakthrough time : >8h. Wear chemically resistant gloves (tested to EN374) . The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances.
Eye protection	:	If there is a risk of liquid being splashed : Use suitable eye protection (EN166): goggles
Body protection	:	Wear suitable protective clothing
Respiratory protection	:	In case of insufficient ventilation, wear suitable respiratory equipment. Half-face mask (DIN EN 140). full face mask (DIN EN 136). Filter type: A (EN 14387). The filter class must be suitable for the maximum contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If the concentration is exceeded, self-contained breathing apparatus must be used. (EN 137)
Thermal hazard protection	:	Not required for normal conditions of use. Use dedicated equipment.
Environmental exposure controls	:	Avoid release to the environment. Comply with applicable Community environmental protection legislation.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Liquid
Appearance	:	Liquid.
Colour	:	Colourless to Amber.
Odour	:	Characteristic.
Odour threshold	:	No data available
pH	:	7 – 10,5
Relative evaporation rate (butylacetate=1)	:	No data available
Melting / freezing point	:	< -50 °C
Freezing point	:	No data available
Initial boiling point and boiling range	:	> 260 °C
Flash point	:	No data available
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Flammability	:	Not applicable,liquid
Vapour pressure	:	No data available
Vapour density	:	No data available
Relative density	:	1,02 – 1,09 (20°C)
Density	:	1020 – 1090 kg/m³ (20°C)
Solubility	:	Water: No data available
Partition coefficient n-octanol/water	:	No data available
Kinematic viscosity	:	15 mm²/s (20 °C)
Dynamic viscosity	:	No data available
Explosive properties	:	Not applicable. The study does not need to be conducted because there are no chemical groups associated with explosive properties present in the molecule.

Oxidising properties	:	Not applicable. The classification procedure needs not to be applied because there are no chemical groups present in the molecule which are associated with oxidising properties.
Explosive limits	:	No data available
Particle size	:	Not applicable
Particle size distribution	:	Not applicable
Particle shape	:	Not applicable
Particle aspect ratio	:	Not applicable
Particle aggregation state	:	Not applicable
Particle agglomeration state	:	Not applicable
Particle specific surface area	:	Not applicable
Particle dustiness	:	Not applicable

9.2. Other information

9.2.1. Information with regard to physical hazard classes

No additional information available

9.2.2. Other safety characteristics

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

None under normal conditions. Reference to other sections 10.4 & 10.5.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. See Section 7 for information on safe handling.

10.5. Incompatible materials

Strong oxidizing agents. Strong acids. Strong bases. See Section 7 for information on safe handling.

10.6. Hazardous decomposition products

Reference to other sections 5.2.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified (Based on available data, the classification criteria are not met)

2,2' -OXYBISETHANOL, DIETHYLENE GLYCOL (111-46-6)	
LD50/oral/rat	12565 mg/kg
LD50 oral	1120 mg/kg

2,2' -OXYBISETHANOL, DIETHYLENE GLYCOL (111-46-6)	
LD50/dermal/rabbit	11890 mg/kg
LD50 dermal	11890 mg/kg
LC50/inhalation/4h/rat	> 4600 mg/m³ (Exposure time: 4 h)

2-(2-methoxyethoxy)ethanol (111-77-3)	
LD50/oral/rat	4 ml/kg
LD50 oral	4 ml/kg
LD50/dermal/rabbit	9404 mg/kg
LD50 dermal	9404 mg/kg
LC50/inhalation/4h/rat (ppm)	LC0 (6 hours) = 1,2 mg/l (OECD 403)

2-(2-(2-butoxyethoxy)ethoxy)ethanol (143-22-6)	
LD50/oral/rat	5300 mg/kg
LD50/dermal/rabbit	3540 mg/kg

