**SECTION 1: Identification of the substance/mixture and of the company/undertaking**

**1.1 Product identifier**

Identification of the substance: Diethanolamine

- Article number: HN99
- Registration number (REACH): 01-2119488930-28-xxxx
- Index No: 603-071-00-1
- EC number: 203-868-0
- CAS number: 111-42-2

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

Identified uses: laboratory chemical

**1.3 Details of the supplier of the safety data sheet**

Carl Roth GmbH + Co KG
Schoemperlenstr. 3-5
D-76185 Karlsruhe
Germany

**Telephone:** +49 (0) 721 - 56 06 0

**Telefax:** +49 (0) 721 - 56 06 149

**e-mail:** sicherheit@carlroth.de

**Website:** www.carlroth.de

- Competent person responsible for the safety data sheet: Department Health, Safety and Environment
- **e-mail (competent person):** sicherheit@carlroth.de

**1.4 Emergency telephone number**

Emergency information service: Poison Centre Munich: +49/(0)89 19240

**SECTION 2: Hazards identification**

**2.1 Classification of the substance or mixture**

**Classification according to Regulation (EC) No 1272/2008 (CLP)**

<table>
<thead>
<tr>
<th>Section</th>
<th>Hazard class</th>
<th>Hazard class and category</th>
<th>Hazard statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1O</td>
<td>acute toxicity (oral)</td>
<td>(Acute Tox. 4)</td>
<td>H302</td>
</tr>
<tr>
<td>3.2</td>
<td>skin corrosion/irritation</td>
<td>(Skin Irrit. 2)</td>
<td>H315</td>
</tr>
<tr>
<td>3.3</td>
<td>serious eye damage/eye irritation</td>
<td>(Eye Dam. 1)</td>
<td>H318</td>
</tr>
<tr>
<td>3.9</td>
<td>specific target organ toxicity - repeated exposure</td>
<td>(STOT RE 2)</td>
<td>H373</td>
</tr>
</tbody>
</table>
For full text of Hazard- and EU Hazard-statements: see SECTION 16.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008 (CLP)

<table>
<thead>
<tr>
<th>Signal word</th>
<th>Danger</th>
</tr>
</thead>
</table>

Pictograms

![Pictogram for Danger]

Hazard statements

- H302: Harmful if swallowed.
- H315: Causes skin irritation.
- H318: Causes serious eye damage.
- H373: May cause damage to organs through prolonged or repeated exposure (if swallowed).

Precautionary statements

Precautionary statements - prevention

- P280: Wear protective gloves/eye protection.

Precautionary statements - response

- P302+P352: IF ON SKIN: Wash with plenty of water.
- P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P310: Immediately call a POISON CENTER/doctor.

Labelling of packages where the contents do not exceed 125 ml

Signal word: Danger

Symbol(s)

- H318: Causes serious eye damage.
- P280: Wear protective gloves/eye protection.
- P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P310: Immediately call a POISON CENTER/doctor.

2.3 Other hazards

There is no additional information.
Diethanolamine ≥99 %, for synthesis

article number: HN99

SECTION 3: Composition/information on ingredients

3.1 Substances

<table>
<thead>
<tr>
<th>Name of substance</th>
<th>Diethanolamine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Index No</td>
<td>603-071-00-1</td>
</tr>
<tr>
<td>Registration number (REACH)</td>
<td>01-2119488930-28-xxxx</td>
</tr>
<tr>
<td>EC number</td>
<td>203-868-0</td>
</tr>
<tr>
<td>CAS number</td>
<td>111-42-2</td>
</tr>
<tr>
<td>Molecular formula</td>
<td>C₄H₁₁NO₂</td>
</tr>
<tr>
<td>Molar mass</td>
<td>105,1 g/mol</td>
</tr>
</tbody>
</table>

SECTION 4: First aid measures

4.1 Description of first aid measures

General notes
Take off contaminated clothing.

Following inhalation
Provide fresh air. In all cases of doubt, or when symptoms persist, seek medical advice.

Following skin contact
Rinse skin with water/shower. In case of skin irritation, consult a physician.

Following eye contact
In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist.

