

SAFETY DATA SHEET**HUNTSMAN**

Enriching lives through innovation

DIETHYLENE GLYCOL

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	09/19/2016	400001019918	Date of first issue: 09/19/2016

SECTION 1. IDENTIFICATION

Product name : DIETHYLENE GLYCOL

Manufacturer or supplier's details

Company name of supplier : Huntsman International LLC

Address : P.O. Box 4980
The Woodlands,
TX 77387
United States of America

Telephone : TechInfo: (281) 719-7780

E-mail address of person responsible for the SDS : MSDS@huntsman.com

Emergency telephone number : Chemtrec: (800) 424-9300 or (703) 527-3887

Recommended use of the chemical and restrictions on use

Recommended use : Component of a Polyurethane System.

SECTION 2. HAZARDS IDENTIFICATION**GHS Classification**

Acute toxicity (Oral) : Category 4

Eye irritation : Category 2B

Specific target organ toxicity - single exposure : Category 2 (Central nervous system, Kidney)

Specific target organ toxicity - repeated exposure : Category 2 (Central nervous system, Kidney, Liver)

GHS label elements

Hazard pictograms :



Signal word : Warning

Hazard statements : H302 Harmful if swallowed.
H320 Causes eye irritation.
H371 May cause damage to organs (Central nervous system, Kidney).
H373 May cause damage to organs (Central nervous system, Kidney, Liver) through prolonged or repeated exposure.Precautionary statements : **Prevention:**

SAFETY DATA SHEET**HUNTSMAN**

Enriching lives through innovation

DIETHYLENE GLYCOL

Version 1.0	Revision Date: 09/19/2016	SDS Number: 400001019918	Date of last issue: - Date of first issue: 09/19/2016
----------------	------------------------------	-----------------------------	--

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.

Response:

P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P308 + P311 IF exposed or concerned: Call a POISON CENTER/doctor.

P337 + P313 If eye irritation persists: Get medical advice/attention.

Storage:

P405 Store locked up.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Substance

Hazardous components

Chemical name	CAS No.	Concentration (% w/w)
Diethylene glycol	111-46-6	95 - 100

The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

SECTION 4. FIRST AID MEASURES

General advice : Move out of dangerous area.
 Show this safety data sheet to the doctor in attendance.
 Do not leave the victim unattended.

If inhaled : If unconscious place in recovery position and seek medical advice.
 If symptoms persist, call a physician.

In case of skin contact : In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
 Get medical attention if irritation develops and persists.
 Wash clothing before reuse.
 Thoroughly clean shoes before reuse.

In case of eye contact : Immediately flush eye(s) with plenty of water.
 Remove contact lenses.
 Protect unharmed eye.

SAFETY DATA SHEET**HUNTSMAN**

Enriching lives through innovation

DIETHYLENE GLYCOL

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	09/19/2016	400001019918	Date of first issue: 09/19/2016

Keep eye wide open while rinsing.
If eye irritation persists, consult a specialist.

If swallowed : Induce vomiting immediately and call a physician.
Keep respiratory tract clear.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
Take victim immediately to hospital.

Most important symptoms and effects, both acute and delayed : None known.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media : High volume water jet

Specific hazards during firefighting : No data is available on the product itself.

Hazardous combustion products : Carbon dioxide (CO₂)
Carbon monoxide

Specific extinguishing methods : No data is available on the product itself.

Further information : Standard procedure for chemical fires.

Special protective equipment for firefighters : Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : No action shall be taken involving any personal risk or without suitable training.
Use personal protective equipment.
Evacuate personnel to safe areas.
Ensure adequate ventilation.
In case of inadequate ventilation wear respiratory protection.

Environmental precautions : Prevent product from entering drains.
Prevent further leakage or spillage if safe to do so.
If the product contaminates rivers and lakes or drains inform respective authorities.

Methods and materials for containment and cleaning up : Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).
Keep in suitable, closed containers for disposal.

SAFETY DATA SHEET



Enriching lives through innovation

DIETHYLENE GLYCOL

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	09/19/2016	400001019918	Date of first issue: 09/19/2016

SECTION 7. HANDLING AND STORAGE

- Advice on protection against fire and explosion : Normal measures for preventive fire protection.
- Advice on safe handling : Do not breathe vapours/dust.
Avoid exposure - obtain special instructions before use.
Avoid contact with skin and eyes.
For personal protection see section 8.
Smoking, eating and drinking should be prohibited in the application area.
Dispose of rinse water in accordance with local and national regulations.
- Conditions for safe storage : Keep container tightly closed in a dry and well-ventilated place.
Observe label precautions.
Electrical installations / working materials must comply with the technological safety standards.
- Materials to avoid : Heat
Keep away from oxidizing agents.
Keep away from strong acids.
Keep away from strong bases.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Contains no substances with occupational exposure limit values.

