

Material safety data sheet

according to 1907/2006/EG, Article 31



GENAXXON

b i o s c i e n c e

Product number : M6023

Product name :

Diethylene glycol

1. Identification of the substance/preparation and of the company

Product identifier

Product Name: Diethylene glycol
Catalogue Number: M6023
CAS Number: 111-46-6
EC Number: 203-872-2
Index-Number: 603-140-00-6
REACH-No.: 01-2119457857-21-xxxx

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

No further relevant information available.

Application of the substance/the preparation

Laboratory chemical
Chemical analytics

Details of the supplier of the safety data sheet

Manufacturer /Supplier:

Genaxxon bioscience GmbH, Söflinger Str. 70, 89077 Ulm/Germany.
Tel.: +49 (0)731 3608 123, info@genaxxon.com

Further information available from: General Management

Emergency telephone number:

Poison Information Centre Mainz, Germany, Tel.: +49 (0)6131 19240 / 24 h

NOTE: If this product is a kit or supplied with more than one material, please refer to the MSDS for each component for hazard information.

Product Use:

This products are for laboratory research use only and are not intended for human or animal diagnostics, therapeutics or other clinical uses.

2. Hazardous identification

Classification of the substance/preparation/mixture

Classification according to Regulation (EC) No 1272/2008

Acute Tox. 4 H302
STOT RE 2 H373

Label elements

Labelling according to Regulation (EC) No 1272/2008

The product is classified and labeled according to the CLP regulation.

Pictogram(s)



GHS08

GHS07

Signal word Warning

Hazard determining components of labelling:

2,2'-oxydiethanol

Hazard statement(s)

H320 Harmful if swallowed
H373 May cause damage to organs (kidney) through prolonged or repeated exposure.

Precautionary statements

P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P270 Do not eat, drink or smoke when using this product.
P301+P312 IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell.

Other hazards

Result of PBT and vPvB assessment

PBT: not applicable
vPvB: not applicable

3. Composition/information on ingredients

Chemical Characterization: Substances

Hazardous ingredients according to Regulation (EC) No 1272/2008

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Component

CAS-No.: 111-46-6
EC-No.: 203-872-2
Index-No.: 603-140-00-6
Registration No. (REACH):
01-2119457857-21-xxxx

2,2'-oxydiethanol

Classification

Acute Tox. 4, H302; STOT RE 2, H373

Concentration

<= 100%

Additional information: For the wording of the listed risk phrases refer to section 16.

4. First-aid measures

Description of first aid measures

General information:

Take off contaminated clothing.

After inhalation:

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.

In case of unconsciousness place patient stably in side position for transportation.

If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.

After skin contact:

Immediately wash with water and soap and rinse thoroughly.

Seek medical treatment

After eye contact:

Rinse opened eye with plenty of water for several minutes and consult a physician.

After swallowing:

Rinse out mouth. Never give anything by mouth to an unconscious person.

Seek medical treatment.

Information for doctor:

Most important symptoms and effects, both acute and delayed: No further relevant information available.

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

5. Fire-fighting measures

Extinguishing media

Suitable extinguishing agents:

Water Spray. Carbon Dioxide. Dry chemical powder, or appropriate foam. Fight larger fires with water spray or alcohol resistant foam.

Special hazards arising from the substance or mixture:

Formation of toxic gases is possible during heating or in case of fire.

In case of a fire, the following can be released:

Carbon oxides (CO, CO₂)

Advice for fire fighters:

Protective equipment:

Mouth respiratory protective device.

Wear self-contained respiratory protective device.

Additional information:

Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

Contain escaping vapours with water.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Avoid breathing vapours, mist or gas.

Avoid substance contact.

Ensure adequate ventilation.

Use respiratory protective device against the effects of fumes/dust/aerosol.

Environmental precautions: Do not allow product to enter sewage system, surface or ground water.

Discharge into the environment must be avoided.

Methods and materials for containment and cleaning up:

Soak with inert absorbent material and dispose of as hazardous waste. Keep suitable, closed containers for disposal.

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

Clean up affected area.

Reference to other sections

See Section 7 for information on safe handling

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

Additional information: None

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7. Handling and storage

Handling

Precautions for safe handling:

Ensure good ventilation/exhaustion at the workplace.
Open and handle receptacle with care.
Avoid contact with skin and eyes.
Prevent formation of dust.
Any unavoidable deposit of dust must be regularly removed.

Information about fire – and explosion protection:

Keep respiratory protective device available.

Conditions for safe storage, including any incompatibilities

Storage:

Requirements to be met by storerooms and receptacles: Keep receptacles tightly sealed.

Store only in the original receptacle.

Containers which are opened must be carefully resealed.

Information about storage in one common storage facility: No special measures required.

Further information about storage conditions:

Keep container sealed.

Recommended storage temperature: +15°C - +25°C

Storage class: 10-13

Specific end use(s): No further relevant information available.

