

Ethylene glycol

Safety Data Sheet

according to Regulation (EU) 2015/830

Date of issue: 05/04/2017 Version: 0.0

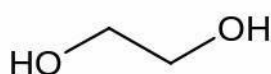
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SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Substance
Substance name : Ethylene glycol
EC Index-No. : 603-027-00-1
EC-No. : 203-473-3
CAS-No. : 107-21-1
Type of product : Pure substance
Formula : C₂H₆O₂
Chemical structure :



Synonyms : 1,2-dihydroxyethane / 1,2-ethanediol / 1,2-ethylene glycol / 2-hydroxyethanol / antifreeze / COREXIT 2920 / dihydroxyethane / DOWTHERM SR1 / ECA6969 / EG (=ethylene glycol) / ethane-1,2-diol / ethylene alcohol / ethylene dihydrate / FRIDEX / glycohol alcohol / glycol / glycol alcohol / LUTROL-9 / MACROGOL 400BPC / MEG (=monoethylene glycol) / monoethylene glycol / NA1142 / NORKOOL / RAMP / TESCOL / thermofluide UCAR17 / UCAR17 / ZEREX

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

1.2.1. Relevant identified uses

Use of the substance/mixture : Solvent
Fuel: additive
Oil: additive
Chemical raw material
Anti-freezing agent
Laboratory chemical

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

ISOLAB Laborgeräte GmbH
Am Dillhof 2 - 63863 Eschau / GERMANY
Tel: + 49 93 74 / 978 55-0
Fax: +49 93 74 / 978 55-29
prodsafe@isolab.de

1.4. Emergency telephone number

Country	Organisation/Company	Address	Emergency number	Comment
Germany	Giftnotruf der Charité CBF, Haus VIII (Wirtschaftgebäude), UG	Hindenburgdamm 30 12203 Berlin	+49 30 19240	

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

Acute Tox. 4 (Oral) H302
STOT RE 2 H373

Full text of hazard classes and H-statements : see section 16

Adverse physicochemical, human health and environmental effects

No additional information available

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2.2. Label elements

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

Hazard pictograms (CLP) :



Signal word (CLP) :

Warning

Hazard statements (CLP) :

H302 - Harmful if swallowed
H373 - May cause damage to organs (Kidney) through prolonged or repeated exposure if swallowed.

Precautionary statements (CLP) :

P314 - Get medical advice/ attention if you feel unwell.

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances

Name	Product identifier	%
Ethylene glycol	(CAS-No.) 107-21-1 (EC-No.) 203-473-3 (EC Index-No.) 603-027-00-1	100

Full text of H-statements: see section 16

3.2. Mixtures

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general	: Check the vital functions. Unconscious: maintain adequate airway and respiration. Respiratory arrest: artificial respiration or oxygen. Cardiac arrest: perform resuscitation. Victim conscious with laboured breathing: half-seated. Victim in shock: on his back with legs slightly raised. Vomiting: prevent asphyxia/aspiration pneumonia. Prevent cooling by covering the victim (no warming up). Keep watching the victim. Give psychological aid. Keep the victim calm, avoid physical strain. Depending on the victim's condition: doctor/hospital.
First-aid measures after inhalation	: Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service.
First-aid measures after skin contact	: Rinse with water. Soap may be used. Remove clothing before washing. Take victim to a doctor if irritation persists.
First-aid measures after eye contact	: Rinse with water. Do not apply neutralizing agents. Take victim to an ophthalmologist if irritation persists.
First-aid measures after ingestion	: Rinse mouth with water. Immediately after ingestion: give lots of water to drink. Victim is fully conscious: immediately induce vomiting. Induce vomiting by giving a 0.9 % saline solution. Give activated charcoal. Consult a doctor/medical service if you feel unwell. Call Poison Information Centre (www.big.be/antigif.htm). Ingestion of large quantities: immediately to hospital. Doctor: administration of chemical antidote. Doctor: gastric lavage.