Personal protective equipment

- Respiratory protection : In the case of vapour formation use a respirator with an approved filter.
Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary.
Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
Ensure adequate ventilation.
- Hand protection
- Remarks : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties.
It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers.
In the case of mixtures, consisting of several substances, the

SAFETY DATA SHEET**HUNTSMAN**

Enriching lives through innovation

DIETHYLENE GLYCOL

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	09/19/2016	400001019918	Date of first issue: 09/19/2016

- protection time of the gloves cannot be accurately estimated.
- Eye protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection:
Chemical splash goggles.
Eye wash bottle with pure water
Ensure that eyewash stations and safety showers are close to the workstation location.
- Skin and body protection** : Impervious clothing
Choose body protection according to the amount and concentration of the dangerous substance at the work place. Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Hygiene measures** : When using do not eat or drink.
When using do not smoke.
Wash hands before breaks and at the end of workday.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance** : liquid
- Colour** : colourless
- Odour** : sweet
- Odour Threshold** : No data is available on the product itself.
- pH** : 7
- Melting point** : -6.5 °C
- Freezing point** : -9 °C
- Boiling point** : 244.9 °C
(1,013 hPa)
- Flash point** : 138 °C Method: closed cup
- Evaporation rate** : No data is available on the product itself.
- Flammability (solid, gas)** : No data is available on the product itself.
- Flammability (liquids)** : No data is available on the product itself.
- Upper explosion limit** : 12.3 %(V)
- Lower explosion limit** : 2 %(V)

SAFETY DATA SHEET**HUNTSMAN**

Enriching lives through innovation

DIETHYLENE GLYCOL

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	09/19/2016	400001019918	Date of first issue: 09/19/2016

Vapour pressure	:	0.002666 hPa (20 °C) ca. 0.77 hPa (80 °C)
Relative vapour density	:	3.65
Relative density	:	1.118
Density	:	1.18 g/cm ³ (20 °C)
Solubility(ies)		
Water solubility	:	1,000 g/l completely miscible (20 °C) soluble
Solubility in other solvents	:	Solvent: Methanol Description: soluble
Partition coefficient: n-octanol/water	:	log Pow: -1.98 GLP: no
Auto-ignition temperature	:	372 °C
Thermal decomposition	:	No data is available on the product itself.
Self-Accelerating decomposition temperature (SADT)	:	No data is available on the product itself.
Viscosity		
Viscosity, dynamic	:	30 mPa.s (25 °C)
Oxidizing properties	:	None.
Molecular weight	:	106.14 g/mol

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	No decomposition if stored and applied as directed.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	Risk of decomposition. pressure build-up Stable under normal conditions. No decomposition if stored and applied as directed.
Conditions to avoid	:	No data available
Hazardous decomposition products	:	Carbon monoxide Carbon dioxide (CO ₂) Aldehydes Ketones Burning produces noxious and toxic fumes.

SAFETY DATA SHEET

HUNTSMAN

Enriching lives through innovation

DIETHYLENE GLYCOL

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	09/19/2016	400001019918	Date of first issue: 09/19/2016

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure : No data is available on the product itself.

Acute toxicity

Components:

Diethylene glycol:

Acute oral toxicityComponents : LD50 (Rat): 1,650 mg/kg
Assessment: The component/mixture is moderately toxic after single ingestion.

Acute inhalation toxicity - Product : LC50(Rat): > 5.08 mg/l
Exposure time: 4 h
Test atmosphere: vapour

LC50(Rat): > 4.4 mg/l
Exposure time: 4 h
Test atmosphere: vapour

Components:

Diethylene glycol:

Acute dermal toxicity : LD50 (Rabbit): 12,500 mg/kg

Acute toxicity (other routes of administration) : No data available

Skin corrosion/irritation

Product:

Species: Rabbit

Assessment: No skin irritation

Result: No skin irritation

GLP: no

Remarks: May cause skin irritation in susceptible persons.

Serious eye damage/eye irritation

Product:

Species: Rabbit

Result: No eye irritation

Assessment: No eye irritation

GLP: no

Remarks: Vapours may cause irritation to the eyes, respiratory system and the skin.

Respiratory or skin sensitisation

Product:

SAFETY DATA SHEET**HUNTSMAN**

Enriching lives through innovation

DIETHYLENE GLYCOL

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	09/19/2016	400001019918	Date of first issue: 09/19/2016

Exposure routes: Skin
 Species: Guinea pig
 Method: Directive 67/548/EEC, Annex V, B.6.
 Result: Does not cause skin sensitisation.

