ENEOS Brake & Clutch Fluid DOT 4

Safety Data Sheet

according to Regulation (EC) No. 453/2010

Date of issue: 15/10/2014 Revision date: 15/10/2014 Supersedes: 15/10/2014 Version: 1.0

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

1.1. Product identifier

Product form : Mixture

Product name : ENEOS Brake & Clutch Fluid DOT 4

Product code : V161500140

Product group : Trade product

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 : industrial use,professional use,consumer use

Use of the substance/mixture : Brake fluid.

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

JX NIPPON OIL & ENERGY EUROPE LIMITED
4th Floor, 4 Moorgate
London, EC2R 6DA
UNITED KINGDOM

1.4. Emergency telephone number

Emergency number : 0044 20 7186 0400
(Monday to Friday: 8:00 - 17:00)

Country	Organisation/Company	Address	Emergency number
ICELAND	Iceland Poisons Information Centre Landspitali University Hospital	Fossvogi 108 Reykjavik	+354 525 111 +354 543 2222
IRELAND (REPUBLIC OF)	National Poisons Information Centre Beaumont Hospital	Beaumont Hospital Beaumont Road 9 Dublin	: +353 1 8379964
UNITED KINGDOM	National Poisons Information Service (Newcastle Centre) Regional Drugs and Therapeutics Centre, Wolfson Unit	Claremont Place Newcastle-upon-Tyne NE1 4LP Newcastle	0844 892 0111 (UK only, Monday to Friday, 08.00 to 18.00 hours)
Ελλάδα	Poisons Information Centre Children's Hospital "Aglaia. Kyriakou"	11527 Athens	+30 10 779 3777
إسرائيل	Israel Poison Information Center Rambam Health Care Campus	6 Ha'Aliya Street 31096 Haifa	+972 4 854 1900

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

Eye Irrit. 2 H319

Full text of H-statements: see section 16

Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

Xi; R36

Full text of R-phrases: see section 16

2.2. Label elements

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

Hazard pictograms (CLP) :

GHS07

CLP Signal word : Warning

Hazard statements (CLP) : H319 - Causes serious eye irritation

Precautionary statements (CLP) : P102 - Keep out of reach of children
P301+P310 - IF SWALLOWED: immediately call a POISON CENTER or doctor/physician
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P337+P313 - If eye irritation persists: Get medical advice/attention

2.3. Other hazards

Other hazards not contributing to the classification : Attacks some forms of plastics, rubber, and coatings.

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	%	Classification according to Directive 67/548/EEC	Classification according to Regulation (EC) No. 1272/2008 [CLP]
2-[2-(2-butoxyethoxy)ethoxy]ethanol, TEGBE, triethylene glycol monobutyl ether, butoxytriethylene glycol	(CAS No) 143-22-6 (EC no) 205-592-6 (EC index no) 603-183-00-0 (REACH-no) 01-21195457107-38	25 - 35	Xi; R41	Eye Dam. 1, H318
Diethylene glycol	(CAS No) 111-46-6 (EC no) 203-872-2	5 - 10	Xn; R22	Acute Tox. 4 (Oral), H302 STOT RE 2, H373
2-(2-methoxyethoxy)ethanol	(CAS No) 111-77-3 (EC no) 203-906-6 (EC index no) 603-107-00-6	2,5 - 5	Repr.Cat.3; R63	Repr. 2, H361d
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	2,5 - 5	Xi; R36	Eye Irrit. 2, H319

Specific concentration limits:

Name	Product identifier	Specific concentration limits: DSD/DPD	Specific concentration limits: CLP
2-[2-(2-butoxyethoxy)ethoxy]ethanol, TEGBE, triethylene glycol monobutyl ether, butoxytriethylene glycol	(CAS No) 143-22-6 (EC no) 205-592-6 (EC index no) 603-183-00-0 (REACH-no) 01-21195457107-38	(20 =< C < 30) Xi;R36 (C >= 30) Xi;R41	

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

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : Seek medical attention if ill effect develops.

First-aid measures after inhalation : Take victim to fresh air, in a quiet place, in an half laying position and if necessary take medical advice. Allow the victim to rest.

First-aid measures after skin contact : Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse. Seek medical attention if ill effect or irritation develops.

First-aid measures after eye contact : Remove contact lenses, if present and easy to do. Continue rinsing. Ensure adequate flushing of eyes by separating eyelids with the fingers. Obtain medical attention if pain, blinking, tears or redness persist.

First-aid measures after ingestion : Consult a doctor/medical service if you feel unwell. If vomiting occurs spontaneously, keep head below the hips to prevent aspiration. Do not induce vomiting.

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

Symptoms/injuries after inhalation : At normal ambient temperatures this product will be unlikely to present an inhalation hazard because of its low volatility. May be harmful by inhalation if exposure to vapour, mists or fumes resulting from thermal decomposition products occurs.

Symptoms/injuries after skin contact : Unlikely to cause harm to the skin on brief or occasional contact but prolonged or repeated exposure may lead to dermatitis. High pressure injection of product into the skin may lead to local necrosis if the product is not surgically removed.

Symptoms/injuries after eye contact : Unlikely to cause more than transient stinging or redness if accidental eye contact occurs.

Symptoms/injuries after ingestion : Bad taste. Unlikely to cause harm if accidentally swallowed in small doses, though larger quantities may cause nausea and diarrhoea.

Symptoms/injuries upon intravenous administration : Unknown.

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), dry chemical powder, foam. Water fog.