Dihydro-3-(tetrapropenyl)furan-2,5-dione (26544-38-7)	
LD50/oral/rat	2550 mg/kg
LD50/dermal/rat	> 2000 mg/kg
LD50/dermal/rabbit	6200 – 7500 mg/kg
LC50/inhalation/4h/rat	5,3 mg/l

tris[2-[2-(2-methoxyethoxy)ethoxy]ethyl] orthoborate (30989-05-0)	
LD50/oral/rat	> 2000 mg/kg
LD50 oral	> 2000 mg/kg
LD50/dermal/rat	> 2000 mg/kg
LD50 dermal	> 2000 mg/kg

Skin corrosion/irritation : Not classified (Based on available data, the classification criteria are not met)
pH: 7 – 10,5

Serious eye damage/irritation : Not classified (Based on available data, the classification criteria are not met)
pH: 7 – 10,5

Respiratory or skin sensitisation : Not classified (Based on available data, the classification criteria are not met)

Germ cell mutagenicity : Not classified (Based on available data, the classification criteria are not met)

Carcinogenicity : Not classified (Based on available data, the classification criteria are not met)

2,2' -OXYBISETHANOL, DIETHYLENE GLYCOL (111-46-6)	
NOAEL, male, female, long term, oral, Rat	1160 - 1210 mg/kg bw/day (108 weeks)

Reproductive toxicity : Suspected of damaging fertility. Suspected of damaging the unborn child.

STOT-single exposure : Not classified (Based on available data, the classification criteria are not met)

2,2' -OXYBISETHANOL, DIETHYLENE GLYCOL (111-46-6)	
NOAEL (dermal, rat/rabbit)	3549 mg/kg bodyweight Mouse

STOT-repeated exposure : Not classified (Based on available data, the classification criteria are not met)

2,2' -OXYBISETHANOL, DIETHYLENE GLYCOL (111-46-6)	
NOAEL, mammalian, long term, oral, Rat	100 mg/kg bw (225 days)

Aspiration hazard : Not classified (Based on available data, the classification criteria are not met)

Vector 4 Brake Fluid	
Kinematic viscosity	15 mm²/s (20 °C)

Other adverse effects : Suspected of damaging the unborn child.

Other information : Symptoms related to the physical, chemical and toxicological characteristics. For further information see section 4.

11.2. Information on other hazards

11.2.1. Endocrine disrupting properties

Adverse health effects caused by endocrine disrupting properties : The mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not identified as 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 %

11.2.2 Other information

Other adverse effects : Suspected of damaging the unborn child.

Other information : Symptoms related to the physical, chemical and toxicological characteristics,For further information see section 4

SECTION 12: Ecological information

12.1. Toxicity

Environmental properties : According to the criteria of the European classification and labelling system, the substance/the product has not to be labelled as "dangerous for the environment".

Hazardous to the aquatic environment, short–term (acute) : Not classified

Hazardous to the aquatic environment, long–term (chronic) : Not classified

2,2' -OXYBISETHANOL, DIETHYLENE GLYCOL (111-46-6)	
LC50 - Fish [1]	75200 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through])
EC50 - Crustacea [1]	84000 mg/l (Exposure time: 48 h - Species: Daphnia magna)
ErC50 algae	2700 mg/l (Scenedesmus quadricauda) TGK 8d
NOEC chronic fish	15380 mg/l EPA 600/4-90/027
NOEC chronic crustacea	8590 mg/l EPA 600/4-90/027
NOEC chronic algae	2700 mg/l OECD 201
EC50, aquatic invertebrates, acute, daphnia	> 10000 mg/l (24 hours, DIN 38414-11)
EC20, aqua FW	> 1995 mg/l (30, ISO 8192)

2-(2-methoxyethoxy)ethanol (111-77-3)	
LC50 - Fish [1]	7500 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus [static])
LC50 - Fish [2]	7500 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus)
EC50 - Crustacea [1]	> 500 mg/l (Exposure time: 48 h - Species: Daphnia magna)
EC50 72h - Algae [1]	> 500 mg/l (Species: Desmodesmus subspicatus)

