



Emergency Contact: Chemtrec (800) 424-9300  
Or Norco (208) 336-1643

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(208) 336-1643

# n-Hexane 0.0001% to 0.6% in Air

## MATERIAL SAFETY DATA SHEET

### Identification

Product Name: n-Hexane 0.0001% to 0.6% in Air  
CAS Number: N/A  
Chemical Formula: C<sub>6</sub>H<sub>14</sub> 0.0001% to 0.6% in Air  
Common Names/Synonyms: None  
TDG (Canada) Classification: 2.2  
MSDS Identification Code/Number: 2080  
Prepared By: Quality Dept.

Revision Date: 06/18/07  
Last Review Date: 01/15/13

### Composition/Information on Ingredients

#### Exposure Limits<sup>1</sup>:

INGREDIENT	% VOLUME	PEL-OSHA <sup>1</sup>	TIV-ACGIH <sup>2</sup>	LD <sub>50</sub> OR LC <sub>50</sub> Route/Species
Air FORMULA: Not Applicable CAS #: Not Applicable RTECS #: Not Applicable	99.4 – 100	Not Applicable	Not Applicable	Not Applicable
n-Hexane FORMULA: C <sub>6</sub> H <sub>14</sub> CAS #: 110-54-3 RTECS # MN9275000	00.0001% - 0.6%	500 PPM TWA	50 PPM TWA (Skin)	LC <sub>50</sub> 48,000 ppm, Inhalation Rat 4 Hrs.

<sup>1</sup> Refer to individual state or provincial regulations, as applicable, for limits, which may be more stringent than those, listed here.

<sup>2</sup> As stated in 29 CFR 1910, Subpart Z (revised July 1, 1993)

<sup>3</sup> As stated in the ACGIH 2007 Threshold Limit Values for Chemical Substances and Physical Agents

OSHA Regulatory Status: this material is classified as hazardous under OSHA regulations.

### Hazards Identification

#### Emergency Overview:

n-Hexane is a simple hydrocarbon and can cause irritation and central nervous system depression at high concentrations. n-Hexane vapors are irritating to the eyes and respiratory system. Use only with adequate ventilation. Contents under pressure. Avoid heat and flames. Cylinder temperature should not exceed 125°F (52°C). Protect containers from physical damage. This mixture is non-flammable.

#### Route of Entry:

Skin Contact Yes	Skin Absorption Yes	Eye Contact No	Inhalation Yes	Ingestion No
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### Hazards Identification Continued

**Health Effects:**

Exposure Limits Yes	Irritant Yes	Sensitization No
Teratogen No	Reproductive Hazard No	Mutagen Yes
Synergistic Effects None Reported		

Carcinogenicity: NTP: No IARC: No OSHA: No

**Eye Effects:**

Irritation may occur. Contact with rapidly expanding gas near the point of release may cause frostbite.

**Skin Effects:**

Contact with rapidly expanding gas near the point of release may cause frostbite with redness, skin color change to gray or white, and blistering. Liquid hexane is an irritant to the skin and can be absorbed through the skin.

**Ingestion Effects:**

Ingestion is unlikely.

**Inhalation Effects:**

Gas mixture contains sufficient oxygen to support life (at least 99.4% of mix is air). Inhalation of high concentrations of hexane vapors may depress the central nervous system causing dizziness, difficulty in walking, respiratory tract irritation, numbness of the extremities and may result in eventual respiratory paralysis at very high concentrations. Symptoms may include headaches, weakness in the fingers and toes, blurred vision, appetite and weight loss, nausea, and throat irritation.

**Chronic Effects:**

Repeated exposure to n-hexane may damage the nervous system causing peripheral neuropathy often characterized by weakness and numbness in the arms and legs. Symptoms generally disappear within a few months after exposure stops.

**Medical Conditions Aggravated by Exposure:**

Any type of paresthesia may be aggravated by hexane exposure.

**Potential Environmental Effects:**

Administration of hexane up to 100 ppm for 96 hours in artificial seawater (@ 8 °C) caused no mortalities in young Coho salmon.

