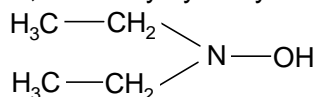
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## 1. IDENTIFICATION OF SUBSTANCE / PREPARATION AND IDENTIFICATION OF THE COMPANY

### 1.1. Identification of substance or preparation:

Commercial name: DEHA 85  
 Chemical name: N, N-Diethylhydroxylamine 85, (water content 15% max.)



### 1.2. Application of substance / preparation:

- Antioxidant and polymerization stopper in the production of butadiene-styrene and acrylonitrile caoutchouc.
- Agent preventing overgrowing of columns by polymers in distillation systems of monomers (styrene, butadiene).
- Active protective preparation preventing formation of corrosion and boiler scale setting in heating systems.
- Oxygen reducer in the professional power sector.
- Developer in colour and X-ray photography.

### 1.3. Identification of company:

Manufacturer: DJCHEM CHEMICALS POLAND S.A.  
 Surname: Bogdan Domagała  
 Address: 05-200 Wołomin, ul. Łukasiewicza 11A Poland  
 Phone/fax.: +48 (022) 787 63 46; +48 (022) 787 63 44  
 Email: [djchem@djchem.com.pl](mailto:djchem@djchem.com.pl)

1.4. Alarm phone: +48 (022) 787 63 46  
 +48 602 388 995

1.5. Registration deadline: 06-2013

1.6. Registration number: -


## 2. IDENTIFICATION OF HAZARDS

### Classification of substance:

- Flammable product (R10).
- Has harmful effect through the respiratory tract and by skin contact (R20/21).
- Has an irritating effect on eyes and skin (R36/38).

### Most important effects of action on man and environment:

Through the respiratory tract: .... Irritation of the respiratory system, cough, shortness of breath.  
 Through the alimentary tract: ... Harmful after consuming.  
 Skin contact: ..... Skin chafes.  
 Eye contact: ..... Irritation of eyes, conjunctivitis.  
 Action on the environment: ..... Do not permit to penetrate to the environment.

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### 3. COMPOSITION / INFORMATION ON COMPONENTS

#### 3.1. Dangerous components along with their classification:

	N, N-Diethylhydroxylamine	Diethylamine
Classification	Harmful	Highly flammable, caustic
Symbols	Xn	F, C
R phrases *)	10-20/21-36/38	11-20/21/22-35
S Phrases	36/37	(1/2)-3-16-26-29-36/37/39-45
Concentration,% by weight	85 ÷ 87	<0.2<0
EC No.	223-055-4	203-716-3
CAS no.	3710-84-7	109-89-7
Index no.	-	612-003-00-X
Name consistent with UIPAC	N, N-Diethylhydroxylamine	Diethylamine
Name and registration number	-	-

\*) Full wording of R Phrases is specified in item 16 of the Material Safety Data Sheet.

### 4. FIRST AID

#### 4.1. General notes:

General means of caution should be adhered to as when handling chemicals. Immediately remove contaminated clothing. Take the injured out from the place of exposure. Ensure calmness and heat.

#### 4.2. In contact through the respiratory tract:

Take the sufferer outdoor, ensure calmness, protect against loss of heat. When necessary, administer oxygen or use artificial respiration. When necessary, call for a doctor.

#### 4.3. In contact with skin:

Immediately rinse contaminated skin with plenty of water or water with soap. In the case of irritation, consult a doctor.

#### 4.4. In eye contact:

Immediately rinse with plenty of water for at least 15 minutes with eyelids open widely. Remove contact lenses. When necessary, call for a doctor-ophthalmologist.

#### 4.5. In case of consumption:


Give plenty of water to drink. Induce vomiting. Immediately call a doctor.

#### 4.6. Possible symptoms and effects:

Irritation of eyes, respiratory system and skin.

#### 4.7. Available means in the work environment:

Eyewash apparatus.  
Use suitable protective clothing and suitable protective gloves.

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## 5. PROCEDURES IN CASE OF FIRE

### 5.1. Suitable extinguishing agents:

Sprayed water, carbon dioxide, foam, fire extinguishing powders (ABC, BC).

### 5.2. Extinguishing agents that may not be used for safety reasons:

Dense water stream.

### 5.3. Specific hazards:

Combustible substance. Hazardous and toxic products (carbon oxides, nitrogen oxides) may be generated as a result of burning.

