



SAFETY DATA SHEET

Gulf Brake Fluid DOT 4

07118

Issuing Date 08-09-2017

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Version 3

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Product Name **Gulf Brake Fluid DOT 4**
Product Code(s) 07118

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

Recommended Use Brake fluid
Uses advised against Any other purpose.

1.3. Details of the supplier of the safety data sheet

Supplier
Gulf Oil Supply Company Limited
B2 Industry Street, Qormi, QRM 3000, Malta
+44 207 321 6219
products@gulfoilltd.com sds@gulfoilltd.com

1.4. Emergency telephone number

Europe (+) 44 808 189 0979 Code 334276
(+) 1 760 476 3961 Code 334276
(+) 32 (0) 3241 33 55

Poison Information Center (IE) +353 (0)1 809 2166 (08:00 - 22:00), (IS) +354 543 2222
telephone number

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008

Serious eye damage/eye irritation

Category 2 H319

2.2. Label Elements



Signal word
WARNING

Hazard statements

H319 - Causes serious eye irritation

Precautionary Statements - EU (§28, 1272/2008)

P264 - Wash face, hands and any exposed skin thoroughly after handling

P280 - Wear eye protection/ face protection

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

2.3. Other hazards

No information available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances / 3.2. Mixtures

This product is a mixture. Health hazard information is based on its ingredients

Chemical name	EC-No	CAS No	Weight-%	Classification according to Regulation (EC) No. 1272/2008 [CLP]	REACH Registration Number
Butyl triglycol	205-592-6	143-22-6	25% - 50%	Eye Dam. 1 (H318)	01-2119531322-53-xxx x
2,2'-Oxydiethanol	203-872-2	111-46-6	2.5% - 10%	Acute Tox. 4 (H302) STOT RE 2 (H373)	01-2119457857-21-xxx x
2-(2-methoxyethoxy)ethanol	203-906-6	111-77-3	2.5% - 10%	Repr. 2 (H361d)	01-2119475100-52-xxx x
2-(2-Butoxyethoxy)ethanol	203-961-6	112-34-5	2.5% - 10%	Eye Irrit. 2 (H319)	01-2119475104-44-xxx x

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

SECTION 4: FIRST AID MEASURES

4.1. Description of first-aid measures

General advice

Do not get in eyes, on skin, or on clothing. When symptoms persist or in all cases of doubt seek medical advice.

Inhalation

Move to fresh air.

Skin contact

Wash off immediately with soap and plenty of water. Remove and wash contaminated clothing before re-use.

Eye contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. If eye irritation persists, consult a specialist.

Ingestion Immediate medical attention is required. Clean mouth with water and afterwards drink plenty of water. Rinse mouth again and drink 1-2 glasses of water and 40 ml ethanol (liquor). Do not induce vomiting without medical advice.

Protection of First-aiders Use personal protective equipment. Avoid contact with skin, eyes and clothing.

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

Main Symptoms Eye damage/irritation

4.3. Indication of immediate medical attention and special treatment needed

Notes to physician Symptoms may be delayed.

SECTION 5: FIRE FIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment: Use CO2, dry chemical, or foam, Water spray or fog

Extinguishing media which shall not be used for safety reasons

Do not use water jet

5.2. Special hazards arising from the substance or mixture

Special Hazard

Thermal decomposition can lead to release of irritating gases and vapors.

Hazardous decomposition products

Hydrogen peroxide

5.3. Advice for firefighters

Special protective equipment for fire-fighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation. Use personal protective equipment. Avoid contact with skin, eyes and clothing.

Advice for non-emergency personnel

Material can create slippery conditions.

Advice for emergency responders For personal protection see section 8.

6.2. Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not flush into surface water or sanitary sewer system.

6.3. Methods and materials for containment and cleaning up

After cleaning, flush away traces with water.

6.4. Reference to other sections

See Section 8/12/13 for additional information

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Ensure adequate ventilation. Prevent the formation of vapors, mists and aerosols. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures/Storage conditions

Store in original container. Keep container tightly closed in a dry and well-ventilated place.

