ETHYLENGLYKOL TECHN.

Version: *6*.05 **Revision Date 2019/10/16**

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

1.1 Product identifier

Trade name	**Ethylenglykol TECHN.**
REACH No.	01-2119456816-28-0011
Substance name (REACH / CLP)	ethane-1,2-diol

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

Use	Industrial use raw material for synthesis processes in the chemical industry Solvent
Uses advised against	

1.3 Details of the supplier of the safety data sheet

Company	SASOL Germany GmbH Anckelmannsplatz 1 20537 Hamburg Germany Telephone: +49 40 63684-1000 Telefax: +49 40 63684-3700
Information (Product safety):	Telephone: + 49 (0) 23 65 - 49 47 05 Telefax: + 49 (0) 23 65 - 49 92 40
E-mail address	msds-info.germany@de.sasol.com

1.4 Emergency telephone number

Emergency telephone number	+ 49 (0) 23 65 - 49 22 32

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Acute toxicity Category 4 (Oral)	Harmful if swallowed.
Specific target organ toxicity - repeated exposure Category 2	May cause damage to organs through prolonged or repeated exposure.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms

Signal word	Warning

Hazard statements

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

Precautionary statements

P260	Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P264	Wash skin thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P301 + P312	IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
P314	Get medical advice/ attention if you feel unwell.
P501	Dispose of contents/ container to an approved waste disposal plant.

Hazardous components which must be listed on the label:
- ethane-1,2-diol

2.3 Other hazards

No information available.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

This product is a substance in the meaning of regulation (EC) 1907/2006.

COMPONENTS TO BE NAMED IN ACCORDANCE WITH REGULATION (EC) 1907/2006 AS WELL AS OTHER HAZARDOUS INGREDIENTS AND CONTAINED SUBSTANCES WITH WORK PLACE LIMIT VALUES

ethanediol

content: >= 90 - <= 100 % **component type:** Active ingredient

EC-No.: 203-473-3 **Index-No.:** 603-027-00-1 **CAS-No.:** 107-21-1
REACH No.: 01-2119456816-28-XXXX
Substance name (REACH / CLP): ethane-1,2-diol

Classification (Regulation (EC) No 1272/2008):	Acute Tox. 4 (Oral)	H302
	STOT RE 2	H373

For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

General advice	Take off all contaminated clothing immediately. If you feel unwell, seek medical advice (show the label where possible).
If inhaled	Remove from exposure, lie down. If breathing is irregular or stopped, administer artificial respiration. Monitor breathing, give oxygen if necessary. Consult a physician.
In case of skin contact	Wash off with plenty of water.
In case of eye contact	Flush eyes with water as a precaution. If eye irritation persists, consult a specialist.

If swallowed	Call a physician immediately. Clean mouth with water and drink afterwards plenty of water.

4.2 Most important symptoms and effects, both acute and delayed

Most important symptoms and effects, both acute and delayed	Symptoms: No information available. Risks: No information available.

4.3 Indication of any immediate medical attention and special treatment needed

Indication of any immediate medical attention and special treatment needed	Treatment: No information available.

SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media	Water spray, Dry powder, Foam, Carbon dioxide (CO2)

5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting	Dangerous gases or fumes may occur in case of fire.

5.3 Advice for firefighters

Special protective equipment for firefighters	Wear self-contained breathing apparatus for firefighting if necessary.
Further information	Standard procedure for chemical fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions	Use personal protective equipment.

6.2 Environmental precautions

Environmental precautions	Avoid subsoil penetration. Do not flush into surface water or sanitary sewer system.

6.3 Methods and materials for containment and cleaning up

Methods for cleaning up	Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).

6.4 Reference to other sections

For personal protection see section 8.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

Advice on safe handling	Wear personal protective equipment. Avoid contact with skin and eyes.
Advice on protection against fire and explosion	No special protective measures against fire required.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers	Keep tightly closed. Keep in a dry place.
Storage class (TRGS 510)	10-13: German Storage Class 10 to 13
Other data	Protect from frost, heat and sunlight.
container material	unsuitable materials: Zinc

7.3 Specific end use(s)

Specific use(s)	This information is not available.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

COMPONENTS WITH WORKPLACE CONTROL PARAMETERS

National occupational exposure limits

Control parameters / **Substance name**	**Typ**	**Control parameters**	**Update**	**Basis**
ethane-1,2-diol	TWA TWA	52 mg/m3 20 ppm	2011-12-01 2011-12-01	United Kingdom. Workplace Exposure Limits (EH40/2005): Table 1:
	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.			
ethane-1,2-diol	TWA	10 mg/m3	2011-12-01	United Kingdom. Workplace Exposure Limits (EH40/2005): Table 1:
	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.			
ethane-1,2-diol	STEL STEL	104 mg/m3 40 ppm	2011-12-01 2011-12-01	United Kingdom. Workplace Exposure Limits (EH40/2005): Table 1:
	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.			