Unsuitable extinguishing media : Do not use a heavy water stream. Use of heavy stream of water may spread fire.

5.2. Special hazards arising from the substance or mixture

Fire hazard : Combustion generates : CO, CO2.

Explosion hazard : Not expected to be a fire/explosion hazard under normal conditions of use.

5.3. Advice for firefighters

Precautionary measures fire : Do not enter fire area without proper protective equipment, including respiratory protection.

Firefighting instructions : Use water spray or fog for cooling exposed containers.

Protection during firefighting : Use self-contained breathing apparatus and chemically protective clothing.

Other information : Prevent fire-fighting water from entering environment. Sweep up and remove to a suitable, clearly marked container for disposal in accordance with local regulations.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Spill area may be slippery. Prevent soil and water pollution. Prevent entry to sewers and public waters.

6.1.1. For non-emergency personnel

Protective equipment : When the risk of skin exposure is high (e.g. when cleaning up spillages or if there is a risk of splashing) then chemical resistant aprons and/or impervious chemical suits and boots will be required. Use protective clothing.

Emergency procedures : Consider evacuation.

6.1.2. For emergency responders

Protective equipment : When the risk of skin exposure is high (e.g. when cleaning up spillages or if there is a risk of splashing) then chemical resistant aprons and/or impervious chemical suits and boots will be required.

Emergency procedures : No specific measures are necessary.

6.2. Environmental precautions

Dike for recovery or absorb with appropriate material. Notify authorities if product enters sewers or public waters. Prevent soil and water pollution. Prevent liquid from entering sewers, watercourses, underground or low areas. Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams.

6.3. Methods and material for containment and cleaning up

For containment : Large quantities: Contain large spillage with sand or earth.

Methods for cleaning up : Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust). Take up large spills with pump or vacuum and finish with dry chemical absorbent.

Other information : Use suitable disposal containers. Sweep up and remove to a suitable, clearly marked container for disposal in accordance with local regulations.

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed : Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

Precautions for safe handling : Avoid prolonged and repeated contact with skin. May be dangerously slippery if spilled. Where contact with eyes or skin is likely, wear suitable protection. Do not eat, drink or smoke during use. Remove contaminated clothing and shoes.

Hygiene measures : Take all necessary measures to avoid accidental discharge of products into drains and waterways due to the rupture of containers or transfer systems. Handle in accordance with good industrial hygiene and safety practice. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Where contact with eyes or skin is likely, wear suitable protection. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Keep container tightly closed and in well ventilated place.

Storage conditions	:	Store in original container.
Incompatible products	:	Reacts vigorously with strong oxidizers and acids.
Maximum storage period	:	5 year
Storage temperature	:	≤ 40 °C.
Prohibitions on mixed storage	:	Keep away from : oxidizing materials. strong acids.
Storage area	:	Store at ambient temperature.
Special rules on packaging	:	Keep container tightly closed and dry.

7.3. Specific end use(s)

Brake fluid.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

2-[2-(2-butoxyethoxy)ethoxy]ethanol, TEGBE, triethylene glycol monobutyl ether, butoxytriethylene glycol (143-22-6)		
Austria	MAK Short time value (ppm)	0 ppm
Diethylene glycol (111-46-6)		
Austria	Local name	Diethylenglykol
Austria	MAK (mg/m³)	44 mg/m³
Austria	MAK (ppm)	10 ppm
Austria	MAK Short time value (mg/m³)	176 mg/m³
Austria	MAK Short time value (ppm)	40 ppm
Croatia	Local name	2,2'-Oksibisetanol; Dietilen-glikol
Croatia	GVI (granična vrijednost izloženosti) (mg/m³)	101 mg/m³
Croatia	GVI (granična vrijednost izloženosti) (ppm)	23 ppm
Croatia	Naznake (HR)	Xn
Denmark	Local name	Diethylenglycol
Denmark	Grænseværdie (langvarig) (mg/m³)	11 mg/m³
Denmark	Grænseværdie (langvarig) (ppm)	2,5 ppm
Estonia	Local name	2,2'-hüdroksüdietanool (dietüleenglükool)
Estonia	OEL TWA (mg/m³)	45 mg/m³
Estonia	OEL TWA (ppm)	10 ppm
Estonia	OEL STEL (mg/m³)	90 mg/m³
Estonia	OEL STEL (ppm)	20 ppm
Germany	Local name	2,2'-Oxydiethanol
Germany	TRGS 900 Occupational exposure limit value (mg/m³)	44 mg/m³
Germany	TRGS 900 Occupational exposure limit value (ppm)	10 ppm
Germany	Remark (TRGS 900)	DFG,Y
Ireland	Local name	Diethylene glycol
Ireland	OEL (8 hours ref) (mg/m³)	100 mg/m³
Ireland	OEL (8 hours ref) (ppm)	23 ppm
Latvia	Local name	Dietilēnglikols (2,2'oksibisetanols,2,2'dihidroksidietilēteris)
Latvia	OEL TWA (mg/m³)	10 mg/m³
Lithuania	Local name	2,2-oksidietanolis (dietilenglikolis, diglikolis)
Lithuania	IPRV (mg/m³)	45 mg/m³
Lithuania	IPRV (ppm)	10 ppm
Lithuania	TPRV (mg/m³)	90 mg/m³
Lithuania	TPRV (ppm)	20 ppm
Lithuania	Remark (LT)	O
Poland	Local name	2,2'-Oksydietanol (glikol dwuetylenowy) aerozol
Poland	NDS (mg/m³)	10 mg/m³
Romania	Local name	Dietilenglicol
Romania	OEL TWA (mg/m³)	500 mg/m³
Romania	OEL TWA (ppm)	115 ppm
Romania	OEL STEL (mg/m³)	800 mg/m³

