

SAFETY DATA SHEET

Pentane, -n

This MSDS is valid for all grades and catalog #'s

1. IDENTIFICATION OF SUBSTANCE / MIXTURE AND OF SUPPLIER

Product Identifier: High Purity Chemicals
Synonyms: Amyl hydride
Other means of identification: CAS No. 109-66-0
EINECS No. 203-692-4

Recommended use of the chemical and restrictions on use:

General use solvent

Supplier Details:

Pharmco Products, Inc.
58 Vale Road, Brookfield,
CT 06804, USA.
Tel: 203.740.3471
Fax: 203.740.3481
CCN17213

Pharmco Products, Inc.
1101 Isaac Shelby Drive, Shelbyville,
KY 40065, USA.
Tel: 502.232.7600
Fax: 502.633.6100
CCN17213

Emergency Contact:

CHEMTREC: 1.800.424.9300 (USA) / +1.703.527.3887 (International)

Distributed by:

The Science Company

7625 W Hampden Ave #14 Lakewood CO 80227
pH: (303) 777-3777 fax: (303) 777-3331

Part #'s: NC-13343, NC-14066

2. HAZARDS IDENTIFICATION

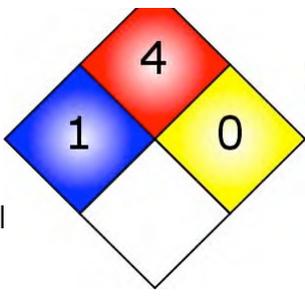
OSHA Hazards:

Flammable liquid, Target organ effect

Target Organs:

Central nervous system, Heart, Lungs

NFPA



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GHS label elements, including precautionary statements



Signal Word:
DANGER!

Hazard statement(s)

H224	Extremely flammable liquid and vapour.
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 statement(s)

P261	Avoid breathing dust/fumes/gas/mist/vapors.
P273	Avoid release to the environment.
P312	Call a POISON CENTER or doctor/ physician if you feel unwell.
P391	Collect spillage.
P501	Dispose of contents and container to an approved waste disposal plant.
P331	Do NOT induce vomiting.
P240	Ground/bond container and receiving equipment.
P304 + P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P303 + P361 + P353	IF ON SKIN (or hair): Remove immediately all contaminated clothing. Rinse skin with water.
P301 + P310	IF SWALLOWED: Immediately call a POISON CENTER or a doctor/ physician.
P370 + P378	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
P210	Keep away from heat, sparks, open flames, and hot surfaces. No smoking.
P233	Keep container tightly closed.
P403	Store in a well-ventilated place.
P243	Take precautionary measures against static discharge.
P241	Use explosion-proof electrical, ventilating, and lighting equipment.
P242	Use only non-sparking tools.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves and eye and face protection.

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GHS Classification(s)

- Aspiration hazard (Category 1)
- Chronic aquatic toxicity (Category 2)
- Flammable Liquids (Category 1)
- Specific target organ toxicity - single exposure (Category 3)

Other hazards which do not result in classification:

Potential Health Effects:

Organ	Description
Eyes	Causes irritation, redness, and pain.
Ingestion	Can be harmful if ingested. Product causes damage if aspirated into the lungs.
Inhalation	Inhalation of vapors can irritate the mucous membranes and upper respiratory tract. Can cause lightheadedness, dizziness, drowsiness and nausea. High vapor concentrations can cause unconsciousness and death.
Skin	Can be irritating to the skin. Symptoms include redness, itching, and pain. Prolonged and/or repeated contact can cause defatting of the skin and dermatitis. Skin contact can cause thickening of the skin and ulceration.

3. COMPOSITION AND INFORMATION ON INGREDIENTS

Chemical identity: n-Pentane
Common name / Synonym: Amyl hydride
CAS number: 109-66-0
EINECS number: 203-692-4
ICSC number: 0534
RTECS #: RZ9450000
UN #: 1265
EC #: 601-006-00-1

% Weight	Material	CAS
100	n-Pentane	109-66-0

4. FIRST AID MEASURES

General advice

Take proper precautions to ensure your own health and safety before attempting rescue and providing first aid. Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

Skin

Wash skin with soap and copious amounts of water. Seek medical attention.

Inhalation

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Remove person to fresh air. If signs/symptoms continue, get medical attention. Give oxygen or artificial respiration as needed.

Eyes

Flush eyes with water as a precaution.

Ingestion

DO NOT induce vomiting. If vomiting does occur, have victim lean forward to prevent aspiration. Rinse mouth with water. Seek medical attention. Never give anything by mouth to an unconscious individual.

5. FIRE FIGHTING MEASURES

Suitable (and unsuitable) extinguishing media:

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

Specific hazards arising from the chemical (e.g., nature of any hazardous combustion products):

Carbon oxides expected to be the primary hazardous combustion product.

Special protective equipment and precautions for firefighters:

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes. Keep unopened containers cool by spraying with water.

Flammable Properties

Classification

OSHA/NFPA Class IA Flammable Liquid.

Flash point

-40 °C (-40 °F) - Closed Cup

Autoignition temperature

260 °C (500 °F)

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures:

Wear respiratory protection. Do not inhale 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.

Environmental precautions:

Stop leak. Contain spill if possible and safe to do so. Prevent product from entering drains.

Methods and materials for containment and cleaning up:

Contain spill, then collect with an electrically protected vacuum cleaner or by wet-brushing and put the material into a convenient waste disposal container. Keep container closed.

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7. HANDLING AND STORAGE

Precautions for safe handling:

Do not get on skin or in eyes. Do not inhale vapor or mist. Flash back possible over considerable distance. Use explosion-proof equipment. Keep away from sources of ignition - No smoking. Take measures to prevent the buildup of electrostatic charge.

