

MATERIAL SAFETY DATA SHEET

PRODUCT NAME: HEXANE

1. Chemical Product and Company Identification

BOC Gases,
Division of
The BOC Group, Inc.
575 Mountain Avenue
Murray Hill, NJ 07974

BOC Gases
Division of
BOC Canada Limited
5975 Falbourne Street, Unit 2
Mississauga, Ontario L5R 3W6

TELEPHONE NUMBER: (908) 464-8100

24-HOUR EMERGENCY TELEPHONE NUMBER:

CHEMTREC (800) 424-9300

TELEPHONE NUMBER: (905) 501-1700

24-HOUR EMERGENCY TELEPHONE NUMBER:

(905) 501-0802

EMERGENCY RESPONSE PLAN NO: 20101

PRODUCT NAME: HEXANE

CHEMICAL NAME: Hexane

COMMON NAMES/SYNONYMS: Hexane/mixed isomers, Hexanes, n-Hexane

TDG (Canada) CLASSIFICATION: 3

WHMIS CLASSIFICATION: B2, D2A, D2B

PREPARED BY: Loss Control (908)464-8100/(905)501-1700

PREPARATION DATE: 6/1/95

REVIEW DATES: 6/7/96

2. Composition, Information on Ingredients

INGREDIENT	% VOLUME	PEL-OSHA ¹	TLV-ACGIH ²	LD ₅₀ or LC ₅₀ Route/Species
Hexane FORMULA: C ₆ H ₁₄ CAS: 110-54-3 RTECS #: MN9275000	100.0	500 ppm TWA (n-Hexane)	50 ppm TWA (n-Hexane)	LD ₅₀ 2870 mg/kg (rat)

¹ As stated in 29 CFR 1910, Subpart Z (revised July 1, 1993)

² As stated in the ACGIH 1994-95 Threshold Limit Values for Chemical Substances and Physical Agents

3. Hazards Identification**EMERGENCY OVERVIEW**

Vapors irritating to the eyes and respiratory system. Skin contact may cause irritation and dermatitis. Inhalation of vapors may depress the central nervous system causing dizziness, headache and nausea and eventual loss of consciousness and respiratory paralysis at very high concentrations. Flammable.

ROUTE OF ENTRY:

Skin Contact Yes	Skin Absorption No	Eye Contact Yes	Inhalation Yes	Ingestion Yes
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HEALTH EFFECTS:

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

Carcinogenicity: -- NTP: No IARC: No OSHA: No

EYE EFFECTS:

Contact will cause irritation, redness and a burning sensation. Persons with potential exposure to hexane should not wear contact lenses.

SKIN EFFECTS:

Hexane is an irritant to the skin and can be absorbed through the skin in harmful amounts.

INGESTION EFFECTS:

Ingestion may cause gastrointestinal irritation, nausea, vomiting and headache.

INHALATION EFFECTS:

Inhalation of the 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.

Some evidence indicates hexane may cause mutagenic, teratogenic, and/or reproductive effects

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:

Any type of paresthesia may be aggravated by hexane exposure.

NFPA HAZARD CODES

Health: 1
Flammability: 3
Reactivity: 0

HMIS HAZARD CODES

Health: 1
Flammability: 3
Reactivity: 0

RATINGS SYSTEM

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

4. First Aid Measures

EYES:

Flush contaminated eye(s) with copious quantities of water. Part eyelids with fingers to assure complete flushing. Continue for minimum of 15 minutes. Seek medical attention.

SKIN:

Flush affected area with large quantities of water. Remove contaminated clothing as rapidly as possible.

INGESTION:

Do not induce vomiting as aspiration into the lung may cause pulmonary edema and complications. Do not administer milk, alcohol or fatty foods. Lay victim down in a cool, quiet, well ventilated area and keep warm with a blanket. Consult a poison control center for instructions as soon as possible.

INHALATION:

MSDS: G-38

Revised: 6/7/96

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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 and given artificial resuscitation and supplemental oxygen. Further treatment should be symptomatic and supportive.

PROMPT MEDICAL ATTENTION IS MANDATORY IN ALL CASES OF OVEREXPOSURE TO HEXANE. Rescue personnel should be equipped with self-contained breathing apparatus and be aware of extreme fire and explosion hazard.

5. Fire Fighting Measures

Conditions of Flammability: Liquid and vapor flammable		
Flash point: -7 °F (-22 °C)	Method: Not Available	Autoignition Temperature: Not Available
LEL(%): 1.7	UEL(%): 7.7	
Hazardous combustion products: Typical for burning hydrocarbon		
Sensitivity to mechanical shock: None		
Sensitivity to static discharge: Not Available		

FIRE AND EXPLOSION HAZARDS:

Vapors may accumulate in areas with inadequate ventilation possibly forming an explosive atmosphere. Use adequate ventilation to prevent vapor buildup.

EXTINGUISHING MEDIA:

Water (foam), dry chemical, carbon dioxide.