Diethylene glycol (111-46-6)		
Romania	OEL STEL (ppm)	184 ppm
Slovenia	Local name	2,2'-oksidietanol
Slovenia	OEL TWA (mg/m³)	44 mg/m³
Slovenia	OEL TWA (ppm)	10 ppm
Slovenia	OEL STEL (mg/m³)	176 mg/m³
Slovenia	OEL STEL (ppm)	40 ppm
Spain	Local name	Dietilenglicol (2009)
Spain	VLA-ED (mg/m³)	44 mg/m³
Spain	VLA-ED (ppm)	10 ppm
Spain	VLA-EC (mg/m³)	176 mg/m³
Spain	VLA-EC (ppm)	40 ppm
Sweden	Local name	Diethylene glycol
Sweden	nivågränsvärde (NVG) (mg/m³)	45 mg/m³
Sweden	nivågränsvärde (NVG) (ppm)	10 ppm
Sweden	kortidsvärde (KTV) (mg/m³)	90 mg/m³
Sweden	kortidsvärde (KTV) (ppm)	20 ppm
United Kingdom	Local name	2,2'-Oxydiethanol
United Kingdom	WEL TWA (mg/m³)	101 mg/m³
United Kingdom	WEL TWA (ppm)	23 ppm
Iceland	Local name	Díetýlenglýkól
Iceland	OEL (8 hours ref) (mg/m³)	11 mg/m³
Iceland	OEL (8 hours ref) (ppm)	2,5 ppm
Switzerland	Local name	Diéthylèneglycol
Switzerland	VME (mg/m³)	44 mg/m³
Switzerland	VME (ppm)	10 ppm
Switzerland	VLE (mg/m³)	176 mg/m³
Switzerland	VLE (ppm)	40 ppm
Switzerland	Remark (CH)	4x15
Australia	Local name	2,2'-Oxybis[ethanol]
Australia	TWA (mg/m³)	100 mg/m³
Australia	TWA (ppm)	23 ppm

2-(2-methoxyethoxy)ethanol (111-77-3)		
EU	IOELV TWA (mg/m³)	50,1 mg/m³
EU	IOELV STEL (mg/m³)	10 mg/m³
Austria	Local name	2-(2-Methoxyethoxy)-ethanol
Austria	MAK (mg/m³)	50,1 mg/m³
Austria	MAK (ppm)	10 ppm
Austria	Remark (AT)	H
Belgium	Local name	2-(2-Méthoxyéthoxy)éthanol
Belgium	Limit value (mg/m³)	50,1 mg/m³
Belgium	Limit value (ppm)	10 ppm
Belgium	Remark (BE)	D
Bulgaria	Local name	2-(2-Метоксиетокси) етанол•
Bulgaria	OEL TWA (mg/m³)	50,1 mg/m³
Croatia	Local name	2-(2-Metoksietoksi)etanol; (Dietilen-glikol monometil-eter)
Croatia	GVI (granična vrijednost izloženosti) (mg/m³)	50,1 mg/m³
Croatia	GVI (granična vrijednost izloženosti) (ppm)	10 ppm
Croatia	Naznake (HR)	K, EU** X
Czech Republic	Local name	2-(2-Methoxyethoxy)ethanol
Czech Republic	Expoziční limity (PEL) (mg/m³)	50 mg/m³
Czech Republic	Expoziční limity (PEL) (ppm)	10,2 ppm
Czech Republic	Expoziční limity (NPK-P) (mg/m³)	100 mg/m³
Czech Republic	Expoziční limity (NPK-P) (ppm)	20 ppm