Following ingestion
Rinse mouth immediately and drink plenty of water. Call a doctor.

4.2 Most important symptoms and effects, both acute and delayed
Irritation, Cough, Breathing difficulties, Vomiting, Risk of serious damage to eyes, Risk of blindness

4.3 Indication of any immediate medical attention and special treatment needed
none
**SECTION 5: Firefighting measures**

5.1 Extinguishing media
- **Suitable extinguishing media**
  - Co-ordinate fire-fighting measures to the fire surroundings
  - Water spray, foam, alcohol resistant foam, dry extinguishing powder, carbon dioxide (CO2)
- **Unsuitable extinguishing media**
  - Water jet

5.2 Special hazards arising from the substance or mixture
- Combustible. Vapours are heavier than air. Vapours can form explosive mixtures with air.
- **Hazardous combustion products**
  - In case of fire may be liberated: nitrogen oxides (NOx), carbon monoxide (CO), carbon dioxide (CO2)

5.3 Advice for firefighters
- Fight fire with normal precautions from a reasonable distance. Wear self-contained breathing apparatus.

**SECTION 6: Accidental release measures**

6.1 Personal precautions, protective equipment and emergency procedures
- **For non-emergency personnel**
  - Do not breathe dust. Do not breathe vapour/spray. Avoid contact with skin and eyes.

6.2 Environmental precautions
- Keep away from drains, surface and ground water.

6.3 Methods and material for containment and cleaning up
- **Advises on how to contain a spill**
  - Covering of drains.
- **Advises on how to clean up a spill**
  - Take up mechanically. Control of dust.
- **Other information relating to spills and releases**
  - Place in appropriate containers for disposal. Ventilate affected area.

6.4 Reference to other sections
- Hazardous combustion products: see section 5.
- Personal protective equipment: see section 8.
- Incompatible materials: see section 10.
- Disposal considerations: see section 13.
SECTION 7: Handling and storage

7.1 Precautions for safe handling
Provide adequate ventilation. Avoid exposure.
• Measures to prevent fire as well as aerosol and dust generation
Removal of dust deposits.

Advice on general occupational hygiene
Keep away from food, drink and animal feedingstuffs. Wash hands before breaks and after work.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed. Store in a dry place.

Incompatible substances or mixtures
Observe hints for combined storage.

Consideration of other advice
• Ventilation requirements
Use local and general ventilation.
• Specific designs for storage rooms or vessels
Recommended storage temperature: 15 - 25 °C.

7.3 Specific end use(s)
No information available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

National limit values

Occupational exposure limit values (Workplace Exposure Limits)

<table>
<thead>
<tr>
<th>Country</th>
<th>Name of agent</th>
<th>CAS No</th>
<th>Notation</th>
<th>Identifier</th>
<th>TWA [mg/m³]</th>
<th>STEL [mg/m³]</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>IE</td>
<td>dusts non-specific</td>
<td></td>
<td>i</td>
<td>OELV</td>
<td>10</td>
<td></td>
<td>S.I. No. 619 of 2001</td>
</tr>
<tr>
<td>IE</td>
<td>dusts non-specific</td>
<td></td>
<td>r</td>
<td>OELV</td>
<td>4</td>
<td></td>
<td>S.I. No. 619 of 2001</td>
</tr>
<tr>
<td>IE</td>
<td>diethanolamine 111-42-2</td>
<td>i, vap</td>
<td>OELV</td>
<td>1</td>
<td></td>
<td></td>
<td>S.I. No. 619 of 2001</td>
</tr>
</tbody>
</table>

Notation
i     Inhalable fraction
r     Respirable fraction
STEL  Short-term exposure limit: a limit value above which exposure should not occur and which is related to a 15-minute 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
vap   As vapours

