

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878 Issue date: 4-3-2020 Revision date: 18-1-2023 Supersedes: 8-4-2022 version: 7.0

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

1.1. Product identifier

Product form	: Mixture
Trade name	: MPM Brake Fluid DOT 4
UFI	: 69YR-4M9J-KU10-QSX3
Product code	: 20000
Type of product	: Brake fluids
Product group	: Mixture

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

1.2.1. Relevant identified uses

Main use category	: Professional use, Industrial use, Consumer use
Industrial/Professional use spec	: Non-dispersive use
	Used in closed systems
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

Manufacturer

MPM International Oil Company Cyclotronweg 1 2629 HN Delft - Nederland T +31 (0)15 2514030 pvhoorn@mpmoil.com - www.mpmoil.com

1.4. Emergency telephone number

Emergency number

: +31 (0)15 2514030 (08.00 - 17.00 GMT+1)

Country	Official advisory body	Address	Emergency number	Comment
Ireland	National Poisons Information Centre Beaumont Hospital	PO Box 1297 Beaumont Road 9 Dublin	+353 1 809 2566 (Healthcare professionals- 24/7) +353 1 809 2166 (public, 8am - 10pm, 7/7)	
United Kingdom	Guy's & St Thomas' Poisons Unit Medical Toxicology Unit, Guy's & St Thomas' Hospital Trust	Avonley Road SE14 5ER	+44 20 7188 7188	

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture		
Classification according to Regulation (EC) No. 1272/2008 [CLP]		
Serious eye damage/eye irritation, Category 2	H319	
Reproductive toxicity, Category 2	H361d	
Full text of H- and EUH-statements: see section 16		
Adverse physicochemical, human health and environmental effects		

The product is not expected to be harmful to the environment.

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2.2. Label elements Labelling according to Regulation (EC) No. 1272/2008 [CLP] Hazard pictograms (CLP) GHS07 GHS08 CLP Signal word : Warning : Methyl Triglycol Borate Contains Hazard statements (CLP) : H319 - Causes serious eye irritation. H361d - Suspected of damaging the unborn child. Precautionary statements (CLP) : P264 - Wash hands, forearms and face thoroughly after handling. P301+P310 - IF SWALLOWED: Immediately call a POISON CENTER/doctor. P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337+P313 - If eye irritation persists: Get medical advice/attention. P501 - Dispose of contents/container in accordance with local and national regulations. P102 - Keep out of reach of children.

2.3. Other hazards

Contains no PBT/vPvB substances ≥ 0.1% assessed in accordance with REACH 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

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Methyl Triglycol Borate	CAS-No.: 30989-05-0 EC-No.: 250-418-4 EC Index-No.: 250-418-4 REACH-no: 2119462824-33	≥ 20 – ≤ 30	Repr. 2, H361d
Butyl Triglycol	CAS-No.: 143-22-6 EC-No.: 205-592-6 EC Index-No.: 603-183-00-0 REACH-no: 01-2119475107- 38	≥ 20 – ≤ 29,9	Eye Dam. 1, H318
Butyl Polyglycol	CAS-No.: 9004-77-7 EC-No.: 500-012-0 EC Index-No.: 500-012-0 REACH-no: 2119475115-41	≥ 5 – ≤ 10	Eye Irrit. 2, H319
Diethylene glycol	CAS-No.: 111-46-6 EC-No.: 203-872-2 EC Index-No.: 603-140-00-6 REACH-no: 01-2119457857- 21	≥ 0,1 – ≤ 9,9	Acute Tox. 4 (Oral), H302

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Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
2-(2-Butoxyethoxy)ethanol	CAS-No.: 112-34-5 EC-No.: 203-961-6 EC Index-No.: 603-096-00-8 REACH-no: 01-2119475104- 44	≥ 0,1 – ≤ 2,99	Eye Irrit. 2, H319
2-(2-Methoxyethoxy)ethanol	CAS-No.: 111-77-3 EC-No.: 203-906-6 EC Index-No.: 603-107-00-6 REACH-no: 01-2119475100- 52	≥ 0,1 – ≤ 2,99	Repr. 2, H361d