2-(2-methoxyethoxy)ethanol (111-77-3)		
Czech Republic	Remark (CZ)	D
Denmark	Local name	Diethylenglycolmonomethylether (2007)
Denmark	Grænseværdie (langvarig) (mg/m³)	50,1 mg/m³
Denmark	Grænseværdie (langvarig) (ppm)	10 ppm
Denmark	Anmærkninger (DK)	EH
Finland	Local name	2-(2-Metoksietoksi)etanoli
Finland	HTP-arvo (8h) (mg/m³)	50 mg/m³
Finland	HTP-arvo (8h) (ppm)	10 ppm
France	Local name	2-(2-méthoxyéthoxy) éthanol
France	VME (mg/m³)	50,1 mg/m³
France	VME (ppm)	10 ppm
Germany	Local name	2-(2-Methoxyethoxy)ethanol
Germany	TRGS 900 Occupational exposure limit value (mg/m³)	50 mg/m³
Germany	TRGS 900 Occupational exposure limit value (ppm)	10 ppm
Germany	Remark (TRGS 900)	EU,Y,H
Hungary	Local name	2-(2-METOXIETOXI)ETANOL
Hungary	AK-érték	50,1 mg/m³
Hungary	Megjegyzések (HU)	EU2
Ireland	Local name	2-(2-Methoxyethoxy)ethanol
Ireland	OEL (8 hours ref) (mg/m³)	50,1 mg/m³
Ireland	OEL (8 hours ref) (ppm)	10 ppm
Ireland	Notes (IE)	Sk, IOELV
Italy	Local name	2-(2-Metossietossi)etanolo
Italy	OEL TWA (mg/m³)	50,1 mg/m³
Italy	OEL TWA (ppm)	10 ppm
Latvia	Local name	2-(2-Metoksietoksi) etanols
Latvia	OEL TWA (mg/m³)	50,1 mg/m³
Latvia	OEL TWA (ppm)	10 ppm
Lithuania	Local name	2-(2-metoksietoksi)etanolis
Lithuania	IPRV (mg/m³)	50,1 mg/m³
Lithuania	IPRV (ppm)	10 ppm
Lithuania	Remark (LT)	RO
Luxembourg	Local name	2-(2-méthoxyéthoxy)éthanol
Luxembourg	OEL TWA (mg/m³)	50,1 mg/m³
Luxembourg	OEL TWA (ppm)	10 ppm
Malta	Local name	2-(2-Methoxyethoxy) ethanol
Malta	OEL TWA (mg/m³)	50,1 mg/m³
Malta	OEL TWA (ppm)	10 ppm
Netherlands	Local name	2-(Methoxyethoxy)ethanol
Netherlands	Grenswaarde TGG 8H (mg/m³)	45 mg/m³
Netherlands	Remark (MAC)	H
Poland	Local name	2-(2-Metoksyetoksy)etanol
Poland	NDS (mg/m³)	50 mg/m³
Romania	Local name	2-(2-metoxietoxi)-etanol
Romania	OEL TWA (mg/m³)	50,1 mg/m³
Romania	OEL TWA (ppm)	10 ppm
Slovenia	Local name	2-(2-metoksietoksi)etanol
Slovenia	OEL TWA (mg/m³)	50,1 mg/m³
Slovenia	OEL TWA (ppm)	10 ppm
Spain	Local name	2-(2-Metoxietoxi)etanol

2-(2-methoxyethoxy)ethanol (111-77-3)		
Spain	VLA-ED (mg/m³)	50,1 mg/m³ Vía dérmica (Indica que, en las exposiciones a esta sustancia, la aportación por la vía cutánea puede resultar significativa para elcontenido corporal total si no se adoptan medidas para prevenir la absorción. En estas situaciones, es aconsejable la utilización delcontrol biológico para poder cuantificar la cantidad global absorbida del contaminante. Para más información véase el Apartado 5 deeste documento.), VLI (Agente químico para el que la U.E. estableció en su día un valor límite indicativo. Todos estos agentes químicos figuran almenos en una de las directivas de valores límite indicativos publicadas hasta ahora (ver Anexo C. Bibliografía). Los estados miembrosdisponen de un tiempo fijado en dichas directivas para su trasposición a los valores límites de cada país miembro. Una vez adoptados,estos valores tienen la misma validez que el resto de los valores adoptados por el país.), r (Esta sustancia tiene establecidas restricciones a la fabricación, la comercialización o el uso en los términos especificados en el"Reglamento (CE) nº 1907/2006 sobre Registro, Evaluación, Autorización y Restricción de sustancias y preparados químicos"(REACH) de 18 de diciembre de 2006 (DOUE L 369 de 30 de diciembre de 2006). Las restricciones de una sustancia pueden aplicarsea todos los usos o sólo a usos concretos. El anexo XVII del Reglamento REACH contiene la lista de todas las sustancias restringidasy especifica los usos que se han restringido.)
Spain	VLA-ED (ppm)	10 ppm Vía dérmica (Indica que, en las exposiciones a esta sustancia, la aportación por la vía cutánea puede resultar significativa para elcontenido corporal total si no se adoptan medidas para prevenir la absorción. En estas situaciones, es aconsejable la utilización delcontrol biológico para poder cuantificar la cantidad global absorbida del contaminante. Para más información véase el Apartado 5 deeste documento.), VLI (Agente químico para el que la U.E. estableció en su día un valor límite indicativo. Todos estos agentes químicos figuran almenos en una de las directivas de valores límite indicativos publicadas hasta ahora (ver Anexo C. Bibliografía). Los estados miembrosdisponen de un tiempo fijado en dichas directivas para su trasposición a los valores límites de cada país miembro. Una vez adoptados,estos valores tienen la misma validez que el resto de los valores adoptados por el país.), r (Esta sustancia tiene establecidas restricciones a la fabricación, la comercialización o el uso en los términos especificados en el"Reglamento (CE) nº 1907/2006 sobre Registro, Evaluación, Autorización y Restricción de sustancias y preparados químicos"(REACH) de 18 de diciembre de 2006 (DOUE L 369 de 30 de diciembre de 2006). Las restricciones de una sustancia pueden aplicarsea todos los usos o sólo a usos concretos. El anexo XVII del Reglamento REACH contiene la lista de todas las sustancias restringidasy especifica los usos que se han restringido.)
United Kingdom	Local name	2-(2-Methoxyethoxy) ethanol
United Kingdom	WEL TWA (mg/m³)	50,1 mg/m³
United Kingdom	WEL TWA (ppm)	10 ppm
United Kingdom	Remark (WEL)	Sk
Iceland	Local name	2-(2-metoxyetoxy)etanol
Iceland	OEL (8 hours ref) (mg/m³)	50,1 mg/m³
Iceland	OEL (8 hours ref) (ppm)	10 ppm
Iceland	Notes (IS)	H
Norway	Local name	2-(2-Metoksyetoksy)etanol
Norway	Gjennomsnittsverdier (AN) (mg/m³)	50 mg/m³