### 5.4. Special protective equipment for fire-fighters:

Protective clothing resistant to chemicals. Personal respiratory apparatus.

### 5.5. Additional information:

Tanks exposed to fire or high temperatures to be cooled down with water, whenever possible, removed from the endangered area. Do not allow penetration of extinguishing agents to the drains, ground and surface water.

## 6. PROCEDURES IN CASE OF UNINTENDED RELEASE TO THE ENVIRONMENT

### 6.1. Personal precautions:

Remove all ignition sources. Ensure proper ventilation. Use means preventing electrostatic discharges. Use appropriate personal protection equipment (protective clothing, protective gloves). Avoid contact with skin and eyes. Do not breathe fumes. When necessary, use breathing apparatus. Evacuate excess personnel.

### 6.2. Safety precautions with regard to environmental protection:

Isolate contaminated area from the environment. Cut off the source of environmental contamination. Do not permit penetration to the drains, ground and surface water and soil. Whenever possible, eliminate leakage.

Inform respective authorities in case of product release to water, soil or drains.


### 6.3. Cleaning methods:

Reduce leak with dams. In case of a large leakage, collect the liquid or pump it to tight closed containers. Cover the remainder with neutral sorbent (sand, diatomaceous soil), collect to tight closed containers, and rinse the contaminated place with plenty of water or water acidified with diluted mineral acid. In case of a little leakage, rinse the liquid with plenty of water or acidified water. Forward the collected product to an authorized waste recipient.

## 7. HANDLING OF SUBSTANCE / PREPARATEM AND ITS STORAGE

### 7.1. Handling of substance / preparation:

Ensure good ventilation of the rooms and ventilating hoods at workplaces. Keep away from sources of heat and ignition. Vapours are heavier than air and may create explosive mixtures with it. Avoid contact with skin and eyes. Do not breathe vapours. Do not eat, drink or smoke when using. Do not keep and do not transport together with food products and animal fodder.

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### 7.2. Storage:

Store in cool, dry and well ventilated rooms. Recommended storage temperature 5 – 30° C. Protect against direct operation of solar rays, freezing, humidity, contact with air and oxygen. Keep away from sources of heat and fire and flammable substances. Do not keep with oxidizing substances. Store in tightly closed packs or tanks in the atmosphere of nitrogen. Use means of caution preventing electrostatic discharges. Appropriate material for packaging: HDPE with Teflon seals, acid-resistant steel. Do not use natural and synthetic rubber and some plastics.

### 7.3. Specific applications:

Use typical means of caution when handling chemicals in accordance with approved instructions.

## 8. EXPOSURE CONTROL AND MEANS OF PERSONAL PROTECTION

### 8.1. Threshold values of exposure:

Ingredient	CAS no.	Concentration % by weight	NDS mg/m <sup>3</sup>	NDSch mg/m <sup>3</sup>	NDSP	DSB
N, N-Diethylhydroxylamine	3710-84-7	85-87	-	-	-	-
Diethylamine	109-89-7	<0.2<0	30	75	-	-

### 8.2. Exposure control:

#### 8.2.1. Exposure control at workplace:

Ensure that there is sufficient general ventilation with exchange of air and / or ventilating hoods in the work area. Avoid contact with skin and eyes. Do not breathe vapours. Do not use close to ignition sources and sources of high temperatures. In the case of insufficient ventilation, use means of protection of the respiratory system. Ensure a shower and a post for rinsing eyes.

#### a) Protection of the respiratory system:

In the event of inadequate ventilation, use appropriate respiratory protection with filter of vapours marked with brown color and letter A.

#### b) Protection of hands:

Use suitable plastic protective gloves (PVC, rubber).

#### c) Eye protection:

Use tight protection glasses (goggles) protecting against fluid droplets.

#### d) Skin protection:


Use natural protective clothing materials (cotton) or synthetic fibers and protective footwear.

#### e) Hygiene at work:

Do not eat, drink or smoke when working. Immediately replace contaminated clothes. Wash hands and face during breaks at work and after its termination. Avoid contact with the product.

#### 8.2.2. Environment exposure control:

Do not permit to penetrate to the environment.

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### 8.3. Legal basis:

Binding national legal regulations.