8. Exposure controls/personal protection

Additional information about design of technical facilities: No further data; see item 7.

Control parameters

Ingredients with limit values that require monitoring at the workplace:

County	Name of agent	Cas-No.	Notation	Identifier	TWA (ppm)	TWA (mg/m3)	STEL (ppm)	STEL (mg/m3)	Source
GB	2,2'-oxydiethanol	111-46-6	---	WEL	23	101			EH40/2005

Notation:

STEL: Short-term exposure limit: a limit value above which exposure should not occur and which is related to a 15 min period (unless otherwise specified).

TWA: Time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8 hours time weighted average (unless otherwise specified).

Relevant DNELs/DMELs/PNECs and other threshold levels

Human health values

Endpoint	Threshold level	Protection goal / route of exposure	Used in	Exposure time
DNEL	60mg/m3	human, inhalatory	worker (industry)	chronic – local effects
DNEL	106mg/kg	human, dermal	worker (industry)	chronic – systemic effects
DNEL	60mg/m3	human, inhalatory	worker (industry)	chronic – systemic effects

Environmental values

Endpoint	Threshold level	Environmental compartment	Exposure time
PNEC	10mg/cm3	air	intermittent release
PNEC	10mg/L	freshwater	short-term (single instance)
PNEC	1mg/L	marine water	short-term (single instance)
PNEC	199.5mg/L	sewage treatment plant (STP)	short-term (single instance)
PNEC	20.9mg/kg	freshwater sediment	short-term (single instance)
PNEC	2.09mg/kg	farine sediment	short-term (single instance)
PNEC	1.53mg/kg	soil	short-term (single instance)
PNEC	10mg/L	water	intermittent release

Additional information: The lists valid during the making were used as basis.

Exposure controls:

Personal protective equipment:

General protective and hygienic measures:

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The usual precautionary measures are to be adhered to when handling chemicals.

Keep away from foodstuffs, beverages and feed.

Wash hands before breaks and at the end of work.

Avoid contact with eyes and skin.

Store protective clothing separately.

Vacuum clean contaminated clothing. Do not blow or brush off contamination.

Immediately remove all soiled and contaminated clothing.

Respiratory protection:



Respiratory protection necessary at: Aerosol or mist formation. Type: A (against organic gases and vapours with a boiling point of >65°C, colour code: Brown).

Protection of hands:



Protective gloves (EN 374)

The glove material has to be impermeable and resist ant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation.

Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies

from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

For the permanent contact gloves made of the following materials are suitable:

Nitrile rubber, NBR

Recommended thickness of the material: ≥ 0.11 mm

Value for permeation: Level: >480 min.

As protection from splashes gloves made of the following materials are suitable:

Nitrile rubber, NBR

Recommended thickness of the material: ≥ 0.11 mm

Value for the permeation: Level ≥ 480 min.

Eye/face protection: Safety goggle with side protection.



Safety goggles with side protection (EN 166)

Body protection:

Use protective suit.

Protective clothing should be selected specifically for the working place, depending on concentration and quantity of the hazardous substances handled.

9. Physical and chemical properties

Information on basic physical and chemical properties

General Information

Appearance

Form:	Liquid (viscous)
Colour:	Colourless
Odour:	characteristic

pH value at 20°C: 6-8 (water: 200g/L)

Change in conditions

Melting point/Melting range:	-6.5°C
Boiling point/Boiling range:	242 - 252°C

Flash point: 138°C at 1.013 hPa (open cup)

Evaporation rate: no data available

Flammability (solid, gaseous): Not relevant (fluid)

Decomposition temperature: Not determined

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Self-ignition:	>350°C
Danger of explosion:	Product does not present an explosion hazard
Explosion limits:	
Lower:	0.7 vol%
Upper:	22 vol%
Vapour pressure:	0.008 hPa at 25°C
Density (20°C):	1.11 – 1.12 g/L
Bulk density at 20°C:	Not applicable
Solubility in / Miscibility with (water, 20°C):	Soluble
Partition coefficient (n-octanol/water):	-1.98 (25°C) (exp.)
Viscosity:	
Dynamic (20°C):	30-35 mm ² /s
Kinematic (20°C):	40-45 mPa s
Other information:	No further relevant information available.

10. Stability and reactivity

Reactivity: Vapours can form explosive mixtures with air.

Chemical stability

Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications. Hygroscopic

Possibility of hazardous reactions: Violent reaction with: Strong oxidizer.

Conditions to avoid: Protect from moisture.

Incompatible materials: Avoid contact with strong oxidizer.

Hazardous decomposition products: In the event of fire: See chapter 5 of this data sheet.

11. Toxicological information

Information on toxicological effects

Acute toxicity:

Exposure route	Endpoint	Value	Species	Source
dermal	LD50	11,890 mg/kg	rabbit	TOXNET
oral	LDLo	1,000 mg/kg	human	TOXNET

Primary irritant effect

Skin corrosion/irritation: Shall not be classified as corrosive/irritant to skin.

