

**DEHA (N,N-Diethylhydroxylamine), 85%**

Version 1.7

Revision Date 2014-06-04

**SECTION 1: Identification of the substance/mixture and of the company/undertaking****Product information**

Trade name : DEHA (N,N-Diethylhydroxylamine), 85%  
Material : 1025310, 1067076, 1034532, 1031290, 1017929, 1034283,  
1024842, 1031122

Use : Oxygen Scavenger

**Company** : Chevron Phillips Chemical Company LP  
Specialty Chemicals  
10001 Six Pines Drive  
The Woodlands, TX 77380

Local : See Company Address

**Emergency telephone:****Health:**

866.442.9628 (North America)

1.832.813.4984 (International)

**Transport:**

North America: CHEMTREC 800.424.9300 or 703.527.3887

Asia: +800 CHEMCALL (+800 2436 2255)

EUROPE: BIG +32.14.584545 (phone) or +32.14583516 (telefax)

South America SOS-Cotec Inside Brazil: 0800.111.767 Outside Brazil: +55.19.3467.1600

Responsible Department : Product Safety and Toxicology Group

E-mail address : MSDS@CPChem.com

Website : www.CPChem.com

**SECTION 2: Hazards identification****Classification of the substance or mixture****GHS Classification and labeling: Follow GB 13690, GB 20576-GB 20602 and GB 15258 (GHS 2011)****Classification**


: Flammable liquids, Category 3  
Acute toxicity, Category 4, Inhalation  
Acute toxicity, Category 4, Dermal  
Acute aquatic toxicity, Category 2  
Chronic aquatic toxicity, Category 2

**Labeling**

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Symbol(s)	:	
Signal Word	:	Warning
Hazard Statements	:	H226: Flammable liquid and vapor. H312 + H332: Harmful in contact with skin or if inhaled. H411: Toxic to aquatic life with long lasting effects.
Precautionary Statements	:	<b>Prevention:</b> 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 skin thoroughly after handling. P271: Use only outdoors or in a well-ventilated area. P280: Wear protective gloves/ eye protection/ face protection. <b>Response:</b> P301 + P310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician. P303 + P361 + P353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. P304 + P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing. P312: Call a POISON CENTER or doctor/ physician if you feel unwell. P321: Specific treatment (see supplemental first aid instructions on this label). P331: Do NOT induce vomiting. P332 + P313: If skin irritation occurs: Get medical advice/ attention. P362 + P364: Take off contaminated clothing and wash it before reuse. P370 + P378: In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish. <b>Storage:</b> P403 + P235: Store in a well-ventilated place. Keep cool. P405: Store locked up. <b>Disposal:</b> P501: Dispose of contents/ container to an approved waste disposal plant.

**SECTION 3: Composition/information on ingredients**

Synonyms	:	Ethanamine, N-Ethyl-N-Hydroxy- (85%)
Molecular formula	:	(C <sub>2</sub> H <sub>5</sub> ) <sub>2</sub> -N-OH

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Chemical Name	CAS-No. / EINECS-No.	Concentration [wt%]
Diethylhydroxylamine	3710-84-7	85

**SECTION 4: First aid measures**

- General advice : Move out of dangerous area. Show this material safety data sheet to the doctor in attendance. Material may produce a serious, potentially fatal pneumonia if swallowed or vomited.
- If inhaled : If unconscious place in recovery position and seek medical advice. If symptoms persist, call a physician.
- In case of skin contact : If on skin, rinse well with water. If on clothes, remove clothes.
- In case of eye contact : Flush eyes with water as a precaution. Remove contact lenses. Protect unharmed eye. Keep eye wide open while rinsing. If eye irritation persists, consult a specialist.
- If swallowed : Keep respiratory tract clear. Do NOT induce vomiting. Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician. Take victim immediately to hospital.

**SECTION 5: Firefighting measures**

- Flash point : 45 °C (113 °F)
- Autoignition temperature : No data available
- Suitable extinguishing media : Alcohol-resistant foam. Carbon dioxide (CO<sub>2</sub>). Dry chemical.
- Unsuitable extinguishing media : High volume water jet.
- Specific hazards during fire fighting : Do not allow run-off from fire fighting to enter drains or water courses.
- Special protective equipment for fire-fighters : Wear self contained breathing apparatus for fire fighting if necessary.
- Further information : Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. For safety reasons in case of fire, cans should be stored separately in closed containments. Use a water spray to cool fully closed containers.
- Fire and explosion protection : Do not spray on an open flame or any other incandescent material. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). Keep away from open flames, hot surfaces and sources of ignition.