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

Symptoms/effects after inhalation	: EXPOSURE TO HIGH CONCENTRATIONS: Irritation of the respiratory tract. Dry/sore throat. Irritation of the nasal mucous membranes.
Symptoms/effects after eye contact	: ON CONTINUOUS EXPOSURE/CONTACT: Irritation of the eye tissue. Redness of the eye tissue. Lacrimation.
Symptoms/effects after ingestion	: AFTER ABSORPTION OF HIGH QUANTITIES: Feeling of weakness. Central nervous system depression. Nausea. Vomiting. Gastrointestinal complaints. Difficulty in swallowing. Headache. Dizziness. Narcosis. Drunkenness. Disturbed tactile sensibility. Disturbed motor response. Visual disturbances. Disturbances of consciousness. Brain affection. Accelerated heart action. Low arterial pressure. Change in the haemogramme/blood composition. Rapid respiration. Cramps/uncontrolled muscular contractions. FOLLOWING SYMPTOMS MAY APPEAR LATER: Blue/grey discolouration of the skin. Decreased renal function. Change in urine composition. Change in urine output.

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

No additional information available

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SECTION 5: Fire-fighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Water spray. Polyvalent foam. Alcohol-resistant foam. Polymer foam. BC powder. Carbon dioxide.
- Unsuitable extinguishing media : Container may slop over if solid jet (water/foam) is applied.

5.2. Special hazards arising from the substance or mixture

- Fire hazard : DIRECT FIRE HAZARD. Combustible. INDIRECT FIRE HAZARD. Temperature above flashpoint: higher fire/explosion hazard. Reactions involving a fire hazard: see "Reactivity Hazard".
- Explosion hazard : INDIRECT EXPLOSION HAZARD. Reactions with explosion hazards: see "Reactivity Hazard".

5.3. Advice for firefighters

- Precautionary measures fire : Exposure to fire/heat: keep upwind. Exposure to fire/heat: seal off low-lying areas. Exposure to fire/heat: have neighbourhood close doors and windows.
- Firefighting instructions : Cool tanks/drums with water spray/remove them into safety.
- Protection during firefighting : Heat/fire exposure: compressed air/oxygen apparatus.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

- Protective equipment : Gloves. Protective clothing. Large spills/in enclosed spaces: compressed air apparatus. See "Material-Handling" to select protective clothing.
- Emergency procedures : Mark the danger area. No naked flames. Wash contaminated clothes. In case of reactivity hazard: consider evacuation.

6.1.2. For emergency responders

No additional information available

6.2. Environmental precautions

No additional information available

6.3. Methods and material for containment and cleaning up

- For containment : Contain released substance, pump into suitable containers. Consult "Material-handling" to select material of containers. Plug the leak, cut off the supply.
- Methods for cleaning up : Take up liquid spill into a non combustible material e.g.: sand, earth, vermiculite or powdered limestone. Scoop absorbed substance into closing containers. See "Material-handling" for suitable container materials. Clean contaminated surfaces with an excess of water. Wash clothing and equipment after handling.

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Comply with the legal requirements. Remove contaminated clothing immediately. Clean contaminated clothing. Thoroughly clean/dry the installation before use. Use earthed equipment. Keep away from naked flames/heat. Finely divided: spark- and explosionproof appliances. Finely divided: keep away from ignition sources/sparks. Observe normal hygiene standards. Keep container tightly closed. Measure the concentration in the air regularly. Carry operations in the open/under local exhaust/ventilation or with respiratory protection.

7.2. Conditions for safe storage, including any incompatibilities

- Heat and ignition sources : KEEP SUBSTANCE AWAY FROM: heat sources.
- Information on mixed storage : KEEP SUBSTANCE AWAY FROM: combustible materials. oxidizing agents. (strong) acids. (strong) bases. water/moisture.
- Storage area : Store in a dry area. Ventilation at floor level. Fireproof storeroom. Keep locked up. Under a shelter/in the open. Underground. May be stored under nitrogen. Meet the legal requirements.
- Special rules on packaging : SPECIAL REQUIREMENTS: closing. dry. clean. correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.
- Packaging materials : SUITABLE MATERIAL: stainless steel. carbon steel. steel with plastic inner lining. glass.