Assessment: No data available

Germ cell mutagenicity**Product:**

Genotoxicity in vitro : Metabolic activation: with and without metabolic activation
 Method: Directive 67/548/EEC, Annex V, B.10.
 Result: negative
 GLP: yes

Metabolic activation: with and without metabolic activation
 Method: OECD Test Guideline 473
 Result: negative
 GLP: yes

Concentration: 30 - 50 mg/ml
 Metabolic activation: with and without metabolic activation
 Method: OECD Test Guideline 479
 Result: negative
 GLP: yes

Product:

Genotoxicity in vivo : Cell type: Somatic
 Application Route: Intraperitoneal injection
 Dose: 500 - 2000 mg/kg
 Method: OECD Test Guideline 474
 Result: negative
 GLP: yes

Carcinogenicity**Product:**

Species: Rat, (male and female)
 Application Route: Oral
 Exposure time: 108 weeks
 Dose: 1160 - 1210 mg/kg
 Frequency of Treatment: 7 daily
 Result: negative

Carcinogenicity - Assessment : No data available

IARC

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

SAFETY DATA SHEET**HUNTSMAN**

Enriching lives through innovation

DIETHYLENE GLYCOL

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	09/19/2016	400001019918	Date of first issue: 09/19/2016

NTP

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity**Product:**

Effects on fertility : Species: Mouse, male and female
Application Route: Oral

Product:

Effects on foetal development : Application Route: Oral
Method: OECD Test Guideline 414
Result: No teratogenic effects

Reproductive toxicity - Assessment : No data available

STOT - single exposure**Components:**

Diethylene glycol:
Target Organs: Central nervous system, Kidney
Assessment: May cause damage to organs.

STOT - repeated exposure**Components:**

Diethylene glycol:
Target Organs: Kidney, Liver, Central nervous system
Assessment: May cause damage to organs through prolonged or repeated exposure.

Repeated dose toxicity**Product:**

Species: Rat, male and female
NOAEL: 100 mg/kg
Application Route: Ingestion
Exposure time: 5,400 h
Number of exposures: 7 d
Method: Subchronic toxicity

Species: Rat, male and female
NOEL: 150 mg/kg
Application Route: Ingestion
Exposure time: 768 h
Method: Subacute toxicity

Repeated dose toxicity - Assessment : No data available

SAFETY DATA SHEET**HUNTSMAN**

Enriching lives through innovation

DIETHYLENE GLYCOL

Version 1.0	Revision Date: 09/19/2016	SDS Number: 400001019918	Date of last issue: - Date of first issue: 09/19/2016
----------------	------------------------------	-----------------------------	--

Aspiration toxicity

No data available

Experience with human exposure

General Information: No data available

Inhalation: No data available

Skin contact: No data available

Eye contact: No data available

Ingestion: No data available

Toxicology, Metabolism, Distribution

No data available

Neurological effects

No data available

Further information**Product:**

Remarks: No data available

SECTION 12. ECOLOGICAL INFORMATION**Ecotoxicity**

Toxicity to fish - Product : LC50 (Pimephales promelas (fathead minnow)): 75,200 mg/l
 Exposure time: 96 h
 Test Type: flow-through test
 Test substance: Fresh water
 GLP: no
 Remarks: Toxic to aquatic organisms.

Toxicity to daphnia and other aquatic invertebrates - Product : EC50 (Daphnia magna (Water flea)): > 10,000 mg/l
 Exposure time: 24 h
 Test Type: static test
 Test substance: Fresh water
 Method: DIN 38412
 GLP: no

Toxicity to algae : No data available

M-Factor (Acute aquatic toxicity) : No data available

SAFETY DATA SHEET**HUNTSMAN**

Enriching lives through innovation

DIETHYLENE GLYCOL

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	09/19/2016	400001019918	Date of first issue: 09/19/2016

Toxicity to fish (Chronic toxicity) - Product : NOEC (Pimephales promelas (fathead minnow)): 15,380 mg/l
 Exposure time: 17 d
 Test substance: Fresh water
 GLP: no

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) - Product : NOEC (Ceriodaphnia (water flea)): 8,590 mg/l
 Exposure time: 7 d
 Test Type: static test
 Test substance: Fresh water

M-Factor (Chronic aquatic toxicity) : No data available

Toxicity to bacteria - Product : IC50: > 1,000 mg/l
 Exposure time: 3 h
 Method: OECD Test Guideline 209

Toxicity to soil dwelling organisms : No data available

Plant toxicity : No data available

Sediment toxicity : No data available

Toxicity to terrestrial organisms : No data available

Ecotoxicology Assessment Acute aquatic toxicity : No data available

Chronic aquatic toxicity : No data available

Toxicity Data on Soil : No data available

Other organisms relevant to the environment : No data available

Further information:
 No data available

Persistence and degradability

Biodegradability - Product : Inoculum: activated sludge
 Result: Readily biodegradable
 Biodegradation: >= 70 %
 Exposure time: 10 - 29 d

