

# Material Safety Data Sheet

## N-PENTANE

Revision 09/04.

### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Advanced Gas Technologies  
1401 Stauffer Road  
Palm, PA 18070.

Telephone Number: (215) 541-4116

MSDS IDENTIFICATION CODE / NUMBER: PE

#### EMERGENCY TELEPHONE NUMBER

CHEMTREC (800) 424-9300

**PRODUCT NAME:** n-Pentane

**CAS NUMBER:** 109-66-0

**CHEMICAL FAMILY:** Saturated Aliphatic Hydrocarbon

**CHEMICAL FORMULA:** C<sub>5</sub> H<sub>12</sub>

**SYNONYMS:** Normal Pentane, Pentane

### 2. COMPOSITION / INFORMATION ON INGREDIENTS

INGREDIENT NAME	EXPOSURE LIMITS	%VOLUME
n-Pentane	600 ppm	99 – 100
Isopentane	NA	0.5 – 1
Related Hydrocarbons	NA	0.2 – 0.5

CAS NUMBER: 78-78-4

PEL-OSHA: Simple Asphyxiant  
TLV-ACGIH-Simple Asphyxiant  
LD 50 or LC50: Not Available

### 3. HAZARDS IDENTIFICATION

Simple hydrocarbons can cause irritation and central nervous system depression at high concentrations. Extremely flammable liquid.

### 4. FIRST AID MEASURES

#### EYES

Vapors may be mildly irritating..

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**SKIN**

Vapors are not irritating. Prolonged or repeated exposure may cause de-fatting of the skin leading to skin irritation.

**INGESTION**

If swallowed, may be aspirated resulting in inflammation and possible fluid accumulation in the lungs.

**INHALATION**

Vapors may be mildly irritating. High concentrations may cause dizziness, disorientation, headache, excitation, anesthesia and central nervous system depression.

**5. FIRE FIGHTING MEASURES**

**FLAMMABLE PROPERTIES**

**FLASH POINT:** < -40 °F (-40 °C) Estimated

**AUTOIGNITION:** NA

**LOWER EXPLOSIVE LIMIT (%):** 1.4

**UPPER EXPLOSIVE LIMIT (%):** 8.3

**FIRE AND EXPLOSION HAZARDS.**

n-Pentane is heavier than air and may travel a considerable distance along the ground to an ignition source. Vapors may accumulate in low areas. Isopentane is a flammable gas! Keep away from open flame and other sources of ignition. Do not allow smoking in storage areas or when handling.

**EXTINGUISHING MEDIA**

Water, Carbon dioxide, Dry chemical.

**FIRE FIGHTING INSTRUCTIONS**

If possible, stop the flow of gas with a remote valve. Use water spray to cool exposed containers. Do not spray water directly on fire; product will float and could be re-ignited on surface of water. If fire is extinguished and flow of gas is continues, increase ventilation to prevent a build up of a flammable/explosive atmosphere. Extinguish sources of ignition.

Be cautious of a Boiling Liquid Evaporating Vapor Explosion, BLEVE, if flame is impinging on surrounding containers. Direct a 500 GPM water stream onto containers above the liquid level with remote monitors. Limit the number of personnel in proximity to the fire. Evacuate surrounding areas to at least 3000 feet in all directions.

## 6. ACCIDENTAL RELEASE MEASURES

Evacuate all personnel from affected area. Use appropriate protective equipment. Shut off source, if possible and contain the spill. Keep out of water sources and sewers. Increase ventilation to prevent build up of a flammable/explosive atmosphere. Extinguish all sources of ignition! Absorb in a dry, inert material ie. sand, clay, etc.. 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 Advanced Gas Tech. or CHEMTREC.

## 7. HANDLING AND STORAGE

### **HANDLING AND STORAGE PRECAUTIONS**

Earth bond and ground all lines and equipment associated with the product system. Electrical equipment should be non-sparking and explosion proof. 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. 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 cylinder.

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 from being stored for excessive periods of time.

Post "No Smoking" signs in storage or use areas.

For additional recommendations consult Compressed Gas Association 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

### **ENGINEERING CONTROLS**

Use local exhaust to prevent gas from accumulating. Use general ventilation to prevent build up of flammable concentrations. Use a hood with ventilation when handling small quantities. If product is handled routinely where the potential for leaks exists, all electrical equipment must be rated for use in potentially flammable atmospheres. Consult the National Electrical Code for details.

### **EYE / FACE PROTECTION**

Safety goggles or glasses

### **SKIN PROTECTION**

Protective gloves made of plastic or rubber.

### **RESPIRATORY PROTECTION**

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

### **OTHER / GENERAL PROTECTION**

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Safety shoes, safety shower, eyewash.

**Page 4: n-Pentane continued.**

## **9. PHYSICAL AND CHEMICAL PROPERTIES**

### **BASIC PHYSICAL PROPERTIES**

**BOILING POINT:** 98 °F 37°C

**MELTING POINT:** -201.5 °F -129.7 °C

**VAPOR PRESSURE:** (@100°F) 15.3 psia

**VAPOR DENSITY (AIR=1):** 2.48

**SOLUBILITY (H2O):** Insoluble

**Physical state:** Colorless Liquid

**Odor:** Mild gasoline odor

## **10. STABILITY AND REACTIVITY**

**STABILITY:** Stable. Conditions to avoid stability: High temperatures. Product will start to decompose.

### **INCOMPATIBLE MATERIALS**

Oxidizers.

### **HAZARDOUS DECOMPOSITION PRODUCTS**

Carbon dioxide, Carbon monoxide if sufficient oxygen is present.

## **11. TOXICOLOGICAL INFORMATION**

Oxygen deficiency during pregnancy has produced developmental abnormalities in humans and experimental animals.

No chronic effects data given in the Registry of Toxic Effects of Chemical Substances (RTECS) or Sax, Dangerous Priorities of Industrial Materials, 7<sup>th</sup> ed.

## **12. ECOLOGICAL INFORMATION**

This product is in U.S. commerce and is listed in the Toxic Substances Control Act (TSCA) Inventory of Chemicals; hence, it may be subject to applicable TSCA provisions and restrictions.

## **13. 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 SECURED AND VALVE PROTECTION CAP IN PLACE TO Advanced Gas Technologies for proper disposal.

## **14. TRANSPORT INFORMATION**

**PROPER SHIPPING NAME:** Pentanes (n-Pentane)

**HAZARD CLASS:** 3

**DOT IDENTIFICATION NUMBER:** UN1265

**PACKING GROUP:** I

**DOT SHIPPING LABEL:** Flammable Liquid

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Page 5: n-Pentane continued.

**15. REGULATORY INFORMATION**

**SARA TITLE III NOTIFICATIONS AND INFORMATION**

SARA TITLE III - HAZARD CLASSES: Acute Health Hazard  
Fire Hazard

**16. OTHER INFORMATION**

**NFPA HAZARD RATING** - HEALTH 1 Slight Hazard  
FIRE 4 Severe Hazard  
REACTIVITY 0 No Hazard

**MSDS IDENTIFICATION CODE / NUMBER: PE**

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