

### 1. PRODUCT AND COMPANY IDENTIFICATION

Product name	: Pentane	
Product Number	: 158941	
Brand	: Sigma-Aldrich	
Product Use	: For laboratory research purposes.	
Supplier	: Sigma-Aldrich 3050 Spruce Street SAINT LOUIS MO 63103 USA	Manufacturer : Sigma-Aldrich Corporation 3050 Spruce St. St. Louis, Missouri 63103 USA
Telephone	: +1 800-325-5832	
Fax	: +1 800-325-5052	
Emergency Phone # (For both supplier and manufacturer)	: (314) 776-6555	
Preparation Information	: Sigma-Aldrich Corporation Product Safety - Americas Region 1-800-521-8956	

### 2. HAZARDS IDENTIFICATION

#### Emergency Overview

#### OSHA Hazards

Flammable liquid, Target Organ Effect

#### Target Organs

Central nervous system, Heart, Lungs

#### GHS Classification

Acute toxicity, Dermal (Category 5)  
Acute toxicity, Oral (Category 5)  
Specific target organ toxicity - single exposure (Category 3)  
Aspiration hazard (Category 1)  
Acute aquatic toxicity (Category 2)

#### GHS Label elements, including precautionary statements

Pictogram



Signal word

Danger

Hazard statement(s)

H303 + H313	May be harmful if swallowed or in contact with skin.
H304	May be fatal if swallowed and enters airways.
H336	May cause drowsiness or dizziness.
H401	Toxic to aquatic life.

Precautionary statement(s)

P261	Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P301 + P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.
P331	Do NOT induce vomiting.

#### HMIS Classification

Health hazard: 0

**Chronic Health Hazard:** \*  
**Flammability:** 4  
**Physical hazards:** 0

**NFPA Rating**

**Health hazard:** 1  
**Fire:** 4  
**Reactivity Hazard:** 0

**Potential Health Effects**

**Inhalation** May be harmful if inhaled. May cause respiratory tract irritation. Vapours may cause drowsiness and dizziness.  
**Skin** May be harmful if absorbed through skin. May cause skin irritation.  
**Eyes** May cause eye irritation.  
**Ingestion** May be harmful if swallowed. Aspiration hazard if swallowed - can enter lungs and cause damage.

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**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Formula : C<sub>5</sub>H<sub>12</sub>  
Molecular Weight : 72.15 g/mol

CAS-No.	EC-No.	Index-No.	Concentration
<b>n-Pentane</b>			
109-66-0	203-692-4	601-006-00-1	-

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**4. FIRST AID MEASURES**

**General advice**

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

**If inhaled**

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

**In case of skin contact**

Wash off with soap and plenty of water. Consult a physician.

**In case of eye contact**

Flush eyes with water as a precaution.

**If swallowed**

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

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**5. FIRE-FIGHTING MEASURES**

**Conditions of flammability**

Flammable in the presence of a source of ignition when the temperature is above the flash point. Keep away from heat/sparks/open flame/hot surface. No smoking.

**Suitable extinguishing media**

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

**Special protective equipment for fire-fighters**

Wear self contained breathing apparatus for fire fighting if necessary.

**Hazardous combustion products**

Hazardous decomposition products formed under fire conditions. - Carbon oxides

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**6. ACCIDENTAL RELEASE MEASURES**

**Personal precautions**

Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

### Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

### Methods and materials for containment and cleaning up

Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

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## 7. HANDLING AND STORAGE

### Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

### Conditions for safe storage

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Store under inert gas.

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## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Components with workplace control parameters

Components	CAS-No.	Value	Control parameters	Basis
n-Pentane	109-66-0	TWA	600 ppm 1,800 mg/m <sup>3</sup>	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
		STEL	750 ppm 2,250 mg/m <sup>3</sup>	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
		TWA	1,000 ppm 2,950 mg/m <sup>3</sup>	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
Remarks	The value in mg/m <sup>3</sup> is approximate.			
		TWA	600 ppm	USA. ACGIH Threshold Limit Values (TLV)
		TWA	600 ppm	USA. ACGIH Threshold Limit Values (TLV)
	Peripheral neuropathy			
		TWA	120 ppm 350 mg/m <sup>3</sup>	USA. NIOSH Recommended Exposure Limits
	15 minute ceiling value			
		C	610 ppm 1,800 mg/m <sup>3</sup>	USA. NIOSH Recommended Exposure Limits
	15 minute ceiling value			

### Personal protective equipment

#### Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type AXBEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

#### Hand protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

**Eye protection**

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

**Skin and body protection**

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**Hygiene measures**

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

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**9. PHYSICAL AND CHEMICAL PROPERTIES****Appearance**

