

Section 1. Product and Company Identification

Product Name n-Pentane
CAS Number 109-66-0

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Section 2. Hazards Identification

Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Flammable liquids (Category 1): H224
Specific target organ toxicity - single exposure (Category 3), Central nervous system: H336
Aspiration hazard (Category 1): H304
Acute aquatic toxicity (Category 2): H401
Chronic aquatic toxicity (Category 2): H411

GHS Label Elements

Pictograms:



Signal word: DANGER

Hazard and precautionary statements

Hazard Statements

H224: Extremely flammable liquid and vapor.
H304: May be fatal if swallowed and enters airways.
H336: May cause drowsiness or dizziness.
H411: Toxic to aquatic life with long lasting effects.

Precautionary Statements

P210: Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P233: Keep container tightly closed.
P240: Ground/bond container and receiving equipment.
P241: Use explosion-proof electrical/ventilating/lighting/equipment.
P242: Use only non-sparking tools.

- P243: Take precautionary measures against static discharge.
 P261: Avoid breathing dust/fume/gas/mist/vapors/spray.
 P271: Use only outdoors or in a well-ventilated area.
 P273: Avoid release to the environment.
 P280: Wear protective gloves/eye protection/face protection.
 P301 + P310: If swallowed, immediately call a poison center or doctor/physician.
 P303 + P361 + P353: If on skin (or hair), remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
 P304 + P340 + P312: If inhaled, remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a poison center or doctor/ physician if you feel unwell.
 P331: Do not induce vomiting.
 P370 + P378: In case of fire, use dry sand, dry chemical, or alcohol-resistant foam for extinction.
 P391: Collect spillage.
 P403 + P233: Store in a well-ventilated place. Keep container tightly closed.
 P403 + P235: Store in a well-ventilated place. Keep cool.
 P405: Store locked up.
 P501: Dispose of contents/container to an approved waste disposal plant.

Hazards not otherwise classified (HNOC) or not covered by GHS: Repeated exposure may cause skin dryness or cracking.

Section 3. Composition / Information on Ingredients

Common Name n-Pentane
Formula C₅H₁₂
CAS Number 109-66-0

COMPONENT	CAS NUMBER	CONCENTRATION
n-Pentane	109-66-0	<= 100%

Section 4. First Aid Measures

Description of first-aid measures

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

Inhalation: Move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

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

Eye contact: Flush eyes with water as a precaution.

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

Most important symptoms and effects, both acute and delayed: The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11.

Indication of any immediate medical attention and special treatment needed: No data available

Section 5. Firefighting Measures

Suitable extinguishing media: Use water spray, alcohol-resistant foam, dry chemical, or carbon dioxide.

Special hazards arising from the substance or mixture: Carbon oxides

Advice for firefighters: Wear self-contained breathing apparatus for firefighting if necessary.

Further information: Use water spray to cool unopened containers

Section 6. Accidental Release Measures

Personal precautions, protective equipment, and emergency procedures: Use personal protective equipment. Avoid breathing vapors, mist, or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas. For personal protection see section 8.

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: Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

Reference to other sections: For disposal see section 13.

Section 7. Handling and Storage

Precautions for safe handling: Avoid contact with skin and eyes. Avoid inhalation of vapor or mist. Use explosion-proof equipment. Keep away from sources of ignition -No smoking. Take measures to prevent the buildup of electrostatic charge. For precautions see section 2.

Conditions for safe storage, including any incompatibilities: 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. Refrigerate before opening.

Storage class (TRGS 510): Flammable liquids

Section 8. Exposure Controls / Personal Protection

Control parameters

Components with workplace control parameters

Component	CAS No.	Value	Control Parameters	Basis
n-Pentane	109-66-0	TWA	120.000000 ppm 350.000000 mg/m ³	USA. NIOSH Recommended Exposure Limits
		C	610.000000 ppm 1,800.000000 mg/m ³	USA. NIOSH Recommended Exposure Limits
	Remarks	15 minute ceiling value		
		TWA	1,000.000000 ppm 2,950.000000 mg/m ³	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		The value in mg/m ³ is approximate.		
		TWA	600.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Peripheral neuropathy Adopted values or notations enclosed are those for which changes are proposed in the NIC See Notice of Intended Changes (NIC)		
		TWA	1,000 ppm	USA. ACGIH Threshold Limit Values (TLV)
		narcosis respiratory tract irritation 2014 Adoption		

Exposure controls

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

Personal protective equipment

Eye/face 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 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.

