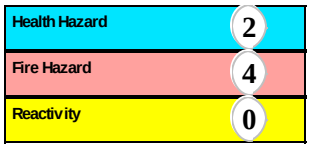
Material Safety Data Sheet

NFPA	HMIS	Personal Protective Equipment
		 See Section 15.

Section 1. Chemical Product and Company Identification

Common Name/ Trade Name	**Pentane**
Manufacturer	SPECTRUM LABORATORY PRODUCTS INC. 14422 S. SAN PEDRO STREET GARDENA, CA 90248
Commercial Name(s)	Not available.
Synonym	Amyl Hydride
Chemical Name	Pentane
Chemical Family	Not available.
Chemical Formula	C5-H12
Supplier	SPECTRUM LABORATORY PRODUCTS INC. 14422 S. SAN PEDRO STREET GARDENA, CA 90248

Catalog Number(s).	HP782, P1560, SP171, SP783, PS784, P1560, P1012, P1013, P1014, US070, US071
CAS#	109-66-0
RTECS	RZ9450000
TSCA	TSCA 8(b) inventory: Pentane
CI#	Not available.

IN CASE OF EMERGENCY
CHEMTREC (24hr) 800-424-9300

CALL (310) 516-8000

Section 2.Composition and Information on Ingredients

		Exposure Limits			
Name	**CAS #**	**TWA (mg/m^3)**	**STEL (mg/m^3)**	**CEIL (mg/m^3)**	**% by Weight**
1) Pentane	109-66-0	1800	2210		100

Toxicological Data on Ingredients

Pentane:
VAPOR (LC50): Acute: 364000 mg/m^3 4 hours [Rat].

Section 3. Hazards Identification

Potential Acute Health Effects

Hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation. Slightly hazardous in case of skin contact (permeator).

Potential Chronic Health Effects

Hazardous in case of ingestion, of inhalation.
Slightly hazardous in case of skin contact (sensitizer).
CARCINOGENIC EFFECTS: Not available.
MUTAGENIC EFFECTS: Not available.
TERATOGENIC EFFECTS: Not available.
DEVELOPMENTAL TOXICITY: Not available.
The substance may be toxic to kidneys, the nervous system, liver, skin, central nervous system (CNS).
Repeated or prolonged exposure to the substance can produce target organs damage.

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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. Cold water may be used. WARM water MUST be used. 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.
Serious Skin Contact	Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek medical attention.
Inhalation	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention if symptoms appear.
Serious Inhalation	Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek medical attention.
Ingestion	If swallowed, do NOT induce vomiting. Never give anything by mouth to an unconscious person. Aspiration hazard if swallowed- can enter lungs and cause damage. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention.
Serious Ingestion	Not available.

Section 5. Fire and Explosion Data

Flammability of the Product	Flammable.
Auto-Ignition Temperature	260°C (500°F)
Flash Points	CLOSED CUP: -49°C (-56.2°F). (TAG)
Flammable Limits	LOWER: 1.5% UPPER: 7.8%
Products of Combustion	These products are carbon oxides (CO, CO2).
Fire Hazards in Presence of Various Substances	Extremely flammable in presence of open flames and sparks, of heat. Flammable in presence of oxidizing materials. Non-flammable in presence of shocks.
Explosion Hazards in Presence of Various Substances	Risks of explosion of the product in presence of static discharge: Not available. Slightly explosive in presence of heat, of oxidizing materials. Non-explosive in presence of shocks.
Fire Fighting Media and Instructions	Flammable liquid, soluble or dispersed in water. SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use alcohol foam, water spray or fog. Cool containing vessels with water jet in order to prevent pressure build-up, autoignition or explosion.
Special Remarks on Fire Hazards	EXTREMELY FLAMMABLE. Vapor may travel considerable distance to source of ignition and flash back.
Special Remarks on Explosion Hazards	Not available.