Relevant DNELs/DMELs/PNECs and other threshold levels
Diethanolamine ≥99 %, for synthesis

article number: HN99

### Human health values

<table>
<thead>
<tr>
<th>Endpoint</th>
<th>Threshold level</th>
<th>Protection goal, route of exposure</th>
<th>Used in</th>
<th>Exposure time</th>
</tr>
</thead>
<tbody>
<tr>
<td>DNEL</td>
<td>1 mg/m³</td>
<td>human, inhalatory</td>
<td>worker (industry)</td>
<td>chronic - local effects</td>
</tr>
<tr>
<td>DNEL</td>
<td>0,13 mg/kg</td>
<td>human, dermal</td>
<td>worker (industry)</td>
<td>chronic - systemic effects</td>
</tr>
</tbody>
</table>

### Environmental values

<table>
<thead>
<tr>
<th>Endpoint</th>
<th>Threshold level</th>
<th>Environmental compartment</th>
<th>Exposure time</th>
</tr>
</thead>
<tbody>
<tr>
<td>PNEC</td>
<td>0,0156 mg/l</td>
<td>freshwater</td>
<td>short-term (single instance)</td>
</tr>
<tr>
<td>PNEC</td>
<td>100 mg/l</td>
<td>sewage treatment plant (STP)</td>
<td>short-term (single instance)</td>
</tr>
<tr>
<td>PNEC</td>
<td>0,0718 mg/kg</td>
<td>freshwater sediment</td>
<td>short-term (single instance)</td>
</tr>
<tr>
<td>PNEC</td>
<td>0,00718 mg/kg</td>
<td>marine sediment</td>
<td>short-term (single instance)</td>
</tr>
<tr>
<td>PNEC</td>
<td>0,00518 mg/kg</td>
<td>soil</td>
<td>short-term (single instance)</td>
</tr>
<tr>
<td>PNEC</td>
<td>0,097 mg/l</td>
<td>water</td>
<td>intermittent release</td>
</tr>
<tr>
<td>PNEC</td>
<td>1,04 mg/kg</td>
<td>water</td>
<td>short-term (single instance)</td>
</tr>
<tr>
<td>PNEC</td>
<td>0,00156 mg/l</td>
<td>marine water</td>
<td>short-term (single instance)</td>
</tr>
</tbody>
</table>

### Exposure controls

#### Individual protection measures (personal protective equipment)

**Eye/face protection**

Use safety goggle with side protection.

**Skin protection**

- **hand protection**
  
  Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

- **type of material**
  NR: natural rubber, latex

- **material thickness**
  0,6 mm

- **breakthrough times of the glove material**
  >480 minutes (permeation: level 6)
NBR (Nitrile rubber).

>0,11 mm.

>30 minutes (permeation: level 2).

Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended.

Respiratory protection necessary at: Dust formation/Aerosol or mist formation. Particulate filter device (EN 143). Type: A-P2 (combined filters against particles and organic gases and vapours, colour code: Blue/White).

Observe the wear time limits according GefStoffV in combination with the rules for using respiratory protection apparatus (BGR 190).

Keep away from drains, surface and ground water.

Splash protection - Protective gloves

- **Type of material**
  NBR (Nitrile rubber).
- **Material thickness**
  >0,11 mm.
- **Breakthrough times of the glove material**
  >30 minutes (permeation: level 2).

- **other protection measures**
  Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended.

Respiratory protection

Respiratory protection necessary at: Dust formation/Aerosol or mist formation. Particulate filter device (EN 143). Type: A-P2 (combined filters against particles and organic gases and vapours, colour code: Blue/White).

Observe the wear time limits according GefStoffV in combination with the rules for using respiratory protection apparatus (BGR 190).

Environmental exposure controls

Keep away from drains, surface and ground water.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

**Appearance**

- Physical state: solid (solid matter)
- Colour: colourless
- Odour: like ammonia
- Odour threshold: No data available

**Other physical and chemical parameters**

- **pH (value)**: ~ 11 (50 g/l, 20 °C)
- **Melting point/freezing point**: 27 - 28 °C
- **Initial boiling point and boiling range**: 269 - 271 °C
- **Flash point**: 176 °C
- **Evaporation rate**: no data available
- **Flammability (solid, gas)**: Non-flammable

**Explosive limits**

- **lower explosion limit (LEL)**: 2,1 vol%
- **upper explosion limit (UEL)**: 10,6 vol%