2-(2-(2-butoxyethoxy)ethoxy)ethanol (143-22-6)	
LC50 - Fish [1]	2400 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static])
LC50 - Fish [2]	2400 mg/l (Exposure time: 96 h - Species: Pimephales promelas)
EC50 - Crustacea [1]	> 500 mg/l (Exposure time: 48 h - Species: Daphnia magna)
EC50 72h - Algae [1]	> 500 mg/l (Species: Desmodesmus subspicatus)

Dihydro-3-(tetrapropenyl)furan-2,5-dione (26544-38-7)	
LC50 - Fish [1]	> 100 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [static-renewal])
EC50 - Crustacea [1]	> 100 mg/l
EC50 - Other aquatic organisms [1]	800 mg/l (3h)
EC50 72h - Algae [1]	110 mg/l (Selenastrum capricornutum)

tris[2-[2-(2-methoxyethoxy)ethoxy]ethyl] orthoborate (30989-05-0)	
LC50 - Fish [1]	> 222,2 mg/l Oncorhynchus mykiss (Rainbow trout)
LC50 - Other aquatic organisms [1]	> 224,4 mg/l Pseudokirchneriella subcapitata
EC50 - Crustacea [1]	> 211,2 mg/l
EC50 96h - Algae [1]	430 mg/l (Species: Pseudokirchneriella subcapitata)

12.2. Persistence and degradability

Vector 4 Brake Fluid	
Persistence and degradability	No additional information available.

2,2' -OXYBISETHANOL, DIETHYLENE GLYCOL (111-46-6)	
Persistence and degradability	Readily biodegradable.

2-(2-methoxyethoxy)ethanol (111-77-3)	
Persistence and degradability	Readily biodegradable.

Dihydro-3-(tetrapropenyl)furan-2,5-dione (26544-38-7)	
Persistence and degradability	Not readily biodegradable.
Biodegradation	9,9 % (28d) (OECD301D)

tris[2-[2-(2-methoxyethoxy)ethoxy]ethyl] orthoborate (30989-05-0)	
Persistence and degradability	Readily biodegradable.

12.3. Bioaccumulative potential

Vector 4 Brake Fluid	
Partition coefficient n-octanol/water	No data available
Bioaccumulative potential	No additional information available.

2,2' -OXYBISETHANOL, DIETHYLENE GLYCOL (111-46-6)	
BCF - Fish [1]	100 – 180
Bioconcentration factor (BCF)	100 (3d, Leuciscus melatonus)
Partition coefficient n-octanol/water	-1,98 (at 25 °C)
Bioaccumulative potential	Bioaccumulation unlikely.

2-(2-methoxyethoxy)ethanol (111-77-3)	
Partition coefficient n-octanol/water	-0,47 (at 20 °C (at pH 6.7)
Bioaccumulative potential	Bioaccumulation unlikely.

2-(2-(2-butoxyethoxy)ethoxy)ethanol (143-22-6)	
BCF - Fish [1]	(no significant bioaccumulation)
Partition coefficient n-octanol/water	0,51 (at 25 °C (at pH 7)

Dihydro-3-(tetrapropenyl)furan-2,5-dione (26544-38-7)	
Partition coefficient n-octanol/water	≥ 4,39 (at 22 °C (at pH 7)
Partition coefficient n-octanol/water (Log Kow)	≥ 4,39
Bioaccumulative potential	Low potential.

tris[2-[2-(2-methoxyethoxy)ethoxy]ethyl] orthoborate (30989-05-0)	
BCF - Fish [1]	(no bioaccumulation expected)
Partition coefficient n-octanol/water	-1,47 (Diethylenglycol; at pH 7)
Bioaccumulative potential	Log Pow -4,37 (QSAR). No bioaccumulation.