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Hazardous decomposition products : Diethylamine. Carbon oxides.

**SECTION 6: Accidental release measures**

- Personal precautions : Use personal protective equipment. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.
- Environmental precautions : Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.
- Methods for cleaning up : Neutralize with acid. Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

**SECTION 7: Handling and storage****Handling**

- Advice on safe handling : Avoid formation of aerosol. Do not breathe vapors/dust. Avoid exposure - obtain special instructions before use. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Take precautionary measures against static discharges. Provide sufficient air exchange and/or exhaust in work rooms. Open drum carefully as content may be under pressure. Dispose of rinse water in accordance with local and national regulations.
- Advice on protection against fire and explosion : Do not spray on an open flame or any other incandescent material. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). Keep away from open flames, hot surfaces and sources of ignition.

**Storage**

- Requirements for storage areas and containers : No smoking. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Observe label precautions. Electrical installations / working materials must comply with the technological safety standards.

**SECTION 8: Exposure controls/personal protection****Engineering measures**

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Consider the potential hazards of this material (see Section 2), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

**Personal protective equipment**

- Respiratory protection** : Wear a supplied-air NIOSH approved respirator unless ventilation or other engineering controls are adequate to maintain minimal oxygen content of 19.5% by volume under normal atmospheric pressure. Wear a NIOSH approved respirator that provides protection when working with this material if exposure to harmful levels of airborne material may occur, such as: Air-Purifying Respirator for Organic Vapors. Use a positive pressure, air-supplying respirator if there is potential for uncontrolled release, exposure levels are not known, or other circumstances where air-purifying respirators may not provide adequate protection.
- Hand protection** : The suitability for a specific workplace should be discussed with the producers of the protective gloves. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.
- Eye protection** : Eye wash bottle with pure water. Tightly fitting safety goggles.
- Skin and body protection** : Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place. Wear as appropriate: Flame retardant antistatic protective clothing. Footwear protecting against chemicals.
- Hygiene measures** : When using do not eat or drink. When using do not smoke. Wash hands before breaks and at the end of workday.

**SECTION 9: Physical and chemical properties****Information on basic physical and chemical properties****Appearance**

- Form** : Liquid  
**Physical state** : Liquid  
**Color** : Colorless to light yellow  
**Odor** : Slight amine

**Safety data**

- Flash point** : 45 °C (113 °F)  
**Lower explosion limit** : 1.7 %(V)  
**Upper explosion limit** : 11.2 %(V)

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Oxidizing properties	: no
Autoignition temperature	: No data available
Molecular formula	: (C <sub>2</sub> H <sub>5</sub> ) <sub>2</sub> -N-OH
Molecular weight	: 89.14 g/mol
pH	: 10.2
Freezing point	: No data available
pour point	No data available
Boiling point/boiling range	: 95 - 132 °C (203 - 270 °F)
Vapor pressure	: 32.25 MMHG at 25 °C (77 °F)
Relative density	: 0.89, 20 °C(68 °F)
Density	: 0.9 G/ML
Water solubility	: Soluble
Partition coefficient: n-octanol/water	: No data available
Viscosity, kinematic	: No data available
Relative vapor density	: No data available
Evaporation rate	: No data available

**SECTION 10: Stability and reactivity**

Chemical stability : This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

**Possibility of hazardous reactions**

Conditions to avoid	: Heat, flames and sparks.
Materials to avoid	: May react with oxygen and strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.
Other data	: No decomposition if stored and applied as directed.

**SECTION 11: Toxicological information****Acute oral toxicity**

Diethylhydroxylamine : LD50: 2,190 mg/kg  
Species: rat

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Sex: male

**Acute inhalation toxicity**

Diethylhydroxylamine : LC50: 11.4 mg/l  
Exposure time: 4 h  
Species: rat  
Sex: male and female  
Test atmosphere: vapor

**Acute dermal toxicity**

Diethylhydroxylamine : LD50: 1,300 mg/kg  
Species: rabbit

**Skin irritation**

Diethylhydroxylamine : No skin irritation

**Eye irritation**

Diethylhydroxylamine : slight irritation.

