



SAFETY DATA SHEET
According to Regulation (EC) No. 1907/2006

DIETHYLENETRIAMINE DETA

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

Product label name Diethylenetriamine	
Supplier DELAMINE B.V. Barchman Wuytierslaan 10 3818 LH Amersfoort PO Box 473 3800 AL Amersfoort The Netherlands Tel.: +31-334676897	
E-mail address of person responsible for safety data sheet SDS.Delamine@delamine.com	
Emergency telephone T +31570679211 F +31570679801 AkzoNobel Chemicals-Deventer-NL	
Intended use Chemical intermediate	
Date of last issue / Revision number 2008/10/30 / 3.10	

2. HAZARDS IDENTIFICATION

Harmful in contact with skin and if swallowed. May be very toxic by inhalation of aerosols. Causes burns. May cause sensitization by skin contact.

3. COMPOSITION/INFORMATION ON INGREDIENTS

This product is to be considered as a substance in conformance to EC directives.			
Information on hazardous ingredients			
Chemical description Diethylenetriamine			
Composition / information on ingredients			
Number	% w/w	CAS-number	Chemical name
1	approx. 100	000111-40-0	Diethylenetriamine

	Index-No.	EC-number	Symbol(s) (EU classification)	Risk-phrase(s)
1	612-058-00-X	203-865-4	C	R21/22 R34 R43

4. FIRST AID MEASURES

Symptoms and effects Corrosive to eyes, skin and upper respiratory tract. May be very toxic by inhalation of aerosols (Do not delay treatment of exposed individuals, death may result).
First aid
General In all cases of doubt, or when symptoms persist, seek medical attention.



SAFETY DATA SHEET
According to Regulation (EC) No. 1907/2006

DIETHYLENETRIAMINE DETA

Inhalation

Provide fresh air, rest, half upright position. Seek medical advice after significant exposure.

Skin

Remove immediately all contaminated clothing. Wash off with soap and water. Seek medical advice if irritation develops. Launder contaminated clothes with plenty of water before reuse. Destroy contaminated shoes if made of leather.

Eye

Rinse immediately and as long as possible with plenty of water (at least 15 minutes). Eyelids should be held away from the eyeball to ensure thorough rinsing. DO NOT remove contact lenses.

Ingestion

Only when conscious, rinse mouth, give plenty of water to drink. DO NOT induce vomiting. Seek medical advice.

Advice to physician

No specific antidote known. Symptomatic treatment is advised. If burn is present treat as any thermal burn after decontamination. If necessary evacuation of the stomach contents should be undertaken by means carrying the least likelihood of aspiration (e.g. gastric lavage in combination with endotracheal intubation).

5. FIRE-FIGHTING MEASURES

Extinguishing media

water, spray, foam, sand, Carbon dioxide, dry powder.

Unsuitable extinguishing media

halones

Hazardous decomposition / combustion products

Nitrous gases may be produced.

Protective equipment

Wear self contained breathing apparatus. Wear a standard aluminised firefighting suit.

Other information

Cool closed containers with water. Do not direct a solid stream of water or foam into the burning material; this may cause spattering and spread the fire. Water used to extinguish a fire should not be allowed to enter the drainage system or water courses.

Fire and explosion hazard

Toxic fumes

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

For personal protection see Section 8.

Environmental precautions

Treat using the best available techniques before discharge into drains or the aquatic environment.

Methods for cleaning up

Absorb with sand, sweep up and put into a container for disposal. Flush remainder with water.

7. HANDLING AND STORAGE

Handling

Persons with a history of sensitization of the skin or the respiratory tract should not be employed in any process in which this product is used. Transfer and handle product only in closed system. When using do not eat, drink or smoke. Avoid contact with skin and eyes. Use only in well-ventilated areas. When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

Fire and explosion prevention

Keep away from sources of ignition - No smoking.

Storage requirements

Store in a dry well ventilated place away from sources of heat and direct sunlight. Store in closed containers preferably under nitrogen. Recommendations storage temperature: $\leq 40^{\circ}\text{C}$. Avoid contact with atmospheric moisture.

DIETHYLENETRIAMINE DETA

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls	
Take precautionary measures against static discharges. Use only in closed system. Do not use copper, nickel and cobalt containing alloys in process equipment. Ensure good ventilation and local exhaustion of the working area.	
Personal protection	
Respiratory	When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. Use self-contained or supplied-air respiratory equipment with filter K. When aerosols are present the combined cartridge K/P should be used.
Hand	Protective neoprene gloves
Eye	Wear tightly fitting safety goggles.
Skin and body	Protective neoprene boots and protective clothing.
Other information	Laundry contaminated clothes with plenty of water before reuse. Contaminated leather items (shoes, belts, watch bands etc.) should be removed and destroyed.