2-(2-methoxyethoxy)ethanol (111-77-3)		
Norway	Gjennomsnittsverdier (AN) (ppm)	10 ppm
Norway	Merknader (NO)	H R

2-(2-butoxyethoxy)ethanol (112-34-5)		
EU	IOELV TWA (mg/m³)	67,5 mg/m³
EU	IOELV TWA (ppm)	10 ppm
EU	IOELV STEL (mg/m³)	101,2 mg/m³
EU	IOELV STEL (ppm)	15 ppm
Austria	Local name	Butyldiglykol
Austria	MAK (mg/m³)	67,5 mg/m³
Austria	MAK (ppm)	10 ppm
Austria	MAK Short time value (mg/m³)	101,2 mg/m³
Austria	MAK Short time value (ppm)	15 ppm
Belgium	Local name	2-(2-Butoxyéthoxy)éthanol
Belgium	Limit value (mg/m³)	67,5 mg/m³
Belgium	Limit value (ppm)	10 ppm
Belgium	Short time value (mg/m³)	101,2 mg/m³
Belgium	Short time value (ppm)	15 ppm
Bulgaria	Local name	2-(2-Бутокси-етокси) етанол•Ванадий - оксиди и неорг.
Bulgaria	OEL TWA (mg/m³)	67,5 mg/m³
Bulgaria	OEL STEL (mg/m³)	101,2 mg/m³
Croatia	Local name	2-(2-Butoksietoksi)etanol; (Dietilen-glikol monobutil-eter)
Croatia	GVI (granična vrijednost izloženosti) (mg/m³)	67,5 mg/m³
Croatia	GVI (granična vrijednost izloženosti) (ppm)	10 ppm
Croatia	KGVI (kratkotrajna granična vrijednost izloženosti) (mg/m³)	101,2 mg/m³
Croatia	KGVI (kratkotrajna granična vrijednost izloženosti) (ppm)	15 ppm
Croatia	Naznake (HR)	EU** Xi
Czech Republic	Local name	2-(2-Buthoxyethoxy)-ethanol
Czech Republic	Expoziční limity (PEL) (mg/m³)	70 mg/m³
Czech Republic	Expoziční limity (PEL) (ppm)	10,6 ppm
Czech Republic	Expoziční limity (NPK-P) (mg/m³)	100 mg/m³
Czech Republic	Expoziční limity (NPK-P) (ppm)	15 ppm
Denmark	Local name	Butyldiglycol (2007)
Denmark	Grænseværdie (langvarig) (mg/m³)	67,5 mg/m³
Denmark	Grænseværdie (langvarig) (ppm)	10 ppm
Denmark	Grænseværdie (kortvarig) (mg/m³)	200 mg/m³
Denmark	Anmærkninger (DK)	E
Finland	Local name	2-(2-Butoksietoksi)etanoli
Finland	HTP-arvo (8h) (mg/m³)	68 mg/m³
Finland	HTP-arvo (8h) (ppm)	10 ppm
France	Local name	2-(2-butoxyéthoxy) éthanol
France	VME (mg/m³)	67,5 mg/m³
France	VME (ppm)	10 ppm
France	VLE (mg/m³)	101,2 mg/m³
France	VLE (ppm)	15 ppm
Germany	Local name	2-(2-Butoxyethoxy)ethanol
Germany	TRGS 900 Occupational exposure limit value (mg/m³)	67 mg/m³
Germany	TRGS 900 Occupational exposure limit value (ppm)	10 ppm
Germany	Remark (TRGS 900)	EU,DFG,Y,11
Hungary	Local name	2-(2-BUTOXIETOXI)ETANOL
Hungary	AK-érték	67,5 mg/m³
Hungary	CK-érték	101,2 mg/m³

2-(2-butoxyethoxy)ethanol (112-34-5)		
Hungary	Megjegyzések (HU)	EU2
Ireland	Local name	2-(2-Butoxyethoxy)ethanol
Ireland	OEL (8 hours ref) (mg/m³)	67,5 mg/m³
Ireland	OEL (8 hours ref) (ppm)	10 ppm
Ireland	OEL (15 min ref) (mg/m3)	101,2 mg/m³
Ireland	OEL (15 min ref) (ppm)	15 ppm
Ireland	Notes (IE)	IOELV
Italy	Local name	2-(2-Butossietossi)etanolo
Italy	OEL TWA (mg/m³)	67,5 mg/m³
Italy	OEL TWA (ppm)	10 ppm
Italy	OEL STEL (mg/m³)	101,2 mg/m³
Italy	OEL STEL (ppm)	15 ppm
Latvia	Local name	2-(2-Butoksietoksi) etanols(butildiglikols)
Latvia	OEL TWA (mg/m³)	67,5 mg/m³
Latvia	OEL TWA (ppm)	10 ppm
Latvia	OEL STEL (mg/m³)	101,2 mg/m³
Latvia	OEL STEL (ppm)	15 ppm
Lithuania	Local name	2-(2-butoksietoksi)etanolis (dietilenglikolio monobutileteris, oksidietanolio monobutileteris)
Lithuania	IPRV (mg/m³)	100 mg/m³
Lithuania	IPRV (ppm)	15 ppm
Lithuania	TPRV (mg/m³)	200 mg/m³
Lithuania	TPRV (ppm)	30 ppm
Luxembourg	Local name	2-(2-butoxyéthoxy)éthanol
Luxembourg	OEL TWA (mg/m³)	67,5 mg/m³
Luxembourg	OEL TWA (ppm)	10 ppm
Luxembourg	OEL STEL (mg/m³)	101,2 mg/m³
Luxembourg	OEL STEL (ppm)	15 ppm
Malta	Local name	2-(2-Butoxyethoxy) ethanol
Malta	OEL TWA (mg/m³)	67,5 mg/m³
Malta	OEL TWA (ppm)	10 ppm
Malta	OEL STEL (mg/m³)	101,2 mg/m³
Malta	OEL STEL (ppm)	15 ppm
Netherlands	Local name	2-(2-Butoxyethoxy)ethanol
Netherlands	Grenswaarde TGG 8H (mg/m³)	50 mg/m³
Netherlands	Grenswaarde TGG 15MIN (mg/m³)	100 mg/m³
Netherlands	Remark (MAC)	H
Poland	Local name	2-(2-Butoksyetoksy)etanol
Poland	NDS (mg/m³)	67 mg/m³
Poland	NDSCh (mg/m³)	100 mg/m³
Romania	Local name	Dowanol DB (eter monobutilic al dietilenglicolului)
Romania	OEL TWA (mg/m³)	150 mg/m³
Romania	OEL STEL (mg/m³)	250 mg/m³
Slovenia	Local name	2-(2-butoksietoksi)etanol (butildietilenglikol)
Slovenia	OEL TWA (mg/m³)	67,5 mg/m³
Slovenia	OEL TWA (ppm)	10 ppm
Slovenia	OEL STEL (mg/m³)	101,25 mg/m³
Slovenia	OEL STEL (ppm)	15 ppm
Spain	Local name	2- (2-Butoxietoxi) etanol (2007)