**Sensitization**

Diethylhydroxylamine : Did not cause sensitization on laboratory animals.

**Repeated dose toxicity**

Diethylhydroxylamine : Species: rat, male and female  
Sex: male and female  
Application Route: Inhalation  
Dose: 15, 150, 1506 ppm  
Exposure time: 28 d  
Number of exposures: 6 h/d, 5d/wk  
NOEL: 150 ppm  
Lowest observable effect level: 1506 ppm  
Method: OECD Guideline 412  
Target Organs: Thymus, Liver

**Reproductive toxicity**

Diethylhydroxylamine : This information is not available.

**Developmental Toxicity**

Diethylhydroxylamine : Species: rat  
Application Route: oral gavage  
Dose: 87.4, 393, 568 mg/kg  
Number of exposures: daily  
Test period: GD 6-15  
Method: OECD Guideline 414  
NOAEL Teratogenicity: >= 568 mg/kg  
NOAEL Maternal: 87.4 mg/kg  
No adverse effects expected

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**CMR effects**

Diethylhydroxylamine : Teratogenicity: Animal testing did not show any effects on fetal development.

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**Further information** : Solvents may degrease the skin.

**SECTION 12: Ecological information****Toxicity to fish**

Diethylhydroxylamine : LC50: > 134 mg/l  
Exposure time: 96 h  
Species: Pimephales promelas (fathead minnow)  
static test Method: OECD Test Guideline 203

**Toxicity to daphnia and other aquatic invertebrates**

Diethylhydroxylamine : EC50: 8.2 mg/l  
Exposure time: 48 h  
Species: Daphnia magna (Water flea)  
static test Method: OECD Test Guideline 202

**Toxicity to algae**

Diethylhydroxylamine : ErC50: > 101 mg/l  
Exposure time: 72 h  
Species: Pseudokirchneriella subcapitata (green algae)  
Growth inhibition Method: OECD Test Guideline 201

**Biodegradability**

Diethylhydroxylamine : Result: Not readily biodegradable.  
11 %  
Testing period: 28 d  
Method: OECD Test Guideline 301

**Ecotoxicology Assessment**

Acute aquatic toxicity  
Diethylhydroxylamine : Toxic to aquatic life.

Chronic aquatic toxicity  
Diethylhydroxylamine : Toxic to aquatic life with long lasting effects.

Results of PBT assessment  
Diethylhydroxylamine : Non-classified PBT substance, Non-classified vPvB substance

Additional ecological information : Toxic to aquatic life with long lasting effects.



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**SECTION 13: Disposal considerations**

The information in this SDS pertains only to the product as shipped.

Use material for its intended purpose or recycle if possible. This material, if it must be discarded, may meet the criteria of a hazardous waste as defined by US EPA under RCRA (40 CFR 261) or other State and local regulations. Measurement of certain physical properties and analysis for regulated components may be necessary to make a correct determination. If this material is classified as a hazardous waste, federal law requires disposal at a licensed hazardous waste disposal facility.

Product : The product should not be allowed to enter drains, water courses or the soil. Do not contaminate ponds, waterways or ditches with chemical or used container. Send to a licensed waste management company.

Contaminated packaging : Empty remaining contents. Dispose of as unused product. Do not re-use empty containers. Do not burn, or use a cutting torch on, the empty drum.

**SECTION 14: Transport information**

**The shipping descriptions shown here are for bulk shipments only, and may not apply to shipments in non-bulk packages (see regulatory definition).**

Consult the appropriate domestic or international mode-specific and quantity-specific Dangerous Goods Regulations for additional shipping description requirements (e.g., technical name or names, etc.) Therefore, the information shown here, may not always agree with the bill of lading shipping description for the material. Flashpoints for the material may vary slightly between the MSDS and the bill of lading.

