

information/emergency telephone no. 616.726.3171  
chemtrec telephone no. 800.424.9300  
canadian emergency telephone no. 613.996.6666**MATERIAL SAFETY  
DATA SHEET****I. Identification**

chemical name	Pentane	molecular weight	72.15
chemical family	Aliphatic Hydrocarbon	formula	C <sub>5</sub> H <sub>12</sub>
synonyms	n-Pentane		
DOT proper shipping name	Pentane		
DOT hazard class	Flammable Liquid		
DOT identification no.	UN1265	CAS no.	109-66-0

**PENTANE****II. Physical and Chemical Data**

boiling point, 760mm Hg.	36.07°C	freezing point	-129.7°C	evaporation rate	(BuAc=1) ca 29
vapor pressure at 20°C	420 mm Hg	vapor density (air=1)	2.5	solubility in water	@ 20°C 0.04%
% volatiles by volume	ca 100	specific gravity (H <sub>2</sub> O=1)	@ 20°C 0.626	stability	Stable
hazardous polymerization	Not expected to occur.				
appearance and odor	Clear, colorless liquid with a mild hydrocarbon odor.				
conditions to avoid	Heat, sparks, open flame, open containers, and poor ventilation.				

materials to avoid Strong oxidizing agents.

hazardous decomposition products Incomplete combustion can generate carbon monoxide and other toxic vapors.

**III. Fire and Explosion Hazard Data**

flash point, (test method)	-40°C (Tag closed cup)	auto ignition temperature	296°C
flammable limits in air % by volume: lower limit	1.5	upper limit	7.8
unusual fire and explosion hazards	Very volatile and extremely flammable. Storage under hot condition (> 36°C) will cause boiling. Cool contents to room temperature (22°C) before opening containers.		

extinguishing media Carbon dioxide, dry chemical or foam.

special fire fighting procedures Water will not be effective in extinguishing a fire and may spread it but a water spray can be used to cool exposed containers. Wear full protective clothing and self-contained breathing apparatus. Heat will build pressure and may rupture closed storage containers.

**IV. Hazardous Components**

Pentane	%	ca 100	TLV	600 ppm	CAS no.	109-66-0
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**Burdick & Jackson's Disclaimer:** The information and recommendations presented in this Material Safety Data Sheet are based on sources believed to be reliable on the date hereof. Burdick & Jackson makes no representation on its completeness or accuracy. It is the user's responsibility to determine the product's suitability for its intended use, the product's safe use, and the product's proper disposal. No representations or warranties, either express or implied, merchantability or fitness for a particular purpose or of any other nature are made with respect to the information provided in this Material Safety Data Sheet. Burdick & Jackson neither assumes nor authorizes any other person to assume for it, any other or additional liability or responsibility resulting from the use of, or reliance upon, this information.

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## V. Health Hazards

<u>Occupational Exposure Limits</u>				<u>Concentration Immediately Dangerous to Health</u>	
OSHA	TWA	-	600 ppm	OSHA/NIOSH	15,000 ppm
	STEL	-	750 ppm		
	Ceiling	-	not listed		
<u>Odor Threshold</u>					
ACGIH	TLV-TWA	-	600 ppm	NIOSH	2.2 ppm
	TLV-STEL	-	750 ppm	OHS	10 ppm
NIOSH	10 hour TWA	-	120 ppm	NSC	not listed

### Carcinogenic Data

Pentane is not listed as a carcinogen by IARC, OSHA, NTP, or ACGIH.

### Primary Routes of Entry

Pentane may exert its effects through inhalation, skin absorption, and ingestion.

### Industrial Exposure: Route of Exposure/Signs and Symptoms

Inhalation: Exposure can cause dizziness, headache, nausea, and narcosis.

Eye Contact: Liquid and high vapor concentration can be irritating.

Skin Contact: Prolonged or repeated skin contact can cause irritation and dermatitis through defatting of skin.

Ingestion: Can cause gastrointestinal tract discomfort.