Section 6. Accidental Release Measures

Small Spill	Absorb with an inert material and put the spilled material in an appropriate waste disposal.
Large Spill	Flammable liquid. 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 touch spilled material. Prevent entry into sewers, basements or confined areas; dike if needed. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Continued on Next Page

Section 7. Handling and Storage

Precautions	Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe gas/fumes/ vapor/spray. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as oxidizing agents.
Storage	Store in a segregated and approved area. Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition (spark or flame). Do not store above 8°C (46.4°F). Refrigerate.

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 threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.
Personal Protection	Splash goggles. Lab coat. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.
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.
Exposure Limits	TWA: 600 STEL: 750 from ACGIH (TLV) [United States] TWA: 1800 STEL: 2210 from ACGIH (TLV) [United States] Consult local authorities for acceptable exposure limits.

Section 9. Physical and Chemical Properties

Physical state and appearance	Liquid.
Molecular Weight	72.15g/mole
pH (1% soln/water)	Not available.

Odor	Pleasant. Gasoline-like
Taste	Not available.
Color	Colorless.

Boiling Point	36.1°C (97°F)
Melting Point	-130°C (-202°F)
Critical Temperature	196.6°C (385.9°F)
Specific Gravity	0.6262 (Water = 1)
Vapor Pressure	56.8 kPa (@ 20°C)
Vapor Density	2.49 (Air = 1)
Volatility	Not available.
Odor Threshold	2.2 ppm
Water/Oil Dist. Coeff.	The product is more soluble in oil; log(oil/water) = 3.4
Ionicity (in Water)	Not available.
Dispersion Properties	See solubility in water, diethyl ether, acetone.
Solubility	Partially soluble in diethyl ether, acetone. Very slightly soluble in cold water. Solubility in water: 0.36g/l water @ 16 deg. C. Solubility in water: 9.9 g in 100 kg water @ 25 deg. C. Solubility in water: 0.04 g in 100 g of water @ 20 deg. C Soluble in chloroform. Solubility in acetone, benzene, ethanol > 10%

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Section 10. Stability and Reactivity Data

Stability	The product is stable.
Instability Temperature	Not available.
Conditions of Instability	Heat, ignition sources, incompatible materials.
Incompatibility with various substances	Reactive with oxidizing agents.
Corrosivity	Non-corrosive in presence of glass.
Special Remarks on Reactivity	Not available.
Special Remarks on Corrosivity	It will attack some forms of plastics, rubber, and coatings.
Polymerization	Will not occur.

Section 11. Toxicological Information

Routes of Entry	Absorbed through skin. Eye contact. Inhalation. Ingestion.
Toxicity to Animals	**WARNING: THE LC50 VALUES HEREUNDER ARE ESTIMATED ON THE BASIS OF A 4-HOUR EXPOSURE.** Acute toxicity of the vapor (LC50): 364000 mg/m^3 4 hours [Rat].
Chronic Effects on Humans	May cause damage to the following organs: kidneys, the nervous system, liver, skin, central nervous system (CNS).
Other Toxic Effects on Humans	Hazardous in case of skin contact (irritant), of ingestion, of inhalation. Slightly hazardous in case of skin contact (permeator).
Special Remarks on Toxicity to Animals	Lowest Published Lethal Dose: LCL [Mouse] - Route: Inhalation; Dose 325 gm/m3/2H
Special Remarks on Chronic Effects on Humans	Not available.
Special Remarks on other Toxic Effects on Humans	Acute Potential Health Effects: Skin: It can cause skin irritaiton with itching, drying erythema, hyperpigmentation, hyperemia, dermatitis, burning sensations, followed by formation of blisters. It may be aborbed by the skin and cause systemic effects. Eyes: It is a strong eye irritant. Symptoms may include pain, corneal irritation, and nystagmus Inhalation: It is a mild respiratory tract (nose, throat, lungs) irritant causing causing coughing, wheezing, and/or shortness of breath. Inhalation exposure to an airborne concentration of 5,000 ppm for 10 minutes appears to have no ill effect in humans, while 90,000 to 120,000 ppm can affect behavior/central nervous system and cause symptoms of central nervous system depression and narcosis. Symptoms of central nervous system depression include nausea, headache, weakness, dizzness, excitement, confusion, lightheadedness, sleepiness, seizures, inability to concentrate, loss of coordination and judgement, coma, and death with exposure to large amounts. It may also affect the cardiovascular system (dysrhythmias), and metabolism (weight loss/loss of appetite/anorexia). Airborne concentration of approximately 130,000 ppm can be fatal by asphyxiation; therefore, there is not a wide margin of safety concentrations causing central nervous system effects and death. Ingestion: Pulmonary aspiration of even a small amount can produce acute lung injury, potentially fatal chemical pneumonitis, and hemorrhage. In extreme cases, respiratory arrest secondary to hypoxia following pneumonitis may occur. It may also affect behavior/central nervous system (symptoms similar to acute inhalation), and cardiovascular system (symptoms similar to acute inhalation). Chronic Potential Health Effects: Skin: Prolonged or repeated skin contact can cause defatting dermatitis with dryness and cracking. Long-term dermal exposure may also cause kidney damage. Ingestion or inhalation: Prolonged or repeated ingestion or inhalation Can cause central nervous system damage. Central nervous system damage symptoms may include numbess, "pins and needles", and weakness of arms and legs. It may also cause liver damage, and kidney damage (renal tubular necrosis, glomerulonephritis, nephritis, proteinuria, hematuria) and may affect metabolism (weight loss).