7.3. Specific end use(s)

No additional information available

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SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Ethylene glycol (107-21-1)		
EU	Local name	Ethylene glycol
EU	IOELV TWA (mg/m ³)	52 mg/m ³ (Ethylene glycol; EU; Time-weighted average exposure limit 8 h; Indicative occupational exposure limit value)
EU	IOELV TWA (ppm)	20 ppm (Ethylene glycol; EU; Time-weighted average exposure limit 8 h; Indicative occupational exposure limit value)
EU	IOELV STEL (mg/m ³)	104 mg/m ³ (Ethylene glycol; EU; Short time value; Indicative occupational exposure limit value)
EU	IOELV STEL (ppm)	40 ppm (Ethylene glycol; EU; Short time value; Indicative occupational exposure limit value)
EU	Notes	Skin
Austria	Local name	Ethylenglykol
Austria	MAK (mg/m ³)	26 mg/m ³
Austria	MAK (ppm)	10 ppm
Austria	MAK Short time value (mg/m ³)	52 mg/m ³
Austria	MAK Short time value (ppm)	20 ppm
Austria	Remark (AT)	H
Belgium	Local name	Ethylèneglycol (en aérosol) # Ethyleenglycol
Belgium	Limit value (mg/m ³)	52 mg/m ³ (Ethylèneglycol (en aérosol); Belgium; Time-weighted average exposure limit 8 h)
Belgium	Limit value (ppm)	20 ppm (Ethylèneglycol (en aérosol); Belgium; Time-weighted average exposure limit 8 h)
Belgium	Short time value (mg/m ³)	104 mg/m ³ (Ethylèneglycol (en aérosol); Belgium; Short time value)
Belgium	Short time value (ppm)	40 ppm (Ethylèneglycol (en aérosol); Belgium; Short time value)
Belgium	Remark (BE)	D: La mention D signifie que la résorption de l'agent, via la peau, les muqueuses ou les yeux, constitue une partie importante de l'exposition totale. Cette résorption peut se faire tant par contact direct que par présence de l'agent dans l'air. # De vermelding D betekent dat de opname van het agens via de huid, de slijmvliezen of de ogen een belangrijk deel van de totale blootstelling vormt. Deze opname kan het gevolg zijn van zowel direct contact als zijn aanwezigheid in de lucht.. M: La mention M indique que lors d'une exposition supérieure à la valeur limite, des irritations apparaissent ou un danger d'intoxication aiguë existe. Le procédé de travail doit être conçu de telle façon que l'exposition ne dépasse jamais la valeur limite. Lors des mesurages, la période d'échantillonnage doit être aussi courte que possible afin de pouvoir effectuer des mesurages fiables. Le résultat des mesurages est calculé en fonction de la période d'échantillonnage.# De vermelding M duidt aan dat bij de blootstelling boven de grenswaarde irritatie optreedt of er gevaar bestaat voor acute vergiftiging. Het werkproces moet zo zijn ontworpen dat de blootstelling de grenswaarde nooit overschrijdt. Bij een controle geldt dat de bemonsterde periode zo kort mogelijk moet zijn om een betrouwbare meting te kunnen verrichten. het meetresultaat wordt dan gerelateerd aan de beschouwde periode.
Bulgaria	Local name	Етиленгликол
Bulgaria	OEL TWA (mg/m ³)	52 mg/m ³
Bulgaria	OEL TWA (ppm)	20 ppm
Bulgaria	OEL STEL (mg/m ³)	104 mg/m ³
Bulgaria	OEL STEL (ppm)	40 ppm
Bulgaria	Notes	Кожа (възможна е значителна резорбция чрез кожата); • (Химични агенти, за които са определени гранични стойности във въздуха на работната среда за Европейската общност)

