SAFETY DATA SHEET

According to EC Regulation 1907/2006/EC

DEHA, Anhydrous

Revision Date *25-Nov-2010*
Revision Number *1*

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

Product Identifier

Product Name	DEHA, Anhydrous
Synonyms	N-Ethyl-N-hydroxy-Ethanamine

Use of the Substance/Mixture

Identified uses	Chemical intermediate corrosion inhibitor

Manufacturer or supplier's details

Company/Undertaking Identification	Taminco BVBA
Address	Pantserschipstraat 207 9000 GENT BELGIUM
E-mail address	MSDS_FCH@taminco.com
Telephone	(+32) 9 254 14 11
Telefax	(+32) 9 254 14 10

Emergency Telephone Number

Emergency Telephone Number	(+32) 9 254 10 36

2. HAZARDS IDENTIFICATION

Classification of the substance or mixture

Classification according to EU Directives 67/548/EEC or 1999/45/EC

Xn : R20/21
Xi : R36/37/38
R10
S26, S36/37/39

REGULATION (EC) No 1272/2008

Classification of the substance or mixture	H226 : Flam. Liq cat. 3 H312 : Acute dermal Tox. cat. 4 H332 : Acute inhalation Tox. cat. 4 H315 : Skin Irrit. cat. 2 H319 : Eye Irrit. cat. 2 H335 : STOT SE cat. 3

Precautionary Statement - Prevention	P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking P233 - Keep container tightly closed P240 - Ground/bond container and receiving equipment P241 - Use explosion-proof electrical/ventilating/lighting/equipment P242 - Use only non-sparking tools P243 - Take precautionary measures against static discharge P261 - Avoid breathing dust/fume/gas/mist/vapors/spray P264 - Wash face, hands and any exposed skin thoroughly after handling P271 - Use only outdoors or in a well-ventilated area P280 - Wear protective gloves/protective clothing/eye protection/face protection

Precautionary Statement - Response	P312 - Call a POISON CENTER or doctor/physician if you feel unwell P303 + P361 + P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower P302 + P352 - IF ON SKIN: Wash with plenty of soap and water P363 - Wash contaminated clothing before reuse P332 + P313 - If skin irritation occurs: Get medical advice/attention P304 + P340 - IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing P337 + P313 - If eye irritation persists: Get medical advice/attention P370 + P378 - In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction

Precautionary Statement - Storage	P403 + P235 - Store in a well-ventilated place. Keep cool P403 + P233 - Store in a well-ventilated place. Keep container tightly closed P405 - Store locked up

Precautionary Statement - Disposal	P501 - Dispose of contents/container to an approved incineration plant

Label elements

Product Name DEHA, Anhydrous

Hazard pictograms

Signal Word
Warning

Hazard Statements
H226 - Flammable liquid and vapor
H312 - Harmful in contact with skin
H332 - Harmful if inhaled
H315 - Causes skin irritation
H319 - Causes serious eye irritation
H335 - May cause respiratory irritation

Precautionary Statements
P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P304 + P340 - IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P312 - Call a POISON CENTER or doctor/physician if you feel unwell

Other hazards

Other hazards which do not result in classification
None known

For the full text of the R phrases mentioned in this Section, see Section 16

3. COMPOSITION/INFORMATION ON INGREDIENTS

Haz/Non-haz

Chemical Name	CAS-No	Weight %	EINECS	Registration number
N,N-Diethylhydroxylamine	3710-84-7	>98	223-055-4	

4. FIRST AID MEASURES

FIRST AID MEASURES

General Advice
If symptoms persist, call a physician. Show this material safety data sheet to the doctor in attendance.

Eye Contact
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes
Obtain medical attention

Skin Contact
Take off all contaminated clothing immediately
Soap
Consult a physician

Inhalation
Move to fresh air
If breathing is difficult, give oxygen
If not breathing, give artificial respiration
Consult a physician

Ingestion
Do not induce vomiting
If conscious, drink plenty of water
Never give anything by mouth to an unconscious person
Obtain medical attention

Most important symptoms and effects, both acute and delayed

- Irritating to eyes, respiratory system and skin

Indication of immediate medical attention and special treatment needed

- Consult a physician

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

- carbon dioxide (CO2)
- water spray
- dry chemical
- Alcohol-resistant foam

Extinguishing media which must not be used for safety reasons

- high volume water jet

Specific Hazards Arising from the Chemical

Specific hazards

- Flammable
- Vapors may form explosive mixture with air
- Vapors are heavier than air and may spread along floors
- Heating or fire can release toxic gas

  Carbon monoxide
  Nitrogen oxides (NOx)

Specific methods

- In the event of fire, cool tanks with water spray
- Keep product and empty container away from heat and sources of ignition
- Collect contaminated fire extinguishing water separately. This must not be discharged into drains

Protective Equipment and Precautions for Firefighters

Wear full protective clothing and self-contained breathing apparatus

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

- Avoid contact with skin, eyes and clothing
- Evacuate personnel to safe areas
- Keep people away from and upwind of spill/leak
- Wear self-contained breathing apparatus and protective suit
- Rubber gloves

Environmental precautions

- Should not be released into the environment
- Remove immediately adhering matter
- Prevent product from entering drains
- Do not flush into surface water or sanitary sewer system

Methods and materials for containment and cleaning up

- Use explosion-proof equipment
- Absorb spill with inert material (e.g. dry sand or earth), then place in a chemical waste container
- Large spills should be collected mechanically (remove by pumping) for disposal