12.4. Mobility in soil

DOT4 XHD 260 Brake Fluid	
Mobility in soil	No data available

Dihydro-3-(tetrapropenyl)furan-2,5-dione (26544-38-7)	
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	2,92

12.5. Results of PBT and vPvB assessment

DOT4 XHD 260 Brake Fluid	
Results of PBT assessment	Contains no PBT/vPvB substances ≥ 0.1% assessed in accordance with REACH Annex XIII

Component	
Dihydro-3-(tetrapropenyl)furan-2,5-dione (26544-38-7)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

12.6. Endocrine disrupting properties

Adverse effects on the environment caused by endocrine disrupting properties : The mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not identified as 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 %

12.7. Other adverse effects

Other adverse effects : No data available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product/Packaging disposal recommendations : Avoid release to the environment. Dispose of empty containers and wastes safely. See Section 7 for information on safe handling. Refer to manufacturer/supplier for information on recovery/recycling. Recycling is preferred to disposal or incineration. If recycling is not possible, eliminate in accordance with local valid waste disposal regulations. Handle contaminated packages in the same way as the substance itself. Dispose of contaminated materials in accordance with current regulations.

European waste catalogue (2001/573/EC, 75/442/EEC, 91/689/EEC) : This material and its container must be disposed of as hazardous waste
Waste codes should be assigned by the user, preferably in discussion with the waste disposal authorities
brake fluids
150110* - packaging containing residues of or contaminated by dangerous substances

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

ADR	IMDG	IATA	ADN	RID
14.1. UN number				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
14.2. UN proper shipping name				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable

ADR	IMDG	IATA	ADN	RID
14.3. Transport hazard class(es)				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
14.4. Packing group				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
14.5. Environmental hazards				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
No supplementary information available				

14.6. Special precautions for user

Special precautions for user : No data available

- Overland transport

Not applicable

- Transport by sea

Not applicable

- Air transport

Not applicable

- Inland waterway transport

Not applicable

- Rail transport

Not applicable

14.7. Maritime transport in bulk according to IMO instruments

Code: IBC : No data available.

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

Listed on REACH Annex XVII (Restriction Conditions). The following restrictions are applicable:

3(b) Substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard classes 3.1 to 3.6, 3.7 adverse effects on sexual function and fertility or on development, 3.8 effects other than narcotic effects, 3.9 and 3.10	DOT4 XHD 260 Brake Fluid ; 2,2' -OXYBISETHANOL, DIETHYLENE GLYCOL ; 2-(2-methoxyethoxy)ethanol ; 2-(2-(2-butoxyethoxy)ethoxy)ethanol ; Dihydro-3-(tetrapropenyl)furan-2,5-dione
3(c) Substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard class 4.1	Dihydro-3-(tetrapropenyl)furan-2,5-dione
54. 2-(2-methoxyethoxy)ethanol (DEGME)	2-(2-methoxyethoxy)ethanol

Contains no substance(s) listed on the REACH Candidate List

Contains no substance(s) listed on REACH Annex XIV (Authorisation List)

15.1.2. National regulations

France

No ICPE	Installations classées Désignation de la rubrique	Code Régime	Rayon
na	Not Applicable	na	na

Germany

Regulatory reference	:	WGK 1, Slightly hazardous to water (Classification according to AwSV, Annex 1)
German storage class (LGK)	:	LGK 12 - Non-combustible liquids
Hazardous Incident Ordinance (12. BImSchV)	:	Is not subject of the 12. BImSchV (Hazardous Incident Ordinance)

Netherlands

Waterbezwaarlijkheid	:	B (5) - Weinig schadelijk voor in het water levende organismen
SZW-lijst van kankerverwekkende stoffen	:	None of the components are listed
SZW-lijst van mutagene stoffen	:	None of the components are listed
SZW-lijst van reprotoxische stoffen – Borstvoeding	:	None of the components are listed
SZW-lijst van reprotoxische stoffen – Vruchtbaarheid	:	None of the components are listed
SZW-lijst van reprotoxische stoffen – Ontwikkeling	:	2-(2-methoxyethoxy)ethanol is listed

Denmark

Recommendations Danish Regulation	:	Young people below the age of 18 years are not allowed to use the product. Pregnant/breastfeeding women working with the product must not be in direct contact with the product.