### Effects of Overexposure

Pentane is a mild eye and mucous membrane irritant, primary skin irritant, and central nervous system depressant. Acute exposure irritates the eyes and respiratory tract. Extreme concentrations can produce drowsiness and other signs of narcosis. Chronic exposure can cause dermatitis.

### Medical Condition Aggravated by Exposure

Preclude from exposure those individuals susceptible to dermatitis.

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### Emergency First Aid

- Inhalation:** Immediately remove to fresh air. If not breathing, administer mouth-to-mouth rescue breathing. If there is no pulse administer cardiopulmonary resuscitation (CPR). Contact physician immediately.
- Eye Contact:** Rinse with copious amounts of water for at least 15 minutes. Get emergency medical assistance.
- Skin Contact:** Flush thoroughly for at least 15 minutes. Wash affected skin with soap and water. Remove contaminated clothing and shoes. Wash clothing before re-use, and discard contaminated shoes. Get emergency medical assistance.
- Ingestion:** Call local Poison Control Center for assistance. Contact physician immediately. Aspiration Hazard - Do not induce vomiting.

### **VI. Safety Measures and Equipment**

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- Ventilation:** Adequate ventilation is required to protect personnel from exposure to chemical vapors exceeding the PEL and to minimize fire hazards. The choice of ventilation equipment, either local or general, will depend on the conditions of use, quantity of material, and other operating parameters.
- Respiratory:** Use approved respirator equipment. Follow NIOSH and equipment manufacturer's recommendations to determine appropriate equipment (air-purifying, air-supplied, or self-contained breathing apparatus).
- Eyes:** Safety glasses are considered minimum protection. Goggles or face shield may be necessary depending on quantity of material and conditions of use.
- Skin:** Protective gloves and clothing are recommended. The choice of material must be based on chemical resistance and other user requirements. Generally, neoprene or nitrile rubber offer acceptable chemical resistance. Individuals who are acutely and specifically sensitive to pentane may require additional protective equipment.

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**Storage:** Pentane should be protected from temperature extremes and direct sunlight. Proper storage of pentane must be determined based on other materials stored and their hazards and potential chemical incompatibility. In general, pentane should be stored in an acceptably protected and secure flammable liquid storage room. **Storage of pentane under hot conditions (> 36°C) will cause boiling of the liquid. If the container is opened before allowing the liquid to cool to room temperature (22°C), the liquid could boil over out of the container.**

**Other:** Emergency eye wash fountains and safety showers should be available in the vicinity of any potential exposure. Ground and bond metal containers to minimize static sparks.

## **VII. Spill and Disposal Data**

**Spill Control:** Protect from ignition. Wear protective clothing and use approved respirator equipment. Absorb spilled material in an absorbent recommended for solvent spills and remove to a safe location for disposal by approved methods. If released to the environment, comply with all regulatory notification requirements.  
CERCLA Reportable Quantity — 5,000 lbs.

**Waste Disposal:** Dispose of pentane as an EPA hazardous waste. Contact state environmental agency for listing of licensed hazardous waste disposal facilities and applicable regulations. Hazardous waste number: D001(Ignitable).

## **VIII. SARA/Title III Data**

<u>Hazard Classification</u>		<u>Chemical Listings</u>	
Immediate Health	Yes (irritant)	Extremely Hazardous Substances	No
Delayed Health	No	CERCLA Hazardous Substances	No
Fire	Yes	Toxic Chemicals	No
Sudden Release	No		
Reactive	No		

Pentane is not subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA) and 40CFR Part 372. This product does not contain any other toxic chemical above 1% concentration or a carcinogen above 0.1% concentration.

Revision Date: July, 1989

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### KEY

ca	Approximately	STEL	Short Term Exposure Level (15 min)
na	Not applicable	TLV	Threshold Limit Value
C	Ceiling	TWA	Time Weighted Average (8 Hours)
		BuAc	Butyl Acetate

CERCLA Comprehensive Environmental Response, Compensation and Liability Act  
NSC National Safety Council ("Fundamentals of Industrial Hygiene," 3rd. Ed., 1988)