

Pentane

**Material Safety Data Sheet**

**Section 1. Product and Company Identification**

**Product Name** Pentane

**Product Code** PX0170

**Manufacturer** EMD Chemicals Inc.

P.O. Box 70

480 Democrat Road

Gibbstown, NJ 08027

Prior to January 1, 2003 EMD Chemicals Inc. was

EM Industries, Inc. or EM Science, Division of

EM Industries, Inc.

**Effective Date** 3/3/2003

**For More Information Call**

856-423-6300 Technical Service

Monday-Friday: 8:00 AM - 5:00 PM

**In Case of Emergency Call**

800-424-9300 CHEMTREC  
(USA)

613-996-6666 CANUTEC  
(Canada)

24 Hours/Day: 7 Days/Week

**Synonym** N-PENTANE

**Material Uses** Analytical reagent.

**Chemical Family** Hydrocarbon.

---

**Section 2. Composition and Information on Ingredients**

**Component**

**CAS # % by Weight**

Pentane

109-66-0 100

---

**Section 3. Hazards Identification**

**Physical State and Appearance** Liquid. (Colorless.)

**Emergency Overview**

DANGER!

EXTREMELY FLAMMABLE LIQUID AND VAPOR.

VAPOR MAY CAUSE FLASH FIRE.

MAY BE FATAL IF SWALLOWED.

ASPIRATION HAZARD.

HARMFUL IF INHALED.

CAUSES DAMAGE TO THE FOLLOWING ORGANS: LUNGS,

RESPIRATORY TRACT, SKIN, CENTRAL NERVOUS SYSTEM,

EYE, LENS OR CORNEA.

TOXIC TO AQUATIC ORGANISMS.

MAY CAUSE RESPIRATORY TRACT, EYE AND SKIN

IRRITATION.

MAY BE HARMFUL TO ENVIRONMENT IF RELEASED IN LARGE AMOUNTS.

**Routes of Entry** Inhalation. Ingestion.

**Potential Acute Health Effects**

**Eyes** May be hazardous in case of eye contact (irritant).

**Skin** May be hazardous in case of skin contact (irritant). Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.

## Pentane

**Inhalation** Hazardous in case of inhalation. May be hazardous in case of inhalation (lung irritant).

**Ingestion** Extremely hazardous in case of ingestion. May be fatal if swallowed.

### Potential Chronic Health Effects

**Carcinogenic Effects** This material is not known to cause cancer in animals or humans.

Additional information See Toxicological Information (section 11)

**Medical Conditions Aggravated by Overexposure:** Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.

---

### Section 4. First Aid Measures

**Eye Contact** Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.

**Skin Contact** In case of contact, immediately flush skin with plenty of water. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.

**Inhalation** If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

**Ingestion** If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

---

### Section 5. Fire Fighting Measures

**Flammability of the Product** Product will burn.

**Auto-ignition Temperature** 283.9°C (543°F)

**Flash Points** Closed cup: -50.1°C (-58.2°F).

**Flammable Limits** LOWER: 1.5% UPPER: 7.8%

**Products of Combustion** These products are carbon oxides (CO, CO<sub>2</sub>).

**Fire Hazards in Presence of Various Substances** Extremely flammable in presence of open flames, sparks and static discharge, of shocks, of heat.

**Explosion Hazards in Presence of Various Substances** **Risks of explosion of the product in presence of static discharge:**  
Extremely flammable in presence of open flames, sparks and static discharge.  
Extremely explosive in presence of open flames, sparks and static discharge.

**Risks of explosion of the product in presence of mechanical impact:**  
Extremely flammable in presence of shocks.  
Extremely explosive in presence of shocks.

**Fire Fighting Media and Instructions** SMALL FIRE: Use DRY chemical powder.  
LARGE FIRE: Use water spray or fog. Cool containing vessels with water jet in order to prevent pressure build-up, autoignition or explosion.

## Pentane

**Protective Clothing** Be sure to use an approved/certified respirator or equivalent.

**(Fire)**

**Special Remarks on** Not available.

**Fire Hazards**

**Special Remarks on** Not available.

**Explosion Hazards**

---

### Section 6. Accidental Release Measures

**Small Spill and Leak** Absorb with an inert material and put the spilled material in an appropriate waste disposal.

**Large Spill and Leak** Keep away from heat. Keep away from sources of ignition. Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. Do not get water inside container. Do not touch spilled material. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Call for assistance on disposal. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

**Spill Kit Information** The following EMD Chemicals Inc. SpillSolv® absorbent is recommended for this product: SX1330 Solvent Treatment Kit

---

### Section 7. Handling and Storage

**Handling** Keep away from heat, sparks and flame. Do not ingest. Keep container closed. Use only with adequate ventilation. Do not get in eyes, on skin, or on clothing.