Specific concentration limits		
Name	Product identifier	Specific concentration limits
Butyl Triglycol	CAS-No.: 143-22-6 EC-No.: 205-592-6 EC Index-No.: 603-183-00-0 REACH-no: 01-2119475107- 38	(20 ≤C < 30) Eye Irrit. 2, H319 (30 ≤C < 100) Eye Dam. 1, H318
Butyl Polyglycol	CAS-No.: 9004-77-7 EC-No.: 500-012-0 EC Index-No.: 500-012-0 REACH-no: 2119475115-41	(20 ≤C < 100) Eye Irrit. 2, H319

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

SECTION 4: First aid measures	
4.1. Description of first aid measures	
General	: Remove to fresh air and keep at rest in a position comfortable for breathing. If medical advice is needed, have product container or label at hand.
After inhalation	: Remove to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell.
After skin contact	: Take off immediately all contaminated clothing. If skin irritation occurs: Get medical advice/attention.
After eye contact	: If eye irritation persists: Get medical advice/attention. In case of eye contact, immediately rinse with clean water for 10-15 minutes.
After ingestion	Do NOT induce vomiting. Rinse mouth. Call a physician immediately. If the person is fully conscious, make him/her drink plenty of water. Never give an unconscious person anything to drink.

After inhalation	: May cause respiratory irritation.
After skin contact	: Repeated exposure may cause skin dryness or cracking.
After eye contact	: May cause severe irritation.
After ingestion	: Abdominal pain, nausea. Vomiting.

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

Treat symptomatically.

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SECTION 5: Firefighting measures		
5.1. Extinguishing media		
Suitable extinguishing media	: Water spray, powder, foam and CO2.	
5.2. Special hazards arising from the subst	ance or mixture	
Hazardous decomposition products in case of fire	: Carbon monoxide. Carbon dioxide.	
5.3. Advice for firefighters		
Precautionary measures fire Firefighting instructions	 Do not enter fire area without proper protective equipment, including respiratory protection. Use water spray or fog for cooling exposed containers. Prevent fire fighting water from entering the environment. 	
Protection during firefighting	: Do not enter fire area without proper protective equipment, including respiratory protection.	
SECTION 6: Accidental release measures		
6.1. Personal precautions, protective equipment and emergency procedures		

General measures	: Mark out the contaminated area with signs and prevent access to unauthorized personnel.
6.1.1. For non-emergency personnel	

Protective equipment

: Wear suitable protective clothing and gloves.

6.1.2. For emergency responders

No additional information available.

6.2. Environmental precautions	
Prevent entry to sewers and public waters.	
6.3. Methods and material for containment a	nd cleaning up
Methods for cleaning up	: Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Small quantities of liquid spill: take up in non-combustible absorbent material and shovel into container for disposal.

6.4. Reference to other sections

For further information refer to section 8: "Exposure controls/personal protection". For further information refer to section 13.

SECTION 7: Handling and stora	age
7.1. Precautions for safe handling	
Precautions for safe handling	: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Do not get in eyes, on skin, or on clothing. Keep container closed when not in use
Hygiene measures	: Do not eat, drink or smoke when using this product.
7.2. Conditions for safe storage, in	cluding any incompatibilities
Storage conditions Incompatible products	Store in a well-ventilated place. Keep container tightly closed.Oxidizing agent.
7.3. Specific end use(s)	

No additional information available.

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SECTION 8: Exposure controls/personal protection			
8.1. Control parameters			
8.1.1. National occupational exposure and biological limit values			
Diethylene glycol (111-46-6)			
EU - Indicative Occupational Exposure Limit (IOEL)			
IOELV TWA (mg/m ³)	101 mg/m ³		
Ireland - Occupational Exposure Limits			
Local name	Diethylene glycol [2,2'-Oxydiethanol]		
OEL (8 hours ref) (mg/m³)	100 mg/m ³		
OEL (8 hours ref) (ppm)	23 ppm		
Regulatory reference	Chemical Agents Code of Practice 2021		
United Kingdom - Occupational Exposure Limits			
Local name	2,2'-Oxydiethanol		
WEL TWA (mg/m³)	101 mg/m³		
WEL TWA (ppm)	23 ppm		
Regulatory reference	EH40/2005 (Fourth edition, 2020). HSE		
2-(2-Butoxyethoxy)ethanol (112-34-5)			
EU - Indicative Occupational Exposure Limit (IOEL)			
Local name	2-(2-Butoxyethoxy)ethanol		
IOELV TWA (mg/m ³)	67,5 mg/m³		
IOELV STEL (mg/m³)	101,2 mg/m³		
IOELV STEL (ppm)	15 ppm		
Regulatory reference	COMMISSION DIRECTIVE 2006/15/EC		
Ireland - Occupational Exposure Limits			
Local name	2-(2-Butoxyethoxy)ethanol		
OEL (8 hours ref) (mg/m³)	67,5 mg/m³		
OEL (8 hours ref) (ppm)	10 ppm		
OEL (15 min ref) (mg/m3)	101,2 mg/m³		
OEL (15 min ref) (ppm)	15 ppm		
Regulatory reference	Regulatory reference Chemical Agents Code of Practice 2021		
United Kingdom - Occupational Exposure Limits			
Local name	2-(2-Butoxyethoxy)ethanol		
WEL TWA (mg/m³)	67,5 mg/m³		
WEL TWA (ppm)	10 ppm		
WEL STEL (mg/m³)	101,2 mg/m³		
WEL STEL (OEL STEL) [ppm]	15 ppm		
Regulatory reference	EH40/2005 (Fourth edition, 2020). HSE		

