



SAFETY DATA SHEET

[In accordance with the criteria of Regulation No 1907/2006 (REACH) as amended]

Section 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade name: **DEHA anhydrous**
Chemical name: N,N-Diethylhydroxylamine
CAS number: 3710-84-7
Registration number: 01-2119962470-39-0001

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

Relevant identified uses:

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.

Uses advised against: not determined.

1.3 Details of the supplier of the safety data sheet

Manufacturer: **DJCHEM CHEMICALS POLAND S.A.**
Address: 05-200 Wołomin, ul. Łukasiewicza 11A, Poland
Telephone/Fax number: +48 22 787 63 46/+48 22 787 63 44
E-mail address for a competent person responsible for SDS: biuro@theta-doradztwo.pl

1.4 Emergency telephone number

112

Section 2: Hazards identification

2.1 Classification of the substance or mixture

Flam. Liq. 3 H226, Acute Tox. 4 H312, Acute Tox. 4 H332, STOT SE 3 H335, Aquatic Chronic 2 H411

Flammable liquid and vapour. Harmful in contact with skin. Harmful if inhaled. May cause respiratory irritation. Toxic to aquatic life with long lasting effects.

2.2 Label elements

Hazard symbols and signal words



WARNING

Hazard statements

H226 Flammable liquid and vapour. H332 Harmful in contact with skin. H312 Harmful if inhaled. H335 May cause respiratory irritation. H411 Toxic to aquatic life with long lasting effects.



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Precautionary statements

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P261 Avoid breathing gas/mist/vapours/spray. P280 Wear protective gloves/protective clothing/eye protection/face protection. P332+P313 If skin irritation occurs: Get medical advice/attention. P337+P313 If eye irritation persists: Get medical advice/attention. P312 Call a POISON CENTER/doctor/if you feel unwell. P403+P233 Store in a well-ventilated place. Keep container tightly closed.

2.3 Other hazards

No information whether the substance or mixture meets criteria for PBT or vPvB in accordance with Annex XIII of REACH Regulation.

Section 3: Composition/information on ingredients

3.1 Substances

Main component

chemical name: N,N-Diethylhydroxylamine
concentration range: 80-100%
CAS number: 3710-84-7
EINECS number: 223-055-4

Section 4: First aid measures

4.1 Description of first aid measures

Skin contact: take off contaminated clothes. Wash out skin with plenty of water with soap. Consult a doctor, if symptoms persist.

Eye contact: wash out with plenty of water with the eyelid hold wide open, for 10-15 min. Remove any contact lenses. Avoid powerful water stream – risk of cornea damage. Obtain medical attention immediately.

Ingestion: induce vomiting. Rinse mouth with water; give plenty of water to drink. Consult a doctor – show the container or label. Do not give anything to drink to an unconscious person.

Inhalation: remove to fresh air, keep warm and calm. In case of some symptoms consult a doctor – show the container or label.

4.2 Most important symptoms and effects, both acute and delayed

Skin contact: irritation, burns in case of long-term or repeating exposure.

Eye contact: irritation, redness, tearing.

Inhalation: may cause irritation mucosal membrane of respiratory system, cough.

Ingestion: may cause stomach pain, nausea, vomiting.

4.3 Indication of any immediate medical attention and special treatment needed

Physician makes a decision regarding further medical treatment after thoroughly examination of the injured.

Section 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media: dry extinguishing ABC and BC, carbon dioxide, water spray. Use extinguishing measures that are appropriate to the environment.

Unsuitable extinguishing media: water jet – risk of the propagation of the flame.



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5.2 Special hazards arising from the substance or mixture

May produce toxic fumes, eg. carbon oxide and nitrogen oxide if burning. Do not inhale combustion products – it can be dangerous for health.

5.3 Advice for firefighters

Flammable liquid and vapours. Vapours are heavier than air and may create explosive mixtures with it. Personal protection typical in case of fire. Self-contained breathing apparatus and protective clothing should be worn. Tanks exposed to fire or high temperatures to be cooled down with water, whenever possible, removed from the endangered area.

Section 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Limit the access for the outsiders into the breakdown area, until the suitable cleaning operations are completed. Wear adequate personal protective equipment. Avoid contact with skin and eyes. Remove all ignition sources. Do not smoke. Use means preventing electrostatic discharges. Ensure adequate ventilation. Avoid vapours inhalation.

6.2 Environmental precautions

In case of release of large amounts of the product, it is necessary to take appropriate steps to prevent it from spreading into the environment. Notify relevant emergency services.

6.3 Methods and material for containment and cleaning up

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.

6.4 Reference to other sections

Appropriate conduct with waste product – section 13.
Appropriate personal protective equipment – section 8.

Section 7: Handling and storage

7.1 Precautions for safe handling

Handle in accordance with good occupational hygiene and safety practices. Ensure good ventilation of the rooms and ventilating hoods at workplaces. Do not inhale dusts. Before break and after work wash hands carefully. Avoid skin and eyes contamination. Keep not used containers tightly closed. Use only with purpose. Do not ingest. Remove all ignition sources. Use means preventing electrostatic discharges. See section 8 too.