EUROPEAN OCCUPATIONAL EXPOSURE LIMITS

Control parameters / **Substance name**	**Typ**	**Control parameters**	**Update**	**Basis**
ethylene glycol	STEL STEL	104 mg/m3 40 ppm	2000-06-16 2000-06-16	EU. Annex of Directive 2000/39/EC establishing a first list of
	skin: Identifies the possibility of significant uptake through the skinIndicative			
ethylene glycol	TWA TWA	52 mg/m3 20 ppm	2000-06-16 2000-06-16	EU. Annex of Directive 2000/39/EC establishing a first list of
	skin: Identifies the possibility of significant uptake through the skinIndicative			

DERIVED NO EFFECT LEVEL (DNEL)

Substance name: ethane-1,2-diol			
End Use	**Exposure routes**	**Value**	**Note**
Workers	dermal, Acute/short-term exposure - systemic effects		Not relevant / Not applicable
	Inhalation, Acute/short-term exposure - systemic effects		Not relevant / Not applicable
	dermal, Acute/short-term exposure - local effects		Not relevant / Not applicable
	Inhalation, Acute/short-term exposure - local effects		Not relevant / Not applicable
	dermal, long-term exposure - systemic effects	106 mg/kg	based on body weight and day
	Inhalation, long-term exposure - systemic effects		Not relevant / Not applicable
	dermal, long-term exposure - local effects		Not relevant / Not applicable
	Inhalation, long-term exposure - local effects	35 mg/m3	
Consumers	dermal, Acute/short-term exposure - systemic effects		Not relevant / Not applicable
	Inhalation, Acute/short-term exposure - systemic effects		Not relevant / Not applicable
	Oral, Acute/short-term exposure - systemic effects		Not relevant / Not applicable
	dermal, Acute/short-term exposure - local effects		Not relevant / Not applicable
	Inhalation, Acute/short-term exposure - local effects		Not relevant / Not applicable
	dermal, long-term exposure - systemic effects	53 mg/kg	based on body weight and day
	Inhalation, long-term exposure - systemic effects		Not relevant / Not applicable

	Oral, long-term exposure - systemic effects		Not relevant / Not applicable
	dermal, long-term exposure - local effects		Not relevant / Not applicable
	Inhalation, long-term exposure - local effects	7 mg/m3	

PREDICTED NO EFFECT CONCENTRATION (PNEC)

Substance name: ethane-1,2-diol		
Environmental Compartment	**Value**	**Note**
Fresh water	10 mg/l	
Marine water	1 mg/l	
intermittent release	10 mg/l	
Sewage treatment plant	199.5 mg/l	
Fresh water sediment	37 mg/kg	based on dry weight
Marine sediment	3.7 mg/kg	based on dry weight
Soil	1.53 mg/kg	based on dry weight
food		Not relevant / Not applicable

8.2 Exposure controls

PERSONAL PROTECTIVE EQUIPMENT

Respiratory protection

No personal respiratory protective equipment normally required. In inadequately ventilated areas, where workplace limits are exceeded, where unpleasant odours exist or where aerosols are in use, or smoke and mist occur, use self-contained breathing apparatus or breathing apparatus with a type A filter or appropriate combined filter (e.g. where aerosols are in use, or smoke and mist occur, A-P2 or ABEK-P2), in compliance with EN 141.

Hand protection

The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other., 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, and the contact time., Be aware that in daily use the durability of a chemical resistant protective glove can be notably shorter than the break through time measured according to EN 374, due to the numerous outside influences (e.g. temperature).

gloves suitable for permanent contact:

Material: Nitrile rubber/nitrile latex
Break through time: >= 480 min
Layer thickness: 0.35 mm

Material: butyl-rubber
Break through time: >= 480 min
Layer thickness: 0.5 mm

Eye protection

Tightly fitting safety goggles

Protective measures

Avoid contact with eyes. Wear suitable gloves and eye/face protection.

