

# GAS INNOVATIONS

## MATERIAL SAFETY DATA SHEET (MSDS)

## PENTANE

### PRODUCT IDENTIFICATION

▪D.O.T. SHIPPING NAME	Pentane
▪SYNONYM (S)	Normal Pentane, n-Pentane
▪D.O.T. I.D. NUMBER	UN-1265
▪D.O.T. HAZZARD CLASS	Flammable Liquid
▪D.O.T. LABEL (S)	Flammable Liquid
▪C.A.S. NUMBER	109-66-0
▪CHEMICAL FORMULA	C <sub>5</sub> H <sub>12</sub> or CH <sub>3</sub> (CH <sub>2</sub> ) <sub>3</sub> CH <sub>3</sub>

### PHYSICAL DATA

▪MOLECULAR WEIGHT	72.0
▪FREEZING POINT	-130°C, -202°F
▪BOILING POINT	37.8°C, 100°F
▪VAPOR PRESSURE	7.2 psia @ 1 atm, 60°F
▪SPECIFIC VOLUME	0.19 gal./lb. @ 1 atm, 68°F
▪ SPECIFIC GRAVITY	Lighter than water.
▪RELATIVE DENSITY, (air=1)	Heavier than air
▪SOLUBILITY IN WATER	Negligible
▪DESCRIPTION	At room temperature and atmospheric pressure n-Pentane is colorless and flammable with slight characteristic odor.

### FIRE AND EXPLOSION HAZARD DATA

▪FLAMMABLE LIMITS IN AIR	1.4 – 8.3 % by volume
▪AUTO-IGNITION TEMPERATURE	308°C, 588°F
▪ FLASH POINT	Below 0° F
▪ FIRE FIGHTING PROCEDURES	The only safe way to extinguish a Pentane fire is to stop the flow. Fires may be brought under control by using foam, carbon dioxide or a dry chemical fire extinguisher. Personnel may have to wear approach type protective suits and positive pressure self-contained breathing apparatus. Firefighters' turnout gear may be inadequate.
▪ UNUSUAL HAZARDS	<ol style="list-style-type: none"><li>1. Cylinders exposed to fire may rupture with violent force. Keep cylinders cool by applying water from a maximum possible distance with a water spray. Avoid spreading burning liquid with water used for cooling.</li><li>2. Keep work areas free of hot metal surfaces and other sources of ignition.</li></ol>

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## HEALTH HAZARD DATA

▪ PERMISSIBLE EXPOSURE  
LIMITS

OSHA TWA None established.  
ACGIH TWA None established.

▪ ACCUTE EFFECTS  
OF OVEREXPOSURE

Inhalation of high concentrations may cause respiratory tract irritation, central nervous system depression in high concentrations, breathing difficulties, dizziness, lightheadedness, and weakness and numbness in extremities. Skin and eye contact can cause irritation.

▪ CHRONIC EFFECTS  
OF OVEREXPOSURE

Possible systemic effects are respiratory tract irritation, central nervous system depression, and weakness or numbness in extremities.

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## FIRST AID INFORMATION

▪ INHALATION

Move victim to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is difficult, give oxygen. Call a physician.

▪ SKIN

Wash with soap and large quantities of water. Remove saturated clothing.

▪ EYE

Flush with large quantities of water for at least 15 minutes and Seek immediate medical attention.

▪ INGESTION

DO NOT INDUCE VOMITING. Seek immediate medical attention.

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## REACTIVITY DATE

- STABILITY
- INCOMPATIBILITY
- HAZARDOUS  
DECOMPOSITION/  
OXIDATION PRODUCTS
- POLYMERIZATION

( X ) Stable. ( ) Unstable.

Oxidizing agents, acids, bases, and selected amines.

Carbon monoxide, carbon dioxide.

( X ) Will not occur ( ) May occur

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## SPILL OR LEAKAGE PROCEDURE

Shut off all ignition sources, remove hot metal surfaces, and ventilate the area. For controlling large flow, personnel may have to wear approach-type protective suits and self-contained breathing apparatus. Flush spilled material into suitable retaining areas or containers with large quantities of water. Small amounts of spilled material may be absorbed into an appropriate absorbent.

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## PRECAUTIONS

▪ STORAGE  
RECOMMENDATIONS

Cylinders should be stored and used in dry, cool, well-ventilated areas away from sources of heat or ignition. Do not store with oxidizers. Avoid direct sun light.

▪ PERSONAL PROTECTIVE  
EQUIPMENT

1. Eye protection – Safety glasses, chemical goggles, and/or face shields should be worn.
2. Respiratory protection – Approved respiratory equipment must be worn when airborne concentrations exceed safe levels.
3. Skin protection – Use impermeable gloves and impermeable aprons. The availability of eye washes and safety showers in work areas is recommended.

▪ BEFORE USING THE GAS

1. Secure the cylinder to prevent it from failing or being knocked over.
  2. Install check valves or traps to prevent suckback to the cylinder.
  3. Ground all lines and equipment.
  4. Leak check the lines and equipment.
  5. Have an emergency plan covering steps to be taken in the event of an accidental release.
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## DISCLAIMER

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