Incompatible materials

Strong oxidizing agents

7.3. Specific end uses

Brake fluid

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Exposure limits

Legend

(s) - Skin; TWA - Time-Weighted Average; STEL - Short Term Exposure Limit; Ceiling - Ceiling Value

Chemical name	European Union	United Kingdom	France	Spain
2,2'-Oxydiethanol		TWA: 23 ppm TWA: 101 mg/m ³ STEL: 69 ppm STEL: 303 mg/m ³		
2-(2-methoxyethoxy)ethanol	TWA: 10 ppm TWA: 50.1 mg/m ³ (s)	TWA: 10 ppm TWA: 50.1 mg/m ³ STEL: 30 ppm STEL: 150.3 mg/m ³ (s)	TWA: 10 ppm TWA: 50.1 mg/m ³ limite indicative (s)	VLA-ED: 10 ppm VLA-ED: 50.1 mg/m ³ (valor límite indicativo) (s)
2-(2-Butoxyethoxy)ethanol	TWA: 10 ppm TWA: 67.5 mg/m ³ STEL: 15 ppm STEL: 101.2 mg/m ³	TWA: 10 ppm TWA: 67.5 mg/m ³ STEL: 15 ppm STEL: 101.2 mg/m ³	TWA: 10 ppm TWA: 67.5 mg/m ³ limite indicative STEL: 15 ppm STEL: 101.2 mg/m ³	VLA-ED: 10 ppm VLA-ED: 67.5 mg/m ³ (valor límite indicativo) VLA-EC: 15 ppm VLA-EC: 101.2 mg/m ³

United Kingdom Workplace exposure limits (EH40).

France Valeurs limites d'exposition professionnelle aux agents chimiques en France ED 984 (par l'INRS).

Spain Límites de Exposición Profesional Para Agentes Químicos en España (Ley 31/1995).

Chemical name	Germany	Italy	Portugal	Netherlands
2,2'-Oxydiethanol	AGW TWA: 10 ppm AGW TWA: 44 mg/m ³ Überschreitungsfaktor 4			
2-(2-methoxyethoxy)ethanol	AGW TWA: 10 ppm AGW TWA: 50 mg/m ³ (II)	TWA: 10 ppm TWA: 50.1 mg/m ³ (s)	TWA: 10 ppm TWA: 50.1 mg/m ³ (Valor-limite indicativo) (s)	TWA: 45 mg/m ³ (s)
2-(2-Butoxyethoxy)ethanol	AGW TWA: 10 ppm AGW TWA: 67 mg/m ³ Überschreitungsfaktor 1 Überschreitungsfaktor 1.5	TWA: 10 ppm TWA: 67.5 mg/m ³ STEL: 15 ppm STEL: 101.2 mg/m ³	TWA: 10 ppm TWA: 67.5 mg/m ³ (Valor-limite indicativo) STEL: 15 ppm	TWA: 50 mg/m ³ STEL: 100 mg/m ³ (s)

			STEL: 101.2 mg/m ³	
Germany TRGS 900 - Arbeitsplatzgrenzwerte, Technische Regeln für Gefahrstoffe (TRGS).				
Italy Istituto Superiore per la Prevenzione e la Sicurezza del Lavoro (ISPESL), Allegato XXXVIII e Allegato XLIII - Valori Limite di Esposizione Professionale.				
Portugal Valores-limite e índices biológicos de exposição profissional a agentes químicos. Quadro 1 - Valores Limite de Exposição (Norma Portuguesa NP 1796:2014).				
Netherlands Grenswaarden gezondheidsschadelijke stoffen; Arbeidsomstandighedenregeling.				

Chemical name	Austria	Switzerland	Poland	Ireland
2,2'-Oxydiethanol	MAK TWA: 10 ppm MAK TWA: 44 mg/m ³ MAK STEL: 40 ppm MAK STEL: 176 mg/m ³ 4 X 15 min	TWA: 10 ppm TWA: 44 mg/m ³ STEL: 40 ppm STEL: 176 mg/m ³	TWA: 10 mg/m ³ frakcja tarkalna	TWA: 23 ppm TWA: 100 mg/m ³ STEL: 69 ppm STEL: 300 mg/m ³
2-(2-methoxyethoxy)ethanol	MAK TWA: 10 ppm MAK TWA: 50.1 mg/m ³ (s)		TWA: 50 mg/m ³	TWA: 10 ppm TWA: 50.1 mg/m ³ STEL: 30 ppm STEL: 150.3 mg/m ³ (s)
2-(2-Butoxyethoxy)ethanol	MAK TWA: 10 ppm MAK TWA: 67.5 mg/m ³ MAK STEL: 15 ppm MAK STEL: 101.2 mg/m ³ 4 X 15 min	TWA: 10 ppm TWA: 67 mg/m ³ STEL: 15 ppm STEL: 101 mg/m ³	TWA: 67 mg/m ³ STEL: 100 mg/m ³	TWA: 10 ppm TWA: 67.5 mg/m ³ STEL: 15 ppm STEL: 101.2 mg/m ³

Austria Verordnung des Bundesministers für Wirtschaft und Arbeit über Grenzwerte für Arbeitsstoffe und über krebserzeugende Arbeitsstoffe ("Maximale Arbeitsplatzkonzentrationen" - MAK und "Technische Richtkonzentrationen" - TRK).