FIRE FIGHTING INSTRUCTIONS:

If possible, stop flow of hexane. Use water spray to cool surrounding containers. Wear self-contained breathing apparatus and other protective clothing as required to fight fire.

6. 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 BOC location.

7. Handling and Storage

Electrical Classifications:

Class 1, Group not specified.

Earth-ground and bond all lines and equipment associated with the hexane system. All electrical equipment should be non-sparking or explosion proof.

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Use only in well-ventilated areas. For gases, 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 or 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 back flow into the system.

Protect cylinders from physical damage. Store in cool, dry, well-ventilated area away from heavily trafficked areas and emergency exits. Do not allow the temperature where cylinders are stored to exceed 130°F (54°C). Cylinders should be stored upright and firmly secured to prevent falling or being knocked over. Full and empty cylinders should be segregated. Use a "first in-first out" inventory system to prevent full cylinders being stored for excessive periods of time. Post "NO SMOKING OR OPEN FLAMES" signs in the storage area or use area. There should be no sources of ignition in the storage or use area.

For additional recommendations, consult Compressed Gas Association's Pamphlet 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.

8. Exposure Controls, Personal Protection

EXPOSURE LIMITS¹:

INGREDIENT	% VOLUME	PEL-OSHA ²	TLV-ACGIH ³	LD ₅₀ or LC ₅₀ Route/Species
Hexane FORMULA: C ₆ H ₁₄ CAS: 110-54-3 RTECS #: MN9275000	100.0	500 ppm TWA (n-Hexane)	50 ppm TWA (n-Hexane)	LD ₅₀ 2870 mg/kg (rat)

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

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

³ As stated in the ACGIH 1994-1995 Threshold Limit Values for Chemical Substances and Physical Agents.

IDLH: 5000 ppm

ENGINEERING CONTROLS:

Use a laboratory hood with forced ventilation for handling small quantities. Use local exhaust to prevent exposures above exposure limits.

EYE/FACE PROTECTION:

Chemical safety goggles or glasses and face shield. Do not wear contact lenses.

SKIN PROTECTION:

Use nitrile rubber gloves.

RESPIRATORY PROTECTION:

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

9. Physical and Chemical Properties

PARAMETER	VALUE	UNITS
Physical state (gas, liquid, solid)	: Liquid	
Vapor pressure at STP	: 2.5	psia
Vapor density at STP (Air = 1)	: 3.0	
Evaporation point	: Not Available	
Boiling point	: 156	°F
	: 69	°C
Freezing point	: -140	°F
	: -95.6	°C
pH	: Not Available	
Specific gravity	: 0.664	
Oil/water partition coefficient	: Not Available	
Solubility (H2O)	: Negligible	
Odor threshold	: Not Available	
Odor and appearance	: Clear liquid with mild solvent odor	

10. Stability and Reactivity

STABILITY:

Stable

INCOMPATIBLE MATERIALS:

Oxygen, other oxidizers.

HAZARDOUS POLYMERIZATION:

Will not occur.

11. Toxicological Information

REPRODUCTIVE:

Toxicity observed in newborn following experimental 10,000 ppm, 7 hour exposure in female rats.

Toxic effects observed in embryo and fetus following 5000 ppm, 20 hour exposure in female rats.

Toxic effects also observed to embryo and fetus of orally exposed mice.

MUTAGENECITY:

Genetic effects observed in mammalian cell analysis system.

OTHER:

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.

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12. Ecological Information

No data given.

13. Disposal Considerations

Do not attempt to dispose of residual waste or unused quantities. Return in the shipping container PROPERLY LABELED, WITH ANY VALVE OUTLET PLUGS OR CAPS SECURED AND VALVE PROTECTION CAP IN PLACE to BOC Gases or authorized distributor for proper disposal.

14. Transport Information

PARAMETER	United States DOT	Canada TDG
PROPER SHIPPING NAME:	Hexanes	Hexanes
HAZARD CLASS:	3	3
IDENTIFICATION NUMBER:	UN 1208	UN 1208
SHIPPING LABEL:	FLAMMABLE LIQUID	FLAMMABLE LIQUID

Packing Group: II

15. Regulatory Information

SARA TITLE III NOTIFICATION AND INFORMATION:

Releases of hexane in quantities equal to or greater than the reportable quantity (RQ) of 5,000 pounds are subject to reporting to the National Response Center under CERCLA, Section 304 SARA Title III.

SARA TITLE II-HAZARD CLASSES:

Acute Health Hazard
Chronic Health Hazard
Fire 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 of 40 CFR 372:

CAS NUMBER	INGREDIENT NAME	PERCENT BY VOLUME
110-54-3	Hexane	100.0

This information must be included on all MSDSs that are copied and distributed for this material.

16. Other Information

Compressed gas cylinders shall not be refilled without the express written permission of the owner. Shipment of a compressed gas cylinder which 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:

MSDS: G-38
Revised: 6/7/96

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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).