1. IDENTIFICATION OF THE SUBSTANCE / PREPARATION AND OF THE COMPANY / UNDERTAKING

Product identifier:

Product name: TRIETHYLENE GLYCOL

Chemical name: 2,2'-(ETHYLENEDIOXY)DIETHANOL

Synonyms; trade names: GLYCOL-BIS(HYDROXYETHYL)ETHER, TEG, TRIETHYLENE GLYCOL 99.5%, TRIETHYLENE GLYCOL, PFR125, TRIETHYLENE GLYCOL CASTROL, TRIETHYLENE GLYCOL HP, TRIETHYLENE GLYCOL HP O&G, TRIETHYLENE GLYCOL O&G, TRIETHYLENE GLYCOL BSF

REACH registration number: 01-2119438366-35-XXXX

REACH registration notes: This product is not classified as hazardous, the information in this datasheet is given for guidance only.

CAS number: 112-27-6

EC number: 203-953-2

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

Identified uses: Chemical Intermediate Industrial Solvent Polyester resin. Plasticizer.

Company name:
Nexchem Ltd
Unit 3 Barshaw Park
Leycroft Road
Leicester
LE4 1ET
Tel: 0116 2311130
24/7 Emergency Tel: 0800 246 1274
Email: sales@nexchem.co.uk

2. HAZARDS IDENTIFICATION

Classification of the substance or mixture:

Classification (EC 1272/2008):

Physical hazards: Not Classified.

Health hazards: Not Classified.

Environmental hazards: Not Classified.

Label elements:

EC number: 203-953-2

Hazard statements: NC Not Classified.

Other hazards: This substance is not classified as PBT or vPvB according to current EU criteria.

[cont…]

3. COMPOSITION / INFORMATION ON INGREDIENTS

Substances:

Product name:	TRIETHYLENE GLYCOL
Chemical name:	2,2'-(ETHYLENEDIOXY)DIETHANOL
REACH registration number:	01-2119438366-35-XXXX
REACH registration notes:	This product is not classified as hazardous, the information in this datasheet is given for guidance only.
CAS number:	112-27-6
EC number:	203-953-2
Composition comments:	The data shown are in accordance with the latest EC Directives.

4. FIRST AID MEASURES

Description of first aid measures:

General information:	First aid personnel should wear appropriate protective equipment during any rescue. Wear protective clothing as described in Section 8 of this safety data sheet. No action shall be taken without appropriate training or involving any personal risk.
Inhalation:	Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Rinse nose and mouth with water. Get medical attention if any discomfort continues.
Ingestion:	Rinse mouth thoroughly with water. Do not induce vomiting. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Give plenty of water to drink. Never give anything by mouth to an unconscious person. Get medical attention if any discomfort continues.
Skin contact:	Remove contaminated clothing. Wash skin thoroughly with soap and water. Get medical attention if any discomfort continues.
Eye contact:	Rinse immediately with plenty of water. Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

Most important symptoms and effects, both acute and delayed:

Inhalation:	Gas or vapour in high concentrations may irritate the respiratory system.
Ingestion:	May cause discomfort if swallowed.
Skin contact:	Prolonged skin contact may cause temporary irritation.
Eye contact:	May cause temporary eye irritation.

Indication of any immediate medical attention and special treatment needed:

Notes for the doctor:	No specific recommendations. Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Extinguishing media

Suitable extinguishing media:	Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog.
Unsuitable extinguishing media:	Do not use water jet as an extinguisher, as this will spread the fire.

[cont…]

Special hazards arising from the substance or mixture:

Specific hazards: None known.

Hazardous combustion products: Thermal decomposition or combustion products may include the following substances: Carbon dioxide (CO_2). Carbon monoxide (CO). Carbonyl compounds. Toxic gases or vapours.

Advice for firefighters:

Protective actions during firefighting: No action shall be taken without appropriate training or involving any personal risk. Cool containers exposed to heat with water spray and remove them from the fire area if it can be done without risk. Control run-off water by containing and keeping it out of sewers and watercourses.

Special protective equipment for firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures:

Personal precautions: No action shall be taken without appropriate training or involving any personal risk. Follow precautions for safe handling described in this safety data sheet. Keep unnecessary and unprotected personnel away from the spillage. Provide adequate ventilation. Avoid inhalation of vapours and contact with skin and eyes. Do not touch or walk into spilled material.