**US DOT (UNITED STATES DEPARTMENT OF TRANSPORTATION)**

UN1993, FLAMMABLE LIQUIDS, N.O.S., (DIETHYLHYDROXYLAMINE), 3, III

**IMO / IMDG (INTERNATIONAL MARITIME DANGEROUS GOODS)**

UN1993, FLAMMABLE LIQUID, N.O.S., (DIETHYLHYDROXYLAMINE), 3, III, (45 °C), MARINE POLLUTANT, (DIETHYLHYDROXYLAMINE)

**IATA (INTERNATIONAL AIR TRANSPORT ASSOCIATION)**

UN1993, FLAMMABLE LIQUID, N.O.S., (DIETHYLHYDROXYLAMINE), 3, III

**ADR (AGREEMENT ON DANGEROUS GOODS BY ROAD (EUROPE))**

UN1993, FLAMMABLE LIQUID, N.O.S., (DIETHYLHYDROXYLAMINE), 3, III, (D/E), ENVIRONMENTALLY HAZARDOUS, (DIETHYLHYDROXYLAMINE)

**RID (REGULATIONS CONCERNING THE INTERNATIONAL TRANSPORT OF DANGEROUS GOODS (EUROPE))**

UN1993, FLAMMABLE LIQUID, N.O.S., (DIETHYLHYDROXYLAMINE), 3, III, ENVIRONMENTALLY HAZARDOUS, (DIETHYLHYDROXYLAMINE)

**ADN (EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY INLAND WATERWAYS)**

UN1993, FLAMMABLE LIQUID, N.O.S., (DIETHYLHYDROXYLAMINE), 3, III,

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ENVIRONMENTALLY HAZARDOUS, (DIETHYLHYDROXYLAMINE)

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code****SECTION 15: Regulatory information**

Classification and Labeling of : Primary label: Combustible Liquid.  
Commonly Used Dangerous  
Chemical Substances

**Notification status**

Europe REACH : On the inventory, or in compliance with the inventory  
United States of America TSCA : On the inventory, or in compliance with the inventory  
Canada DSL : On the inventory, or in compliance with the inventory  
Australia AICS : On the inventory, or in compliance with the inventory  
New Zealand NZIoC : On the inventory, or in compliance with the inventory  
Japan ENCS : On the inventory, or in compliance with the inventory  
Korea KECI : On the inventory, or in compliance with the inventory  
Philippines PICCS : On the inventory, or in compliance with the inventory  
China IECSC : On the inventory, or in compliance with the inventory

**SECTION 16: Other information****Further information**

Legacy SDS Number : E020

Significant changes since the last version are highlighted in the margin. This version replaces all previous versions.

The information in this SDS pertains only to the product as shipped.

The information provided in this Material 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 guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered 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 materials or in any process, unless specified in the text.

**Key or legend to abbreviations and acronyms used in the safety data sheet**

ACGIH	American Conference of Government Industrial Hygienists	LD50	Lethal Dose 50%
AICS	Australia, Inventory of Chemical Substances	LOAEL	Lowest Observed Adverse Effect Level
DSL	Canada, Domestic Substances List	NFPA	National Fire Protection Agency
NDSL	Canada, Non-Domestic Substances List	NIOSH	National Institute for Occupational Safety & Health
CNS	Central Nervous System	NTP	National Toxicology Program
CAS	Chemical Abstract Service	NZIoC	New Zealand Inventory of Chemicals
EC50	Effective Concentration	NOAEL	No Observable Adverse Effect

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			Level
EC50	Effective Concentration 50%	NOEC	No Observed Effect Concentration
EGEST	EOSCA Generic Exposure Scenario Tool	OSHA	Occupational Safety & Health Administration
EOSCA	European Oilfield Specialty Chemicals Association	PEL	Permissible Exposure Limit
EINECS	European Inventory of Existing Chemical Substances	PICCS	Philippines Inventory of Commercial Chemical Substances
MAK	Germany Maximum Concentration Values	PRNT	Presumed Not Toxic
GHS	Globally Harmonized System	RCRA	Resource Conservation Recovery Act
>=	Greater Than or Equal To	STEL	Short-term Exposure Limit
IC50	Inhibition Concentration 50%	SARA	Superfund Amendments and Reauthorization Act.
IARC	International Agency for Research on Cancer	TLV	Threshold Limit Value
IECSC	Inventory of Existing Chemical Substances in China	TWA	Time Weighted Average
ENCS	Japan, Inventory of Existing and New Chemical Substances	TSCA	Toxic Substance Control Act
KECI	Korea, Existing Chemical Inventory	UVCB	Unknown or Variable Composition, Complex Reaction Products, and Biological Materials
<=	Less Than or Equal To	WHMIS	Workplace Hazardous Materials Information System
LC50	Lethal Concentration 50%		