ENVIRONMENTAL EXPOSURE CONTROLS

General advice	Avoid subsoil penetration. Do not flush into surface water or sanitary sewer system.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Physical state	liquid; 20 °C; 1,013 hPa
Form	liquid
Colour	clear
Odour	very faint
Odour Threshold	No valid method available.
pH	20 °C; neutral
Melting point/range	ca. -13 °C
Boiling point/boiling range	ca. 197 °C; 1,013 hPa
Flash point	111 °C; DIN 51758
Evaporation rate	No data available
Flammability (solid, gas)	not applicable (liquid)
Lower explosion limit	3.2 %(V)
Upper explosion limit	53 %(V)
Vapour pressure	ca. 0.1 hPa; 20 °C
Relative vapour density	> 1
Density	1.113 g/cm3; 20 °C
Water solubility	20 °C; completely miscible
Partition coefficient: n-octanol/water	log Pow: -1.36
Ignition temperature	410 °C; DIN 51794
Auto-ignition temperature	not auto-flammable
Viscosity, dynamic	No data available
Explosive properties	not expected based on structure and functional groups
Oxidizing properties	No data available

9.2 Other data

None known.

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity

Note	Stable

10.2 Chemical stability

Note	Stable under normal conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions	None known.

10.4 Conditions to avoid

Conditions to avoid	None known.

10.5 Incompatible materials to avoid

Materials to avoid	Oxidizing agents;

10.6 Hazardous decomposition products

Hazardous decomposition products	No decomposition if stored normally.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

Acute oral toxicity	ethanediol: LD50 Rat: > 2,000 mg/kg (literature value)
Acute inhalation toxicity	ethanediol: LC50 Rat: > 1 - 5 mg/l; 6 h (literature value) Based on available data, the classification criteria are not met.
Acute dermal toxicity	ethanediol: LD50 Mouse: > 2,000 mg/kg; (literature value) Based on available data, the classification criteria are not met.
Human experience - Ingestion	ethanediol: Harmful if swallowed. (literature value)

Skin corrosion/irritation

Skin irritation	ethanediol: Rabbit: not irritating (literature value) Based on available data, the classification criteria are not met.

Serious eye damage/eye irritation

Eye irritation	ethanediol: Rabbit: not irritating (literature value) Based on available data, the classification criteria are not met.

Respiratory or skin sensitisation

Sensitisation	ethanediol: Maximisation Test Guinea pig: not sensitizing (literature value) Based on available data, the classification criteria are not met.

Germ cell mutagenicity

Genotoxicity in vitro	ethanediol: In vitro tests did not show mutagenic effects (literature value)
Genotoxicity in vivo	ethanediol: In vivo tests did not show mutagenic effects (literature value)
Remarks	ethanediol: Based on available data, the classification criteria are not met.

Carcinogenicity

Carcinogenicity	ethanediol: Mouse; oral feed; 2 years; NOAEL: 1,500 mg/kg bw/day In this study no cancerogenic effects were observed. (literature value)
Remarks	ethanediol: Based on available data, the classification criteria are not met.

Reproductive toxicity

Reproductive toxicity	ethanediol: Rat; Oral NOAEL ((parents)): 1,000 mg/kg (based on body weight and day) NOAEL (F1): 1,000 mg/kg (based on body weight and day) NOAEL (F2): 1,000 mg/kg (based on body weight and day) (literature value)
RemarksReproductive toxicity	ethanediol: Based on available data, the classification criteria are not met.
Teratogenicity	ethanediol: Rabbit; Oral NOAEL: 2,000 mg/kg (based on body weight and day) NOAEL (pregnant female): 1,000 mg/kg (based on body weight and day) (literature value)
Remarks-Teratogenicity	ethanediol: Based on available data, the classification criteria are not met.

STOT - single exposure

Remarks	ethanediol: The substance or mixture is not classified as specific target organ toxicant, single exposure.