Body Protection: Complete suit protecting against chemicals, Flame retardant antistatic protective clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection: Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multipurpose 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).

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

Section 9. Physical and Chemical Properties

Information on basic physical and chemical properties

Appearance: Clear, colorless liquid

Odor: No data available

Odor Threshold: No data available

pH: No data available

Melting point/freezing point: Melting point/range: -130°C (-202°F) - lit.

Initial boiling point and boiling range: 35 - 36°C (95 - 97°F) - lit.

Flash point (Closed Cup): -48.99°C (-56.18°F)

Evaporation rate: No data available

Flammability (solid, gas): No data available

Upper/lower flammability or explosive limits

Upper explosion limit: 8.3% (V)

Lower explosion limit: 1.4% (V)

Vapor 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)

Vapor density: No data available

Relative density: 0.626 g/cm³ at 25°C (77°F)

Water solubility: No data available

Partition coefficient (n-Octanol/Water): log Pow: 3.39

Auto-ignition temperature: 260.0°C (500.0°F)

Decomposition temperature: No data available

Viscosity: No data available

Explosive properties: Not explosive

Oxidizing properties: No data available

Other safety information: No data available

Section 10. Stability and Reactivity

Reactivity: No data available

Chemical stability: Stable under recommended storage conditions.

Possibility of hazardous reactions: Vapors may form explosive mixture with air.

Conditions to avoid: Heat, flames, and sparks.

Incompatible materials: Strong oxidizing agents

Hazardous decomposition products

Other decomposition products: No data available

In the event of fire: see section 5

Section 11. Toxicological Information

Information on toxicological effects

Acute toxicity

LD50 Oral: Mouse - 5,000 mg/kg

LC50 Inhalation: Rat - 4h - 364,000 mg/m³

LD50 Dermal: Rabbit - 3,000 mg/kg

Skin corrosion/irritation

Skin: Rabbit

Result: 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

Ames test: S. typhimurium

Result: negative

Carcinogenicity

IARC: No components 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 components 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 components 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 components 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

Specific target organ toxicity - single exposure: May cause drowsiness or dizziness

Specific target organ toxicity - repeated exposure: No data available

Aspiration hazard: May be fatal if swallowed and enters airways.

Additional Information

RTECS: RZ9450000

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.

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Stomach - Irregularities - Based on Human Evidence

Section 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: Exposure time 192 h

Result: 70% - Readily biodegradable

Bio accumulative potential: No data available

Mobility in soil: No data available

Results of PBT and vPvB assessment: PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Toxic to aquatic life with long lasting effects.

Avoid release to the environment. Do not empty into drains

Section 13. Disposal Considerations

Waste Treatment Methods: Dispose of product and contaminated packaging in accordance with all local, state, and federal environmental control regulations.

Section 14. Transport Information

DOT (US)

UN number: 1265

Class: 3

Packing group: II

Proper shipping name: Pentanes

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: Yes



IATA

UN number: 1265

Class: 3

Packing group: II

Proper shipping name: Pentanes

Section 15. Regulatory Information

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

SARA 313 Components: 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

n-Pentane (CAS-No.109-66-0)

Pennsylvania Right to Know Components

n-Pentane (CAS-No.109-66-0)

New Jersey Right to Know Components

n-Pentane (CAS-No.109-66-0)

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.

HMIS Rating

Health: 0*

Flammability: 4

Reactivity: 0

NFPA Rating

Health: 0

Flammability: 4

Reactivity: 0

Section 16. Other Information

Disclaimer: 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.

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