SECTION 1. IDENTIFICATION

Product name : DIGLYCOLAMINE® AGENT

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

Recommended use of the chemical and restrictions on use
Recommended use : Gas treating

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification
Skin corrosion : Category 1
Serious eye damage : Category 1
Specific target organ systemic toxicity - single exposure : Category 2 (Central nervous system, Kidney)
Specific target organ systemic toxicity - repeated exposure : Category 2 (Central nervous system, Kidney, Liver)

GHS Label element
Hazard pictograms : 

Signal Word : Danger
Hazard Statements : H314 Causes severe skin burns and eye damage.
H318 Causes serious eye damage.
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:**
- 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.
- P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

**Response:**
- P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
- P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
- P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor/ physician.
- P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/ physician.
- P308 + P311 IF exposed or concerned: Call a POISON CENTER or doctor/ physician.
- P363 Wash contaminated clothing before reuse.

**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 ingredients**

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS-No.</th>
<th>Concentration (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-(2-aminooethoxy)ethanol</td>
<td>929-06-6</td>
<td>95 - 100</td>
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<tr>
<td>N-ethylaminoethoxyethanol</td>
<td>106007-99-2</td>
<td>1 - 3</td>
</tr>
<tr>
<td>Glycol</td>
<td>–</td>
<td>1 - 3</td>
</tr>
<tr>
<td>morpholine</td>
<td>110-91-8</td>
<td>0.1 - 1</td>
</tr>
</tbody>
</table>

### SECTION 4. FIRST AID MEASURES

**General advice:**
- Move out of dangerous area.
- Consult a physician.
- Show this material 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: Immediate medical treatment is necessary as untreated wounds from corrosion of the skin heal slowly and with difficulty.
If on skin, rinse well with water.
If on clothes, remove clothes.

In case of eye contact: Small amounts splashed into eyes can cause irreversible tissue damage and blindness.
In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Continue rinsing eyes during transport to hospital.
Remove contact lenses.
Protect unharmed eye.
Keep eye wide open while rinsing.
If eye irritation persists, consult a specialist.

If swallowed: Clean mouth with water and drink afterwards plenty of water.
Keep respiratory tract clear.
Do NOT induce vomiting.
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. FIRE-FIGHTING 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 fire fighting: Do not allow run-off from fire fighting to enter drains or water courses.

Hazardous combustion products: No hazardous combustion products are known

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

Further information: Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

Special protective equipment for fire-fighters: Wear self-contained breathing apparatus for firefighting if necessary.
SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures:
- 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:
- Neutralize with acid.
- Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).
- Keep in suitable, closed containers for disposal.

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 vapors/dust.
- Avoid contact with skin and eyes.
- For personal protection see section 8.
- Smoking, eating and drinking should be prohibited in the application area.
- To avoid spills during handling keep bottle on a metal tray.
- 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:
- Keep away from strong acids.
- Keep away from metals.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters:
Contains no substances with occupational exposure limit values.

Personal protective equipment:
Respiratory protection:
- 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.
SAFETY DATA SHEET

DIGLYCOLAMINE® AGENT

Hand protection
Material: Nitrile rubber
Break through time: > 8 h

Remarks: The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Eye protection: Eye wash bottle with pure water
Tightly fitting safety goggles.
Wear face-shield and protective suit for abnormal processing problems.
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.
Complete suit protecting against chemicals

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
Color: colorless
Odor: amine-like
Odor Threshold: No data is available on the product itself.
pH: 11.8
Freezing point: -12.5 °C
Melting point: -12.5 °C
Boiling point: 221 °C
No information available.
222.5 - 223.8 °C (1,013 hPa)
Flash point: 127 °C
Method: Pensky-Martens closed cup, closed cup
Evaporation rate: No data is available on the product itself.
Flammability (solid, gas): No data is available on the product itself.
Upper explosion limit: 11.7 % (V)
Lower explosion limit : 2.6 % (V)
Vapor pressure : 0.002 hPa (25 °C)
Relative vapor density : 3.6
Relative density : 1.06 (20 °C)
Density : No data is available on the product itself.
Solubility(ies)
Water solubility : completely miscible
Solubility in other solvents : Solvent: Methanol
Description: soluble
Partition coefficient: n-octanol/water : log Pow: -1.89 (20 °C)
Autoignition temperature : 370 °C
Thermal decomposition : No data is available on the product itself.
Viscosity
Viscosity, dynamic : 48.688 mPa.s (25 °C)
Oxidizing properties : None.
Self-Accelerating decomposition temperature (SADT) : No data is available on the product itself.
Molecular weight : 105.16 g/mol

