

Safety Data Sheet

1. IDENTIFICATION

Product Identifier:	Pentane (n-), 99%
Product Code(s):	P1141
Synonyms:	n-Pentane; Normal Pentane
Recommended Use:	For manufacturing, industrial, and laboratory use only. Use as a solvent or as a laboratory reagent.
Uses Advised Against:	Not for food, drug, or household use.
Supplier:	Rocky Mountain Reagents, Inc. 4621 Technology Drive, Golden, CO 80403 Phone: (303) 762-0800 Fax: (303) 762-1240
Emergency Phone Number:	(800) 255-3924 (VelocityEHS)

2. HAZARDS IDENTIFICATION

Hazard Classifications:	Flammable Liquids:	Category 2
	Eye Damage/Irritation:	Category 2B
	Specific Target Organ Toxicity (Single Exposure):	Category 3
	Aspiration Hazard:	Category 1

Signal Word: DANGER

Hazard Statements: Highly flammable liquid and vapor.
Causes eye irritation.
May cause drowsiness or dizziness.
May be fatal if swallowed and enters airways.

Pictograms:



Precautionary Statements:

Prevention: Keep away from heat, sparks, open flames, and hot surfaces. – No smoking.
Keep container tightly closed.

Ground or bond container and receiving equipment.
Use explosion-proof electrical, ventilating, lighting, and transportation equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Wear protective gloves, eye protection, and face protection.
Wash thoroughly after handling.
Avoid breathing fume, mist, vapors, or spray.
Use only outdoors or in a well-ventilated area.

Response: If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
In case of fire: Use water spray, dry powder, alcohol resistant foam, or carbon dioxide to extinguish.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.
If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center or doctor if you feel unwell.
If swallowed: Immediately call a poison center or doctor. Do NOT induce vomiting.

Storage: Store in a well-ventilated place.
Keep cool.
Keep container tightly closed.
Store locked up.

Disposal: Dispose of contents and container in accordance with local, regional, national, and international regulations.

Hazards Not Otherwise Classified: Not applicable.

Toxicity Statement: Not applicable.

3. COMPOSITION AND INFORMATION ON INGREDIENTS

Component	Common Name / Synonyms	CAS#	Chemical Formula	% by Weight
Pentane (n-)	n-Pentane; Normal Pentane	109-66-0	C ₅ H ₁₂	≥ 99
Isopentane	Methylbutane; 2-Methylbutane	78-78-4	C ₅ H ₁₂	≤ 1

Trade Secret Statement: Not applicable.

4. FIRST AID MEASURES

First Aid Procedures:

Inhalation: Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. WARNING! It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled or ingested material is toxic, infectious, or corrosive. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Call a poison center or doctor immediately.

Ingestion: Do NOT induce vomiting. If vomiting occurs, keep head low so that vomit does not enter lungs. Give small quantities (< 250 mL) of water to drink. Never give anything by mouth to an unconscious person. Call a poison center or doctor immediately.

Skin Contact: Take off immediately all contaminated clothing. Wash skin with soap and plenty of water for at least 15 minutes. Wash clothing before reuse. Call a physician if symptoms occur.

Eye Contact: Immediately flush eyes with gentle but large stream of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Check for and remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if eye irritation persists.

General Advice: Poison information centers in each state can provide additional assistance for scheduled poisons. Ensure that those providing first aid and medical personnel are aware of the material(s) involved and take precautions to protect themselves.

Symptoms and Effects: Causes eye irritation. May cause drowsiness or dizziness if inhaled, and high concentrations may result in central nervous system depression and loss of consciousness. Ingestion may cause nausea, vomiting, dizziness, drowsiness, and central nervous system depression. If vomiting occurs, may be aspirated into the lungs with a risk of chemical pneumonitis.

**Immediate Medical Care/
Special Treatment:** If ingested or inhaled seek medical attention immediately. Treat symptomatically.

