



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

## ETHANOLAMINE, SOLUTION

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

<b>Product label name</b> Ethanolamine / triethylenediamine, mixture	
<b>Supplier</b> DELAMINE B.V. Barchman Wuytierslaan 10 3818 LH Amersfoort PO Box 473 3800 AL Amersfoort The Netherlands Tel.: +31-334676897	
<b>E-mail address of person responsible for safety data sheet</b> SDS.Delamine@delamine.com	
<b>Emergency telephone</b> AkzoNobel Chemicals-Deventer-NLT +31 570 679211 F +31 570 679801	
<b>Intended use</b> Chemical intermediate	
<b>Date of last issue / Revision number</b> 2010/04/13 / 3.03	

### 2. HAZARDS IDENTIFICATION

Causes burns. Harmful by inhalation, in contact with skin and if swallowed. May cause sensitization by skin contact.
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### 3. COMPOSITION/INFORMATION ON INGREDIENTS

This product is to be considered as a preparation in conformance to EC directives			
Information on hazardous ingredients			
<b>Chemical description</b> Ethanolamine / triethylenediamine, mixture			
<b>Composition / information on ingredients</b>			
<b>Number</b>	<b>% w/w</b>	<b>CAS-number</b>	<b>Chemical name</b>
1	> 60	000141-43-5	Ethanolamine
2	10 - 30	000280-57-9	1,4-diazabicyclooctane

	Index-No.	EC-number	Symbol(s) (EU classification)	Risk-phrase(s)
1	603-030-00-8	205-483-3	C	R20/21/22 R34
2		205-999-9	Xn	R22 R36/37/38 R43

### 4. FIRST AID MEASURES

<b>Symptoms and effects</b> Causes burns.
<b>First aid</b>
<b>General</b> In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).



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**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). 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, 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.

### **7. HANDLING AND STORAGE**

**Handling**

Persons with a history of skin sensitization problems should not be employed in any process in which this preparation is used. 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. Avoid contact with atmospheric moisture.



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### 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. or. respirator 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.

Ethanolamine		
Skin designation		Potential for cutaneous absorption
Short Term Exposure Limit (STEL)	3 ppm	
Short Term Exposure Limit (STEL)	7.6 mg/m <sup>3</sup>	
Time Weighted Average (TWA)	1 ppm	
Time Weighted Average (TWA)	2.5 mg/m <sup>3</sup>	

### 9. PHYSICAL AND CHEMICAL PROPERTIES

**Appearance**

liquid

**Colour**

yellowish

**Odour**

ammonia like

**Boiling point/range**

not determined ( approx. 170 °C )

**Melting point/range**

not determined ( approx. 10 °C )

**Flash point**

not determined ( approx. 95 °C )

**Flammability**

not determined

**Explosive properties**

not determined

**Oxidising properties**

not applicable

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<b>Vapour pressure</b> not determined ( > 0.04 kPa, 20 °C )
<b>Density</b> not determined ( approx. 1000 kg/m <sup>3</sup> , 20 °C )
<b>Bulk density</b> not applicable
<b>Solubility in water</b> Soluble
<b>Solubility in other solvents</b> not determined
<b>pH value</b> not determined ( approx. 12; 100 g/l water, 20 °C )
<b>Partition coefficient n-octanol/water</b> not determined ( < 0 )
<b>Relative vapour density (air=1)</b> not determined
<b>Viscosity</b> not determined
<b>Autoignition temperature</b> not determined ( > 330 °C )
<b>Explosion limits</b> not determined

### 10. STABILITY AND REACTIVITY

<b>Conditions to avoid</b> Formation of an aerosol.
<b>Stability</b> Stable under recommended storage and handling conditions (see section 7).
<b>Incompatibles</b> acids, chlorinated hydrocarbons, oxidising agents, copper and copper alloys, nickel, cobalt.
<b>Hazardous decomposition products</b> Nitrous gases may be produced.