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2-(2-Methoxyethoxy)ethanol (111-77-3)		
EU - Indicative Occupational Exposure Limit (IOEL)		
Local name	2-(2-Methoxyethoxy)ethanol	
IOELV TWA (mg/m³)	50,1 mg/m³	
Notes	Skin	
Regulatory reference	COMMISSION DIRECTIVE 2006/15/EC	
Ireland - Occupational Exposure Limits		
Local name	2-(2-Methoxyethoxy)ethanol	
OEL (8 hours ref) (mg/m³)	50,1 mg/m³	
OEL (8 hours ref) (ppm)	10 ppm	
Regulatory reference	Chemical Agents Code of Practice 2021	
United Kingdom - Occupational Exposure Limits		
Local name	2-(2-Methoxyethoxy) ethanol	
WEL TWA (mg/m³)	50,1 mg/m³	
WEL TWA (ppm)	10 ppm	
Remark (WEL)	Sk (Can be absorbed through the skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity)	
Regulatory reference	EH40/2005 (Fourth edition, 2020). HSE	

8.1.2. Recommended monitoring procedures

No additional information available.

8.1.3. Air contaminants formed

No additional information available.

8.1.4. DNEL and PNEC

No additional information available.

8.1.5. Control banding

No additional information available.

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Technical measures:

Ensure good ventilation of the work station. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.

8.2.2. Personal protection equipment

Personal protective equipment:

Safety glasses. Gloves.

Personal protective equipment symbol(s):



8.2.2.1. Eye and face protection

Eye protection:

Chemical goggles or safety glasses

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Eye protection			
Туре	Field of application	Characteristics	Standard
Safety glasses, Face shield		With side shields	EN 166

8.2.2.2. Skin protection

Skin and body protection:

Wear suitable protective clothing

Hand protection:

Wear suitable gloves resistant to chemical penetration

Hand protection					
Туре	Material	Permeation	Thickness (mm)	Penetration	Standard
Reusable gloves	Butyl rubber, Natural rubber	6 (> 480 minutes)	0.3		EN ISO 374, EN 388

8.2.2.3. Respiratory protection

Respiratory protection:

No special respiratory protection equipment is recommended under normal conditions of use with adequate ventilation

Respiratory protection			
Device	Filter type	Condition	Standard
Reusable half mask	Type A - High-boiling (>65 °C) organic compounds	In the event of insufficient ventilation:	

8.2.2.4. Thermal hazards

No additional information available.

8.2.3. Environmental exposure controls

Environmental exposure controls:

Avoid release to the environment.

Other information:

Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Dhysical state		Liquid
Physical state		Liquid
Colour	:	Amber.
Appearance	:	Clear.
Odour	:	Slight.
Odour threshold	:	Not available
Melting point	:	< -50 °C SAE J 1704
Freezing point	:	Not available
Boiling point	:	> 260 °C SAE J 1704
Flammability	:	> 280 °C
Explosive limits	:	Not available
Lower explosion limit	:	Not available
Upper explosion limit	:	Not available
Flash point	:	> 100 °C IP 35
Auto-ignition temperature	:	Not available
Decomposition temperature	:	> 300 °C
рН	:	7 – 10,5 SAE J 1704
Viscosity, kinematic	:	5 – 10 mm²/s @20C

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Solubility	: Water: 100 % Ethanol: 100 %
Log Kow	: Not available
Log Pow	: ≤2
Vapour pressure	: 1 mbar
Vapour pressure at 50°C	: Not available
Density	: 1046 (1020 – 1070) kg/m³ DIN 51757
Relative density	: Not available
Relative vapour density at 20°C	: Not 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.