Biochemical Oxygen Demand (BOD) : No data available

Chemical Oxygen Demand (COD) : No data available

BOD/COD : No data available

SAFETY DATA SHEET**HUNTSMAN**

Enriching lives through innovation

DIETHYLENE GLYCOL

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	09/19/2016	400001019918	Date of first issue: 09/19/2016

ThOD : No data available

BOD/ThOD : No data available

Dissolved organic carbon (DOC) : No data available

Physico-chemical removability : No data available

Stability in water : No data available

Photodegradation : No data available

Impact on Sewage Treatment : No data available

Bioaccumulative potential

Bioaccumulation - Product : Species: Leuciscus idus (Golden orfe)
 Bioconcentration factor (BCF): 100
 Exposure time: 3 d
 Test substance: Fresh water
 Method: Bioaccumulation: Static Fish Test

Partition coefficient: n-octanol/water - Product : log Pow: -1.98
 GLP: no

Mobility in soil

Mobility : No data available

Distribution among environmental compartments - Product : Koc: 1

Stability in soil : No data available

Other adverse effects

Environmental fate and pathways : No data available

Results of PBT and vPvB assessment : No data available

Endocrine disrupting potential : No data available

Adsorbed organic bound halogens (AOX) : No data available

Hazardous to the ozone layer

Ozone-Depletion Potential : Regulation: 40 CFR Protection of Environment; Part 82
 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances
 Remarks: This product neither contains, nor was

SAFETY DATA SHEET



Enriching lives through innovation

DIETHYLENE GLYCOL

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	09/19/2016	400001019918	Date of first issue: 09/19/2016

manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

Additional ecological information - Product : No data available
 Global warming potential (GWP) : No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Do not dispose of waste into sewer.
 Do not contaminate ponds, waterways or ditches with chemical or used container.
 Send to a licensed waste management company.

Contaminated packaging : Empty remaining contents.
 Dispose of as unused product.
 Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION

International Regulation

IATA

Not regulated as dangerous goods

IMDG

Not regulated as dangerous goods

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

Not applicable for product as supplied.

National Regulations

DOT Classification

Not regulated as dangerous goods

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know Act

SARA 311/312 Hazards : Acute Health Hazard
 Chronic Health Hazard

SAFETY DATA SHEET**HUNTSMAN**

Enriching lives through innovation

DIETHYLENE GLYCOL

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	09/19/2016	400001019918	Date of first issue: 09/19/2016

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

The following chemical(s) are listed as HAP under the U.S. Clean Air Act, Section 12 (40 CFR 61):

Diethylene glycol	111-46-6	99.5 %
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California Prop. 65 This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

The components of this product are reported in the following inventories:

CH INV	: On the inventory, or in compliance with the inventory
TSCA	: On the inventory, or in compliance with the inventory
DSL	: All components of this product are on the Canadian DSL
AICS	: On the inventory, or in compliance with the inventory
NZIoC	: On the inventory, or in compliance with the inventory
ENCS	: On the inventory, or in compliance with the inventory
KECI	: On the inventory, or in compliance with the inventory
PICCS	: On the inventory, or in compliance with the inventory
IECSC	: On the inventory, or in compliance with the inventory
TCSI	: On the inventory, or in compliance with the inventory

Inventories

AICS (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECI (Korea), NZIoC (New Zealand), PICCS (Philippines), TCSI (Taiwan), TSCA (USA)

TSCA - 5(a) Significant New Use Rule List of Chemicals

No substances are subject to a Significant New Use Rule.

US. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D)

No substances are subject to TSCA 12(b) export notification requirements.

SAFETY DATA SHEET



Enriching lives through innovation

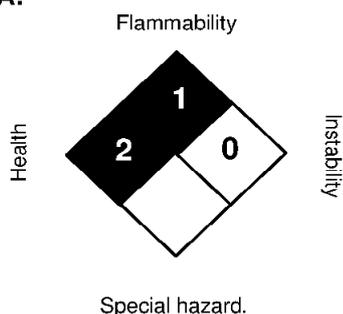
DIETHYLENE GLYCOL

Version 1.0 Revision Date: 09/19/2016 SDS Number: 400001019918 Date of last issue: -
 Date of first issue: 09/19/2016

SECTION 16. OTHER INFORMATION

Further information

NFPA:



HMIS III:

HEALTH	2*
FLAMMABILITY	1
PHYSICAL HAZARD	0

0 = not significant, 1 =Slight,
 2 = Moderate, 3 = High
 4 = Extreme, * = Chronic

Revision Date : 09/19/2016

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THE PRODUCT MAY PRESENT HAZARDS AND SHOULD BE USED WITH CAUTION. WHILE CERTAIN HAZARDS ARE DESCRIBED IN THIS PUBLICATION, NO GUARANTEE IS MADE THAT THESE ARE THE ONLY HAZARDS THAT EXIST.

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