Switzerland Grenzwerte am Arbeitsplatz 2016 - SUVAPro.

Poland Rozporządzenie Ministra Pracy i Polityki Społecznej z dnia 6 czerwca 2014 w sprawie najwyższych dopuszczalnych stężeń i natężeń czynników szkodliwych dla zdrowia w środowisku pracy (Dz.U. 2016 Nr. 944).

Ireland 2016 Code of Practice for the Safety, Health and Welfare at Work (Chemical Agents) Regulations 2001.

Chemical name	Finland	Denmark	Norway	Sweden
2,2'-Oxydiethanol		TWA: 2.5 ppm TWA: 11 mg/m ³		LLV: 10 ppm LLV: 45 mg/m ³ STLV: 20 ppm (Indikativ) STLV: 90 mg/m ³ (Indikativ) (s)
2-(2-methoxyethoxy)ethanol	TWA: 10 ppm TWA: 50 mg/m ³ (s)	TWA: 10 ppm TWA: 50 mg/m ³ (s)	TWA: 10 ppm TWA: 50 mg/m ³ STEL: 15 ppm STEL: 75 mg/m ³ (s)	LLV: 10 ppm LLV: 50 mg/m ³ (s)
2-(2-Butoxyethoxy)ethanol	TWA: 10 ppm TWA: 68 mg/m ³	TWA: 10 ppm TWA: 68 mg/m ³	TWA: 10 ppm TWA: 68 mg/m ³ STEL: 15 ppm STEL: 102 mg/m ³	LLV: 10 ppm LLV: 68 mg/m ³ STLV: 15 ppm (Indikativ) STLV: 101 mg/m ³ (Indikativ) STLV: 15 ppm (Bindande) STLV: 101 mg/m ³ (Bindande)

Finland Förrordningen om koncentrationer som befunnits skadliga, 268/2014 - HTP-arvot 2014.

Denmark Bekendtgørelse om grænseværdier for stoffer og materialer. Arbejdstilsynets bekendtgørelse nr. 507 Bilag 2 Afsnit A.

Norway Forskrift om tiltaksverdier og grenseverdier for fysiske og kjemiske faktorer i arbeidsmiljøet samt smitterisikogrupper for biologiske faktorer (Forskrift om tiltaks- og grenseverdier), FOR-2011-12-06-1358, FOR-2016-06-21-760, FOR-2016-12-22-1860.

Sweden Arbetsmiljöverkets föreskrifter om hygieniska gränsvärden och allmänna råd om tillämpningen av föreskrifterna.

Chemical name	Czech Republic	Hungary	Bulgaria	Romania
2,2'-Oxydiethanol			TWA: 10 mg/m ³	TWA: 115 ppm TWA: 500 mg/m ³ STEL: 184 ppm STEL: 800 mg/m ³
2-(2-methoxyethoxy)ethanol	TWA: 50 mg/m ³ Ceiling: 100 mg/m ³ (s)	TWA: 50.1 mg/m ³	TWA: 10 ppm TWA: 50.1 mg/m ³ (s)	TWA: 10 ppm TWA: 50.1 mg/m ³ (s)
2-(2-Butoxyethoxy)ethanol	TWA: 100 mg/m ³ Ceiling: 100 mg/m ³	TWA: 67.5 mg/m ³ STEL: 101.2 mg/m ³	TWA: 10 ppm TWA: 67.5 mg/m ³ STEL: 15 ppm STEL: 101.2 mg/m ³	TWA: 67.5 mg/m ³ TWA: 10 ppm STEL: 15 ppm STEL: 101.2 mg/m ³

Czech Republic Narizeni vlady 93/2012, kterym se meni narizeni vlady c.361/2007 Sb., kterym se stanoví podmínky ochrany zdraví při práci, ve znění narizeni vlady c.68/2010 Sb.

Hungary 25/2000. (IX. 30.) EüM-SzCsM együttes rendelet a munkahelyek kémiai biztonságáról (62/2016. (XII.29.)).
 Bulgaria НАРЕДБА #13 от 30.12.2003 г. за защита на работещите от рискове, свързани с експозиция на химични агенти при работа.
 Romania Valori Limit Obligatorii Nationale de expunere profesională ale agenților chimic - Anex Nr.1 Publicat în Monitorul Oficial, Partea I nr. 845.