2-(2-butoxyethoxy)ethanol (112-34-5)		
Spain	VLA-ED (mg/m³)	67,5 mg/m³ VLI (Agente químico para el que la U.E. estableció en su día un valor límite indicativo. Todos estos agentes químicos figuran almenos en una de las directivas de valores límite indicativos publicadas hasta ahora (ver Anexo C. Bibliografía). Los estados miembrosdisponen de un tiempo fijado en dichas directivas para su trasposición a los valores límites de cada país miembro. Una vez adoptados,estos valores tienen la misma validez que el resto de los valores adoptados por el país.), r (Esta sustancia tiene establecidas restricciones a la fabricación, la comercialización o el uso en los términos especificados en el"Reglamento (CE) nº 1907/2006 sobre Registro, Evaluación, Autorización y Restricción de sustancias y preparados químicos"(REACH) de 18 de diciembre de 2006 (DOUE L 369 de 30 de diciembre de 2006). Las restricciones de una sustancia pueden aplicarsea todos los usos o sólo a usos concretos. El anexo XVII del Reglamento REACH contiene la lista de todas las sustancias restringidasy especifica los usos que se han restringido.)
Spain	VLA-ED (ppm)	10 ppm VLI (Agente químico para el que la U.E. estableció en su día un valor límite indicativo. Todos estos agentes químicos figuran almenos en una de las directivas de valores límite indicativos publicadas hasta ahora (ver Anexo C. Bibliografía). Los estados miembrosdisponen de un tiempo fijado en dichas directivas para su trasposición a los valores límites de cada país miembro. Una vez adoptados,estos valores tienen la misma validez que el resto de los valores adoptados por el país.), r (Esta sustancia tiene establecidas restricciones a la fabricación, la comercialización o el uso en los términos especificados en el"Reglamento (CE) nº 1907/2006 sobre Registro, Evaluación, Autorización y Restricción de sustancias y preparados químicos"(REACH) de 18 de diciembre de 2006 (DOUE L 369 de 30 de diciembre de 2006). Las restricciones de una sustancia pueden aplicarsea todos los usos o sólo a usos concretos. El anexo XVII del Reglamento REACH contiene la lista de todas las sustancias restringidasy especifica los usos que se han restringido.)
Spain	VLA-EC (mg/m³)	101,2 mg/m³ VLI (Agente químico para el que la U.E. estableció en su día un valor límite indicativo. Todos estos agentes químicos figuran almenos en una de las directivas de valores límite indicativos publicadas hasta ahora (ver Anexo C. Bibliografía). Los estados miembrosdisponen de un tiempo fijado en dichas directivas para su trasposición a los valores límites de cada país miembro. Una vez adoptados,estos valores tienen la misma validez que el resto de los valores adoptados por el país.), r (Esta sustancia tiene establecidas restricciones a la fabricación, la comercialización o el uso en los términos especificados en el"Reglamento (CE) nº 1907/2006 sobre Registro, Evaluación, Autorización y Restricción de sustancias y preparados químicos"(REACH) de 18 de diciembre de 2006 (DOUE L 369 de 30 de diciembre de 2006). Las restricciones de una sustancia pueden aplicarsea todos los usos o sólo a usos concretos. El anexo XVII del Reglamento REACH contiene la lista de todas las sustancias restringidasy especifica los usos que se han restringido.)