7.2 Conditions for safe storage, including any incompatibilities

Keep only in original, tightly closed containers in the atmosphere of nitrogen in dry, cool and well-ventilated place. Recommended storage temperature 5 – 30° C. Keep away from fire source. Use means of caution preventing electrostatic discharges. Protect against direct operation of solar rays, freezing, humidity, contact with air and oxygen. Keep away from flammable substances. Do not keep with oxidizing substances. Keep away from food, beverages or feed for animals. Recommended material for packages: HDPE with Teflon seals, acid-resistant steel. Do not use natural and synthetic rubber and some plastics.

7.3 Specific end use(s)

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.



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Section 8: Exposure controls/personal protection

8.1 Control parameters

Product doesn't contain any components with occupational exposure limit values at working place in Community. Legal Basis: Commission Directive 2006/15/EC, 2000/39/EC, 2009/161/EC.

Please check any national occupational exposure limit values in your country.

DNEL for workers

route	type	value
inhalation	systemic effects - long-term, repeated dose toxicity	DNEL 3.65 mg/m ³
inhalation	systemic effects, acute toxicity	DNEL 45.6 mg/m ³
inhalation	local effects - long-term, repeated dose toxicity	DNEL 2.92 mg/m ³
inhalation	local effects, acute toxicity	DNEL 8.76 mg/m ³
skin	systemic effects - long-term, repeated dose toxicity	DNEL 0.26 mg/kg mc/day
skin	systemic effects, acute toxicity	DNEL 4.7 mg/kg mc/day

DNEL for consumers

route	type	value
inhalation	systemic effects - long-term, repeated dose toxicity	DNEL 0.65 mg/m ³
oral	systemic effects - long-term, repeated dose toxicity	DNEL 0.13 mg/kg

PNEC

uwagi	value
fresh water, assessment factor: 1000	PNEC 8.2 µg/L
marine water, assessment factor: 10000	PNEC 0.82 µg/L
intermittent releases to water, assessment factor: 100	PNEC 82 µg/L
sediments (freshwater)	PNEC 0.0652 mg/kg sediment dw
sediments (marine water)	PNEC 0.00652 mg/kg sediment dw
sewage treatment plant, assessment factor: 10	PNEC 10 mg/L
soil	PNEC 0.0082 mg/kg soil dw

8.2 Exposure controls

Use the product in accordance with good occupational hygiene and safety practices. Ensure that there is sufficient general ventilation with exchange of air and / or ventilating hoods in the work area. Avoid skin and eyes contamination. Do not inhale vapours. When handlings do not eat, drink or smoke. Before break and after work wash hands carefully. 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.

Hand and body protection

Use gloves from PCV or rubber. Use natural protective clothing materials (cotton) or synthetic fibers and protective footwear.

The material that the gloves are made of must be impenetrable and resistant to the product's effects. The selection of material must be performed with consideration of breakthrough time, penetration speed and degradation. Moreover, the selection of proper gloves depends not only on the material, but also on other quality features and changes depending on the manufacturer. The producer should provide detailed information regarding the exact breakthrough time. This information should be followed.

Eye/face protection

Use safety glasses (goggles).

Respiratory protection

Use mask with filt type A.

Environmental exposure controls

Do not allow the large quantity of mixture to contaminate surface water/ground water.





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Section 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

physical state:	liquid
colour:	colorless
odour:	amine
odour threshold:	not determined
pH:	8-12
melting point/freezing point:	- 9°C
initial boiling point and boiling range:	134°C
flash point:	45-50°C
evaporation rate:	not determined
flammability (solid, gas):	not applicable
upper/lower flammability or explosive limits:	10% vol./1,9% vol.
vapour pressure (20°C):	5,3 mbar
vapour pressure (25°C):	7,4 mbar
relative vapour density (air=1):	3,1
density (20°C):	0,8689 g/cm ³
solubility(ies):	soluble in water 450 g/l (20°C), soluble also in ethanol and other solvents mixing with water
partition coefficient: n-octanol/water:	≤ 0,5
auto-ignition temperature:	265°C
decomposition temperature (1013 hPa):	not determined
explosive properties:	not display
oxidising properties:	not display
viscosity:	not determined

9.2 Other information

surface tension (20°C):	25,6 mN/m
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Section 10: Stability and reactivity

10.1 Reactivity

It reacts with strong oxidizing. Hazardous polymerization will not occur. See also 10.3-10.5.

10.2 Chemical stability

The product is stable.

10.3 Possibility of hazardous reactions

None.

10.4 Conditions to avoid

High temperature, humidity, ignition sources.

10.5 Incompatible materials

Oxidizers (perchlorates, peroxides), acids, nitrates.

10.6 Hazardous decomposition products

None.

Section 11: Toxicological information

11.1 Information on toxicological effects

Information regarding acute and/or delayed results of the exposure was defined on the basis of the information on product's classification and/or toxicological studies.



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Acute toxicity

LD ₅₀ (rat, oral)	2 190 mg/kg
LD ₅₀ (rabbit, dermal)	1 300 mg/kg
LC ₅₀ (rat, inhalation)	3,140 ppm/4h

Harmful in contact with skin. Harmful if inhaled.