Chemical name	Greece	Cyprus	Turkey	Malta
2-(2-methoxyethoxy)ethanol	TWA: 10 ppm TWA: 50.1 mg/m ³ (s)	TWA: 10 ppm TWA: 50.1 mg/m ³ (s)	TWA: 10 ppm TWA: 50.1 mg/m ³ (s)	TWA: 10 ppm TWA: 50.1 mg/m ³ (s)
2-(2-Butoxyethoxy)ethanol	TWA: 10 ppm TWA: 67.5 mg/m ³ STEL: 15 ppm STEL: 101.2 mg/m ³	TWA: 10 ppm TWA: 67.5 mg/m ³ STEL: 15 ppm STEL: 101.2 mg/m ³	TWA: 10 ppm TWA: 67.5 mg/m ³ STEL: 15 ppm STEL: 101.2 mg/m ³	TWA: 10 ppm TWA: 67.5 mg/m ³ STEL: 15 ppm STEL: 101.2 mg/m ³

Greece Οριακές Τιμές Επαγγελματικής Έκθεσης - Προστασία της υγείας και της ασφάλειας των εργαζομένων που εκτίθενται σε ορισμένους καρκινογόνους και μεταλλαξιογόνους παράγοντες 127/2000.
 Cyprus Канонισμός 268/2001 του Υπουργικού Συμβουλίου - Ασφάλεια και Υγεία στην Εργασία (Χημικοί Παράγοντες), 6 Ιουλίου, 2001 - Όπως τροποποιήθηκε από τον Канонισμός 44/2015 (δημοσιεύθηκε στην Επίσημη Εφημερίδα της Κυβέρνησης της Κύπρου στις 13 Φεβρουαρίου, 2015, Παράρτημα III(I), Αριθμ. 4850).
 Turkey Kimyasal Maddelerle Çalışmalarda Sağlık ve Güvenlik Önlemleri Hakkında Yönetmelik.
 Malta Occupational Health and Safety Authority Act: Chapter 424.

Chemical name	Belgium	Luxembourg	Iceland	Croatia
2,2'-Oxydiethanol			TWA: 2.5 ppm TWA: 11 mg/m ³	TWA: 23 ppm TWA: 101 mg/m ³
2-(2-methoxyethoxy)ethanol	TWA: 10 ppm TWA: 50.1 mg/m ³ (s)	TWA: 10 ppm TWA: 50.1 mg/m ³ (s)	TWA: 10 ppm TWA: 50.1 mg/m ³ (s)	TWA: 10 ppm TWA: 50.1 mg/m ³ (s)
2-(2-Butoxyethoxy)ethanol	TWA: 10 ppm TWA: 67.5 mg/m ³ STEL: 15 ppm STEL: 101.2 mg/m ³	TWA: 10 ppm TWA: 67.5 mg/m ³ STEL: 15 ppm STEL: 101.2 mg/m ³ (s)	TWA: 10 ppm TWA: 67.5 mg/m ³ STEL: 15 ppm STEL: 101.2 mg/m ³	TWA: 10 ppm TWA: 67.5 mg/m ³ STEL: 15 ppm STEL: 101.2 mg/m ³

Belgium Arrêté royal relatif à la protection de la santé et de la sécurité des travailleurs contre les risques liés à des agents chimiques sur le lieu de travail.
 Luxembourg Règlement grand-ducal du 28 juillet 2011 concernant la protection de la santé et de la sécurité des travailleurs contre les risques liés à des agents chimiques sur le lieu de travail.
 Iceland Reglur og reglugerðir sem heyra undir Vinnuverndarlögin nr. 46/1980 um aðbúnað, hollustuhætti og öryggi á vinnustöðum. 390/2009 - Reglugerð um mengunarmörk og aðgerðir til að draga úr mengun á vinnustöðum.
 Croatia Pravilnik o izmjenama i dopunama Pravilnika o graničnim vrijednostima izloženosti opasnim tvarima pri radu i o biološkim graničnim vrijednostima.

Chemical name	Russia	Estonia	Latvia	Lithuania
2,2'-Oxydiethanol	MAC: 10 mg/m ³	TWA: 10 ppm TWA: 45 mg/m ³ STEL: 20 ppm STEL: 90 mg/m ³ (s)	TWA: 10 mg/m ³	TWA: 10 ppm TWA: 45 mg/m ³ STEL: 20 ppm STEL: 90 mg/m ³ (S)
2-(2-methoxyethoxy)ethanol			TWA: 10 ppm TWA: 50.1 mg/m ³ (s)	TWA: 10 ppm TWA: 50.1 mg/m ³ (S)
2-(2-Butoxyethoxy)ethanol	MAC: 10 mg/m ³	TWA: 10 ppm TWA: 67.5 mg/m ³	TWA: 10 ppm TWA: 67.5 mg/m ³ STEL: 15 ppm STEL: 101.2 mg/m ³	TWA: 15 ppm TWA: 100 mg/m ³ STEL: 30 ppm STEL: 200 mg/m ³

Russia ГН 2.2.5.1313-03 "Гигиенические нормативы. Предельно допустимые концентрации (ПДК) вредных веществ в воздухе рабочей зоны".
 Estonia Tookeskkonna keemiliste ohutegurite piirnormid.
 Latvia Ministru Kabineta noteikumi Nr. 325 - Darba aizsardzības prasības, saskaroties ar ķīmiskajām vielām darba vietās.
 Lithuania Del Lietuvos higienos normos HN 23:2011 "Cheminių medžiagų profesinio poveikio ribiniai dydžiai. Matavimo ir poveikio vertinimo bendrieji reikalavimai".