STOT - repeated exposure

Remarks	ethanediol: Ingestion; Target Organs: Kidney May cause damage to organs through prolonged or repeated exposure. (literature value)
Repeated dose toxicity	ethanediol: Rat; Oral; Subchronic toxicity NOAEL: 150 mg/kg (based on body weight and day); OECD Test Guideline 408 Target Organs: Kidney (literature value) ethanediol: Dog; Dermal; Subacute toxicity NOAEL: 2,220 mg/kg (based on body weight and day); OECD Test Guideline 410

Target Organs: Kidney
(literature value)

Aspiration hazard

Aspiration toxicity ethanediol:
Not applicable

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish ethanediol:
LC50 (96 h) Pimephales promelas (fathead minnow): > 100 mg/l ; static test
(literature value)

Toxicity to fish - Chronic toxicity ethanediol:
NOEC (7 d) Pimephales promelas (fathead minnow): > 100 mg/l
(literature value)

Toxicity to daphnia and other aquatic invertebrates ethanediol:
EC50 (48 h) Daphnia magna (Water flea): > 100 mg/l ; static test; OECD Test Guideline 202
(literature value)

Toxicity to daphnia and other aquatic invertebrates - Chronic toxicity ethanediol:
NOEC (7 d) Ceriodaphnia sp.: > 100 mg/l; reproduction rate; Fresh water
(literature value)

Toxicity to aquatic plants ethanediol:
EC50 (96 h) Pseudokirchneriella subcapitata (microalgae): > 100 mg/l ; static test;
(literature value)

Toxicity to bacteria ethanediol:
EC20 (30 min) activated sludge, domestic: > 1,995 mg/l; Respiration inhibition; ISO 8192
Category approach
(literature value)

Toxicity to soil dwelling organisms ethanediol:
The study is not necessary.
Justification:
Readily biodegradable.
Direct exposure to soil is unlikely.

Toxicity to terrestrial flora ethanediol:
The study is not necessary.
Justification:
Readily biodegradable.
Direct exposure to soil is unlikely.

Toxicity for other terrestrial non-mammalian fauna ethanediol:
The study is not necessary.
Justification:
Readily biodegradable.
Direct exposure to soil is unlikely.
Accumulation in terrestrial organisms is unlikely.

12.2 Persistence and degradability

Biodegradability ethanediol:
> 70 %; 28 d; aerobic; OECD Test Guideline 301A
(literature value)

12.3 Bioaccumulative potential

Bioaccumulation	ethanediol: Bioaccumulation is unlikely.

12.4 Mobility in soil

Mobility	ethanediol: Adsorption/Soil; Medium: Soil; Koc: 1; calculated Highly mobile in soils (literature value)

12.5 Results of PBT and vPvB assessment

Results of PBT assessment	This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.
Results of PBT assessment	ethanediol: This substance is not considered to be persistent, bioaccumulating and toxic (PBT). Based on available data, the classification criteria are not met.

12.6 Other adverse effects

General advice	ethanediol: None known.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product	Can be incinerated, when in compliance with local regulations.
waste code of the European Union: EWC	A waste code in accordance with the European Waste Catalogue (EWC) may not be assigned to this product since it admits of a classification only when the consumer uses it for some purpose. The waste code must be determined in agreement with the regional waste disposal authority or company.

SECTION 14: TRANSPORT INFORMATION

14.1 UN number

ADR	Not dangerous goods
RID	Not dangerous goods
ADN	Not dangerous goods
IMDG	Not dangerous goods
ICAO/IATA	Not dangerous goods

14.2 Proper shipping name

ADR	Not dangerous goods
RID	Not dangerous goods
ADN	Not dangerous goods
IMDG	Not dangerous goods
ICAO/IATA	Not dangerous goods

14.3 Transport hazard class

ADR	Not dangerous goods
RID	Not dangerous goods
ADN	Not dangerous goods
IMDG	Not dangerous goods
ICAO/IATA	Not dangerous goods

14.4 Packing group

ADR	Not dangerous goods
RID	Not dangerous goods
ADN	Not dangerous goods
IMDG	Not dangerous goods
ICAO/IATA	Not dangerous goods

14.5 Environmental hazards

ADR	Environmentally hazardous	no
RID	Environmentally hazardous	no
ADN	Environmentally hazardous	no
IMDG	Marine pollutant	no
ICAO/IATA	Environmentally hazardous	no

14.6 Special precautions for user

Not classified as dangerous in the meaning of transport regulations.

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

Ship type	3
Pollution category	Y
Remarks	MARPOL NAME: Ethylene glycol

SECTION 15: REGULATORY INFORMATION

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

Occupational restrictions Employment restrictions for children and young workers in accordance with Directive 94/33/EC and the respective national provisions are to be observed.