10.2. Chemical stability

The substance is hygroscopic and absorbs water as it comes into contact with moisture in the air.

10.3. Possibility of hazardous reactions

Peroxides may be formed on prolonged contact with air.

10.4. Conditions to avoid

Do not allow contact with water. No flames, no sparks. Eliminate all sources of ignition.

10.5. Incompatible materials

Strong oxidizing agent. Strong bases. Strong acids. water.

10.6. Hazardous decomposition products

When exposed to high temperatures may produce hazardous decomposition products such as carbon monoxide and dioxide, smoke, nitrogen oxides (NOx), NH3, sulphur compounds.

SECTION 11: Toxicological information		
11.1. Information on hazard classes as	defined in Regulation (EC) No 1272/2008	
Acute toxicity (oral) Acute toxicity (dermal) Acute toxicity (inhalation) Additional information	 Not classified Not classified Not classified Not classified Probably harmless when inhaled because of the low vapor pressure of the substance at ambient temperature. May be harmful if swallowed 	

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LDS0 anal rat > 2000 mg/kg bodyweight LDS0 demail rat > 2000 mg/kg bodyweight Butyl Triglycol (143-22-6) LDS0 anal rat > 5000 mg/kg bodyweight Diethylene glycol (111-46-6) ATE CLP (oral) 500 mg/kg bodyweight Diethylene glycol (9004-77-7) LDS0 anal rabbit 3540 mg/kg bodyweight Dieto rat > 2000 mg/kg bodyweight LDS0 demail rabbit 3540 mg/kg bodyweight 24.2-Butoxyethoxylethanol (112-34-5) LDS0 demail rabbit 2764 mg/kg bodyweight OCD 402 ATE CLP (demail) 9404 mg/kg bodyweight OCD 402 Atdional information : Not classified Serious syed domage/mation : Causes syei mation. Respirately or sin sensitiation : Not classified Caromege/mation <t< th=""><th>Methyl Triglycol Borate (30989-05-0)</th><th></th></t<>	Methyl Triglycol Borate (30989-05-0)	
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	NOAEL (dermal, rat/rabbit, 90 days)	4000 mg/kg bodyweight
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	LOAEL (oral, rat, 90 days)	40000 mg/kg bodyweight OECD 407

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Butyl Polyglycol (9004-77-7)	
LOAEL (oral, rat, 90 days)	1200 mg/kg bodyweight
NOAEL (oral, rat, 90 days)	400 mg/kg bodyweight
2-(2-Butoxyethoxy)ethanol (112-34-5)	
NOAEL (oral, rat, 90 days)	250 mg/kg bodyweight OECD 408
2-(2-Methoxyethoxy)ethanol (111-77-3)	
NOAEL (oral, rat, 90 days)	900 mg/kg bodyweight OECD 407
NOAEC (inhalation, rat, vapour, 90 days)	> 1,06 mg/l air OECD 413
Aspiration hazard :	Not classified
MPM Brake Fluid DOT 4	
Viscosity, kinematic	5 – 10 mm²/s @20C
11.2. Information on other hazards	
11.2.1. Endocrine disrupting properties	
Adverse health effects caused by endocrine : disrupting properties	Shows an adverse effect in an intact organism or its progeny, which is a change in the morphology, physiology, growth, development, reproduction or life span of an organism, system or (sub)population that results in an impairment of functional capacity, an impairment of the capacity to compensate for additional stress or an increase in susceptibility to other influences
11.2.2. Other information	
Other information :	Irritant side effects: The product contains substances that can irritate locally through skin/eye contact or when inhaled. Contact with local irritants may result in the contact area more easily absorbing harmful substances, such as allergens.