7. HANDLING AND STORAGE

Precautions for safe handling

- Use only in area provided with appropriate exhaust ventilation
- Use spark-proof tools and explosion-proof equipment
- Wear personal protective equipment
- Do not eat, drink or smoke when using this product
- Wash hands after handling
- Remove contaminated clothing and protective equipment before entering eating areas
- Ensure that eyewash stations and safety showers are close to the workstation location
- Avoid breathing vapors or mists

Conditions for safe storage, including any incompatibilities

- In accordance with local and national regulations
- Keep away from open flames, hot surfaces and sources of ignition
- Store in original container
- Keep container tightly closed
- Keep in a dry, cool and well-ventilated place

Specific end uses

See also section 1

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

Exposure Guidelines

Exposure controls

Engineering Controls
- Local exhaust

Personal Protective Equipment

Eye/face Protection
- Tightly fitting safety goggles
- Face-shield
- Respirator with a full face mask

Skin Protection
- Wear suitable protective equipment
- Complete suit protecting against chemicals

Hand Protection
- Neoprene gloves
- Solvent-resistant gloves (butyl-rubber)
- The selected protective gloves have to satisfy the specifications of EU Directive 89/689/EEC and the standard EN 374 derived from it
- The suitability for a specific workplace should be discussed with the producers of the protective gloves

Respiratory Protection
- In the case of vapor formation use a respirator with filter model K
- self-contained breathing apparatus (EN 133)
  (in case of higher concentration)

Environmental exposure controls
- Prevent product from entering drains
- Do not contaminate surface water
- Avoid subsoil penetration

9. PHYSICAL AND CHEMICAL PROPERTIES

General Information

Physical State	Liquid
Color	Light yellow
Odor	Amine-like

Important Health Safety and Environmental Information

Boiling Point/Range	133°C
Flash Point	50°C closed cup
Viscosity	No information available
Vapor Pressure	5 mmHg @ 20 °C
Vapor Density	3.1 (Air =1.0)
Partition coefficient: n-octanol/water	log Pow 0.43
pH	Alkaline
Water solubility	Soluble 35 %
Oxidizing Properties	Not applicable
Explosive Properties	No information available
Melting Point/Range	-6°C
Density	0.87 g/cm3 @ 20 °C
Flammability	flammable
Autoignition Temperature	No information available

10. STABILITY AND REACTIVITY

Reactivity

Chemical Stability

- Hazardous polymerisation does not occur

Possibility of hazardous reactions

None under normal processing

Conditions to Avoid

- Heat, flames and sparks
- Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors)
- Handle under nitrogen, protect from moisture

Incompatible materials to avoid

- Zinc
- Copper
- Aluminum
- Strong acids and oxidizing agents

Hazardous Decomposition Products

- Heating or fire can release toxic gas
  - Nitrogen oxides (NOx)
  - Carbon monoxide

11. TOXICOLOGICAL INFORMATION

Product Information

11. TOXICOLOGICAL INFORMATION

LD50/oral/rat =	2190 mg/kg
LD50/dermal/rabbit =	1300 mg/kg
LC50/inhalation/4h/rat =	11.4 mg/l
Eye irritation	Irritating to eyes
Skin irritation	Irritating to skin
Sensitization	Did not cause sensitization on laboratory animals
Mutagenic Effects	Did not show mutagenic effects in animal experiments
Reproductive toxicity	Did not show teratogenic effects in animal experiments

Human experience

Human experience	Irritating to eyes, respiratory system and skin

12. ECOLOGICAL INFORMATION

Ecotoxicity

LC50/96h/guppy =	150 mg/l
EC50/48h/daphnia =	111 mg/l
EC50/72h/algae =	> 101 mg/l
Toxicity to bacteria	IC50 : 37 mg/l

Mobility

No information available

Persistence and degradability

Not readily biodegradable
20 % after 28 Days

Bioaccumulative Potential

minimum

Results of PBT and vPvB assessment

- This substance is not considered to be persistent, bioaccumulating nor toxic (PBT)
- This substance is not considered to be very persistent nor very bioaccumulating (vPvB)

Other adverse effects

None known based on information supplied

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method

- Should not be released into the environment
- Dispose of in accordance with local regulations

Contaminated Packaging

- Empty containers should be taken to an approved waste handling site for recycling or disposal

14. TRANSPORT INFORMATION

Road transport

Class	3
UN-No	UN1993
Packing Group	III
Marine pollutant	no
Proper Shipping Name	Flammable liquid, n.o.s (Diethylhydroxylamine)

Sea transport

Class	3
UN-No	UN1993
Packing Group	III
Marine pollutant	no
Proper Shipping Name	Flammable liquid, n.o.s (Diethylhydroxylamine)

Air transport

Class	3
UN-No	UN1993
Packing Group	III
Marine pollutant	no
Proper Shipping Name	Flammable liquid, n.o.s (Diethylhydroxylamine)

15. REGULATORY INFORMATION

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

International Inventories

Chemical Name	TSCA	EINECS	DSL	ENCS	AICS
N,N-Diethylhydroxylamine	x	223-055-4	x	2-190	x

Chemical Safety Assessment

- no data available

16. OTHER INFORMATION

This data sheet contains changes from the previous version in section(s)

Revision Date	25-Nov-2010
Reason for revision	Classification and hazard labeling

List of relevant R-phrases

- R10 - Flammable
- R20/21 - Harmful by inhalation and in contact with skin
- R36/37/38 - Irritating to eyes, respiratory system and skin
- 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

Training advice

Provide adequate information, instruction and training for operators

Further information for the material safety data sheet

The information provided on 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 guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as 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 material or in any process, unless specified in the text..

End of Material Safety Data Sheet