SECTION 10. STABILITY AND REACTIVITY
Reactivity : No dangerous reaction known under conditions of normal use.
Chemical stability : Stable under normal conditions.
Possibility of hazardous reactions : No decomposition if stored and applied as directed.
Conditions to avoid : No data available
Hazardous decomposition products : Carbon dioxide (CO2)
Carbon monoxide
Nitrogen oxides (NOx)

SECTION 11. TOXICOLOGICAL INFORMATION
Information on likely routes of exposure : No data is available on the product itself.
Acute toxicity
Acute oral toxicity - Product : Acute toxicity estimate : 3,198 mg/kg
**Acute inhalation toxicity**

**Product:**

- Acute toxicity estimate: > 40 mg/l
- Exposure time: 4 h
- Test atmosphere: vapor
- Method: Calculation method

**Acute dermal toxicity**

**Product:**

- Acute toxicity estimate: > 5,000 mg/kg
- Method: Calculation method

**Acute toxicity (other routes of administration):**

- No data available

**Skin corrosion/irritation**

**Product:**

Remarks: Extremely corrosive and destructive to tissue.

**Serious eye damage/eye irritation**

**Product:**

Remarks: May cause irreversible eye damage.

**Respiratory or skin sensitization**

**Product:**

- Routes of exposure: Skin
- Species: Guinea pig
- Method: OECD Test Guideline 406
- Result: Does not cause skin sensitization.
- Assessment: No data available

**Germ cell mutagenicity**

**Product:**

- Genotoxicity in vitro
  - Concentration: 100 - 10000 ug/plate
  - Metabolic activation: with and without metabolic activation
  - Method: OECD Test Guideline 471
  - Result: negative

  - Concentration: 62.5 - 250 mg/kg
  - Result: negative

  - Method: OECD Test Guideline 482
  - Result: negative

**Product:**

- Genotoxicity in vivo
  - Application Route: Intraperitoneal injection
  - Dose: 62.5 - 250 mg/kg
Carcinogenicity

**Ingredients:**

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

morpholine:
- Species: Rat, (male and female)
- Application Route: Inhalation
- Exposure time: 24 month(s)
- Dose: 543 mg/m³
- Frequency of Treatment: 5 daily
- Method: OECD Test Guideline 453
- Result: negative

Species: Rat, (male)
- Application Route: Oral
- Exposure time: 23 weeks
- Dose: 220 - 880 mg/kg
- Frequency of Treatment: 24 hour
- Result: negative

Carcinogenicity - Assessment: No data available

**IARC**

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

**NTP**

No ingredient 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: Rat, male and female
- Application Route: Inhalation
- Method: OECD Test Guideline 422
- Species: Rat, male and female
- Application Route: Dermal
- Method: OECD Test Guideline 411
Product:
Effects on fetal development: Species: Rat, male and female
Application Route: Inhalation
General Toxicity Maternal: NOAEL (No observed adverse effect level): 40 mg/m³
Method: OECD Test Guideline 422
Result: No teratogenic effects.

Reproductive toxicity - Assessment: No data available

STOT-single exposure
Ingredients:
Glycol:
Target Organs: Central nervous system, Kidney
Assessment: May cause damage to organs.

STOT-repeated exposure
Ingredients:
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 (No observed adverse effect level): >= 175 mg/kg/d
Application Route: Skin contact
Exposure time: 13 Weeks
Number of exposures: 6 h
Method: Subchronic toxicity

Repeated dose toxicity - Assessment: No data available

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 (Leuciscus idus (Golden orfe)): > 681 mg/l
  - Exposure time: 96 h
  - Test Type: static test
  - Test substance: Fresh water
  - Method: DIN 38412

**Toxicity to daphnia and other aquatic invertebrates - Product**
- EC50 (Daphnia magna (Water flea)): 189 mg/l
  - Exposure time: 48 h
  - Test Type: static test
  - Test substance: Fresh water

**Toxicity to algae - Product**
- ErC50 (Desmodesmus subspicatus (Scenedesmus subspicatus)): 202 mg/l
  - Exposure time: 72 h
  - Test Type: static test
  - Test substance: Fresh water
  - Method: DIN 38412

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

**Ingredients:**

**Glycol:**
- Toxicity to fish (Chronic toxicity)
  - NOEC (Pimephales promelas (fathead minnow)): 15,380 mg/l
    - Exposure time: 17 d
    - Test substance: Fresh water

**Ingredients:**

**Glycol:**
- Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)
  - 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: EC50 (Pseudomonas putida): 110 mg/l
Exposure time: 17 h
Test Type: static test
Test substance: Fresh water
Method: DIN 38 412 Part 8

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
Biodegradation: 84 %
Exposure time: 28 d
Method: OECD Test Guideline 302B