Chemical name	Belarus	Ukraine	Slovakia	Slovenia
2,2'-Oxydiethanol			TWA: 10 ppm TWA: 44 mg/m ³	TWA: 10 ppm TWA: 44 mg/m ³ STEL: STEL ppm STEL: STEL mg/m ³
2-(2-methoxyethoxy)ethanol			TWA: 10 ppm	TWA: 10 ppm

			TWA: 50.1 mg/m ³ (s)	TWA: 50.1 mg/m ³ (s)
2-(2-Butoxyethoxy)ethanol			TWA: 10 ppm TWA: 67.5 mg/m ³	TWA: 10 ppm TWA: 67.5 mg/m ³ STEL: STEL ppm STEL: STEL mg/m ³

*Slovakia Nariadenie Vlády Slovenskej republiky z 16. januára 2002 o ochrane zdravia pri práci s karcinogénnymi a mutagénymi faktormi.
Slovenia Pravilnik o varovanju delavcev pred tveganji zaradi izpostavljenosti kemičnim snovem pri delu.*

Chemical name	Serbia	Macedonia	Liechtenstein	South Africa
2,2'-Oxydiethanol		TWA: 10 ppm TWA: 44 mg/m ³ STEL: 40 ppm STEL: 176 mg/m ³		
2-(2-methoxyethoxy)ethanol	TWA: 10 ppm TWA: 50.1 mg/m ³ (s)	TWA: 10 ppm TWA: 50.1 mg/m ³ (s)	TWA: 10 ppm TWA: 50.1 mg/m ³ (s)	
2-(2-Butoxyethoxy)ethanol	TWA: 10 ppm TWA: 67.5 mg/m ³ STEL: 15 ppm STEL: 101.2 mg/m ³	TWA: 10 ppm TWA: 67.5 mg/m ³ STEL: 15 ppm STEL: 101.25 mg/m ³	TWA: 10 ppm TWA: 67.5 mg/m ³ STEL: 15 ppm STEL: 101.2 mg/m ³	

Serbia Pravilnik o preventivnim merama za bezbedan i zdrav rad pri izlaganju hemijskim materijama, Prilog 1- Obavezujuće granične vrednosti izloženosti hemijskim materijama na radnom mestu.

Macedonia Правилник минималните барања за безбедност и здравје при работа вработени од ризици поврзани со изложување на хемиски супстанции.

Liechtenstein 822.103.3 - Verordnung ueber die Sicherheit und den Gesundheitsschutz der Arbeitnehmer am Arbeitsplatz, Arbeitnehmerschutz.

Derived No Effect Level (DNEL)

Workers Systemic toxicity

Chemical name	Long term - Oral exposure	Long term - Dermal exposure	Long term - Inhalation exposure	Short term - Oral Exposure	Short term - Dermal exposure	Short term - Inhalation exposure
Butyl triglycol		50mg/kg/day	195 mg/m ³			
2,2'-Oxydiethanol		106 mg/kg	60 mg/m ³			
2-(2-methoxyethoxy)ethanol		2.22 mg/kg	50.1 mg/m ³			
2-(2-Butoxyethoxy)ethanol		20 mg/kg	67.5 mg/m ³			

Workers Local effects

Chemical name	Long term - Oral exposure	Long term - Dermal exposure	Long term - Inhalation exposure	Short term - Oral Exposure	Short term - Dermal exposure	Short term - Inhalation exposure
Butyl triglycol		50mg/kg/day	195mg/ m3			
2,2'-Oxydiethanol			60 mg/m ³			
2-(2-Butoxyethoxy)ethanol			67.5 mg/m ³			101.2mg/m ³

Consumers Systemic toxicity

Chemical name	Long term - Oral exposure	Long term - Dermal exposure	Long term - Inhalation exposure	Short term - Oral Exposure	Short term - Dermal exposure	Short term - Inhalation exposure
Butyl triglycol	2.5mg/kg/day	25mg/kg/day	117mg/ m3			
2,2'-Oxydiethanol		53 mg/kg	12 mg/m ³			
2-(2-methoxyethoxy)ethanol	7.5 mg/kg	1.33 mg/kg	30.1 mg/m ³			
2-(2-Butoxyethoxy)ethanol	1.25mg/kg/day	10 mg/kg	34 mg/m ³			