Skin corrosion/irritation

Based on available data, the classification criteria are not met.

Serious eye damage/irritation

Based on available data, the classification criteria are not met.

Respiratory or skin sensitization

May cause respiratory irritation.

Germ cell mutagenicity

Based on available data, the classification criteria are not met.

Carcinogenicity

Based on available data, the classification criteria are not met.

Reproductive toxicity

Based on available data, the classification criteria are not met.

STOT-single exposure

May cause respiratory irritation.

STOT-repeated exposure

Based on available data, the classification criteria are not met.

NOAEC 54,6 mg/m³ (inhalation, rat)

Aspiration hazard

Based on available data, the classification criteria are not met.

Other symptoms:

Skin contact: irritation, burns in case of long-term or repeating exposure.

Eye contact: irritation, redness, tearing.

Inhalation: may cause irritation mucosal membrane of respiratory system, cough.

Ingestion: stomach pain, nausea, vomiting.

Section 12: Ecological information

12.1 Toxicity

LC ₅₀	134 mg/l/96h / <i>Pimephales promelas</i>
EC ₅₀	8.9 mg/l/24h / <i>Daphnia magna</i>
EC ₅₀	> 101 mg/l/72h / <i>Pseudokirchnerella subcapitata</i>

Product is toxic to aquatic life with long lasting effects.

12.2 Persistence and degradability

Product is biodegradable in water in 11% / 28 days (release of CO₂, OECD 301F method).

12.3 Bioaccumulative potential

Product has not bioaccumulative potential.

12.4 Mobility in soil

Product is mobile in soil. It is soluble in water.

12.5 Results of PBT and vPvB assessment

No data.



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12.6 Other adverse effects

This product has no influence on the global warming or the ozone layer depletion.

Section 13: Disposal considerations

13.1 Waste treatment methods

Disposal methods for the product: disposal in accordance with the local legislation. Do not remove with household garbage. Store remaining in original containers. Recycle, if possible.

Disposal methods for used packing: empty containers give for appropriate rubbish dump or for disposal in accordance with the local legislation. Dispose of uncleanable containers like of the product.

Legal basis: Directive 2008/98/EC; 94/62/EC.

Section 14: Transport information

14.1 UN number (ONZ number)

ADR: 1993, classification code: F1, hazard distinctive identification number: 30

ICAO/IATA: 1993

IMDG: 1993, EmS code: F-E, S-E

14.2 UN proper shipping name

ADR: FLAMMABLE LIQUID, I.N.O. (Diethylhydroxylamine, 98% solution)

ICAO/IATA: FLAMMABLE LIQUID, I.N.O. (Diethylhydroxylamine, 98% solution)

IMDG: FLAMMABLE LIQUID, I.N.O. (Diethylhydroxylamine, 98% solution)

14.3 Transport hazard class(es)

ADR: 3

ICAO/IATA: 3

IMDG: 3

14.4 Packing group

ADR: III

ICAO/IATA: III

IMDG: III

14.5 Environmental hazards

Product is dangerous for environment according to ADR, IATA and IMDG.

14.6 Special precautions for user

Wear adequate personal protective equipment. See section 8.

14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code

Not applicable.

Section 15: Regulatory information

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

Comission Regulation (EU) 2015/830 of 28 May 2015 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).



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Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 (Text with EEA relevance) as amended.

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC as amended.

Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives.

European Parliament and Council Directive 94/62/EC of 20 December 1994 on packaging and packaging waste.

15.2 Chemical safety assessment

Substance has chemical safety assessment.

Section 16: Other information

Clarification of aberrations and acronyms

PBT	Persistent, Bioaccumulative and Toxic substance
vPvB	very Persistent and very Bioaccumulative substance
DNEL	Derived No-Effect Level;
PNEC	Predicted No Effect Concentration;
NOAEC	No Observed Adverse Effect Concentration
LD ₅₀	the median lethal dose
LC ₅₀	lethal concentration
EC ₅₀	median effective concentration
Acute Tox. 4	Acute toxicity category 4
Flam. Liq. 3	Flammable liquid category 3

Trainings

Before commencing working with the product, the user should learn the Health & Safety regulations, regarding handling chemicals, and in particular, undergo a proper workplace training. Persons related to the transportation of the dangerous goods in compliance with the ADR Agreement should be properly trained within the scope of performed tasks (general training, on-the-job training and training related to the safety issues).

Other data

Date of update:	12.06.2015
Version:	4.0/EN
Changes:	section: 1,2,8,11,12,14,15,16.
Composed by:	Kinga Wasilewska (on the basis of producer's data)
Safety Data Sheet made by:	„THETA” Technical Consulting

This SDS annuls and replaces all previous versions.

The information above is based on a current available data concerning the product, but also on the experience and knowledge in this field of the producer. They are neither a quality description of the product nor a guarantee of particular features. They are to be treated as aid to safety in transport, storage and usage of the product. That does not free the user from the responsibility of improper usage of the information above and also of improper compliance with the law norms in the field.