2-(2-butoxyethoxy)ethanol (112-34-5)		
Spain	VLA-EC (ppm)	15 ppm VLI (Agente químico para el que la U.E. estableció en su día un valor límite indicativo. Todos estos agentes químicos figuran almenos en una de las directivas de valores límite indicativos publicadas hasta ahora (ver Anexo C. Bibliografía). Los estados miembrosdisponen de un tiempo fijado en dichas directivas para su trasposición a los valores límites de cada país miembro. Una vez adoptados,estos valores tienen la misma validez que el resto de los valores adoptados por el país.), r (Esta sustancia tiene establecidas restricciones a la fabricación, la comercialización o el uso en los términos especificados en el"Reglamento (CE) nº 1907/2006 sobre Registro, Evaluación, Autorización y Restricción de sustancias y preparados químicos"(REACH) de 18 de diciembre de 2006 (DOUE L 369 de 30 de diciembre de 2006). Las restricciones de una sustancia pueden aplicarsea todos los usos o sólo a usos concretos. El anexo XVII del Reglamento REACH contiene la lista de todas las sustancias restringidasy especifica los usos que se han restringido.)
Sweden	Local name	Diethylene glycol mono-butyl ether
Sweden	nivågränsvärde (NVG) (mg/m³)	100 mg/m³
Sweden	nivågränsvärde (NVG) (ppm)	15 ppm
Sweden	kortidsvärde (KTV) (mg/m³)	200 mg/m³
Sweden	kortidsvärde (KTV) (ppm)	30 ppm
United Kingdom	Local name	2-(2-Butoxyethoxy)ethanol
United Kingdom	WEL TWA (mg/m³)	67,5 mg/m³
United Kingdom	WEL TWA (ppm)	10 ppm
United Kingdom	WEL STEL (mg/m³)	101,2 mg/m³
United Kingdom	WEL STEL (ppm)	15 ppm
Iceland	Local name	2-(2-bútoxýetoxý)etanól (bútýldíglýkól)
Iceland	OEL (8 hours ref) (mg/m³)	67,5 mg/m³
Iceland	OEL (8 hours ref) (ppm)	10 ppm
Iceland	OEL (15 min ref) (mg/m3)	101,2 mg/m³
Iceland	OEL (15 min ref) (ppm)	15 ppm
Norway	Local name	2-2(Butoksyetoksy)etanol
Norway	Gjennomsnittsverdier (AN) (mg/m³)	68 mg/m³
Norway	Gjennomsnittsverdier (AN) (ppm)	10 ppm
Switzerland	Local name	Butyldiglycol
Switzerland	VME (mg/m³)	67 mg/m³
Switzerland	VME (ppm)	10 ppm
Switzerland	VLE (mg/m³)	101,2 mg/m³
Switzerland	VLE (ppm)	15 ppm
Switzerland	Remark (CH)	4x15
USA - ACGIH	Local name	Diethylene glycol monobutyl ether
USA - ACGIH	ACGIH TWA (mg/m³)	67,5 mg/m³
USA - ACGIH	ACGIH TWA (ppm)	10 ppm
USA - ACGIH	ACGIH STEL (mg/m³)	101,2 mg/m³
USA - ACGIH	ACGIH STEL (ppm)	15 ppm

8.2. Exposure controls

Appropriate engineering controls : Large quantities: Contain large spillage with sand or earth.

Personal protective equipment : Gloves. In case of splash hazard: safety glasses. Eye protection should only be necessary where liquid could be splashed or sprayed.

Materials for protective clothing	:	PVC gloves. Nitrile rubber. Butyl-rubber protective gloves
Hand protection	:	In case of repeated or prolonged contact wear gloves. The gloves should be replaced immediately in case of damage or signs of wear. It is recommended to use preventative skin protection (skin cream). The protection glove should be tested for its specific suitability (e.g. mechanical strength, product compatibility, anti-static properties).
Eye protection	:	Eye protection should only be necessary where liquid could be splashed or sprayed
Skin and body protection	:	No special clothing/skin protection equipment is recommended under normal conditions of use. Avoid repeated or prolonged skin contact. If repeated skin contact or contamination of clothing is likely, protective clothing should be worn. Equipment should conform to EN 166.
Respiratory protection	:	Respiratory protective equipment is not normally required where there is adequate natural or local exhaust ventilation to control exposure. Where excessive vapour, mist, or dust may result, use approved respiratory protection equipment. Respiratory protective equipment must be checked to ensure it fits correctly each time it is worn. Provided an air-filtering/air-purifying respirator is suitable, a filter for particulates can be used for mist or fume. Use filter type P or comparable standard. A combination filter for particles and organic gases and vapours (boiling point >65°C) may be required if vapour or abnormal odour is also present due to high product temperature. Use filter type AP or comparable standard.

Environmental exposure controls	:	See Heading 12. See Heading 6.
Consumer exposure controls	:	PVC gloves. Nitrile-rubber protective gloves. Butylrubber protective gloves.
Other information	:	Do not put the product-soaked rags into the pockets of working clothes. Do not use cloths stained with the product to dry hands. 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 during use. Wash contaminated clothing before reuse.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	liquid
Appearance	:	Oily. liquid.
Colour	:	Colourless to yellow.
Odour	:	characteristic.
Odour threshold	:	no data available
pH	:	7 - 11,5
Relative evaporation rate (butylacetate=1)	:	< 0,1
Melting point	:	< -50 °C.
Freezing point	:	no data available
Boiling point	:	> 260 °C.
Flash point	:	> 100 °C.
Auto-ignition temperature	:	> 300 °C.
Decomposition temperature	:	> 300 °C.
Flammability (solid, gas)	:	no data available
Vapour Pressure 20°C	:	< 2 mbar
Relative vapour density at 20 °C	:	> 1 (air=1)
Relative density	:	no data available
Density	:	1,02 - 1,07 kg/l
Solubility	:	Completely miscible with water.
Log Pow	:	< 2
Viscosity, kinematic	:	5 - 10 cSt
Viscosity, dynamic	:	no data available
Explosive properties	:	no data available
Oxidising properties	:	no data available
Explosive limits	:	0,6 - 7 vol %

9.2. Other information

Other properties	:	Gas/vapour heavier than air at 20'C.