**Explosion limits of dust clouds**: these information are not available

**Vapour pressure**: This information is not available.

**Density**: 1,09 g/ml

**Vapour density**: This information is not available.

**Relative density**: Information on this property is not available.
Diethanolamine ≥99 %, for synthesis

article number: HN99

**Solubility(ies)**
- Water solubility: 950 g/l at 20 °C

**Partition coefficient**
- n-octanol/water (log KOW): -1.43 (exp.) (TOXNET)

**Auto-ignition temperature**: 370 - 375 °C

**Decomposition temperature**: >270 °C

**Viscosity**: not relevant (solid matter)
- Dynamic viscosity: 352 mPa s at 30 °C

**Explosive properties**: Shall not be classified as explosive

**Oxidising properties**: none

### 9.2 Other information
- **Temperature class (EU, acc. to ATEX)**: T2 (Maximum permissible surface temperature on the equipment: 300°C)

### SECTION 10: Stability and reactivity

#### 10.1 Reactivity
Dust explosibility. If heated: Vapours can form explosive mixtures with air

#### 10.2 Chemical stability
The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

#### 10.3 Possibility of hazardous reactions
Violent reaction with: Oxidisers, Acids

#### 10.4 Conditions to avoid
Keep away from heat. Decomposition takes place from temperatures above: >270 °C.

#### 10.5 Incompatible materials
- copper, bronze, brass, zinc

#### 10.6 Hazardous decomposition products
Hazardous combustion products: see section 5.

### SECTION 11: Toxicological information

#### 11.1 Information on toxicological effects

**Acute toxicity**

<table>
<thead>
<tr>
<th>Exposure route</th>
<th>Endpoint</th>
<th>Value</th>
<th>Species</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>oral</td>
<td>LD50</td>
<td>1.100 mg/kg</td>
<td>rat</td>
<td>ECHA</td>
</tr>
</tbody>
</table>

**Skin corrosion/irritation**
Causes skin irritation.
Causes serious eye damage.
Shall not be classified as a respiratory or skin sensitiser.
Shall not be classified as germ cell mutagenic, carcinogenic nor as a reproductive toxicant
Shall not be classified as a specific target organ toxicant (single exposure).
May cause damage to organs through prolonged or repeated exposure (if swallowed).
Shall not be classified as presenting an aspiration hazard.
May cause damage to liver through prolonged or repeated exposure if swallowed.
Causes serious eye damage, risk of blindness
Irritation to respiratory tract, breathing difficulties
Causes skin irritation

**Summary of evaluation of the CMR properties**
Shall not be classified as germ cell mutagenic, carcinogenic nor as a reproductive toxicant

**Specific target organ toxicity - single exposure**
Shall not be classified as a specific target organ toxicant (single exposure).

**Specific target organ toxicity - repeated exposure**
May cause damage to organs through prolonged or repeated exposure (if swallowed).

**Aspiration hazard**
Shall not be classified as presenting an aspiration hazard.

**Symptoms related to the physical, chemical and toxicological characteristics**

- **If swallowed**
  gastrointestinal complaints, vomiting, May cause damage to liver through prolonged or repeated exposure if swallowed

- **If in eyes**
  Causes serious eye damage, risk of blindness

- **If inhaled**
  Irritation to respiratory tract, breathing difficulties

- **If on skin**
  causes skin irritation

**Other information**
None

---

**SECTION 12: Ecological information**

**12.1 Toxicity**
acc. to 1272/2008/EC: Shall not be classified as hazardous to the aquatic environment.

**Aquatic toxicity (acute)**

<table>
<thead>
<tr>
<th>Endpoint</th>
<th>Value</th>
<th>Species</th>
<th>Source</th>
<th>Exposure time</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50</td>
<td>1,400 mg/l</td>
<td>western mosquitofish (Gambusia affinis)</td>
<td></td>
<td>96 h</td>
</tr>
<tr>
<td>EC50</td>
<td>110 mg/l</td>
<td>daphnia magna</td>
<td></td>
<td>48 h</td>
</tr>
</tbody>
</table>