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Ethylene glycol (107-21-1)		
Croatia	Local name	etandiol; (Etilenglikol)
Croatia	GVI (granična vrijednost izloženosti) (mg/m ³)	52 mg/m ³
Croatia	GVI (granična vrijednost izloženosti) (ppm)	20 ppm
Croatia	KGVI (kratkotrajna granična vrijednost izloženosti) (mg/m ³)	104 mg/m ³
Croatia	KGVI (kratkotrajna granična vrijednost izloženosti) (ppm)	40 ppm
Croatia	Naznake (HR)	K (Skin): (naznaka da tvar može štetno djelovati kroz kožu); EU* (naznaka da se radi o tvarima za koje su utvrđene indikativne granične vrijednosti izloženosti prema Direktivi 2000/39/ EC (prva lista)); Xn (Štetno)
Czech Republic	Local name	Ethylenglykol
Czech Republic	Expoziční limity (PEL) (mg/m ³)	50 mg/m ³
Czech Republic	Expoziční limity (PEL) (ppm)	20 ppm
Czech Republic	Expoziční limity (NPK-P) (mg/m ³)	100 mg/m ³
Czech Republic	Expoziční limity (NPK-P) (ppm)	39 ppm
Czech Republic	Remark (CZ)	D
Denmark	Local name	Ethylenglycol (1,2-Ethandiol; Glycol)
Denmark	Grænseværdie (langvarig) (mg/m ³)	26 mg/m ³ 10 mg/m ³ forstøvet
Denmark	Grænseværdie (langvarig) (ppm)	10 ppm
Denmark	Anmærkninger (DK)	E (betyder, at stoffet har en EF-grænseværdi); H (betyder, at stoffet kan optages gennem huden)
Estonia	Local name	1,2-etaandiool (etüleenglükool)
Estonia	OEL TWA (mg/m ³)	52 mg/m ³
Estonia	OEL TWA (ppm)	20 ppm
Estonia	OEL STEL (mg/m ³)	104 mg/m ³
Estonia	OEL STEL (ppm)	40 ppm
Finland	Local name	1,2-Etaanidioli
Finland	HTP-arvo (8h) (mg/m ³)	50 mg/m ³
Finland	HTP-arvo (8h) (ppm)	20 ppm
Finland	HTP-arvo (15 min)	100 mg/m ³
Finland	HTP-arvo (15 min) (ppm)	40 ppm
Finland	Huomautus (FI)	iho
France	Local name	Ethylèneglycol
France	VME (mg/m ³)	52 mg/m ³ (Ethylèneglycol (vapeur); France; Time-weighted average exposure limit 8 h; VRI: Valeur réglementaire indicative)
France	VME (ppm)	20 ppm (Ethylèneglycol (vapeur); France; Time-weighted average exposure limit 8 h; VRI: Valeur réglementaire indicative)
France	VLE (mg/m ³)	104 mg/m ³ (Ethylèneglycol (vapeur); France; Short time value; VRI: Valeur réglementaire indicative)
France	VLE (ppm)	40 ppm (Ethylèneglycol (vapeur); France; Short time value; VRI: Valeur réglementaire indicative)
France	Note (FR)	Valeurs réglementaires indicatives; risque de pénétration percutanée
Germany	Local name	Ethandiol
Germany	TRGS 900 Occupational exposure limit value (mg/m ³)	26 mg/m ³
Germany	TRGS 900 Occupational exposure limit value (ppm)	10 ppm
Germany	Remark (TRGS 900)	DFG,EU,H,Y,11
Gibraltar	Eight hours mg/m ³	52 mg/m ³
Gibraltar	Eight hours ppm	20 ppm

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Gibraltar	Short-term mg/m ³	104 mg/m ³
Gibraltar	Short-term ppm	40 ppm
Gibraltar	Name of agent	Ethylene glycol
Gibraltar	Notation	Skin
Greece	OEL TWA (mg/m ³)	125 mg/m ³
Greece	OEL TWA (ppm)	50 ppm
Greece	OEL STEL (mg/m ³)	125 mg/m ³
Greece	OEL STEL (ppm)	50 ppm
Hungary	Local name	ETILÉNGLIKOL
Hungary	AK-érték	52 mg/m ³
Hungary	CK-érték	104 mg/m ³
Hungary	Megjegyzések (HU)	b, i, l.
Ireland	Local name	Ethane-1,2-diol, particulate
Ireland	OEL (8 hours ref) (mg/m ³)	10 mg/m ³ 52 mg/m ³
Ireland	OEL (8 hours ref) (ppm)	20 ppm
Ireland	OEL (15 min ref) (mg/m ³)	104 mg/m ³
Ireland	OEL (15 min ref) (ppm)	40 ppm
Ireland	Notes (IE)	Sk, IOELV
Italy	Local name	Etilen glicol
Italy	OEL TWA (mg/m ³)	52 mg/m ³
Italy	OEL TWA (ppm)	20 ppm
Italy	OEL STEL (mg/m ³)	104 mg/m ³
Italy	OEL STEL (ppm)	40 ppm
Latvia	Local name	Etilēnglikols, (1,2-etāndiols)
Latvia	OEL TWA (mg/m ³)	52 mg/m ³
Latvia	OEL TWA (ppm)	20 ppm
Latvia	OEL STEL (mg/m ³)	104 mg/m ³
Latvia	OEL STEL (ppm)	40 ppm
Lithuania	Local name	Etilenglikolis (1,2-etandiolis, glikolis)
Lithuania	IPRV (mg/m ³)	25 mg/m ³
Lithuania	IPRV (ppm)	10 ppm
Lithuania	TPRV (mg/m ³)	50 mg/m ³
Lithuania	TPRV (ppm)	20 ppm
Lithuania	Remark (LT)	O (medžiaga į organizmą gali prasiskverbti pro nepažeistą odą); Šis RD taikomas bendrai garų ir aerozolio koncentracijai.
Luxembourg	Local name	Ethylène-glycol
Luxembourg	OEL TWA (mg/m ³)	52 mg/m ³
Luxembourg	OEL TWA (ppm)	20 ppm
Luxembourg	OEL STEL (mg/m ³)	104 mg/m ³
Luxembourg	OEL STEL (ppm)	40 ppm
Malta	Local name	Ethyleneglycol
Malta	OEL TWA (mg/m ³)	52 mg/m ³
Malta	OEL TWA (ppm)	20 ppm
Malta	OEL STEL (mg/m ³)	104 mg/m ³
Malta	OEL STEL (ppm)	40 ppm
Netherlands	Local name	Ethaan-1,2-diol