NATIONAL/OTHER REGULATIONS

Legislation on the control of major-accident hazards involving dangerous substances Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.

list entry in the directive:: Not applicable

Directive 1999/13/EC (VOC) The question whether this product or components thereof has/have to be considered as volatile organic compound/compounds (VOC) as defined by Directive 1999/13/EU can only be answered when detailed knowledge on the use as solvent in connection with certain activities in certain facilities is available.

NOTIFICATION STATUS

Switzerland. Consolidated Inventory (based on EU-EINECS and EU-NLP)	CH INV	listed (product or constituents are listed)
Canadian Domestic Substances List (DSL)	DSL	listed (product or constituents are listed)
Australia Inventory of Chemical Substances (AICS)	AICS	listed (product or constituents are listed)
Japan. ENCS - Existing and New Chemical Substances Inventory	ENCS (JP)	listed (product or constituents are listed)
Japan. ISHL - Inventory of Chemical Substances	ISHL (JP)	listed (product or constituents are listed)
Korea. Korean Existing Chemicals Inventory (KECI)	KECI (KR)	listed (product or constituents are listed)
Philippines Inventory of Chemicals and Chemical Substances (PICCS)	PICCS (PH)	listed (product or constituents are listed)
China. Inventory of Existing Chemical Substances in China (IECSC)	IECSC	listed (product or constituents are listed)
Taiwan Chemical Substance Inventory (TCSI)	TCSI	listed (product or constituents are listed)
United States TSCA Inventory	TSCA	listed (product or constituents are listed)

Please note: the names and CAS numbers which are used for this product in the stated inventories may deviate from the information which is listed in chapter 3.

15.2 Chemical safety assessment

ethane-1,2-diol

A Chemical Safety Assessment has been carried out for this substance.

SECTION 16: OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

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

Safety datasheet sections which have been updated:

8. Exposure controls/personal protection
11. Toxicological information
12. Ecological information
14. Transport information
15. Regulatory information

Further information: 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.
This safety datasheet only contains information relating to safety and does not replace any product information or product specification.

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

ADN	Accord européen relatif au transport international des marchandises dangereuses par voie de navigation intérieure
ADR	Accord européen relatif au transport international des marchandises Dangereuses par Route
AICS	Australian Inventory of Chemical Substances
ANSI	American National Standards Institute
ASTM	American Society of Testing and Materials (US)
BCF	Bioconcentration factor
CLP	Regulation on Classification, Labelling and Packaging of Substances and Mixtures
DIN	Deutsches Institut für Normung
DNEL	Derived No-Effect Level
DSL	Domestic Substances List
EC…	Effect concentration ... %
ENCS	Existing Notified Chemical Substances (Japan)
EWC	European Waste Catalogue
IATA	International Air Transport Association
IBC	Intermediate Bulk Container
ICAO	International Civil Aviation Organization
IMDG	International Maritime Dangerous Goods
IMO	International Maritime Organization
ISHL	Industrial Safety and Health Law (Japan)
ISO	International Organization for Standardization
IUAPC	International Union of Pure and Applied Chemistry
KECI	Korea Existing Chemicals Inventory
LC…	Lethal Concentration, ...%
LD…	Lethal Dose, ...%
MARPOL	International Convention for the Prevention of Pollution From Ships
NDSL	Non-Domestic Substances List
NOAEL	no observable adverse effect level
NOEL/NOEC	No Observed-effect level/concentration
NZIoC	New Zealand Inventory of Chemicals
OECD	Organisation for Economic Co-operation and Development
PBT	persistent, bioaccumulative, toxic
PICCS	Philippine Inventory of Chemicals and Chemical Substances
PNEC	Predicted No-Effect Concentration
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
RID	Règlement concernant le transport international ferroviaire de marchandises dangereuses
TG	Test Guideline
TRGS	Technische Regeln für Gefahrstoffe
TSCA	Toxic Substances Control Act
vPvB	very persistent, very bioaccumulative
WGK	Wassergefährdungsklasse

Annex

Attachments to the safety data sheet and/or lists of the identified uses for the listed substances can be downloaded using the internet links below.

ethane-1,2-diol

http://www.sasolgermany.de/fileadmin/doc/productsafety/Annex/000000000123_EN_01.pdf