### 8.4. Methods of assessment of exposure in the work environment:

Binding national methods of assessment of exposure.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1. General information:

Form: Liquid, colorless to slightly yellowish.

Smell: Characteristic amine.

### 9.2. Important information concerning health, safety and the environment:

pH: ..... 8 ÷ 12  
Boiling point / Boiling range: ..... 95 ÷ 125° C  
Flash point: ..... 46° C  
Flammability: ..... Yes  
Explosive properties:  
• Upper explosive limit: ..... 10.0%  
• Lower explosive limit: ..... 1.9%  
Oxidising properties: ..... Non applicable  
Vapour pressure in 25° C: ..... 43 hPa  
Relative density in 20° C: ..... 0.900 g / cm<sup>3</sup>  
Solubility: ..... Ethanol, solvents mixing with water  
Solubility in water in 20° C: ..... Total < 35% and > 85%  
N-octanol / water breakdown factor: ..... No data  
Viscosity: ..... No data  
Vapor density (air = 1): ..... 3.1  
Vaporization velocity (diethyl ether = 1): ..... No data

### 9.3. Other information:

During use, explosive mixtures may form with air vapors.

## 10. STABILITY AND REACTIVITY

The product is stable under specified conditions of storage (item 7 of the Material Safety Data Sheet).

### 10.1. Conditions to be avoided:

High temperature, ignition sources, fire open, moisture.

### 10.2. Factors to be avoided:

Oxidizers (perchlorates, peroxides), acids, nitrates.

### 10.3. Dangerous products of disintegration:

Carbon oxides, nitrogen oxides, Diethylamine.



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## 11. TOXICOLOGICAL INFORMATION

The product may cause irritation of the respiratory system, eyes and skin. Cough and shortness of breath may occur. Has harmful effect after consuming.

### 11.1. Health effects of acute exposure:

Ingredient	CAS no.	Dose	Value	Unit
N, N-Diethylhydroxylamine	3710-84-7	LD <sub>50</sub> (orally, rat)	2190	mg/kg
		LD <sub>50</sub> (skin, rabbit)	1300	mg/kg
		LC <sub>50</sub> (inhalation, rat)	3.140	ppm (4 hours)
Diethylamine	109-89-7	LD <sub>50</sub> (orally, rat)		
		LD <sub>50</sub> (skin, rabbit)		
		LC <sub>50</sub> (inhalation, rat)		

Through the respiratory system:..... Irritation of the respiratory system, cough, shortness of breath.

Through the alimentary tract:..... Harmful after consuming.

Skin contact:..... Skin chafes.

Eye contact:..... Irritation of eyes, conjunctivitis.

### 11.2. Health effects of chronic exposure:

Through the respiratory system (toxicity of repeating dose):..... No data.

Through the alimentary tract:..... No data.

Skin contact:..... No data

Irritating effect (on eyes, skin or the respiratory system):..... No data.

Caustic effect:..... No data.

Allergenic effect (on the skin, the respiratory system):..... No data.

Anesthetizing effect:..... No data.

Carcinogenic effect:..... No data.

Mutagenic effect:..... No data.

Effect on reproduction capacity:..... No data.

Toxikinetics, metabolism and placement:..... No data.

## 12. ECOLOGICAL INFORMATION

Do not permit to penetrate to waters, drains and soil.

### 12.1. Ecotoxicity:

LC<sub>50</sub> (fish, 96 hours):..... 130 mg/L

EC<sub>50</sub> (daphnia, 48 hours)..... 111 mg/L

### 12.2. Mobility:

No data.

### 12.3. Stability and capacity of decomposition:

No data.



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## 12.4. Biocumulation capacity:

Octanol-water breakdown factor (KOW): ..... No data.

Bioconcentration factor (BCF): ..... No data.

## 12.5. Results of assessment of PBT property:

No data.

## 12.6. Other harmful effects:

No data.

## 13. WASTE HANDLING

### 13.1. Methods of removing the substance:

Do not dispose of the substance together with municipal waste. Do not permit contamination of ground and surface water. Destroy in adapted waste incinerating plants.

### 13.2. Methods of removing packaging contaminated with the substance:

Contaminated packaging to be treated as the product itself. Thoroughly rinse any packaging not fit for re-use with water and destroy in adapted plants.

### 13.3. Legal basis:

Binding national legal regulations.