**Storage** Keep container in a cool, well-ventilated area.

---

### Section 8. Exposure Controls/Personal Protection

**Engineering Controls** Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective occupational exposure limits. Ensure that eyewash stations and safety showers are proximal to the work-station location.

#### Personal Protection

**Eyes** Splash goggles.

**Body** Lab coat.

**Respiratory** Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate.

**Hands** Gloves.

**Feet** Not applicable.

**Protective Clothing (Pictograms)**

**Personal Protection in Case of a Large Spill** Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self-contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

**Product Name**  
Pentane

#### Exposure Limits

**BAUA (Germany, 1997).**

Spitzenbegrenzung: 11800 mg/m<sup>3</sup>

Spitzenbegrenzung: 4000 ppm

TWA: 2950 mg/m<sup>3</sup> 8 hour(s).

TWA: 1000 ppm 8 hour(s).

## Pentane

### **DK–Arbejdstylsinet (Denmark, 1996).**

GV: 1500 mg/m<sup>3</sup> 8 hour(s).

GV: 500 ppm 8 hour(s).

### **INRS (France, 1996).**

VME: 1800 mg/m<sup>3</sup> 8 hour(s).

VME: 600 ppm 8 hour(s).

### **National Authority for Occupational Safety/Health (Ireland, 1999).**

STEL: 2250 mg/m<sup>3</sup> 15 minute(s).

STEL: 750 ppm 15 minute(s).

OEL: 1800 mg/m<sup>3</sup> 8 hour(s).

OEL: 600 ppm 8 hour(s).

### **Arbeidsinspectie (Netherlands, 1999).**

TGG 8 uur: 1800 mg/m<sup>3</sup> 8 hour(s).

TGG 8 uur: 600 ppm 8 hour(s).

### **ACGIH (United States, 1998).**

TWA: 600 ppm 8 hour(s).

### **NIOSH REL (United States, 1994).**

CEIL: 1800 mg/m<sup>3</sup> 15 minute(s).

CEIL: 610 ppm 15 minute(s).

TWA: 350 mg/m<sup>3</sup> 10 hour(s).

TWA: 120 ppm 10 hour(s).

### **OSHA Final Rule (United States, 1989).**

STEL: 2250 mg/m<sup>3</sup> 15 minute(s).

STEL: 750 ppm 15 minute(s).

TWA: 1800 mg/m<sup>3</sup> 8 hour(s).

TWA: 600 ppm 8 hour(s).

---

## Section 9. Physical and Chemical Properties

<b>Odor</b>	Gas.
<b>Color</b>	Colorless.
<b>Physical State and Appearance</b>	Liquid. (Colorless.)
<b>Molecular Weight</b>	72.17 g/mole
<b>Molecular Formula</b>	C <sub>5</sub> –H <sub>12</sub>
<b>pH</b>	Not applicable.
<b>Boiling/Condensation Point</b>	36.17°C (97.1°F)
<b>Melting/Freezing Point</b>	–128.83°C (–199.9°F)
<b>Critical Temperature</b>	196.6°C (385.9°F)
<b>Specific Gravity</b>	0.626 (Water = 1)
<b>Vapor Pressure</b>	Not available.
<b>Vapor Density</b>	2.5 (Air = 1)
<b>Odor Threshold</b>	10 ppm
<b>Evaporation Rate</b>	10.46 compared to (n–BUTYL ACETATE=1)
<b>LogKow</b>	Not available.
<b>Solubility</b>	Insoluble in water.

---

## Pentane

### Section 10. Stability and Reactivity

<b>Stability and Reactivity</b>	The product is stable.
<b>Conditions of Instability</b>	Not available.
<b>Incompatibility with Various Substances</b>	Highly reactive with oxidizing agents.
<b>Rem/Incompatibility</b>	Not available.
<b>Hazardous Decomposition Products</b>	carbon oxides (CO, CO <sub>2</sub> )
<b>Hazardous Polymerization</b>	Will not occur.