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Netherlands	Grenswaarde TGG 8H (mg/m ³)	52 mg/m ³ (Ethaan-1,2-diol (damp); Netherlands; Time-weighted average exposure limit 8 h; Public occupational exposure limit value; damp; Ethaan-1,2-diol (druppels); 10 mg/m ³ ; Netherlands; Time-weighted average exposure limit 8 h; Public occupational exposure limit value; druppels)
Netherlands	Grenswaarde TGG 8H (ppm)	20 ppm (Ethaan-1,2-diol (damp); Netherlands; Time-weighted average exposure limit 8 h; Public occupational exposure limit value; damp; Ethaan-1,2-diol (druppels); 3.9 ppm; Netherlands; Time-weighted average exposure limit 8 h; Public occupational exposure limit value; druppels)
Netherlands	Grenswaarde TGG 15MIN (mg/m ³)	104 mg/m ³ (Ethaan-1,2-diol (damp); Netherlands; Short time value; Public occupational exposure limit value; damp)
Netherlands	Grenswaarde TGG 15MIN (ppm)	40 ppm (Ethaan-1,2-diol (damp); Netherlands; Short time value; Public occupational exposure limit value; damp)
Netherlands	Remark (MAC)	H (Huidopname) Stoffen die relatief gemakkelijk door de huid kunnen worden opgenomen, hetgeen een substantiële bijdrage kan betekenen aan de totale inwendige blootstelling, hebben in de lijst een Haanduiding. Bij deze stoffen moeten naast maatregelen tegen inademing ook adequate maatregelen ter voorkoming van huidcontact worden genomen.
Poland	Local name	Glikol etylenowy
Poland	NDS (mg/m ³)	15 mg/m ³
Poland	NDSCh (mg/m ³)	50 mg/m ³
Portugal	Local name	Etilenglicol
Portugal	OEL - Ceilings (mg/m ³)	100 mg/m ³ H (Apenas aerossol)
Romania	Local name	Etilenglicol
Romania	OEL TWA (mg/m ³)	52 mg/m ³
Romania	OEL TWA (ppm)	20 ppm
Romania	OEL STEL (mg/m ³)	104 mg/m ³
Romania	OEL STEL (ppm)	40 ppm
Slovakia	Local name	Etylénglykol (etán-1,2-diol)
Slovakia	NPHV (priemerná) (mg/m ³)	52 mg/m ³
Slovakia	NPHV (priemerná) (ppm)	20 ppm
Slovakia	OEL STEL (mg/m ³)	104 mg/m ³
Slovakia	OEL STEL (ppm)	40 ppm
Slovakia	Upozornenie (SK)	K - znamená, že faktor môže byť ľahko absorbovaný kožou
Slovenia	Local name	etandiol (glikol)
Slovenia	OEL TWA (mg/m ³)	52 mg/m ³
Slovenia	OEL TWA (ppm)	20 ppm
Slovenia	OEL STEL (mg/m ³)	104 mg/m ³
Slovenia	OEL STEL (ppm)	40 ppm
Spain	Local name	Etilenglicol
Spain	VLA-ED (mg/m ³)	52 mg/m ³
Spain	VLA-ED (ppm)	20 ppm
Spain	VLA-EC (mg/m ³)	104 mg/m ³
Spain	VLA-EC (ppm)	40 ppm