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.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters, e.g., occupational exposure limit values or biological limit values:

Occupational Exposure Limits

Component	Source	Type	Value	Note
n-Pentane	US (OSHA)	TWA	1000 ppm, 2950 mg/m ³	29 CFR 1910.1000 Table Z-1 Limits for Air Contaminants
n-Pentane	US (OSHA)	STEL	750 ppm, 2250 mg/m ³	29 CFR 1910.1000 Table Z-1 Limits for Air Contaminants

Appropriate engineering controls:

General room or local exhaust ventilation is usually required to meet exposure limit(s). Electrical equipment should be grounded and conform to applicable electrical code.

Individual protection measures, such as 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 ABEK (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:

Use chemical safety goggles and/or a full face shield where splashing is possible. Use equipment approved by appropriate government standards, such as NIOSH (US) or EN166 (EU) Maintain eye wash fountain and quick-drench facilities in work area.

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Skin and body protection:

Wear impervious, flame retardant, antistatic protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Hygiene measures:

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

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance (<i>physical state, color, etc.</i>)	Liquid. Colorless, clear.
Odor	Specific data not available
Odor threshold	Specific data not available
pH	Specific data not available
Freezing point	-130 °C (-202 °F)
Initial boiling point and boiling range	36 °C (97 °F)
Flash point	-40 °C (-40 °F) - Closed Cup
Evaporation rate	Specific data not available
Flammability (solid, gas)	Flammable
Upper / Lower flammability or explosive limits	7.8% (V) / 1.5% (V)
Vapor pressure	579 hPa (434 mmHg) at 20 °C (68 °F)
Vapor Density	2.5 (air = 1)
Relative Density	0.626 g/cm ³ at 25 °C (77 °F)
Solubility(ies)	insoluble in water
Partition coefficient n-octanol/water(ies)	log Pow: 3.4
Auto-ignition temperature	260 °C (500 °F)
Decomposition temperature	Specific data not available
Formula (PENTANE)	C ₅ H ₁₂
Molecular Weight (PENTANE)	72.15 g/mol

10. STABILITY AND REACTIVITY

Chemical Stability	Stable under recommended storage conditions.
Possibility of hazardous reactions	Vapors may form explosive mixture with air.
Conditions to avoid (e.g., static discharge, shock or vibration)	Heat, flames, and sparks. Extreme temperatures and direct sunlight.
Incompatible materials	Strong oxidizing agents
Hazardous decomposition products	Carbon oxides are expected to be, under fire conditions, the primary hazardous decomposition products.

11. TOXICOLOGICAL INFORMATION

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· n-Pentane 109-66-0

Product Summary:

No data available for the mutagenic, teratogenic, or reproductive effects of the product. No data available to designate product to cause specific target organ toxicity through repeated exposure.

Acute Toxicity:

LC50 (Inhalation)	Rat	364,000 mg/m3	4 hours
LD50 (Dermal)	Rabbit	3,000 mg/kg	
LD50 (Oral)	Mouse	5,000 mg/kg	

Irritation:

Eyes

No data available.

Skin

Rabbit - no skin irritation

Aspiration Hazard

The substance or mixture is known to cause human aspiration toxicity hazards or has to be regarded as if it causes a human aspiration toxicity hazard

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

Inhalation - May cause drowsiness or dizziness. - Central Nervous System

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable 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.

Other Hazards

Organ	Description
Eyes	Causes irritation, redness, and pain.
Ingestion	May be harmful if ingested. Product causes damage if aspirated into the lungs.
Inhalation	Inhalation of vapors may irritate the mucous membranes and upper respiratory tract. May cause lightheadedness, dizziness, drowsiness and nausea. High vapor concentrations may cause unconsciousness and death.

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Skin	May be irritating to the skin. Symptoms include redness, itching, and pain. Prolonged and/or repeated contact may cause defatting of the skin and dermatitis. Skin contact may cause thickening of the skin and ulceration.
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12. ECOLOGICAL INFORMATION

• n-Pentane 109-66-0

Ecotoxicity (aquatic and terrestrial, where available):

Toxicity to Daphnia (PENTANE)

EC50 / 48 hours / Water flea - 9.74 mg/L

Persistence and degradability:

Readily biodegradable.

Bioaccumulative potential:

No data available

Other adverse effects:

Can be considered an environmental hazard through improper use or improper disposal.

13. DISPOSAL CONSIDERATIONS

Description of waste residues and information on their safe handling and methods of disposal, including the disposal of any contaminated packaging:

Contact a licensed professional waste disposal service to dispose of this material. Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company.

14. TRANSPORT INFORMATION

Description of waste residues and information on their safe handling and methods of disposal:

UN number	1265
UN proper shipping name	Pentanes
Transport hazard class(es)	3
Packing group (if applicable)	II

IMDG

UN-Number: 1265 Class: 3 Packing Group: II

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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

15. REGULATORY INFORMATION

Safety, health and environmental regulations specific for the product in question:

OSHA Hazards

Flammable liquid, Target organ effect

All ingredients are on the following inventories or are exempted from listing

Country	Notification
Australia	AICS
Canada	DSL
China	IECS
European Union	EINECS
Japan	ENCS/ISHL
Korea	ECL
New Zealand	NZIoC
Philippines	PICCS
United States of America	TSCA

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

Chronic Health Hazard

Fire Hazard

CERCLA

No chemicals in this material with known CAS numbers are subject to the reporting requirements of CERCLA

Massachusetts Right To Know Components

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

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Pennsylvania Right To Know Components

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

New Jersey Right To Know Components

n-Pentane CAS-No. 109-66-0 Revision Date 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.

**16. OTHER INFORMATION:
INCLUDING INFORMATION ON PREPARATION AND REVISION OF THE SDS**

Disclaimer

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