**NFPA Hazard Codes**

Health: 1  
Flammability: 0  
Instability: 0

**HMIS Hazard Codes**

Health: 1  
Flammability: 0  
Physical Hazard: 3

**Ratings System**

0 = No Hazard  
1 = Slight Hazard  
2 = Moderate Hazard  
3 = Serious Hazard  
4 = Severe Hazard

Ratings were assigned in accordance with Compressed Gas Association (CGA) guidelines as published in CGA Pamphlet P-19-2004, *CGA recommended Hazard Ratings for Compressed Gases, 2<sup>nd</sup> Edition*.

<b>First Aid Measures</b>
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**Eyes:**

None required for gas. If frostbite is suspected, flush eyes with cool water for 15 minutes and obtain immediate medical attention.

**Skin:**

None required for gas. For frostbite, immerse skin in lukewarm water. DO NOT USE HOT WATER. Obtain medical attention.

## First Aid Measures Continued

**Ingestion:**

Not normally required. Product is a gas at normal conditions.

**Inhalation:**

PROMPT MEDICAL ATTENTION IS MANDATORY IN ALL CASES OF OVEREXPOSURE TO PRODUCT. RESCUE PERSONNEL SHOULD BE EQUIPPED WITH SELF-CONTAINED BREATHING APPARATUS. Conscious persons should be assisted to an uncontaminated area and inhale fresh air. Quick removal from the contaminated area is most important. Unconscious persons should be moved to an uncontaminated area, given assisted (artificial) respiration and supplemental oxygen. Further treatment should be symptomatic and supportive.

## Fire Fighting Measures

Conditions of Flammability: Not flammable		
Flash Point: None	Method: Not Applicable	Autoignition Temperature: None
LEL (%): 1.2% (n-Hexane)		UEL (%): 7.4% (n-Hexane)
Hazardous combustion products: Carbon Monoxide, Carbon Dioxide		
Sensitivity to mechanical shock: None		
Sensitivity to static discharge: None		

**Fire and Explosion Hazards:**

The majority of this product constitutes air. N-Hexane is present in concentrations below the Lower Explosive Limits (LEL). Cylinder may vent rapidly or rupture violently from pressure when involved in a fire situation.

**Extinguishing Media:**

Water spray to keep cylinders cool. Extinguishing agent appropriate for the combustible material.

**Fire Fighting Instructions:**

Continue to cool heat or flame exposed containers until well after the flames are extinguished.

## Accidental Release Measures

Evacuate all personnel from affected area. Use appropriate protective equipment. If leak is in user's equipment, be certain to purge piping with inert gas prior to attempting repairs. If leak is in container or container valve, contact the appropriate emergency telephone number listed in Section 1 or call your closest Norco location.

## Handling and Storage

**Electrical Classification:**

Non-hazardous

Use only in well-ventilated areas. Valve protection caps must remain in place unless container is secured with valve outlet piped to use point. Do not drag, slide or roll cylinders. Use a suitable hand truck for cylinder movement. Use a pressure-reducing regulator when connecting cylinder to lower pressure (<3000 psig) piping systems. Do not heat cylinder by any means to increase the discharge rate of product from the cylinder. Use a check valve or trap in the discharge line to prevent hazardous backflow into the cylinder.

Protect cylinders from physical damage. Store in a cool, dry, well-ventilated area away from heavily trafficked areas and emergency exits. Do not allow the temperature where cylinders are stored to exceed 125<sup>o</sup> F (52<sup>o</sup> C). Cylinders should be stored upright and firmly secured to prevent falling or being knocked over. Use a "first in, first out" inventory system to prevent full cylinders being stored for excessive period of time.

For additional recommendations, consult Compressed Gas Association's Pamphlets P-1.

Never carry a compressed gas cylinder or a container of a gas in cryogenic liquid form in an enclosed space such as a car trunk, van or station wagon. A leak can result in a fire, explosion, asphyxiation or a toxic exposure.

## Exposure Controls, Personal Protection

**Engineering Controls:**

Use local exhaust ventilation as necessary to maintain atmospheric oxygen levels above 19.5% and control air contaminants to below acceptable exposure guidelines.

**Eye/Face Protection:**

Safety glasses should be worn.

**Skin Protection:**

Protective gloves made of suitable material appropriate for the job.

**Respiratory Protection:**

Positive pressure air-line with mask and escape bottle or self-contained breathing apparatus should be available for emergency use.

**Other/General Protection:**

Safety shoes, emergency eyewash station.