**12.2 Process of degradability**
The substance is readily biodegradable.
Theoretical Oxygen Demand with nitrification: 2,13 mg/mg
Theoretical Oxygen Demand: 1,522 mg/mg
Theoretical Carbon Dioxide: 1,674 mg/mg
Biochemical Oxygen Demand: 0,89 g/l at 5 h
Diethanolamine ≥99 %, for synthesis

article number: HN99

<table>
<thead>
<tr>
<th>Process</th>
<th>Degradation rate</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>biotic/abiotic</td>
<td>94 %</td>
<td>30 d</td>
</tr>
<tr>
<td>oxygen depletion</td>
<td>94 %</td>
<td>30 d</td>
</tr>
</tbody>
</table>

12.3 Bioaccumulative potential
Does not significantly accumulate in organisms.

n-octanol/water (log KOW) -1,43
BCF 2,3

12.4 Mobility in soil
Data are not available.

12.5 Results of PBT and vPvB assessment
Data are not available.

12.6 Other adverse effects
Data are not available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods
This material and its container must be disposed of as hazardous waste. Dispose of contents/container in accordance with local/regional/national/international regulations.

Sewage disposal-relevant information
Do not empty into drains.

13.2 Relevant provisions relating to waste
The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

13.3 Remarks
Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities. Please consider the relevant national or regional provisions.

SECTION 14: Transport information

14.1 UN number (not subject to transport regulations)

14.2 UN proper shipping name not relevant

14.3 Transport hazard class(es) not relevant
Class -

14.4 Packing group not relevant

14.5 Environmental hazards none (non-environmentally hazardous acc. to the dangerous goods regulations)

14.6 Special precautions for user
There is no additional information.
14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code
The cargo is not intended to be carried in bulk.

14.8 Information for each of the UN Model Regulations
- Transport of dangerous goods by road, rail and inland waterway (ADR/RID/ADN)
  Not subject to ADR, RID and ADN.
- International Maritime Dangerous Goods Code (IMDG)
  Not subject to IMDG.
- International Civil Aviation Organization (ICAO-IATA/DGR)
  Not subject to ICAO-IATA.

SECTION 15: Regulatory information

15.1 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.
- List of substances subject to authorisation (REACH, Annex XIV)
  Not listed
- 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

National inventories
Substance is listed in the following national inventories:
- EINECS/ELINCS/NLP (Europe)
- REACH (Europe)

15.2 Chemical Safety Assessment
No Chemical Safety Assessment has been carried out for this substance.
Diethanolamine  ≥99 %, for synthesis

article number: HN99

### SECTION 16: Other information

#### 16.1 Indication of changes (revised safety data sheet)

<table>
<thead>
<tr>
<th>Section</th>
<th>Former entry (text/value)</th>
<th>Actual entry (text/value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.2</td>
<td></td>
<td>Hazard statements: change in the listing (table)</td>
</tr>
<tr>
<td>8.1</td>
<td></td>
<td>• environmental values: change in the listing (table)</td>
</tr>
<tr>
<td>9.1</td>
<td>Water solubility: no data available</td>
<td>Water solubility: 950 g/l at 20 °C</td>
</tr>
<tr>
<td>9.2</td>
<td></td>
<td>Temperature class (EU, acc. to ATEX): T2 (Maximum permissible surface temperature on the equipment: 300°C)</td>
</tr>
<tr>
<td>11.1</td>
<td>• Specific target organ toxicity - repeated exposure: May cause damage to organs through prolonged or repeated exposure.</td>
<td>• Specific target organ toxicity - repeated exposure: May cause damage to organs through prolonged or repeated exposure (if swallowed).</td>
</tr>
<tr>
<td>12.6</td>
<td>Other adverse effects: Slightly hazardous to water.</td>
<td>Other adverse effects: Data are not available.</td>
</tr>
<tr>
<td>14.8</td>
<td></td>
<td>• International Civil Aviation Organization (ICAO-IATA/DGR): Not subject to ICAO-IATA.</td>
</tr>
<tr>
<td>16</td>
<td></td>
<td>Abbreviations and acronyms: change in the listing (table)</td>
</tr>
<tr>
<td>16</td>
<td></td>
<td>List of relevant phrases (code and full text as stated in chapter 2 and 3): change in the listing (table)</td>
</tr>
</tbody>
</table>