## 14. INFORMATION ABOUT TRANSPORT

### 14.1. Road transport, railway and inland water transport (ADR / RID/ADNR/ADN):


UN Number: 1993  
Class: 3  
Stickers: 3  
Proper transport name: FLAMMATORY LIQUID MATERIAL, I.N.O.  
(Diethylhydroxylamine, 85% solution)  
Packaging group: III  
Classification code: F1  
Hazard distinctive identification number: 30

### 14.2. Sea transport (IMDG):

UN Number: 1993  
Proper transport name: FLAMMABLE LIQUID, N.O.S.  
(Diethylhydroxylamine, 85% solution)  
Class: 3  
Packaging group: III  
EMS/MFAG F-E S-E  
Contaminates marine environment: No

### 14.3. Air transport (ICAO/IATA):

UN Number: 1993  
Proper transport name: FLAMMABLE LIQUID, N.O.S.  
(Diethylhydroxylamine, 85% solution)  
Class: 3  
Packaging group: III

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## 15. INFORMATION REGARDING LEGAL REGULATIONS

### 15.1. Marking:

Commercial name of the product: DEHA 85  
 Chemical name: N, N-Diethylhydroxylamine 85  
 EC number: 223-055-4  
 Warning signs:



**Xn** Harmful product

Symbol / Text specifying the meaning of the warning sign:

Xn Harmful product

Phrases indicating type of hazard:

R10 Flammable product.

R20/21 Has harmful effect through the respiratory system and by skin contact.

R36/38 Has an irritating effect on eyes and skin.

Phrases determining conditions of safe use:

S36/37 Wear suitable protective clothing and suitable protective gloves.

Name, address and telephone number of the supplier:

DJCHEM CHEMICALS POLAND S.A.  
 05-200 Wołomin, ul. Łukasiewicza 11A Poland  
 +48 (022) 787 63 46; +48 (022) 787 63 44


### 15.2. Other regulations used when preparing the Card:

Legislation of the European Community:

- Regulation (EC) No. 1907/2006 of the European Parliament and the Council of 18 December 2006 on registration, assessment, granting of permits and applied restrictions concerning chemicals (REACH) and establishing the European Chemicals Agency, changing Directive 1999/45/EC and repealing the Regulation of the Council (EEC) No. 793/93 and the Regulation of the Commission (EC) No. 1488/94 as well as Council Directive 76/769/EEC and Directives of the Commission 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC.
- Directive of the Commission 2004/73 on classification and labelling of hazardous substances – 29 adjustment.
- Directive of the Commission of 8 June 2000 no.2000/39/EC establishing the first list of indicative values of highest permitted concentrations in the work environment.
- Directive 2006/121/EC of the European Parliament and the Council relating to classification, packing and labeling of hazardous substances.
- Directive 2006/8/EC – adjustment of Directive 1999/45/EC concerning classification and labelling of preparations.
- Directive of the Commission 2001/60/EC on hazardous preparations.
- Directive of the Commission 2001/58/EC on Material Safety Data Sheets.
- Council Directive 91/689/EEC on hazardous waste.

National legislation:

- Binding national legal regulations.

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## 16. OTHER INFORMATION

### 16.1. List of R Phrases used in item 2 and 3 of the Material Safety Data Sheet:

- R10 Flammable product.
- R11 Highly flammable product.
- R20/21 Has harmful effect through the respiratory system and by skin contact.
- R20/21/22 Has harmful effect through the respiratory tract, in contact with skin and after ingestion.
- R36/38 Has an irritating effect on eyes and skin.
- R52/53 Has harmful effect on water organisms; may cause long sustained unfavourable changes in the water environment.

### 16.2. Advice concerning training:

Ensure required safety and ensure that the personnel understands hazards resulting from physical and chemical properties of the product.

### 16.3. Recommended restrictions for use:

Wear suitable protective clothing and suitable protective gloves.

### 16.4. Data sources used when preparing the Material Safety Data Sheet:

ESIS – European Chemical Substances Information System (ECB).  
IUCRID – International Uniform Chemical Information Database.

### 16.5. Person drawing up the card:

Andrzej Nowiński

Date of preparation: 30-01-2008  
Update date: -  
Changes in the card: General update.

*These data are based on the present state of our knowledge and experience. They are intended to describe the product as may be required by safety-related requirements in transport, distribution, use and storage and should not be regarded as binding guarantees of particular properties.*