15.2. Chemical safety assessment

Not applicable

For the following substances of this mixture a chemical safety assessment has been carried out
2,2' -OXYBISETHANOL, DIETHYLENE GLYCOL 2-(2-methoxyethoxy)ethanol 2-(2-(2-butoxyethoxy)ethoxy)ethanol tris[2-[2-(2-methoxyethoxy)ethoxy]ethyl] orthoborate

SECTION 16: Other information

Indication of changes:

2.1	Classification according to Regulation (EC) No. 1272/2008 [CLP]	Modified	
2.2	Hazard statements (CLP)	Modified	
2.3	ED text	Added	
3	Composition/informatio	Modified	

	n on ingredients		
4.2	Chronic symptoms	Added	
7.2	Special rules on packaging	Added	
7.3	Specific end use(s)	Added	
9.2	Information with regard to physical hazard classes	Added	
9.2	Other safety characteristics	Added	
11.2	Adverse health effects caused by endocrine disrupting properties	Added	
12.6	Adverse effects on the environment caused by endocrine disrupting properties	Added	
14.7	Maritime transport in bulk according to IMO instruments	Added	
15.1	German storage class (LGK)	Added	

Abbreviations and acronyms:

	ABM = Algemene beoordelingsmethodiek
	ADN = Accord Européen relatif au Transport International des Marchandises Dangereuses par voie de Navigation du Rhin ADR = Accord européen relatif au transport international des marchandises Dangereuses par Route CLP = Classification, Labelling and Packaging Regulation according to 1272/2008/EC IATA = International Air Transport Association IMDG = International Maritime Dangerous Goods Code LEL = Lower Explosive Limit/Lower Explosion Limit UEL = Upper Explosion Limit/Upper Explosive Limit REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals
	BTT = Breakthrough time (maximum wearing time)
	DMEL = Derived Minimal Effect level
	DNEL = Derived No Effect Level
	EC50 = Median Effective Concentration
	EL50 = Median effective level
	ErC50 = EC50 in terms of reduction of growth rate
	ErL50 = EL50 in terms of reduction of growth rate
	EWC = European waste catalogue
	LC50 = Median lethal concentration
	LD50 = Median lethal dose
	LL50 = Median lethal level
	NA = Not applicable
	NOEC = No observed effect concentration
	NOEL: no-observed-effect level
	NOELR = No observed effect loading rate
	NOAEC = No observed adverse effect concentration
	NOAEL = No observed adverse effect level
	N.O.S. = Not Otherwise Specified
	OEL = Occupational Exposure Limits - Short Term Exposure Limits (STELs)
	PNEC = Predicted No Effect Concentration
	Quantitative structure-activity relationship (QSAR)
	STOT = Specific Target Organ Toxicity

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	TWA = time weighted average
	VOC = Volatile organic compounds
	WGK = Wassergefährdungsklasse (Water Hazard Class under German Federal Water Management Act)

Sources of key data used to compile the datasheet : ECHA (European Chemicals Agency), supplier sds, Loli.

Training advice : Training staff on good practice. Manipulations are to be done only by qualified and authorised persons.

Other information : Classification - Assessment method: CLP Calculation method (Article 9). Physicochemical hazard assessment: Information given is based on tests on the mixture itself.

Full text of H- and EUH-statements:

Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Aquatic Chronic 4	Hazardous to the aquatic environment – Chronic Hazard, Category 4
EUH208	Contains Dihydro-3-(tetrapropenyl)furan-2,5-dione. May produce an allergic reaction.
Eye Dam. 1	Serious eye damage/eye irritation, Category 1
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
H302	Harmful if swallowed.
H317	May cause an allergic skin reaction.
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.
H413	May cause long lasting harmful effects to aquatic life.
Repr. 1B	Reproductive toxicity, Category 1B
Repr. 2	Reproductive toxicity, Category 2
Skin Sens. 1A	Skin sensitisation, category 1A

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878
Classification according to Regulation (EC) No. 1272/2008 [CLP]
Labelling according to Regulation (EC) No. 1272/2008 [CLP]