Environmental precautions: Avoid the spillage or runoff entering drains, sewers or watercourses. Spillages or uncontrolled discharges into watercourses must be reported immediately to the Environmental Agency or other appropriate regulatory body.

Methods and material for containment and cleaning up:

Methods for cleaning up: Stop leak if safe to do so. Avoid the spillage or runoff entering drains, sewers or watercourses. Absorb spillage with inert, damp, non-combustible material. Collect and place in suitable waste disposal containers and seal securely.

Reference to other sections: Wear protective clothing as described in Section 8 of this safety data sheet. Collect and dispose of spillage as indicated in Section 13.

7. HANDLING AND STORAGE

Precautions for safe handling:

Usage precautions: Handle all packages and containers carefully to minimise spills. Wear protective clothing as described in Section 8 of this safety data sheet. Provide adequate ventilation. In case of insufficient ventilation, wear suitable respiratory equipment. Avoid inhalation of vapours and contact with skin and eyes. Keep container tightly sealed when not in use.

Advice on general occupational hygiene: Do not eat, drink or smoke when using this product. Wash at the end of each work shift and before eating, smoking and using the toilet. Wash hands and any other contaminated areas of the body with soap and water before leaving the work site. Provide eyewash station and safety shower.

[cont…]

Conditions for safe storage, including any incompatibilities:

Storage precautions: Store in tightly-closed, original container in a dry, cool and well-ventilated place. Avoid exposure to high temperatures or direct sunlight.
The substance is hygroscopic and will absorb water by contact with the moisture in the air.
Avoid contact with the following materials: Strong oxidising agents. Moisture. Air.
Store at temperatures not exceeding 40°C.
Do not store for more than 12 months.

Specific end use(s): The identified uses for this product are detailed in Section 1.2.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters:

Occupational exposure limits: Observe any occupational exposure limits for the product or ingredients.

DNEL: Workers - Dermal; Long term systemic effects: 40 mg/kg/day
Workers - Inhalation; Short term local effects: 50 mg/m³
General population - Dermal; Long term systemic effects: 20 mg/kg/day
General population - Inhalation; Short term local effects: 25 mg/m³

PNEC: Fresh water; 10 mg/l
Marine water; 1 mg/l
Intermittent release; 10 mg/l
Sediment; 46 mg/kg/day
Soil; 3.32 mg/kg/day
STP; 10 mg/l

Exposure controls:

Protective equipment:

Appropriate engineering controls: Provide adequate ventilation. Observe any occupational exposure limits for the product or ingredients. Use process enclosures, local exhaust ventilation or other engineering controls as the primary means to minimise worker exposure. Avoid inhalation of vapours and contact with skin and eyes. Provide eyewash station and safety shower.

Eye/face protection: Eyewear complying with an approved standard should be worn if a risk assessment indicates eye contact is possible. Personal protective equipment for eye and face protection should comply with European Standard EN166. Unless the assessment indicates a higher degree of protection is required, the following protection should be worn: Tight-fitting safety glasses. Chemical splash goggles.

[cont…]

Hand protection: Chemical-resistant, impervious gloves complying with an approved standard should be worn if a risk assessment indicates skin contact is possible. To protect hands from chemicals, gloves should comply with European Standard EN374. The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material.
For exposure up to 8 hours, wear gloves made of the following material:
Nitrile rubber. Thickness: 0.4 mm
Chloroprene rubber. Thickness: 0.5 mm
Butyl rubber. Thickness: 0.7 mm

Other skin and body protection: Wear appropriate clothing to prevent repeated or prolonged skin contact.

Hygiene measures: Wash at the end of each work shift and before eating, smoking and using the toilet. Wash hands and any other contaminated areas of the body with soap and water before leaving the work site. Care should be taken to avoid contact with contaminants when removing contaminated clothing. Wash contaminated clothing before reuse.