Serious eye damage/irritation: Shall not be classified as seriously damaging to the eye or eye irritant.

After inhalation: No further relevant data available.

Respiratory or skin sensitization: Based on available data, the classification criteria are not met.

CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction):

Gem cell mutagenicity: Based on available data, the classification criteria are not met.

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

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

STOT – single exposure: Based on available data, the classification criteria are not met.

STOT – repeated exposure: Based on available data, the classification criteria are not met.

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

Specific target organ toxicity - repeated exposure

May cause damage to organs (kidney) through prolonged or repeated exposure.

Additional toxicological information:

Symptoms related to the physical, chemical and toxicological characteristics

If swallowed: diarrhoea, vomiting, nausea, vertigo, headache, liver and kidney damage

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

The product should be treated with usual precautions while handling chemicals.

12. Ecological Information

Toxicity

Aquatic toxicity (acute):

Endpoint	Value	Species	Source	Exposure time
LC50	75,200 mg/L	Fathead minnow (Pimephales promelas)	ECHA	96 h
EC50	>10,000 mg/L	Daphnia magna		48 h

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Aquatic toxicity (chronic):

Endpoint	Value	Species	Source	Exposure time
EC50	>10,000 mg/L	Aquatic invertebrates	ECHA	24 h

Persistence and degradability: No further relevant information available

Behaviour in environmental systems

Bioaccumulative potential: No further relevant information available

Mobility in soil: No further relevant information available

Additional ecological information

General notes:

Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water. Do not allow product to reach ground water, water course or sewage system.

Results of PBT and vPvB assessment

PBT: Not applicable

vPvB: Not applicable

Other adverse effects: No further relevant information available.

13. Disposal considerations

Waste treatment methods

Recommendation:

Chemicals must be disposed of in compliance with the respective national regulations. Must not be disposed together with household garbage. Do not allow product to reach sewage system. Contact a licensed professional waste disposal service to dispose of this material. Observe all federal, state, and local environmental regulations.

Uncleaned packaging:

Recommendation: Disposal must be made according to official regulations. Packagings that may not be cleansed are to be disposed of in the same manner as the product.

Recommended cleaning agents: Water, if necessary together with cleansing agents.

14. Transport information

UN-Number

ADR, ADN, IMDG, IATA: Void

UN proper shipping name

ADR; ADN, IMDG, IATA: Void

Transport hazard class(es):

ADR, ADN, IMDG, IATA class: Void

Packing group:

ADR, IMDG, IATA: Void

Environmental hazards / Marine pollutant: No

Special precautions for user: Not applicable

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

Not applicable

Transport/Additional information:

Not dangerous according to the above specifications

UN „Model Regulation“:

Void

15. Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture
Relevant provisions of the European Union (EU)

Regulation 649/2012/EU concerning the export and import of hazardous chemicals (PIC): Not listed.

Regulation 1005/2009/EC on substances that deplete the ozone layer (ODS): Not listed.

Regulation 850/2004/EC on persistent organic pollutants (POP): Not listed.

Restrictions according to REACH, Annex XVII

Name of substance	CAS No.	Wt%	Type of registration	No
Diethylene glycol	111-46-6	100	1907/2006/EC annex KVII	3

List of substances subject to authorisation (REACH, Annex XIV): not listed

Seveso Directive

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2012/18/EU (Seveso III)			
No	Dangerous substance/hazard categories	Qualifying quantity (tonnes) for the application of lower and upper-tier requirements	Notes
	Not assigned		

Limitation of emissions of volatile organic compounds due to the use of organic solvents in certain paints and varnishes and vehicle refinishing products (2004/42/EC, Deco-Paint Directive)

VOC content - 100 %

Directive 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS) - Annex II

not listed

Regulation 166/2006/EC concerning the establishment of a European Pollutant Release and Transfer Register (PRTR)

not listed

Directive 2000/60/EC establishing a framework for Community action in the field of water policy (WFD)

not listed

Persistence and degradability: No further relevant information

16. Other information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Genaxxon bioscience GmbH, shall not be held liable for any damage resulting from handling or from contact with the above product.

Disclaimer

This product is for R&D use only. Not for drug, household or other uses.

Abbreviations and Acronyms:

ACAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO).

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road).

CAS: Chemical Abstracts Service (division of the American Chemical Society).

EINECS: European Inventory of Existing Commercial Chemical Substances.

GefStoffV: Gefahrstoffverordnung (Ordinance on Hazardous Substances, Germany).

GHS: Globally Harmonized System of Classification and labeling of Chemicals.

IATA: International Air Transport Association.

IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA).

ICAO: International Civil Aviation Organization.

IMDG: International Maritime code for Dangerous Goods.

LC50: Lethal concentration, 50 percent.

LD50: Lethal dose, 50 percent.

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail).

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