

## SAFETY DATA SHEET

According to 13 December 2014, No:29204, "Ministry of Environment and Urbanization; Regulation on Safety data sheets regarding hazardous substances and mixtures".

### DIETHYLENETRIAMINE (DETA)

Version 1

Revision Date 22.11.2017

Print Date 02.03.2020

TR / EN

#### SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

##### 1.1 Product identifier

Trade name : DIETHYLENETRIAMINE (DETA)

Substance name : Diethylenetriamine

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

Use of the Substance/Mixture : Specific use(s): Various industrial applications

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

Company : Nouryon Surface Chemistry AB  
Stenunge Alle 3  
SE 444 85 Stenungsund  
Sweden

Telephone : +4630385000

Telefax : +4630384659

E-mail address : Regulatory.Affairs@nouryon.com

Contact Point : Safety data sheet preparer

Information of the certificate holder : Rauf ÖZTÜRK

Certificate number/date : TSE GBF-1814 /  
23.03.2015

##### 1.4 Emergency telephone number

Emergency telephone number : 020 99 60 00 Kemiakuten, SE +31 57 06 79 211 24 hours emergency response number

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#### SECTION 2: HAZARDS IDENTIFICATION

##### 2.1 Classification of the substance or mixture

Classification (T.R. SEA No 28848)

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Acute toxicity, 4, H302  
Acute toxicity, 2, H330  
Acute toxicity, 4, H312  
Skin corrosion, 1B, H314  
Serious eye damage, 1, H318  
Skin sensitisation, 1, H317  
Specific target organ toxicity - single exposure, 3, Respiratory system, H335

For the full text of the H-Statements mentioned in this Section, see Section 16.

## 2.2 Label elements

### Labelling (T.R. SEA No 28848)

Hazard pictograms	:	
Signal word	:	Danger
Hazard statements	:	H302 + H312 Harmful if swallowed or in contact with skin. H314 Causes severe skin burns and eye damage. H317 May cause an allergic skin reaction. H330 Fatal if inhaled. H335 May cause respiratory irritation.
Precautionary statements	:	<b>Prevention:</b> P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray. P280 Wear protective gloves/ protective clothing/ eye protection/ face protection. <b>Response:</b> P303 + P361 + P353 IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower. P304 + P340 + P310 IF INHALED: Remove victim to fresh air and keep at rest in a position 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. <b>Storage:</b> P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

### Hazardous components which must be listed on the label:

Diethylenetriamine

111-40-0

## 2.3 Other hazards

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No further data available.

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## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1 Substances

Pure substance/mixture : Substance  
CAS-No. : 111-40-0

#### Hazardous substance

Chemical name	CAS-No. EC-No. REACH No.	Classification	Concentration [%]
Diethylenetriamine	111-40-0 203-865-4 01- 2119473793- 27	Acute Tox. 4; H302 Acute Tox. 2; H330 Acute Tox. 4; H312 Skin Corr. 1B; H314 Eye Dam. 1; H318 Skin Sens. 1; H317 STOT SE 3; H335	>= 90 - <= 100

For the full text of the H-Statements mentioned in this Section, see Section 16.

## SECTION 4: FIRST AID MEASURES

### 4.1 Description of first aid measures

- General advice : Immediate medical attention is required.  
Move out of dangerous area.  
Show this safety data sheet to the doctor in attendance.  
Symptoms of poisoning may appear several hours later.
- If inhaled : If breathed in, move person into fresh air.  
Call a physician or poison control centre immediately.  
Remove to fresh air.  
Keep patient warm and at rest.  
If unconscious, place in recovery position and seek medical advice.  
Keep respiratory tract clear.
- In case of skin contact : Take off contaminated clothing and shoes immediately.  
Rinse immediately with plenty of water.  
Immediate medical treatment is necessary as untreated wounds from corrosion of the skin heal slowly and with difficulty.  
If skin irritation persists, call a physician.
- In case of eye contact : Rinse with plenty of water.  
Get medical attention immediately. Continue to rinse during transport.  
Remove contact lenses.  
Protect unharmed eye.  
Keep eye wide open while rinsing.  
Small amounts splashed into eyes can cause irreversible tissue damage and blindness.
- If swallowed : Clean mouth with water and drink afterwards plenty of water.  
Never give anything by mouth to an unconscious person.

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Take victim immediately to hospital.  
Do not induce vomiting! May cause chemical burns in mouth and throat.