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Spain	Notes	Vía dérmica (Indica que, en las exposiciones a esta sustancia, la aportación por la vía cutánea puede resultar significativa para el contenido corporal total si no se adoptan medidas para prevenir la absorción. En estas situaciones, es aconsejable la utilización del control biológico para poder cuantificar la cantidad global absorbida del contaminante. Para más información véase el Apartado 5 de este documento), VLI (Agente químico para el que la U.E. estableció en su día un valor límite indicativo. Todos estos agentes químicos figuran al menos en una de las directivas de valores límite indicativos publicadas hasta ahora (ver Anexo C. Bibliografía). Los estados miembros disponen de un tiempo fijado en dichas directivas para su transposición 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).
Sweden	Local name	Etylenglykol
Sweden	nivågränsvärde (NVG) (mg/m ³)	25 mg/m ³ 25 mg/m ³
Sweden	nivågränsvärde (NVG) (ppm)	10 ppm 10 ppm
Sweden	kortidsvärde (KTV) (mg/m ³)	104 mg/m ³ 104 mg/m ³
Sweden	kortidsvärde (KTV) (ppm)	40 ppm 40 ppm
Sweden	Anmärkning (SE)	H (Ämnet kan lätt upptas genom huden Det föreskrivna gränsvärdet bedöms ge tillräckligt skydd endast under förutsättning att huden är skyddad mot exponering för ämnet ifråga); 25 (Gränsvärdet gäller den sammanlagda koncentrationen av ånga och aerosol)
United Kingdom	Local name	Ethane-1,2-diol
United Kingdom	WEL TWA (mg/m ³)	10 mg/m ³ Ethane-1,2-diol particulate; United Kingdom; Time-weighted average exposure limit 8 h; Workplace exposure limit (EH40/2005); Ethane-1,2-diol vapour; 52 mg/m ³ ; United Kingdom; Time-weighted average exposure limit 8 h; Workplace exposure limit (EH40/2005)
United Kingdom	WEL TWA (ppm)	20 ppm Ethane-1,2-diol vapour; United Kingdom; Time-weighted average exposure limit 8 h; Workplace exposure limit (EH40/2005)
United Kingdom	WEL STEL (mg/m ³)	104 mg/m ³ Ethane-1,2-diol vapour; United Kingdom; Short time value; Workplace exposure limit (EH40/2005)
United Kingdom	WEL STEL (ppm)	40 ppm Ethane-1,2-diol vapour; United Kingdom; Short time value; Workplace exposure limit (EH40/2005)
United Kingdom	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)
Russian Federation	Local name	Этан-1,2-диол
Russian Federation	OEL Ceiling (mg/m ³)	10 mg/m ³
Russian Federation	OEL TWA (mg/m ³)	5 mg/m ³
Russian Federation	Remark (RU)	3 класс опасности - опасное; п + а (смесь паров и аэрозоля)
Norway	Local name	1,2-etandiol (Etylenglykol)
Norway	Grenseverdier (AN) (mg/m ³)	52 mg/m ³
Norway	Grenseverdier (AN) (ppm)	20 ppm
Norway	Grenseverdier (Korttidsverdi) (mg/m ³)	104 mg/m ³