SECTION 10: Stability and reactivity

10.1. Reactivity

Stable under normal conditions of use.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Refer to section 10.1 on Reactivity.

10.4. Conditions to avoid

Moisture. Overheating.

10.5. Incompatible materials

Strong oxidizing agents. strong acids.

10.6. Hazardous decomposition products

CO, CO2.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

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

Skin corrosion/irritation : Not classified
pH: 7 - 11,5

Serious eye damage/irritation : Causes serious eye irritation.
pH: 7 - 11,5

Respiratory or skin sensitisation : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

Specific target organ toxicity (single exposure) : Not classified

Specific target organ toxicity (repeated exposure) : Not classified

Aspiration hazard : Not classified

ENEOS Brake & Clutch Fluid DOT 4	
Viscosity, kinematic	5 - 10 mm²/s

Other information : Toxicological data have not been determined specifically for this product. Information given is based on a knowledge of the components and the toxicology of similar products. Likely route of exposure: ingestion, skin and eye.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : Ecotoxicological data have not been determined specifically for this product. Information given is based on a knowledge of the components and the ecotoxicology of similar products.

12.2. Persistence and degradability

ENEOS Brake & Clutch Fluid DOT 4	
Persistence and degradability	Not readily biodegradable.

12.3. Bioaccumulative potential

ENEOS Brake & Clutch Fluid DOT 4	
Log Pow	< 2
Bioaccumulative potential	This product is not expected to bioaccumulate through food chains in the environment.
2-[2-(2-butoxyethoxy)ethoxy]ethanol, TEGBE, triethylene glycol monobutyl ether, butoxytriethylene glycol (143-22-6)	
Log Pow	0,51

12.4. Mobility in soil

ENEOS Brake & Clutch Fluid DOT 4	
Ecology - soil	Spillages may penetrate the soil causing ground water contamination. This product floats on water and may affect the oxygen-balance in the water.

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Regional legislation (waste)	:	Disposal must be done according to official regulations.
Waste disposal recommendations	:	Dispose in a safe manner in accordance with local/national regulations. Do not discharge into drains or the environment.
Additional information	:	Hazardous waste.
Ecology - waste materials	:	Every mixture with foreign substances such as solvents, brake- and cooling liquids is forbidden. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly. When not empty dispose of this container at hazardous or special waste collection point.
European List of Waste (LoW) code	:	16 01 13* - brake fluids

SECTION 14: Transport information

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

14.1. UN number

Not regulated for transport

14.2. UN proper shipping name

Proper Shipping Name	:	Not applicable
Proper Shipping Name (IMDG)	:	Not applicable
Proper Shipping Name (IATA)	:	Not applicable
Proper Shipping Name (ADN)	:	Not applicable
Proper Shipping Name (RID)	:	Not applicable

14.3. Transport hazard class(es)

ADR

Transport hazard class(es) (ADR)	:	Not applicable

IMDG

Transport hazard class(es) (IMDG)	:	Not applicable

IATA

Transport hazard class(es) (IATA)	:	Not applicable

ADN

Transport hazard class(es) (ADN)	:	Not applicable

RID

Transport hazard class(es) (RID)	:	Not applicable

14.4. Packing group

Packing group (UN)	:	Not applicable
Packing group (IMDG)	:	Not applicable
Packing group (IATA)	:	Not applicable
Packing group (ADN)	:	Not applicable
Packing group (RID)	:	Not applicable

14.5. Environmental hazards

Dangerous for the environment	:	No
Marine pollutant	:	No
Other information	:	No supplementary information available

14.6. Special precautions for user

- Overland transport

no data available

- Transport by sea

no data available

- Air transport

no data available

- Inland waterway transport

Not subject to ADN : No

- Rail transport

Carriage prohibited (RID) : No

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

Not applicable

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 substances with Annex XVII restrictions

Contains no substance on the REACH candidate list

Contains no REACH Annex XIV substances

15.1.2. National regulations

Germany

VwVwS Annex reference : Water hazard class (WGK) 3, severe hazard to waters (Classification according to VwVwS, Annex 4.)

12th Ordinance Implementing the Federal Immission Control Act - 12.BImSchV : Is not subject of the 12. BImSchV (Hazardous Incident Ordinance)

Netherlands

SZW-lijst van kankerverwekkende stoffen : None of the components are listed

SZW-lijst van mutagene stoffen : None of the components are listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Borstvoeding : None of the components are listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Vruchtbaarheid : None of the components are listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling : 2-(2-methoxyethoxy)ethanol is listed

Denmark

Classification remarks : Emergency management guidelines for the storage of flammable liquids must be followed

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

No additional information available

SECTION 16: Other information

Full text of R-, 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
Repr. 2	Reproductive toxicity, Category 2
STOT RE 2	Specific target organ toxicity — Repeated exposure, Category 2
H302	Harmful if swallowed
H318	Causes serious eye damage
H319	Causes serious eye irritation
H361d	Suspected of damaging the unborn child
H373	May cause damage to organs through prolonged or repeated exposure
R22	Harmful if swallowed

R36	Irritating to eyes
R41	Risk of serious damage to eyes
R63	Possible risk of harm to the unborn child
Xi	Irritant
Xn	Harmful

SDS EU (REACH Annex II)

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