---

### Section 11. Toxicological Information

<b>RTECS Number:</b>	Pentane	RZ9450000
<b>Toxicity</b>	LD50: Not available. LC50: Not available.	
<b>Chronic Effects on Humans</b>	Not available.	
<b>Acute Effects on Humans</b>	May be hazardous in case of eye contact (irritant). May be hazardous in case of skin contact (irritant). Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering. Hazardous in case of inhalation. May be hazardous in case of inhalation (lung irritant). Extremely hazardous in case of ingestion. May be fatal if swallowed.	
<b>Synergetic Products (Toxicologically)</b>	Not available.	
<b>Irritancy</b>	Draize Test: Not available.	
<b>Sensitization</b>	Not available.	
<b>Carcinogenic Effects</b>	This material is not known to cause cancer in animals or humans.	
<b>Toxicity to Reproductive System</b>	Not available.	
<b>Teratogenic Effects</b>	Not available.	
<b>Mutagenic Effects</b>	Not available.	

---

### Section 12. Ecological Information

<b>Ecotoxicity</b>	Not available.
<b>BOD5 and COD</b>	Not available.
<b>Toxicity of the Products of Biodegradation</b>	The products of degradation are less toxic than the product itself.

---

### Section 13. Disposal Considerations

<b>EPA Waste Number</b>	D001
<b>Treatment</b>	Incineration, fuels blending or recycle. Contact your local permitted waste disposal site (TSD) for permissible treatment sites. Always contact a

## Pentane

permitted waste disposal (TSD) to assure compliance with all current local, state, and Federal Regulations.

---

### Section 14. Transport Information

**DOT Classification** Proper Shipping Name: PENTANE

Hazard Class: 3

UN number: UN1265

Packing Group: I

RQ: Not applicable.

**TDG Classification** Not available.

**IMO/IMDG Classification** Proper Shipping Name: PENTANES, LIQUID

Hazard Class: 3

UN number: UN1265

Packing Group: I

RQ: Not applicable.

**ICAO/IATA Classification** Not available.

---

### Section 15. Regulatory Information

**U.S. Federal Regulations** TSCA 8(a) PAIR: Pentane  
TSCA 8(b) inventory: Pentane

SARA 302/304/311/312 extremely hazardous substances: No products were found.

SARA 302/304 emergency planning and notification: No products were found.

SARA 302/304/311/312 hazardous chemicals: Pentane

SARA 311/312 MSDS distribution – chemical inventory – hazard identification: Pentane: Fire Hazard, Immediate (Acute) Health Hazard

SARA 313 toxic chemical notification and release reporting: No products were found.

Clean Water Act (CWA) 307: No products were found.

Clean Water Act (CWA) 311: No products were found.

Clean air act (CAA) 112 accidental release prevention: Pentane

Clean air act (CAA) 112 regulated flammable substances: Pentane

Clean air act (CAA) 112 regulated toxic substances: No products were found.

**WHMIS (Canada)** CLASS B–2: Flammable liquid with a flash point lower than 37.8°C (100°F).

Class D–2A: Material causing other toxic effects (VERY TOXIC).

CEPA DSL: Pentane

This product has been classified in accordance with the hazard criteria of the Controlled Product Regulations and the MSDS contains all required information.

**International Regulations**

**EINECS** Pentane 203–692–4

**DSCL (EEC)** R11– Highly flammable.

R36/37/38– Irritating to eyes, respiratory system and skin.

**International** Australia (NICNAS): Pentane

Pentane

**Lists**

Japan (MITI): Pentane

Korea (TCCL): Pentane

Philippines (RA6969): Pentane

China: No products were found.

**State Regulations**

Pennsylvania RTK: Pentane: (generic environmental hazard)

Massachusetts RTK: Pentane

New Jersey: Pentane

California prop. 65: No products were found.

**Section 16. Other Information**

<b>National Fire Protection Association (U.S.A.)</b>	<b>4</b>	<b>Fire</b>
	<b>10</b>	<b>Hazard</b>
	<b>Health</b>	<b>Reactivity</b>
		<b>Specific Hazard</b>

**Changed Since Last Revision** +

**Notice to Reader**

The statements contained herein are based upon technical data that EMD Chemicals Inc. believes to be reliable, are offered for information purposes only and as a guide to the appropriate precautionary and emergency handling of the material by a properly trained person having the necessary technical skills. Users should consider these data only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use, storage and disposal of these materials and the safety and health of employees and customers and the protection of the environment. EMD CHEMICALS INC. MAKES NO REPRESENTATION OR WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE, WITH RESPECT TO THE INFORMATION HEREIN OR THE PRODUCT TO WHICH THE INFORMATION REFERS.