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Ethylene glycol (107-21-1)		
Norway	Grenseverdier (Korttidsverdi) (ppm)	40 ppm
Norway	Merknader (NO)	H (Kjemikalier som kan tas opp gjennom huden); E (EU har en veiledende grenseverdi for stoffet); 5) Grenseverdien er basert på beregning av summen av gass- og partikkelform (aerosol) av stoffet; S (Korttidsverdi er en verdi for gjennomsnittskonsentrasjonen av et kjemisk stoff i pustesonen til en arbeidstaker som ikke skal overskrides i en fastsatt referanseperiode. Referanseperioden er 15 minutter hvis ikke annet er oppgitt)
Switzerland	Local name	Ethylenglykol
Switzerland	VME (mg/m ³)	26 mg/m ³
Switzerland	VME (ppm)	10 ppm
Switzerland	VLE (mg/m ³)	52 mg/m ³
Switzerland	VLE (ppm)	20 ppm
Switzerland	Remark (CH)	H SSc - Auge, OAW ^{KT HU}
Turkey	Local name	Etilen glikol
Turkey	OEL TWA (mg/m ³)	52 mg/m ³
Turkey	OEL TWA (ppm)	20 ppm
Turkey	OEL STEL (mg/m ³)	104 mg/m ³
Turkey	OEL STEL (ppm)	40 ppm
Turkey	Comments	Deri
Australia	Local name	Ethylene glycol (particulate)
Australia	TWA (mg/m ³)	10 mg/m ³ Synonym (Ethane-1,2-diol) 52 mg/m ³ Synonym (Ethane-1,2-diol)
Australia	TWA (ppm)	20 ppm Synonym (Ethane-1,2-diol)
Australia	Remark (AU)	Sk - Absorption through the skin may be a significant source of exposure.
USA - ACGIH	Local name	Ethylene glycol
USA - ACGIH	ACGIH TWA (ppm)	25 ppm
USA - ACGIH	ACGIH STEL (mg/m ³)	10 mg/m ³
USA - ACGIH	ACGIH STEL (ppm)	50 ppm
USA - ACGIH	ACGIH Ceiling (mg/m ³)	100 mg/m ³ (Ethylene glycol; USA; Momentary value; TLV - Adopted Value)
USA - ACGIH	Remark (ACGIH)	Kidney dam; URT & eye irr

8.2. Exposure controls

Materials for protective clothing:

GIVE EXCELLENT RESISTANCE: butyl rubber. natural rubber. neoprene. nitrile rubber. polyethylene. PVC. tetrafluoroethylene. viton. polyethylene/ethylenevinylalcohol. GIVE GOOD RESISTANCE: chlorinated polyethylene. polyurethane. PVA

Hand protection:

Gloves

Eye protection:

Safety glasses

Skin and body protection:

Protective clothing

Respiratory protection:

Wear gas mask with filter type A if conc. in air > exposure limit

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: Liquid.
Molecular mass	: 62.07 g/mol

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Colour	: Colourless.
Odour	: Almost odourless.
Odour threshold	: No data available
pH	: 6 - 7.5 (100 g/l, H ₂ O, 20 °C)
Relative evaporation rate (butylacetate=1)	: No data available
Melting point	: (-14)-(-10) °C
Freezing point	: No data available
Boiling point	: 197.6 °C
Flash point	: 111 °C
Critical temperature	: 372 °C
Auto-ignition temperature	: 398 °C
Decomposition temperature	: > 500 °C
Flammability (solid, gas)	: No data available
Vapour pressure	: 0.053 hPa (20 °C)
Relative vapour density at 20 °C	: 2.1
Relative density	: 1.1
Density	: 1.11 g/cm ³ (20 °C)
Solubility	: Soluble in water. Soluble in ethanol. Soluble in acetone. Soluble in acetic acid. Soluble in glycerol. Soluble in pyridine. Water: 1000 g/l at 20 °C Ethanol: Complete Acetone: Complete
Log Pow	: -1.34 (Experimental value)
Viscosity, kinematic	: No data available
Viscosity, dynamic	: 0.021 Pa.s (20 °C)
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: 3.2 – 15.3 vol %

9.2. Other information

Specific conductivity	: 116 µS/m
Saturation concentration	: 0.31 g/m ³
VOC content	: 0 %
Other properties	: Gas/vapour heavier than air at 20°C. Clear. Hygroscopic. Slightly volatile. Substance has neutral reaction.

SECTION 10: Stability and reactivity

10.1. Reactivity

Reacts on exposure to water and heat with (some) metals. Reacts on exposure to temperature rise with (some) bases. Upon combustion: CO and CO₂ are formed. Reacts violently with (strong) oxidizers: (increased) risk of fire/explosion. Violent to explosive reaction with (some) acids.

10.2. Chemical stability

Hygroscopic.

10.3. Possibility of hazardous reactions

No additional information available

10.4. Conditions to avoid

No additional information available

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

No additional information available

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Oral: Harmful if swallowed.