Respiratory protection: Respiratory protection complying with an approved standard should be worn if a risk assessment indicates inhalation of contaminants is possible. Ensure all respiratory protective equipment is suitable for its intended use and is 'CE'-marked. If ventilation is inadequate, suitable respiratory protection must be worn. Wear a respirator fitted with the following cartridge: Gas filter, type A2.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties:

Appearance:	Liquid.
Colour:	Clear. Colourless.
Odour:	Almost odourless.
Odour threshold:	No information available.
pH:	pH (diluted solution): 7.4 @ 50% aq
Melting point:	-7°C
Initial boiling point and range:	284 - 294°C @ 1013 hPa
Flash point:	176 - 177°C Pensky-Martens closed cup.
Evaporation rate:	< 0.01 (butyl acetate = 1)
Flammability (solid, gas):	Not applicable.
Upper/lower flammability or explosive limits:	
Lower flammable/explosive limit:	0.9 %
Upper flammable/explosive limit:	~9.2 %
Vapour pressure:	<0.01 mm Hg @ °C
Vapour density:	5.2
Relative density:	~ 1.1 @ 20°C
Solubility(ies):	Miscible with the following materials: Water Hydrocarbons.
Partition coefficient:	-1.75
Auto-ignition temperature:	347°C

[cont…]

Decomposition Temperature: No information available.
Viscosity: 49 cP @ 20°C
Explosive properties: Not considered to be explosive.
Oxidising properties: Does not meet the criteria for classification as oxidising.

Other information:
Molecular weight: 150.18

10. STABILITY AND REACTIVITY

Reactivity: There are no known reactivity hazards associated with this product.

Chemical stability:
Stability: Stable at normal ambient temperatures and when used as recommended.

Possibility of hazardous reactions: Under normal conditions of storage and use, no hazardous reactions will occur.

Conditions to avoid: Avoid exposure to high temperatures or direct sunlight.
Keep at temperature not exceeding 40°C.
Keep container tightly sealed when not in use.
The substance is hygroscopic and will absorb water by contact with the moisture in the air.

Incompatible materials:
Materials to avoid: Avoid contact with the following materials: Strong oxidising agents. Air. Moisture.

Hazardous decomposition products:
Thermal decomposition or combustion products may include the following substances:
Carbon dioxide (CO2).
Carbon monoxide (CO).
Carbonyl compounds.
Toxic gases or vapours.

11. TOXICOLOGICAL INFORMATION

Information on toxicological effects:
Acute toxicity – oral:
Notes (oral LD_{50}): LD_{50} >2000 mg/kg, Oral, Rat.

Acute toxicity – dermal:
Notes (dermal LD_{50}): LD_{50} >18016 mg/l, Dermal, Rabbit.

Acute toxicity – inhalation:
Notes (inhalation LC_{50}): LD_{50} >5.2 mg/l, Inhalation, Aerosol., Rat.

[cont…]

Skin corrosion/irritation:

Skin corrosion/irritation: Not irritating. Rabbit Draize test.

Serious eye damage/irritation:

Serious eye damage/irritation: Not irritating. Rabbit Draize test.

Respiratory sensitisation:

Respiratory sensitisation: No specific test data are available.
Based on available data the classification criteria are not met.

Skin sensitisation:

Skin sensitisation: No specific test data are available.
Based on available data the classification criteria are not met.

Germ cell mutagenicity:

Genotoxicity - in vitro: This substance has no evidence of mutagenic properties.

Genotoxicity - in vivo: This substance has no evidence of mutagenic properties.

Carcinogenicity:

Carcinogenicity: No specific test data are available.
Based on available data the classification criteria are not met.

Reproductive toxicity:

Reproductive toxicity – fertility: No evidence of reproductive toxicity in animal studies.

Reproductive toxicity – development: No evidence of reproductive toxicity in animal studies.

Specific target organ toxicity - single exposure:

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

Specific target organ toxicity - repeated exposure:

STOT - repeated exposure: Not classified as a specific target organ toxicant after repeated exposure.

Aspiration hazard:

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

Inhalation: Gas or vapour in high concentrations may irritate the respiratory system.

Ingestion: May cause discomfort if swallowed.

Skin contact: Prolonged skin contact may cause temporary irritation.

Eye contact: May cause temporary eye irritation.

[cont…]

12. ECOLOGICAL INFORMATION

Ecotoxicity: The product components are not classified as environmentally hazardous. However, large or frequent spills may have hazardous effects on the environment.