## Physical and Chemical Properties

PARAMETER	VALUE	UNITS
Physical state (gas, liquid, solid)	: Gas	
Vapor pressure	: Above critical temp.	
Vapor density (Air = 1)	: Not Available	
Evaporation point	: Not Available	
Boiling point	: Not Available	°C
Freezing point	: Not Available	
pH	: Not Available	
Specific gravity at STP	: Not Available	
Oil/water partition coefficient	: Not Available	
Solubility (H <sub>2</sub> O)	: Negligible	
Odor threshold	: 65 to 248 PPM n-Hexane	
Odor and appearance	: Colorless gas with a slight solvent odor.	

## Stability and Reactivity

**Stability:**

Stable

**Incompatible Materials:**

None

**Hazardous Decomposition Products:**

Carbon Monoxide

**Hazardous Polymerization:**

Will not occur.

## Toxicological Information

**Inhalation:**

In humans, inhalation of 5000 PPM n-hexane for 10 minutes produced dizziness and giddiness while 2000 PPM caused no effects.

**Skin and Eye:**

No evidence of eye or mucous membrane irritation was reported following exposure of unacclimated human subjects to 5000 PPM n-hexane.

## Toxicological Information Continued

**Other:**

Repeated exposure to n-hexane can cause slow-developing bilateral, symmetrical, peripheral and sensimotor neuropathy. The minimum levels on n-hexane which are neurotoxic to humans have not been established.

Studies indicate that n-hexane can adversely affect the fetus at maternally toxic levels. Toxicity was observed in newborn following experimental 10,000 ppm, 7 hour exposure in female rats. Toxic effects were observed in embryo and fetus following 5000 ppm, 20 hour exposure in female rats. Although progressive testicular toxicity has been induced in rats at subneurotoxic doses of the main toxic metabolite of n-hexane (2,5-hexanedione), no reports of human reproductive toxicity or sterility have been associated with n-hexane exposure. Genetic effects have been observed in mammalian cell analysis system.

Toxic effects observed to respiratory system, nervous systems in experimental exposures mammalian species. Effects include changes in brain weight, body weight and peripheral nervous system changes.

## Ecological Information

Product does not contain Class I or Class II ozone depleting substances. Although hexane may biodegrade in soil and water, volatilization and adsorption are expected to be more important fate processes.

## Disposal Considerations

Do not attempt to dispose of waste or unused quantities. Return in the shipping container *properly labeled with any valve outlet plugs or caps secure and valve protection cap in place* to Norco for proper disposal.

## Transport Information

PARAMETER	United States DOT	Canada TDG
<b>Proper Shipping Name:</b>	Compressed Gas, N.O.S., (Air, hexane)	Compressed Gas, N.O.S.,
<b>Hazard Class:</b>	2.2	2.2
<b>Identification Number</b>	1956	1956
<b>Shipping label:</b>	Non-flammable gas	Non-flammable gas

## Regulatory Information

**SARA Title III Notifications and Information:**

Releases of hexane in quantities equal to or greater than the reportable quantity (RQ) of 5000 pounds are subject to reporting to the national Response Center under CERCLA, Section 304 SARA Title III.

**SARA Title III – Hazard Classes:**

Acute Health Hazard  
Sudden Release of Pressure Hazard

**SARA Title III – Section 313 Supplier Notification:**

This product contains the following toxic chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community right-To-Know Act (EPCRA) of 1986 and 40 CFR 372:

CAS # : 110-54-3      Ingredient Name: n-Hexane      % By Volume: 0.0001% to 0.6%

**California Proposition 65:**

This product does not contain ingredient(s) known to the State of California to cause cancer or reproductive toxicity.

<b>Other Information</b>
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Compressed gas cylinders shall not be refilled without the express written permission of the owner. Shipment of a compressed gas cylinder that has not been filled by the owner or with his/her (written) consent is a violation of transportation regulations.

**Disclaimer of Expressed and Implied Warranties:**

Although reasonable care has been taken in the preparation of this document, we extend no warranties and make no representations as to the accuracy or completeness of the information contained herein, and assume no responsibility regarding the suitability of this information for the user's intended purposes or for the consequences of its use. Each individual should make a determination as to the suitability of the information for their particular purpose(s).