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Ethylene glycol (107-21-1)	
LD50 oral rat	> 5000 mg/kg (Rat; Literature study)

Skin corrosion/irritation	: Not classified
Serious eye damage/irritation	: Not classified
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
STOT-single exposure	: Not classified
STOT-repeated exposure	: Not classified
Aspiration hazard	: Not classified

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general	: Classification concerning the environment: not applicable.
Ecology - air	: Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009). TA-Luft Klasse 5.2.5/l.
Ecology - water	: Mild water pollutant (surface water). Ground water pollutant. Not harmful to fishes (LC50(96h) >1000 mg/l). Not harmful to invertebrates (Daphnia) (EC50 > 1000 mg/l). Not harmful to algae (EC50 >1000 mg/l). Not harmful to bacteria (EC50 >1000 mg/l). Inhibition of activated sludge.

Ethylene glycol (107-21-1)	
LC50 fish 2	40761 mg/l (LC50; 96 h; Salmo gairdneri)
EC50 Daphnia 1	> 10000 mg/l (EC50; 24 h)

12.2. Persistence and degradability

Ethylene glycol (107-21-1)	
Persistence and degradability	Readily biodegradable in water. Biodegradable in the soil.
Biochemical oxygen demand (BOD)	0.47 g O ₂ /g substance
Chemical oxygen demand (COD)	1.24 g O ₂ /g substance
ThOD	1.29 g O ₂ /g substance
BOD (% of ThOD)	0.36

12.3. Bioaccumulative potential

Ethylene glycol (107-21-1)	
BCF fish 1	10 (BCF; 72 h)
BCF other aquatic organisms 1	0.21 - 0.6 (BCF)
BCF other aquatic organisms 2	190 (BCF; 24 h)
Log Pow	-1.34 (Experimental value)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

12.4. Mobility in soil

Ethylene glycol (107-21-1)	
Surface tension	0.048 N/m (20 °C)

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Other adverse effects

No additional information available

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SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product/Packaging disposal recommendations : Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Recycle by distillation. Remove to an authorized waste incinerator for solvents with energy recovery. Do not discharge into surface water. Obtain the consent of pollution control authorities before discharging to wastewater treatment plants.

Additional information : LWCA (the Netherlands): KGA category 03. Hazardous waste according to Directive 2008/98/EC.

European List of Waste (LoW) code : 07 01 04* - other organic solvents, washing liquids and mother liquors

SECTION 14: Transport information

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

ADR	IMDG	IATA	ADN	RID
14.1. UN number				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
14.2. UN proper shipping name				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
14.3. Transport hazard class(es)				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
14.4. Packing group				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
14.5. Environmental hazards				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
No supplementary information available				

14.6. Special precautions for user

- Overland transport

Not applicable

- Transport by sea

Not applicable

- Air transport

Not applicable

- Inland waterway transport

Not applicable

- Rail transport

Not applicable

14.7. Transport in bulk according to Annex II of Marpol 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

No REACH Annex XVII restrictions

Ethylene glycol is not on the REACH Candidate List

Ethylene glycol is not on the REACH Annex XIV List

VOC content : 0 %

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15.1.2. National regulations

Germany

VwVwS Annex reference : Water hazard class (WGK) 1, low hazard to waters (Classification according to VwVwS, Annex 1 or 2; ID No. 105)

WGK remark : Classification water polluting in compliance with Verwaltungsvorschrift wassergefährdender Stoffe (VwVwS) of 27 July 2005 (Anhang 2)

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 : The substance is not listed

SZW-lijst van mutagene stoffen : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Borstvoeding : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Vruchtbaarheid : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling : The substance is not listed

Denmark

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

The requirements from the Danish Working Environment Authorities regarding work with carcinogens must be followed during use and disposal

15.2. Chemical safety assessment

No additional information available

SECTION 16: Other information

Abbreviations and acronyms:

ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
CLP	Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
EC50	Median effective concentration
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LC50	Median lethal concentration
LD50	Median lethal dose
PBT	Persistent Bioaccumulative Toxic
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SDS	Safety Data Sheet
vPvB	Very Persistent and Very Bioaccumulative

Data sources : REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

Full text of H- and EUH-statements:	
Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
STOT RE 2	Specific target organ toxicity — Repeated exposure, Category 2
H302	Harmful if swallowed
H373	May cause damage to organs (Kidney) through prolonged or repeated exposure if swallowed.

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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