SECTION 12: Ecological information	
12.1. Toxicity	
	The product is not expected to be harmful to the environment. The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment. That does not mean that large or frequent spills can have on the environment. Not classified
	Not classified
MPM Brake Fluid DOT 4	
LC50 fish 1	> 100 mg/l
Methyl Triglycol Borate (30989-05-0)	
LC50 fish 1	> 222,2 mg/l
LC50 fish 2	> 1010 mg/l
EC50 Daphnia 1	> 211,2 mg/l
EC50 Daphnia 2	> 960 mg/l
EC50 72h - Algae [1]	> 224,4 mg/l
EC50 72h - Algae [2]	> 1020 mg/l
Butyl Triglycol (143-22-6)	
LC50 fish 1	2400 mg/l Pimephales promelas

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Butyl Triglycol (143-22-6)				
LC50 fish 2	2200 – 4600 mg/l Leuciscus idus			
EC50 72h - Algae [1]	1589 mg/l Pseudokirchneriella subcapitata			
EC50 72h - Algae [2]	3211 mg/l Pseudokirchneriella subcapitata			
Diethylene glycol (111-46-6)				
LC50 fish 1	75200 mg/l Pimephales promelas			
EC50 96h - Algae [1]	6500 – 13000 mg/l Pseudokirchneriella subcapitata			
EC50 96h - Algae [2]	9362 mg/l green algae			
NOEC (chronic)	≥ 1000 mg/l Americamysis bahia @23d			
Butyl Polyglycol (9004-77-7)				
LC50 fish 1	> 1800 mg/l			
EC50 Daphnia 1	> 3200 mg/l			
EC50 72h - Algae [1]	391 mg/l			
2-(2-Butoxyethoxy)ethanol (112-34-5)				
LC50 fish 1	1300 mg/l			
EC50 Daphnia 1	> 100 mg/l			
EC50 96h - Algae [1]	> 100 mg/l			
2-(2-Methoxyethoxy)ethanol (111-77-3)				
LC50 fish 1	5741 mg/l Pimephales promelas			
EC50 Daphnia 1	1192 mg/l Daphnia magna			
EC50 96h - Algae [1]	> 1000 mg/l Pseudokirchneriella subcapitata			
12.2. Persistence and degradability				
MPM Brake Fluid DOT 4				
Biodegradation	100 % @21d (Zahn Wellans/EMPA)			
12.3. Bioaccumulative potential				
MPM Brake Fluid DOT 4				
Log Pow	≤2			
Bioaccumulative potential	not bioaccumulable.			
12.4. Mobility in soil	12.4. Mobility in soil			
MPM Brake Fluid DOT 4				
Soil	In water, material soluble.			
12.5. Results of PBT and vPvB assessment				
No additional information available.				
12.6. Endocrine disrupting properties				
Adverse effects on the environment caused by : The product does not contain any substances with endocrine disrupting properties. endocrine disrupting properties				

SECTION 14: Transport information

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

12.7. Other adverse effects

No additional information available.

isposal must be done according to official regulations. /aste suitable for incineration. ispose in a safe manner in accordance with local/national regulations. Remove to an uthorized waste treatment plant.
6 01 13* - brake fluids
/

In accordance with ADR / IMDG	
14.1. UN number or ID number	
UN-No. UN-No. (IMDG)	: Not regulated : Not regulated
14.2. UN proper shipping name	
Proper Shipping Name (ADR) Proper Shipping Name (IMDG)	: Not regulated : Not regulated
14.3. Transport hazard class(es)	
ADR Transport hazard class(es) (ADR)	: Not regulated
IMDG Transport hazard class(es) (IMDG)	: Not regulated
14.4. Packing group	
Packing group (ADR) Packing group (IMDG)	: Not regulated : Not regulated
14.5. Environmental hazards	
Dangerous for the environment Marine pollutant Other information	: No : No : No supplementary information available
14.6. Special precautions for user	

Overland transport

Not regulated

Transport by sea

Not regulated

14.7. Maritime transport in bulk according to IMO instruments

Not applicable

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

Contains no substance(s) listed on REACH Annex XVII (Restriction Conditions)

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

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

Contains no substance(s) listed on the PIC list (Regulation EU 649/2012 concerning the export and import of hazardous chemicals)

Contains no substance(s) listed on the POP list (Regulation EU 2019/1021 on persistent organic pollutants)

15.1.2. National regulations

No additional information available.

15.2. Chemical safety assessment

No additional information available.

SECTION 16: Other information

Indication of changes			
Section	Changed item	Change	Comments
	Supersedes	Modified	
	Revision date	Modified	
2.2	Precautionary statements (CLP)	Modified	

Full text of H- and EUH-statements	
Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Eye Dam. 1	Serious eye damage/eye irritation, Category 1
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
H302	Harmful if swallowed.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H361d	Suspected of damaging the unborn child
Repr. 2	Reproductive toxicity, Category 2

SDS MPM REACH

This 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.