## 4.2 Most important symptoms and effects, both acute and delayed

- Symptoms : The symptoms and effects are as expected from the hazards as shown in section 2. No specific product related symptoms are known.
- Risks : Harmful if swallowed or in contact with skin.  
May cause an allergic skin reaction.  
Causes serious eye damage.  
Fatal if inhaled.  
May cause respiratory irritation.  
Causes severe burns.

## 4.3 Indication of any immediate medical attention and special treatment needed

- Treatment : Treat symptomatically.

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## SECTION 5: FIREFIGHTING MEASURES

### 5.1 Extinguishing media

- Suitable extinguishing media : Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

### 5.2 Special hazards arising from the substance or mixture

- Specific hazards during firefighting / Specific hazards arising from the chemical : Do not allow run-off from fire fighting to enter drains or water courses.
- Combustion products : Carbon oxides  
Nitrogen oxides (NO<sub>x</sub>)

### 5.3 Advice for firefighters

- Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.
- 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.

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## SECTION 6: ACCIDENTAL RELEASE MEASURES

### 6.1 Personal precautions, protective equipment and emergency procedures

- Personal precautions : Use personal protective equipment.  
Wear respiratory protection.  
Ensure adequate ventilation.
- Emergency measures on accidental release : Evacuate personnel to safe areas.  
Only qualified personnel equipped with suitable protective equipment may intervene.  
Prevent unauthorised persons entering the zone.

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## 6.2 Environmental precautions

Environmental precautions : Do not flush into surface water or sanitary sewer system. If the product contaminates rivers and lakes or drains inform respective authorities.

## 6.3 Methods and materials for containment and cleaning up

Methods for cleaning up /  
Methods for containment : Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

## 6.4 Reference to other sections

For disposal considerations see section 13.

For personal protection see section 8.

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## SECTION 7: HANDLING AND STORAGE

### 7.1 Precautions for safe handling

Advice on safe handling : Persons with a history of skin sensitisation problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.

: For personal protection see section 8.  
Avoid formation of aerosol.  
Do not breathe vapours or spray mist.  
Avoid contact with skin, eyes and clothing.  
Smoking, eating and drinking should be prohibited in the application area.  
Provide sufficient air exchange and/or exhaust in work rooms.  
Dispose of rinse water in accordance with local and national regulations.

Advice on protection against  
fire and explosion : Avoid formation of aerosol.

### 7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage  
areas and containers : Prevent unauthorized access.  
Keep in a well-ventilated place.  
Reacts with copper, aluminium, zinc and their alloys.

Other data : No decomposition if stored and applied as directed.

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## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1 Control parameters

#### Components with workplace control parameters

Contains no substances with occupational exposure limit values.

### 8.2 Exposure controls

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## Engineering controls

Effective exhaust ventilation system

Ensure that eyewash stations and safety showers are close to the workstation location.

## Personal protective equipment

- Respiratory protection : In the case of vapour or aerosol formation use a respirator with an approved filter.  
Wear full face mask supplied with:  
Gas cartridge K (ammonia, green).
- Hand protection : butyl-rubber
- Eye protection : Safety glasses with side-shields conforming to EN166
- Skin and body protection : Protective suit
- Hygiene measures : Avoid contact with skin, eyes and clothing.  
When using do not eat or drink.  
When using do not smoke.  
Wash hands before breaks and immediately after handling the product.  
Wash contaminated clothing before re-use.

## Environmental exposure controls

- General advice : Do not flush into surface water or sanitary sewer system.  
If the product contaminates rivers and lakes or drains inform respective authorities.

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## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

#### Appearance

- Form : viscous liquid
- Colour : colourless
- Odour : ammoniacal
- Odour Threshold : No data available

#### Safety data

- pH : 12  
at 20 °C
- Melting point/range : -39 °C  
at 1 013 hPa
- Boiling point/boiling range : 207 °C  
at 1 013 hPa
- Flash point : 96,7 °C  
at 1 013 hPa  
Method: Pensky-Martens closed cup
- Evaporation rate : No data available

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Flammability (solid, gas)	: Not applicable
Flammability (liquids)	: Not classified as a flammability hazard
Lower explosion limit	: 1 %(V)
Upper explosion limit	: 10 %(V)
Vapour pressure	: 0,2 hPa at 20 °C
Relative vapour density	: 3,6
Density	: 957 kg/m <sup>3</sup> at 20 °C
Relative density	: 0,959 at 20 °C
Water solubility	: soluble
Solubility in other solvents	: Soluble in alcohols and hydrocarbons.
Partition coefficient: n-octanol/water	: log Pow: -1,58 at 20 °C
Auto-ignition temperature	: 358 °C at 1 013 hPa
Decomposition temperature	: No data available
Viscosity, dynamic	: 5,05 mPa.s at 20 °C
Viscosity, kinematic	: No data available
Explosive properties	: Not explosive
Oxidizing properties	: The substance or mixture is not classified as oxidizing.