### 11. TOXICOLOGICAL INFORMATION

No experimental toxicological data on the preparation as such available. The following data are applicable to the ingredient(s) listed below:	
<b>Ethanolamine</b>	
<b>Acute toxicity</b>	
<b>Oral LD50</b> rat: 1720-3320 mg/kg	
<b>Dermal LD50</b> rabbit: 1025 mg/kg	
<b>Irritation</b>	
<b>Skin</b> Severely irritating	
<b>Eye</b> Severely irritating	

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<b>Respiratory</b>
Moderately irritating
<b>Genotoxicity</b>
Not mutagenic
<b>1,4-diazabicyclooctane</b>
<b>Acute toxicity</b>
<b>Oral LD50</b>
rat : 1870 mg/kg
<b>Dermal LD50</b>
rabbit : > 3000 mg/kg
<b>Inhalation LC50</b>
(rat): > 20 mg/kg /60 minutes (Lit.)
<b>Irritation</b>
<b>Skin</b>
Mildly irritating
<b>Eye</b>
Mildly irritating
<b>Respiratory</b>
rat: > 20 mg/kg /60 minutes (Lit.)
<b>Sensitization</b>
Sensitizing
<b>Genotoxicity</b>
Not mutagenic

### 12. ECOLOGICAL INFORMATION

No experimental ecological data are available on the preparation as such. The following data are applicable to the ingredient(s) listed below:	
<b>Ethanolamine</b>	
<b>Ecotoxicity</b>	
<b>fish</b>	Acute toxicity, 96h-LC50: 75-375 mg/l
<b>daphnia</b>	Acute toxicity, 24h-EC50: 100-140 mg/l
<b>Fate</b>	
<b>Degradation Biotic</b>	Readily biodegradable
<b>1,4-diazabicyclooctane</b>	
<b>Ecotoxicity</b>	
<b>fish</b>	Acute toxicity, 96h-LC50: 1730 mg/l
<b>daphnia</b>	48h-EC50 (Daphnia magna): 92 mg/l (Lit.)
<b>algae</b>	72h-IC50: 110 mg/l (Lit.)
<b>Fate</b>	
<b>Degradation Biotic</b>	Not readily biodegradable, (7% in 28 days) (Lit.)

### 13. DISPOSAL CONSIDERATIONS



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<b>Product</b> Incineration is recommended.
<b>Contaminated packaging</b> Containers which cannot be cleaned should be disposed of in the same manner as the substance.
<b>Other information</b> For further advice contact manufacturer.

### 14. TRANSPORT INFORMATION

<i>Land transport</i>
<b>Class</b> 8
<b>Classification Code</b> C7
<b>RID class</b> 8
<b>Packing group</b> III
<b>Hazard Identification No.</b> 80
<b>Substance Identification No.</b> 2491
<b>UN number</b> 2491
<b>Proper Shipping Name</b> ETHANOLAMINE SOLUTION
<b>Other information</b> Transport label(s): 8 ADR Tunnel code: E

<i>Sea transport (IMO / IMDG-code)</i>
<b>Class</b> 8
<b>Packing group</b> III
<b>UN number</b> 2491
<b>EMS</b> F-A, S-B
<b>Marine pollutant</b> no
<b>Proper Shipping Name</b> ETHANOLAMINE SOLUTION
<b>Other information</b> Transport label(s): 8

<i>Air transport (ICAO-TI / IATA-DGR)</i>
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<b>UN number</b> 2491
<b>Class</b> 8
<b>Packing group</b> III
<b>Proper Shipping Name</b> ETHANOLAMINE SOLUTION
<b>Other information</b> Transport label(s): 8

### 15. REGULATORY INFORMATION

<b>Product label name</b> Ethanolamine / triethylenediamine, mixture
<b>Labelling according to EC directives</b>
<b>EC-number</b> not applicable
<b>Classification based on</b> Calculation

<b>R(isk) phrase(s) (EU classification)</b>	
<b>Code</b>	<b>Description</b>
R20/21/22.	Harmful by inhalation, in contact with skin and if swallowed.
R34.	Causes burns.
R43.	May cause sensitization by skin contact.

<b>S(afety) phrase(s) (EU classification)</b>	
<b>Code</b>	<b>Description</b>
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).

<b>Symbol(s) (EU classification)</b>	
	
	CORROSIVE



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### Other information

German Water Hazard Class (WGK): 1 (Germany)

TSCA Inventory (USA): yes

DSL (Canada): yes

### 16. OTHER INFORMATION

#### R-pharse information

Chemical name	R(isk) phrase(s) (EU classification)	
Ethanolamine	R20/21/22 R34	Harmful by inhalation, in contact with skin and if swallowed Causes burns
1,4-diazabicyclooctane	R22 R36/37/38 R43	Harmful if swallowed Irritating to eyes, respiratory system and skin May cause sensitization by skin contact

#### History

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##### Revision

3.03

##### Composed by

M. Gyimesi

J. Bos

##### Changes were made in section

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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.