5. FIREFIGHTING MEASURES

Suitable Extinguishing Media: Dry powder, alcohol resistant foam, carbon dioxide.

Unsuitable Extinguishing Media: Do not use water spray, as material is lighter than water and may form pools of burning liquid on top of water.

**Hazardous Combustion
Products:** Carbon oxides.

Specific Hazards: Highly flammable liquid and vapor. Vapors may cause flash fire or ignite explosively. Burns vigorously if ignited easily by heat, sparks, or flames. Material may burn with an invisible flame. Sealed containers may explode when heated or involved in fire. Material is sensitive to static discharge. Vapors may travel considerable distance to source of ignition and flash back. Vapor may accumulate in container headspace, resulting in flammability hazard. Excessive thermal conditions may cause decomposition and yield corrosive and/or toxic fumes.

**Special Protective Equipment/
Precautions for Firefighters:** As in any fire, wear MSHA/NIOSH-approved (or equivalent), self-contained, positive-pressure or pressure-demand breathing apparatus and full protective gear. Move containers from fire area, if you can do so without risk. This material may evaporate and leave a flammable residue if spilled. In the event of fire and/or explosion, do not breathe fumes.

6. ACCIDENTAL RELEASE MEASURES

**Personal Precautions and
Protective Equipment:** Ventilate area of leak or spill. Isolate hazard area and keep unnecessary and unprotected personnel away from the area of the leak or spill. Keep upwind. Keep out of low areas. Wear appropriate personal protective equipment (see Section 8). Avoid contact with eyes, skin, and clothing. Remove all sources of ignition. Pay attention to flashback. Take precautionary measures against static discharge. All equipment used when handling the products must be grounded. Use spark-proof tools and explosion-proof equipment.

Emergency Procedures: In case of chemical emergency, or if unsure how to address an accidental release, consult a professional (see Section 1).

Methods for Containment: Eliminate all sources of ignition. Stop the flow of material, if this is without risk. Prevent entry into waterways, sewer, basements, or confined areas. Dike the spilled material where possible. Cover if possible to reduce evaporation. Product should not be released to the environment. Contain and recover liquid when possible.

Methods for Cleanup: Absorb spill with an inert material (e.g. vermiculite, dry sand, earth, cloth, or fleece) and place in a non-combustible container for reclamation or disposal. Do not flush to sewer. Clean contaminated surface thoroughly. Never return spills in original containers for reuse. Clean up in accordance with all applicable regulations.

7. HANDLING AND STORAGE

Handling: Do not handle, store, or open near an open flame, sources of heat, or sources of ignition. Use only in well-ventilated areas. Provide sufficient air exchange and/or exhaust in work areas. Wear personal protective equipment (see Section 8). Avoid contact with skin, eyes, and clothing. Do not breathe vapors or spray mist. Do not ingest. When using, do not eat, drink, or smoke. Take precautionary measures against static discharge. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded. Vapors are heavier than air and may accumulate in low-lying areas and below ground areas such as ducts and sewers. Keep away from incompatible materials (see Section 10). Handle in accordance with good industrial hygiene and safety practice. Wash thoroughly after handling. Containers of this material may be hazardous when empty, as they retain product residues. Observe all warnings and precautions listed for this product.

Storage: Store in a cool, dry, ventilated area. Store in a segregated and approved area away from heat, sources of ignition, and incompatible materials (see Section 10). Store in original container. Keep containers tightly closed and upright. Keep away from food, drink, and animal foodstuffs. Keep out of the reach of children. Keep out of direct sunlight. Ground container and transfer equipment. The storage room floor must be impermeable to prevent the escape of liquids. Comply with all national, state, and local codes pertaining to the storage, handling, dispensing, and disposal of this product.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure Limits:

Pentane (n-):	OSHA: 1,000 ppm 3,000 mg/m ³
	ACGIH: 600 ppm 1,800 mg/m ³
Isopentane:	ACGIH: 600 ppm 1,800 mg/m ³

Engineering Controls: Ensure adequate ventilation. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Personal Protective Measures:

Eye/Face Protection: Wear safety glasses with side shields or safety goggles. Maintain approved eye wash station and accessible rinse facilities in work area.