## 9.2 Other information

This safety datasheet only contains information relating to safety and does not replace any product information or product specification.

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## SECTION 10: STABILITY AND REACTIVITY

### 10.1 Reactivity

Stable under normal conditions.

### 10.2 Chemical stability

Stable under recommended storage conditions.

### 10.3 Possibility of hazardous reactions

Heating can release hazardous gases.

### 10.4 Conditions to avoid

Conditions to avoid : Extremes of temperature and direct sunlight.

### 10.5 Incompatible materials

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Materials to avoid : Reacts with copper, aluminium, zinc and their alloys.  
Strong acids and oxidizing agents  
Halogenated compounds

## 10.6 Hazardous decomposition products

Hazardous decomposition products : Nitrogen oxides (NO<sub>x</sub>)

Thermal decomposition : No data available

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## SECTION 11: TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

#### Product information:

Acute toxicity : Harmful if swallowed or in contact with skin.  
Fatal if inhaled.

Skin corrosion/irritation : Causes severe burns.

Serious eye damage/eye irritation : Causes serious eye damage.

Respiratory or skin sensitisation : Respiratory sensitisation: Not classified based on available information.  
Skin sensitisation: May cause an allergic skin reaction.

Germ cell mutagenicity : Not classified based on available information.

Carcinogenicity : Not classified based on available information.

Reproductive toxicity : Not classified based on available information.

STOT - single exposure : May cause respiratory irritation.

STOT - repeated exposure : Not classified based on available information.

Aspiration hazard : Not classified based on available information.

Further information : No further data available.

#### Toxicology data for the components:

##### Diethylenetriamine

#### Acute toxicity:

Acute oral toxicity : LD50: > 300 - 2 000 mg/kg  
Species: Rat

Acute inhalation toxicity : LC50 (Rat): > 0,07 - 0,3 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
dust/mist

Acute dermal toxicity : LD50: > 1 000 - 2 000 mg/kg  
Species: Rabbit

Skin corrosion/irritation : Result: Causes burns.

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Serious eye damage/eye irritation	: Result: Risk of serious damage to eyes.
Respiratory or skin sensitisation	: Result: The product is a skin sensitiser, sub-category 1B. Method: OECD Test Guideline 429
Germ cell mutagenicity	
Genotoxicity in vitro	: Ames test Result: negative
Genotoxicity in vivo	: Result: No evidence of genotoxic effects in vivo.
STOT - single exposure	: Exposure routes: Inhalation Target Organs: Respiratory system May cause respiratory irritation.

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## SECTION 12: ECOLOGICAL INFORMATION

### Product information:

#### Ecotoxicology Assessment

Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.  
Harmful to aquatic life.

### 12.1 Toxicity

#### Components:

##### Test result

#### Diethylenetriamine

Toxicity to fish	: LC50: > 100 mg/l Exposure time: 96 h Species: Poecilia reticulata (guppy)
Toxicity to daphnia and other aquatic invertebrates	: EC50: > 10 - 100 mg/l Exposure time: 48 h Species: Daphnia magna (Water flea)
Toxicity to algae	: EC50: > 100 mg/l Exposure time: 72 h Species: Pseudokirchneriella subcapitata (green algae)

### 12.2 Persistence and degradability

#### Product information:

Biodegradability : Result: Readily biodegradable.

#### Components:

##### Diethylenetriamine

Biodegradability : Result: Readily biodegradable.

### 12.3 Bioaccumulative potential

#### Product information:

Bioaccumulation : Bioaccumulation is unlikely.

#### Components:

##### Diethylenetriamine

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Bioaccumulation : Not expected considering the low log Pow value.

## 12.4 Mobility in soil

### Product information:

Mobility : Due to its physical and chemical properties, transport between environmental compartments is not expected

### Components:

#### Diethylenetriamine

Mobility : The product is miscible in water and readily biodegradable in both water and soil. Accumulation is not expected.