Toxicity:

Acute aquatic toxicity:

Acute toxicity – fish: LC_{50}, 96 hours: >10000 mg/l, Lepomis macrochirus (Bluegill)

Acute toxicity – aquatic invertebrates: EC_{50}, 48 hours: >10000 mg/l, Daphnia magna

Acute toxicity - aquatic plants: EC_{0}, 192 hour: > 10000 mg/l, Scenedesmus subspicatus

Acute toxicity – microorganisms: EC10, 30 minutes: > 1995 mg/l, Activated sludge

Persistence and degradability: The product is readily biodegradable. Read-across data.

Bioaccumulative potential: Bioaccumulation is unlikely.

Partition coefficient: -1.75

Mobility in soil:

Mobility: The product is soluble in water.

Results of PBT and vPvB assessment: This substance is not classified as PBT or vPvB according to current EU criteria.

Other adverse effects: None known.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods:

General information: Waste should be treated as controlled waste. Do not puncture or incinerate, even when empty. Waste codes should be assigned by the user, preferably in discussion with the waste disposal authorities.

Disposal methods: Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.

14. TRANSPORT INFORMATION

General: The product is not covered by international regulations on the transport of dangerous goods (IMDG, IATA, ADR/RID).

UN number: Not applicable.

UN proper shipping name: Not applicable.

Transport hazard class(es): No transport warning sign required.

Packing group: Not applicable.

[cont…]

Environmental hazards:

Environmentally hazardous substance/marine pollutant: No.

Special precautions for user: Not applicable.

Transport in bulk according to Annex II of MARPOL and the IBC Code:

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not applicable.

15. REGULATORY INFORMATION

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

EU legislation: Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (as amended).
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 (as amended).
Commission Regulation (EU) No 2015/830 of 28 May 2015.

Chemical safety assessment: Not applicable.

Note: The regulatory information given above only indicates the principal regulations specifically Applicable to the product described in the safety data sheet. The user's attention is drawn to the possible existence of additional provisions which complete these regulations. Refer to all applicable national, international and local regulations or provisions.

16. OTHER INFORMATION

Abbreviations and acronyms used in the safety data sheet:

ATE: Acute Toxicity Estimate.
ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.
ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways.
CAS: Chemical Abstracts Service.
DNEL: Derived No Effect Level.
IATA: International Air Transport Association.
IMDG: International Maritime Dangerous Goods.
Kow: Octanol-water partition coefficient.
LC_{50}: Lethal Concentration to 50 % of a test population.
LD_{50}: Lethal Dose to 50% of a test population (Median Lethal Dose).
PBT: Persistent, Bioaccumulative and Toxic substance.
PNEC: Predicted No Effect Concentration.
REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006.
RID: European Agreement concerning the International Carriage of Dangerous Goods by Rail.

[cont…]

vPvB: Very Persistent and Very Bioaccumulative.
IARC: International Agency for Research on Cancer.
MARPOL 73/78: International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978.
cATpE: Converted Acute Toxicity Point Estimate.
BCF: Bioconcentration Factor.
BOD: Biochemical Oxygen Demand.
EC_{50}: 50% of maximal Effective Concentration.
LOAEC: Lowest Observed Adverse Effect Concentration.
LOAEL: Lowest Observed Adverse Effect Level.
NOAEC: No Observed Adverse Effect Concentration.
NOAEL: No Observed Adverse Effect Level.
NOEC: No Observed Effect Concentration.
LOEC: Lowest Observed Effect Concentration.
DMEL: Derived Minimal Effect Level.
EL50: Exposure Limit 50
hPa: Hectopascal
LL50: Lethal Loading fifty
OECD: Organisation for Economic Co-operation and Development
POW: Octanol-water partition coefficient
SCBA: self-contained breathing apparatus
STP: Sewage Treatment Plant
VOC: Volatile Organic Compounds

Classification abbreviations and acronyms:

Acute Tox. = Acute toxicity
Aquatic Acute = Hazardous to the aquatic environment (acute)
Aquatic Chronic = Hazardous to the aquatic environment (chronic)

Legal disclaimer:

The information contained in this SDS does not constitute a risk assessment, and should not replace the user's own assessment of risks as required by other health and safety legislation. This advice is given by Nexchem Ltd who accept no legal liability for it except otherwise provided by law. The information contained herein is based on the present state of our knowledge and is intended to describe our products from the point of view of safety requirements. It should not therefore be construed as guaranteeing specific properties.