Skin Protection: Wear appropriate chemical resistant clothing (with long sleeves) and appropriate chemical resistant gloves.

Respiratory Protection: An air-purifying, NIOSH-approved respirator with an organic vapor cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Use a positive-pressure, air-supplied respirator if there is any potential for an uncontrolled release, if exposure levels are unknown, or if any other circumstances exist where air-purifying respirators may not provide adequate protection.

**Specific Requirements
for Personal Protective
Equipment:**

Ensure that glove material is compatible with this product. This information is available from glove manufacturers.

9. PHYSICAL AND CHEMICAL PROPERTIES

Unless otherwise indicated, all properties are given at 25 °C and standard pressure.

Appearance:	Colorless, transparent liquid.
Odor:	Gasoline-like.
Odor Threshold:	No information found.
Formula Weight:	72.15
pH:	No information found.
Melting/Freezing Point:	-130 °C
Boiling Point/Range:	32 – 38 °C
Decomposition Temperature:	No information found.
Flash Point:	-40 °C
Auto-ignition Temperature:	308 °C
Flammability:	Highly flammable liquid and vapor.
Flammability/Explosive Limits:	Lower: 1.4% by volume Upper: 8.3% by volume
Solubility:	Negligible in water.
Vapor Pressure:	16.0 psia @ 100 °F (37.78 °C)
Vapor Density:	2.5 (Air = 1.0)
Specific Gravity:	0.63 @ 60 °F (15.56 °C) (Water = 1)
Evaporation Rate:	No information found.
Viscosity:	No information found.
Partition Coefficient (n-octanol/water):	3.45

10. STABILITY AND REACTIVITY

Reactivity Data:	Highly flammable liquid and vapor. See Section 9.
Chemical Stability:	Stable under normal conditions.
Conditions to Avoid:	Heat, flames, sparks, sources of ignition, incompatible materials.
Incompatible Materials:	Strong oxidizers, strong acids, strong bases, amines.
Hazardous Decomposition Products:	Carbon oxides.
Possibility of Hazardous Reactions:	May react vigorously or violently with the incompatible materials listed above. Excessive thermal conditions may yield hazardous decomposition products listed above.
Hazardous Polymerization:	Will not occur.

11. TOXICOLOGICAL INFORMATION

Routes of Exposure:	Inhalation, ingestion, skin contact, eye contact.												
Acute Effects:	Harmful when inhaled in high concentrations or ingested. Inhalation may cause dizziness and drowsiness, and high concentrations may result in central nervous system depression and loss of consciousness. Ingestion may cause nausea, vomiting, dizziness, drowsiness, and central nervous system depression. If vomiting occurs, may be aspirated into the lungs, with a risk of chemical pneumonitis.												
Chronic Effects:	Prolonged or repeated contact of this product will result in defatting of the skin, causing dryness and cracking.												
Toxicological Data:	<table><tr><td>Pentane (n-):</td><td>LD₅₀ Oral, Rat:</td><td>> 2,000 mg/kg</td></tr><tr><td></td><td>LC₅₀ Inhalation, Mouse:</td><td>295 mg/L, 2 h</td></tr><tr><td></td><td>LC₅₀ Inhalation, Rat:</td><td>364 g/m³, 4 h</td></tr><tr><td>Isopentane:</td><td>LC_{Lo} Inhalation, Mouse:</td><td>419 g/m³, 2 h</td></tr></table>	Pentane (n-):	LD ₅₀ Oral, Rat:	> 2,000 mg/kg		LC ₅₀ Inhalation, Mouse:	295 mg/L, 2 h		LC ₅₀ Inhalation, Rat:	364 g/m ³ , 4 h	Isopentane:	LC _{Lo} Inhalation, Mouse:	419 g/m ³ , 2 h
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Symptoms of Exposure:	Inhalation may cause dizziness and drowsiness, and high concentrations may result in central nervous system depression and loss of consciousness. Ingestion may cause nausea, vomiting, dizziness, drowsiness, and central nervous system depression. If vomiting occurs, may be aspirated into the lungs, with a risk of chemical pneumonitis.												
Carcinogenic Effects:	No component of this product is considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.												