## 12.5 Results of PBT and vPvB assessment

### Product information:

PBT and vPvB assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

### Components:

#### Diethylenetriamine

PBT and vPvB assessment : This substance is not considered to be a PBT (Persistent, Bioaccumulation, Toxic)  
This substance is not considered to be vPvB (very Persistent nor very Bioaccumulating)

## 12.6 Other adverse effects

### Product information:

Biochemical Oxygen Demand (BOD) : No data available

### Components:

#### Diethylenetriamine

Biochemical Oxygen Demand (BOD) : No data available

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## SECTION 13: DISPOSAL CONSIDERATIONS

### 13.1 Waste treatment methods

Product : The product should not be allowed to enter drains, water courses or the soil.  
Do not contaminate ponds, waterways or ditches with chemical or used container.  
Hazardous waste  
Dispose of contents/container in accordance with local regulation.

Contaminated packaging : Empty remaining contents.  
Dispose of as unused product.

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## SECTION 14: TRANSPORT INFORMATION

### 14.1 UN number

ADR : UN 2079

RID : UN 2079

IMDG-Code : UN 2079

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**IATA-DGR** : UN 2079

## 14.2 Proper shipping name

**ADR** : DIETHYLENETRIAMINE

**RID** : DIETHYLENETRIAMINE

**IMDG-Code** : DIETHYLENETRIAMINE

**IATA-DGR** : Diethylenetriamine

## 14.3 Transport hazard class

**ADR** : 8

**RID** : 8

**IMDG-Code** : 8

**IATA-DGR** : 8

## 14.4 Packing group

### **ADR**

Packing group : II

Classification Code : C7

Hazard Identification Number : 80

Labels : 8

Tunnel restriction code : (E)

### **RID**

Packing group : II

Classification Code : C7

Hazard Identification Number : 80

Labels : 8

### **IMDG-Code**

Packing group : II

Labels : 8

EmS Code : F-A, S-B

### **IATA-DGR**

Packing instruction (cargo aircraft) : 855

Packing instruction (passenger aircraft) : 851

Packing instruction (LQ) : Y840

Packing group : II

Labels : 8

## 14.5 Environmental hazards

### **ADR**

Environmentally hazardous : no

### **RID**

Environmentally hazardous : no

### **IMDG-Code**

Marine pollutant : no

### **IATA-DGR**

Environmentally hazardous : no

## 14.6 Special precautions for user

Not applicable

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

Not applicable for product as supplied.

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## SECTION 15: REGULATORY INFORMATION

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

#### Notification status

DSL	: YES. All components of this product are on the Canadian DSL
AICS	: YES. On the inventory, or in compliance with the inventory
NZIoC	: YES. On the inventory, or in compliance with the inventory
ENCS	: YES. On the inventory, or in compliance with the inventory
ISHL	: YES. On the inventory, or in compliance with the inventory
KECI	: YES. On the inventory, or in compliance with the inventory
PICCS	: YES. On the inventory, or in compliance with the inventory
IECSC	: YES. On the inventory, or in compliance with the inventory
TCSI	: YES. On the inventory, or in compliance with the inventory
TSCA	: YES. All chemical substances in this product are either listed on the TSCA Inventory or in compliance with a TSCA Inventory exemption.

For explanation of abbreviation see section 16.

#### Further information

According to 13 December 2014, No:29204, "Ministry of Environment and Urbanization; Regulation on Safety data sheets regarding hazardous substances and mixtures".  
Regulation on Classification, Labelling and Packaging of Substances and Mixtures. Dated 11 December 2013, Numbered 28848 (Bis) Ministry of Environment and Forestry.

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## SECTION 16: OTHER INFORMATION

#### Full text of H-Statements referred to under sections 2 and 3.

H302	: Harmful if swallowed.
H312	: Harmful in contact with skin.
H314	: Causes severe skin burns and eye damage.
H317	: May cause an allergic skin reaction.
H318	: Causes serious eye damage.
H330	: Fatal if inhaled.
H335	: May cause respiratory irritation.

#### Full text of other abbreviations

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road; AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of

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Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

## Contact Point

: Safety data sheet preparer  
Information of the certificate holder : Rauf ÖZTÜRK  
Certificate number/date : TSE GBF-1814 /  
23.03.2015

## Further information

This safety data sheet was prepared by an accredited expert within the scope of the Regulation on the safety data sheets of the hazardous substances and mixtures (TR 29204 / 13.12.2014)

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.