Diethylenetriamine		
skin (private grenswaarde)		Can be absorbed through skin.
Time Weighted Average (TWA) (private grenswaarde)	4 mg/m ³	

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	liquid
Colour	colourless
Odour	ammonia like
Boiling point/range	207 °C
Melting point/range	-39 °C
Flash point	98 °C (Pensky-Martens, closed cup)
Flammability	not determined
Explosive properties	not determined
Oxidising properties	not applicable
Vapour pressure	0.03 kPa (20 °C)
Density	950 kg/m ³ (20 °C)

SAFETY DATA SHEET
According to Regulation (EC) No. 1907/2006

DIETHYLENETRIAMINE DETA

Bulk density not applicable
Solubility in water Completely miscible
Solubility in other solvents not available
pH value 12 (100 g/l water, 20 °C)
Partition coefficient n-octanol/water Log Pow: < 0
Relative vapour density (air=1) 3
Viscosity 7 mPa.s (20 °C)
Autoignition temperature 395 °C
Explosion limits not determined

10. STABILITY AND REACTIVITY

Conditions to avoid Formation of an aerosol.
Stability Stable under recommended storage and handling conditions (see section 7).
Incompatibles acids, chlorinated hydrocarbons, oxidising agents, copper and copper alloys, nickel, cobalt.
Hazardous decomposition products Nitrous gases may be produced.
Other information none

11. TOXICOLOGICAL INFORMATION

Acute toxicity
Diethylenetriamine.
Acute toxicity
Oral LD50 rat: 819-2600 mg/kg
Dermal LD50 rabbit: 670-1240 mg/kg.
Inhalation LC50 May be very toxic by inhalation of aerosols.
Irritation
Skin Corrosive.
Eye Corrosive.
Respiratory Highly irritating.

SAFETY DATA SHEET
According to Regulation (EC) No. 1907/2006

DIETHYLENETRIAMINE DETA

Genotoxicity

Not mutagenic.
not clastogenic.

Other toxicological information

- subchronic (90 days) oral toxicity, rat: No Observed Effect Level 70-80 mg/kg/day
- not carcinogenic
- Reproduction toxicity screening test (OECD 421) rat: No Observed Effect Level 30 mg/kg/day.
- Not teratogenic

12. ECOLOGICAL INFORMATION

Diethylenetriamine

Ecotoxicity

fish

Acute toxicity, 96h-LC50 :430 mg/l (Poecilia reticulata).

daphnia

Acute toxicity, 48h-EC50: 65 mg/l (Daphnia magna).

algae

Acute toxicity, 72h-IC50: 187 mg/l (Selenastrum capricornutum).

bacteria

Acute toxicity, EC 50: 1.7 mg/l (Pseudomonas putida).

Acute toxicity, EC 50 : 33 mg/l
(Nitrifying bacteria).

Fate

Degradation Abiotic

Inherently biodegradable (SCAS test).

Other information

- Activated sludge respiration inhibition test EC50: 2000 mg/l.
- Chronic toxicity (28days) No Observed Effect Level >10 mg/l (Gasterostues aculeatus).
- Chronic toxicity (21 days): No Observed Effect Level 5.6 mg/l (Daphnia magna).

13. DISPOSAL CONSIDERATIONS

Product

Incineration is recommended.

Contaminated packaging

Containers which cannot be cleaned should be disposed of in the same manner as the substance.

Other information

For further advice contact manufacturer.

14. TRANSPORT INFORMATION

Land transport

Class

8

Classification Code

C7

RID class

8

Packing group

II

Hazard Identification No.

80



SAFETY DATA SHEET
According to Regulation (EC) No. 1907/2006

DIETHYLENETRIAMINE DETA

Substance Identification No. 2079
TREM-Card or ERG number CEFIC TEC(R)- 80GC7-II+III
UN number 2079
Proper Shipping Name DIETHYLENETRIAMINE
Other information Transport label(s): 8

<i>Sea transport (IMO / IMDG-code)</i>
Class 8
Packing group II
UN number 2079
EMS F-A, S-B
Marine pollutant no
Proper Shipping Name Diethylenetriamine
Other information Transport label(s): 8

<i>Air transport (ICAO-TI / IATA-DGR)</i>
UN number 2079
Class 8
Packing group II
Proper Shipping Name Diethylenetriamine
Other information none

15. REGULATORY INFORMATION

Product label name Diethylenetriamine
Labelling according to EC directives
EC-number 203-865-4

SAFETY DATA SHEET
According to Regulation (EC) No. 1907/2006

DIETHYLENETRIAMINE DETA

Classification based on
Annex-VI

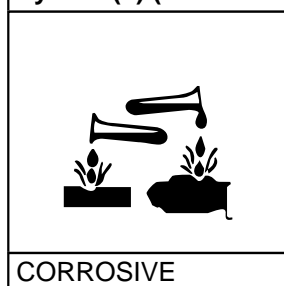
R(isk) phrase(s) (EU classification)

Code	Description
R21/22	Harmful in contact with skin and if swallowed
R34	Causes burns
R43	May cause sensitization by skin contact

S(afety) phrase(s) (EU classification)

Code	Description
S26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice
S36/37/39	Wear suitable protective clothing, gloves and eye/face protection
S45.	In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

Symbol(s) (EU classification)



Other information

TSCA Inventory (USA): yes.
DSL (Canada): yes.

German Water Hazard Class (WGK)

2

16. OTHER INFORMATION

R-phrase information

Chemical name	R(isk) phrase(s) (EU classification)	
Diethylenetriamine	R21/22 R34 R43	Harmful in contact with skin and if swallowed Causes burns May cause sensitization by skin contact

History



SAFETY DATA SHEET
According to Regulation (EC) No. 1907/2006

DIETHYLENETRIAMINE DETA

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2009/07/10

Revision
3.10

Composed by
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J. Bos

Changes were made in section
composers

This information only concerns the above mentioned product and does not need to be valid if used with other product(s) or in any process. The information is to our best present knowledge correct and complete and is given in good faith but without warranty. It remains the user's own responsibility to make sure that the information is appropriate and complete for his special use of this product.