12. ECOLOGICAL INFORMATION

Ecotoxicological Data:	<table><tr><td>Pentane (n-):</td><td>EC₅₀ Rainbow Trout (<i>Oncorhynchus mykiss</i>):</td><td>4.26 mg/L, 96 h</td></tr><tr><td></td><td>EC₅₀ Water Flea (<i>Daphnia magna</i>):</td><td>2.7 mg/L, 48 h</td></tr><tr><td>Isopentane:</td><td>EC₅₀ Rainbow Trout (<i>Oncorhynchus mykiss</i>):</td><td>3.1 mg/L, 96 h</td></tr><tr><td></td><td>EC₅₀ Water Flea (<i>Daphnia magna</i>):</td><td>2.3 mg/L, 48 h</td></tr></table>	Pentane (n-):	EC ₅₀ Rainbow Trout (<i>Oncorhynchus mykiss</i>):	4.26 mg/L, 96 h		EC ₅₀ Water Flea (<i>Daphnia magna</i>):	2.7 mg/L, 48 h	Isopentane:	EC ₅₀ Rainbow Trout (<i>Oncorhynchus mykiss</i>):	3.1 mg/L, 96 h		EC ₅₀ Water Flea (<i>Daphnia magna</i>):	2.3 mg/L, 48 h
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Persistence and Degradability:	Readily biodegradable in aquatic systems, however, in view of its high evaporation rate, pentane (n-) is expected to volatilize rapidly from water sources into the atmosphere, where it will be degraded by photochemical reaction.												
Environmental Effects:	Toxic to aquatic organisms and likely to cause long term effects in the environment. Avoid release to the environment.												

13. DISPOSAL INFORMATION

Disposal Instructions:	Dispose of this material and its container to an approved waste collection point. Minimize exposure to product waste (see Section 8). Do not dispose unused waste down drains or into sewers. All wastes must be handled in accordance with local, state, and federal regulations.
Contaminated Packaging:	Because containers retain product residue, follow label warnings even after container is emptied. Residual vapors may explode on ignition; do not cut, drill, grind, or weld on or near product container. Offer rinsed packaging material to local recycling facilities.
Waste Codes:	No information found.

14. TRANSPORT INFORMATION

DOT:

UN Number: 1265

Proper Shipping Name: Pentanes

Hazard Class: 3

Packing Group: II

ERG Number: 128

Environmental Hazard Regulations: No information found.

Other Transport Precautions: No information found.

15. REGULATORY INFORMATION

U.S. Federal Regulations:

OSHA: This product is considered a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Inventory: All components of this product are on the U.S. TSCA Inventory.

U.S. EPCRA (SARA Title III):

Section 302: This product does not contain any constituents that are classified as an extremely hazardous substance.

Sections 311/312:

Hazard Category	List (Yes/No)
Section 311 – Hazardous Chemical	Yes
Immediate Hazard	Yes
Delayed Hazard	No
Fire Hazard	Yes
Pressure Hazard	No
Reactivity Hazard	No

Section 313: This product contains no toxic chemicals.

CERCLA Reportable Quantities: No information found.

International Inventories:

Country or Region	Inventory Name	On Inventory (Yes/No)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes

*A "Yes" indicates that the listed components of this product comply with the inventory requirements administered by the governing country or region.

16. OTHER INFORMATION**Disclaimer:**

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Issue Date:

January 31, 2025

Reason for Revision:

Updated DOT Packing Group in Section 14. Supersedes 09/03/2024 version.