Form	liquid, clear
Colour	colourless

**Safety data**

pH	no data available
Melting point/freezing point	Melting point/range: -130 °C (-202 °F) - lit.
Boiling point	35 - 36 °C (95 - 97 °F) - lit.
Flash point	-49.0 °C (-56.2 °F) - closed cup
Ignition temperature	260 °C (500 °F)
Autoignition temperature	260.0 °C (500.0 °F)
Lower explosion limit	1.4 %(V)
Upper explosion limit	8.3 %(V)
Vapour pressure	579.0 hPa (434.3 mmHg) at 20.0 °C (68.0 °F) 1,859.7 hPa (1,394.9 mmHg) at 55.0 °C (131.0 °F)
Density	0.626 g/mL at 25 °C (77 °F)
Water solubility	no data available
Partition coefficient: n-octanol/water	log Pow: 3.39
Relative vapour density	no data available
Odour	no data available
Odour Threshold	no data available
Evaporation rate	no data available

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**10. STABILITY AND REACTIVITY****Chemical stability**

Stable under recommended storage conditions.

**Possibility of hazardous reactions**

Vapours may form explosive mixture with air.

**Conditions to avoid**

no data available

**Materials to avoid**

Strong oxidizing agents

## Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides

Other decomposition products - no data available

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## 11. TOXICOLOGICAL INFORMATION

### Acute toxicity

#### Oral LD50

LD50 Oral - mouse - 5,000 mg/kg

#### Inhalation LC50

LC50 Inhalation - rat - 4 h - 364,000 mg/m<sup>3</sup>

#### Dermal LD50

LD50 Dermal - rabbit - 3,000 mg/kg

#### Other information on acute toxicity

no data available

### Skin corrosion/irritation

Skin - rabbit - No skin irritation - OECD Test Guideline 404

### Serious eye damage/eye irritation

no data available

### Respiratory or skin sensitization

no data available

### Germ cell mutagenicity

Genotoxicity in vitro - Ames test - S. typhimurium - negative

### Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

### Reproductive toxicity

no data available

### Teratogenicity

no data available

### Specific target organ toxicity - single exposure (Globally Harmonized System)

May cause drowsiness or dizziness.

### Specific target organ toxicity - repeated exposure (Globally Harmonized System)

no data available

### Aspiration hazard

May be fatal if swallowed and enters airways.

### Potential health effects

**Inhalation** May be harmful if inhaled. May cause respiratory tract irritation. Vapours may cause drowsiness and dizziness.

**Ingestion** May be harmful if swallowed. Aspiration hazard if swallowed - can enter lungs and cause damage.

**Skin**  
**Eyes**

May be harmful if absorbed through skin. May cause skin irritation.  
May cause eye irritation.

### Signs and Symptoms of Exposure

Contact with eyes can cause: Redness, Blurred vision, Provokes tears., Prolonged or repeated contact with skin may cause: defatting, Dermatitis, Central nervous system depression, Damage to the lungs.

### Synergistic effects

no data available

### Additional Information

RTECS: RZ9450000

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## 12. ECOLOGICAL INFORMATION

### Toxicity

Toxicity to daphnia and other aquatic invertebrates. EC50 - Daphnia magna (Water flea) - 9.74 mg/l - 48 h

### Persistence and degradability

Biodegradability Biotic/Aerobic  
Result: 70 % - Readily biodegradable.

### Bioaccumulative potential

### Mobility in soil

no data available

### PBT and vPvB assessment

no data available

### Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Toxic to aquatic life.

Avoid release to the environment. Do not empty into drains.

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## 13. DISPOSAL CONSIDERATIONS

### Product

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

### Contaminated packaging

Dispose of as unused product.

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## 14. TRANSPORT INFORMATION

### DOT (US)

UN number: 1265 Class: 3 Packing group: II  
Proper shipping name: Pentanes  
Marine pollutant: No  
Poison Inhalation Hazard: No

### IMDG

UN number: 1265 Class: 3 Packing group: II EMS-No: F-E, S-D  
Proper shipping name: PENTANES  
Marine pollutant: No

### IATA

UN number: 1265 Class: 3 Packing group: II  
Proper shipping name: Pentanes

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## 15. REGULATORY INFORMATION

### OSHA Hazards

Flammable liquid, Target Organ Effect

### SARA 302 Components

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

### SARA 313 Components

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

### SARA 311/312 Hazards

Fire Hazard, Chronic Health Hazard

### Massachusetts Right To Know Components

	CAS-No.	Revision Date
n-Pentane	109-66-0	2007-03-01

### Pennsylvania Right To Know Components

	CAS-No.	Revision Date
n-Pentane	109-66-0	2007-03-01

### New Jersey Right To Know Components

	CAS-No.	Revision Date
n-Pentane	109-66-0	2007-03-01

### California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

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## 16. OTHER INFORMATION

### Further information

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The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Co., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.

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