Consumers Local effects

Chemical name	Long term - Oral exposure	Long term - Dermal exposure	Long term - Inhalation exposure	Short term - Oral Exposure	Short term - Dermal exposure	Short term - Inhalation exposure
2-(2-Butoxyethoxy)ethanol						50.6 mg/m ³

Predicted No Effect Concentration (PNEC)

Chemical name	Fresh water	Sea water	Fresh water sediment	Sea sediment	Soil
Butyl triglycol	1.5 mg/L	0.25 mg/L	5.77 mg/kg	0.13 mg/kg	0.45 mg/kg/soil dw
2,2'-Oxydiethanol	10 mg/l	1 mg/l	20.9 mg/kg		1.53 mg/kg
2-(2-methoxyethoxy)ethanol	12 mg/L	1.2 mg/L	44.4 mg/kg	0.44 mg/kg	2.1 mg/kg
2-(2-Butoxyethoxy)ethanol	1 mg/L	0.1 mg/L	4 mg/kg	0.4 mg/kg	0.4 mg/kg

8.2. Exposure controls**Engineering Measures**

Ensure adequate ventilation, especially in confined areas.

Personal protective equipment

Engineering controls should be considered as the first line of protection against adverse exposure to harmful substances. Administrative controls and PPE should be used in the absence of engineering controls or as supplemental controls where engineering controls are insufficient in reducing specific exposures to an acceptable level.

Eye Protection

Tightly fitting safety goggles. Eye protection must conform to standard EN 166.

Hand Protection

For operations where prolonged or repeated skin contact may occur, impervious gloves should be worn. The following glove type may be suitable for handling this product. Protective gloves complying with EN 374.

Nitrile rubber Glove thickness => 0.38 mm Break through time => 480 min

Butyl rubber Glove thickness => 0.64 mm Break through time => 480 min

Glove material suitability will vary depending on specific use conditions. Consideration should be given to variables such as operational characteristics, anticipated contact time, task requirements and other factors relevant to the selection of PPE. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion. Any specific glove information provided is based on published literature and glove manufacturer data. Barrier creams may help to protect the exposed areas of skin. Barrier creams should not be applied after exposure has occurred. Gloves should be replaced regularly and if there is any sign of damage to the glove material.

Skin and body protection

Long sleeved clothing.

Respiratory protection

No special protective equipment required. In case of mist, spray or aerosol exposure wear suitable personal respiratory protection and protective suit.

This information is based on the state in which the specific product is delivered and on the intended use specified within this SDS. This information is provided based on literature reference, manufacturer specifications and recommendations and/or derived by analogy with similar substances. The level of protection and types of exposure controls will vary depending on potential exposure conditions.

Hygiene measures

Regular cleaning of equipment, work area and clothing is recommended.

Environmental Exposure Controls

No special environmental precautions required.

Thermal hazards

None under normal use conditions

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**9.1. Information on basic physical and chemical properties**

Physical state	liquid	Appearance	clear amber
Odor	bland	Odor threshold	Not Determined

Property	Values	Remarks
pH	7.0 - 11.50	
Melting point / freezing point	< -50 °C / < -58 °F	
Boiling point / boiling range	>260 °C / > 500 °F	
Flash point	> 100 °C / > 212 °F	
Evaporation rate	Not Determined	
Flammability (solid, gas)	Not Determined	
Flammability Limit in Air		
Upper flammability limit:	Not Determined	
Lower flammability limit:	Not Determined	
Vapor pressure	<2	mbar
Vapor density	Not Determined	
Relative density	1.020-1.070	@20°C
Solubility(ies)	Water solubility: Miscible	
Partition coefficient	<2.0	
Autoignition temperature	> 300 °C / > 572 °F	
Decomposition temperature	> 300 °C	
Kinematic viscosity	5-10 cSt @ 20 °C	
Explosive properties	Not applicable	
Oxidizing Properties	Not applicable	

9.2. Other information

Viscosity, kinematic (100°C)	Not Determined
Pour Point	Not Determined
VOC Content (ASTM E-1868-10)	Not Determined
VOC content	Not Determined

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

None under normal use conditions

10.2. Chemical stability

Stable under normal conditions

10.3. Possibility of hazardous reactions

Contact with metals may evolve flammable hydrogen gas; Aluminium

10.4. Conditions to avoid

Do not allow evaporation to dryness

10.5. Incompatible materials

Strong oxidizing agents

10.6. Hazardous decomposition products

Hydrogen peroxide

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects**Product Information - Principle Routes of Exposure**

Inhalation	None known
Eye contact	Irritating to eyes
Skin contact	None known
Ingestion	None known

Acute toxicity - Product Information

Product does not present an acute toxicity hazard based on known or supplied information.