Inoculum: activated sludge
Result: Readily biodegradable.
Biodegradation: 90 - 100 %
Exposure time: 17 d
Method: OECD Test Guideline 301A

Biochemical Oxygen Demand (BOD): No data available

Chemical Oxygen Demand (COD): No data available

BOD/COD: No data available

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

**Ingredients:**

- **morpholine:**
  - Photodegradation: Test Type: Air
    - Degradation (direct photolysis): 50 %

Impact on Sewage Treatment : No data available

**Bioaccumulative potential**

**Ingredients:**

- **Glycol:**
  - Bioaccumulation:
    - Species: Leuciscus idus (Golden orfe)
    - Bioconcentration factor (BCF): 100
    - Exposure time: 3 d
    - Test substance: Fresh water
    - Method: OECD Test Guideline 305

- **morpholine:**
  - Bioaccumulation:
    - Species: Cyprinus carpio (Carp)
    - Bioconcentration factor (BCF): < 2.8
    - Exposure time: 42 d
    - Test substance: Fresh water
    - Method: flow-through test
    - Remarks: Bioaccumulation is unlikely.

Partition coefficient: n-octanol/water - Product : log Pow: -1.89 (20 °C)

**Mobility in soil**

- Mobility : No data available
- Distribution among environmental compartments - Product :
  - Koc: 1 - 1.061
- 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 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
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
UN/ID No. : UN 3055
Proper shipping name : 2-(2-Aminoethoxy)ethanol
Class : 8
Packing group : III
Labels : Corrosive
Packing instruction (cargo aircraft) : 856
Packing instruction (passenger aircraft) : 852

IMDG
SAFETY DATA SHEET

DIGLYCOLAMINE® AGENT

Version 1.0  Revision Date: 12/04/2015  SDS Number: 400001000972  Date of last issue: -

UN number : UN 3055
Proper shipping name : 2-(2-AMINOETHOXY)ETHANOL

Class : 8
Packing group : III
Labels : 8
EmS Code : F-A, S-B
Marine pollutant : no

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not applicable for product as supplied.

Domestic regulation

DOT Classification
UN/ID/NA number : UN 3055
Proper shipping name : 2-(2-AMINOETHOXY) ETHANOL

Class : 8
Packing group : III
Labels : CORROSIVE
ERG Code : 154
Marine pollutant : no

SECTION 15. REGULATORY INFORMATION

TSCA - 5(a) Significant New Use Rule List of Chemicals : Not relevant

EPCRA - Emergency Planning and Community Right-to-Know

CERCLA Reportable Quantity

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>CAS-No.</th>
<th>Component RQ (lbs)</th>
<th>Calculated product RQ (lbs)</th>
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</thead>
<tbody>
<tr>
<td>MONOETHYLENE GLYCOL (MEG)</td>
<td>107-21-1</td>
<td>5000</td>
<td>*</td>
</tr>
</tbody>
</table>

*: Calculated RQ exceeds reasonably attainable upper limit.

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

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.

Clean Air Act
This product neither contains, nor was 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). 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 1 %
This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCMI Intermediate or Final VOC’s (40 CFR 60.489).

**California Prop 65**

WARNING: This product contains a chemical known in the State of California to cause birth defects or other reproductive harm.

Ethylene glycol 107-21-1

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

- CH INV: The mixture contains substances listed on the Swiss Inventory
- TSCA: On TSCA 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
- ISHL: On the inventory, or in compliance with the inventory
- KECl: 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

**SECTION 16. OTHER INFORMATION**

**Further information**

**NFPA:**

- Flammability: 1
- Health: 3
- Instability: 0

**HMIS III:**

<table>
<thead>
<tr>
<th>HEALTH</th>
<th>3*</th>
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</thead>
<tbody>
<tr>
<td>FLAMMABILITY</td>
<td>1</td>
</tr>
<tr>
<td>PHYSICAL HAZARD</td>
<td>0</td>
</tr>
</tbody>
</table>

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

Revision Date: 12/04/2015

While the information and recommendations in this publication are to the best of our knowledge, information and belief accurate at the date of publication, NOTHING HEREIN IS TO BE CONSTRUED AS A WARRANTY, EXPRESS OR OTHERWISE.

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HAZARDS ARE DESCRIBED IN THIS PUBLICATION, NO GUARANTEE IS MADE THAT THESE ARE THE ONLY HAZARDS THAT EXIST.

Hazards, toxicity and behaviour of the products may differ when used with other materials and are dependent upon the manufacturing circumstances or other processes. Such hazards, toxicity and behaviour should be determined by the user and made known to handlers, processors and end users.

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