#### Abbreviations and acronyms

<table>
<thead>
<tr>
<th>Abbr.</th>
<th>Descriptions of used abbreviations</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADN</td>
<td>Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieures (European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways)</td>
</tr>
<tr>
<td>ADR</td>
<td>Accord européen relatif au transport international des marchandises dangereuses par route (European Agreement concerning the International Carriage of Dangerous Goods by Road)</td>
</tr>
<tr>
<td>BCF</td>
<td>bioconcentration factor</td>
</tr>
<tr>
<td>CAS</td>
<td>Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)</td>
</tr>
<tr>
<td>CLP</td>
<td>Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures</td>
</tr>
<tr>
<td>CMR</td>
<td>Carcinogenic, Mutagenic or toxic for Reproduction</td>
</tr>
<tr>
<td>DGR</td>
<td>Dangerous Goods Regulations (see IATA/DGR)</td>
</tr>
<tr>
<td>DMEL</td>
<td>Derived Minimal Effect Level</td>
</tr>
<tr>
<td>DNEL</td>
<td>Derived No-Effect Level</td>
</tr>
<tr>
<td>EINECS</td>
<td>European Inventory of Existing Commercial Chemical Substances</td>
</tr>
<tr>
<td>ELINCS</td>
<td>European List of Notified Chemical Substances</td>
</tr>
<tr>
<td>GHS</td>
<td>&quot;Globally Harmonized System of Classification and Labelling of Chemicals&quot; developed by the United Nations</td>
</tr>
<tr>
<td>IATA</td>
<td>International Air Transport Association</td>
</tr>
<tr>
<td>IATA/DGR</td>
<td>Dangerous Goods Regulations (DGR) for the air transport (IATA)</td>
</tr>
<tr>
<td>ICAO</td>
<td>International Civil Aviation Organization</td>
</tr>
<tr>
<td>IMDG</td>
<td>International Maritime Dangerous Goods Code</td>
</tr>
</tbody>
</table>
Diethanolamine ≥99 %, for synthesis

article number: HN99

<table>
<thead>
<tr>
<th>Abbr.</th>
<th>Descriptions of used abbreviations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Index No</td>
<td>the Index number is the identification code given to the substance in Part 3 of Annex VI to Regulation (EC) No 1272/2008</td>
</tr>
<tr>
<td>MARPOL</td>
<td>International Convention for the Prevention of Pollution from Ships (abbr. of &quot;Marine Pollutant&quot;)</td>
</tr>
<tr>
<td>NLP</td>
<td>No-Longer Polymer</td>
</tr>
<tr>
<td>PBT</td>
<td>Persistent, Bioaccumulative and Toxic</td>
</tr>
<tr>
<td>PNEC</td>
<td>Predicted No-Effect Concentration</td>
</tr>
<tr>
<td>REACH</td>
<td>Registration, Evaluation, Authorisation and Restriction of Chemicals</td>
</tr>
<tr>
<td>RID</td>
<td>Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regulations concerning the International carriage of Dangerous goods by Rail)</td>
</tr>
<tr>
<td>STEL</td>
<td>short-term exposure limit</td>
</tr>
<tr>
<td>TWA</td>
<td>time-weighted average</td>
</tr>
<tr>
<td>vPvB</td>
<td>very Persistent and very Bioaccumulative</td>
</tr>
</tbody>
</table>

Key literature references and sources for data
- Regulation (EC) No. 1272/2008 (CLP, EU GHS)

List of relevant phrases (code and full text as stated in chapter 2 and 3)

<table>
<thead>
<tr>
<th>Code</th>
<th>Text</th>
</tr>
</thead>
<tbody>
<tr>
<td>H302</td>
<td>harmful if swallowed</td>
</tr>
<tr>
<td>H315</td>
<td>causes skin irritation</td>
</tr>
<tr>
<td>H318</td>
<td>causes serious eye damage</td>
</tr>
<tr>
<td>H373</td>
<td>may cause damage to organs through prolonged or repeated exposure (if swallowed)</td>
</tr>
</tbody>
</table>

Disclaimer
The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.