Acute toxicity - Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Butyl triglycol	= 5300 mg/kg (Rat)	= 3480 mg/kg (Rabbit)	
2,2'-Oxydiethanol	12565 mg/kg (Rat)	= 11890 mg/kg (Rabbit)	
2-(2-methoxyethoxy)ethanol	= 9210 mg/kg (Rat)	= 9404 mg/kg (Rabbit)	
2-(2-Butoxyethoxy)ethanol	3384 mg/kg (Rat)	= 2700 mg/kg (Rabbit)	

Skin corrosion/irritation Based on available data, the classification criteria are not met.

Serious eye damage/eye irritation Irritating to eyes.

Sensitization

Respiratory Sensitization
Skin sensitization

Based on available data, the classification criteria are not met.
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 Based on available data, the classification criteria are not met.

Specific target organ systemic toxicity (single exposure) Based on available data, the classification criteria are not met

Specific target organ systemic 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.

SECTION 12: ECOLOGICAL INFORMATION**12.1. Toxicity**

No special environmental measures are necessary

Chemical name	Algae/aquatic plants	Fish	Crustacea
Butyl triglycol	500: 72 h Desmodesmus subspicatus mg/L EC50	2400: 96 h Pimephales promelas mg/L LC50 static 2400: 96 h	500: 48 h Daphnia magna mg/L EC50

		Pimephales promelas mg/L LC50 2200 - 4600: 96 h Leuciscus idus mg/L LC50 static	
2,2'-Oxydiethanol	1000: 72 h Skeletonema costatum mg/L EC50	75200: 96 h Pimephales promelas mg/L LC50 flow-through	84000: 48 h Daphnia magna mg/L EC50
2-(2-methoxyethoxy)ethanol	>1000: 96 h Pseudokirchnerella subcapitata mg/L EC50	5741: 96 h Pimephales promelas mg/L LC50	1192: 48 h Daphnia magna mg/L EC50
2-(2-Butoxyethoxy)ethanol	100: 96 h Desmodesmus subspicatus mg/L EC50	1300: 96 h Lepomis macrochirus mg/L LC50 static	2850: 24 h Daphnia magna mg/L EC50 100: 48 h Daphnia magna mg/L EC50

12.2. Persistence and degradability

No information available.

12.3. Bioaccumulative potential

Chemical name	Partition coefficient
Butyl triglycol	0.51
2,2'-Oxydiethanol	-1.98
2-(2-methoxyethoxy)ethanol	-0.49

12.4. Mobility

The product is water soluble, and may spread in water systems

12.5. Results of PBT and vPvB assessment

This preparation contains no substance considered to be persistent, bioaccumulating nor toxic (PBT). This preparation contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

12.6. Other adverse effects

None known

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods**Waste from Residues / Unused Products**

Dispose of as hazardous waste in compliance with local and national regulations

Contaminated packaging

Empty containers should be taken to an approved waste handling site for recycling or disposal. Observe all label precautions until container is cleaned, reconditioned or destroyed.

Other Data

According to the European Waste Catalog, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user based on the application for which the product was used.

SECTION 14: TRANSPORT INFORMATION

14.1. UN-Number

Not regulated

14.2. UN proper shipping name

Not regulated

14.3. Transport hazard class

Not regulated

14.4. Packing Group

Not regulated

14.5. Environmental Hazards

None

14.6. Special precautions for users

None

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

IMDG Not regulated**ADR** Not regulated**IATA** Not regulated**ADN** Not regulated**SECTION 15: REGULATORY INFORMATION****15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****EU legislation**

The Classification, Labeling and Packaging of Substances and Mixtures (CLP) Regulation (EC 1272/2008)
Registration, Evaluation, Authorization, and Restriction of Chemicals (REACH) Regulation (EC 1907/2006)
European Agreement concerning the International Carriage of Dangerous Goods by Road
Safety Data Sheet according to Regulation EC 1907/2006 (REACH) with its amendment regulation EC 2015/830
European Agreement concerning the International Carriage of Dangerous Goods by Road/ Regulations concerning the
International Carriage of Dangerous Goods by Rail
International Civil Aviation Organization / International Air Transport Association Dangerous Goods Regulation

Substance(s) of Very High Concern

This product contains one or more candidate substance(s) of very high concern (Regulation (EC) No. 1907/2006 (REACH), Article 59).

Authorizations and/or restrictions on use:

This product contains one or more substance(s) subject to restriction (Regulation (EC) No. 1907/2006 (REACH), Annex XVII). This product does not contain substances subject to authorization (Regulation (EC) No. 1907/2006 (REACH), Annex XIV).

National regulations**Germany W GK Classification**

Low hazard to water/Class 1

Product Registration number

Denmark Registration (DK)

4072248

International Regulations**Ozone-depleting substances (ODS)**

Not applicable

Persistent Organic Pollutants

Not applicable

Chemicals Subject to Prior Informed Consent (PIC)

Not applicable

International Inventories**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory

All ingredients are on the inventory or exempt from listing

DSL/NDL - Canadian Domestic Substances List/Non-Domestic Substances List

All ingredients are on the inventory or exempt from listing

AICS - Australian Inventory of Chemical Substances

All ingredients are on the inventory or exempt from listing

PICCS - Philippines Inventory of Chemicals and Chemical Substances

All ingredients are on the inventory or exempt from listing

KECL - Korean Existing and Evaluated Chemical Substances

All ingredients are on the inventory or exempt from listing

IECSC - China Inventory of Existing Chemical Substances

All ingredients are on the inventory or exempt from listing

ENCS - Japan Existing and New Chemical Substances

All ingredients are on the inventory or exempt from listing

TCSI - Taiwan National Existing Chemical Inventory

Contact supplier for inventory compliance status

NZIoC - New Zealand Inventory of Chemicals

All ingredients are on the inventory or exempt from listing

Other Information

Not applicable

15.2. Chemical Safety Assessment

No information available

SECTION 16: OTHER INFORMATION

Key or legend to abbreviations and acronyms used in the safety data sheet

Repr.-Reproduction toxicity
 Asp. Tox. - Aspiration Toxicity
 Acute Tox. - Acute Toxicity
 Aquatic Acute - Acute Aquatic Toxicity
 Aquatic Chronic - Chronic Aquatic Toxicity
 Eye Dam. - Eye Damage
 Eye Irrit. - Eye Irritation
 Skin Corr. - Skin Corrosion
 Skin Irrit. - Skin Irritation
 Skin Sens. - Skin Sensitizer
 Resp. Sens. - Respiratory Sensitizer
 STOT SE - Specific target organ systemic toxicity (Single exposure)
 STOT RE - Specific target organ systemic toxicity (repeated exposure)
 VOC - Volatile organic compounds

Full text of H-Statements which may be referred to under Sections 2 and 3

• H224 - Extremely flammable liquid and vapor • H225 - Highly flammable liquid and vapor • H226 - Flammable liquid and vapor • H270 - May cause or intensify fire; oxidizer • H271 - May cause fire or explosion; strong oxidizer • H272 - May intensify fire; oxidizer • H290 - May be corrosive to metals • H300 - Fatal if swallowed • H301 - Toxic if swallowed • H302 - Harmful if swallowed • H304 - May be fatal if swallowed and enters airways • H310 - Fatal in contact with skin • H311 - Toxic in contact with skin • H312 - Harmful in contact with skin • H314 - Causes severe skin burns and eye damage • H315 - Causes skin irritation • H317 - May cause an allergic skin reaction • H318 - Causes serious eye damage • H319 - Causes serious eye irritation • H330 - Fatal if inhaled • H331 - Toxic if inhaled • H332 - Harmful if inhaled • H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled • H335 - May cause respiratory irritation • H336 - May cause drowsiness or dizziness • H340 - May cause genetic defects	• H341 - Suspected of causing genetic defects • H350 - May cause cancer • H351 - Suspected of causing cancer • H360 - May damage fertility or the unborn child • H361 - Suspected of damaging fertility or the unborn child • H362 - May cause harm to breast-fed children • H370 - Causes damage to organs • H371 - May cause damage to organs • H372 - Causes damage to organs through prolonged or repeated exposure • H373 - May cause damage to organs through prolonged or repeated exposure • H400 - Very toxic to aquatic life • H410 - Very toxic to aquatic life with long lasting effects • H411 - Toxic to aquatic life with long lasting effects • H412 - Harmful to aquatic life with long lasting effects • H413 - May cause long lasting harmful effects to aquatic life • H360Df - May damage the unborn child. Suspected of damaging fertility • H360D - May damage the unborn child • H360FD - May damage fertility. May damage the unborn child • H360F - May damage fertility • H361d - Suspected of damaging the unborn child • H361fd - Suspected of damaging fertility. Suspected of damaging the unborn child • H361f - Suspected of damaging fertility • EUH066 - Repeated exposure may cause skin dryness or cracking • EUH210 - Safety data sheet available on request • EUH208 - May produce an allergic reaction
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Classification for mixtures and used evaluation method according to regulation (EC) 1207/2008 [CLP]

Physical hazards	On basis of test data
Health Hazards	Calculation Method
Environmental Hazards	Calculation Method

Revision Date 08-09-2017

Revision Note This SDS has been revised in the following section(s), 3, 8, 15, 16.

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