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Section 12. Ecological Information

Ecotoxicity	Not available.
BOD5 and COD	Not available.
Products of Biodegradation	Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.
Toxicity of the Products of Biodegradation	The product itself and its products of degradation are not toxic.
Special Remarks on the Products of Biodegradation	Not available.

Section 13. Disposal Considerations

Waste Disposal	Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14. Transport Information

DOT Classification	CLASS 3: Flammable liquid.
Identification	UNNA: 1265: Pentane PG: II
Special Provisions for Transport	Not available.
DOT (Pictograms)	

Section 15. Other Regulatory Information and Pictograms

Federal and State Regulations	Connecticut hazardous material survey.: Pentane Illinois toxic substances disclosure to employee act: Pentane Rhode Island RTK hazardous substances: Pentane Pennsylvania RTK: Pentane Minnesota: Pentane Massachusetts RTK: Pentane Massachusetts spill list: Pentane New Jersey: Pentane New Jersey toxic catastrophe prevention act: Pentane California Director's list of Hazardous Substances: Pentane TSCA 8(b) inventory: Pentane TSCA 4(a) proposed test rules: Pentane TSCA 8(a) PAIR: Pentane TSCA 8(d) H and S data reporting: Pentane: Effective date: 1/26/94; Sunset Date: 6/30/98
California Proposition 65 Warnings	California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer which would require a warning under the statute: No products were found. California prop. 65: This product contains the following ingredients for which the State of California has found to cause birth defects which would require a warning under the statute: No products were found.
Other Regulations	OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200). EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances (EINECS No. 203-692-4). Canada: Listed on Canadian Domestic Substance List (DSL). China: Listed on National Inventory. Japan: Listed on National Inventory (ENCS). Korea: Listed on National Inventory (KECI). Philippines: Listed on National Inventory (PICCS).

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Australia: Listed on AICS.

Other Classifications

WHMIS (Canada)

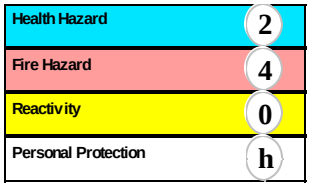
CLASS B-2: Flammable liquid with a flash point lower than 37.8°C (100°F).
CLASS D-2B: Material causing other toxic effects (TOXIC).

DSCL (EEC)

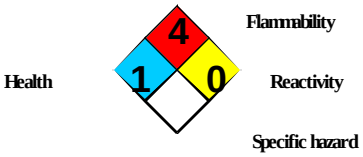
R12- Extremely flammable.
R51/53- Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R65- Harmful: may cause lung damage if swallowed.

S9- Keep container in a well-ventilated place.
S16- Keep away from sources of ignition - No smoking.
S29- Do not empty into drains.
S33- Take precautionary measures against static discharges.
S61- Avoid release to the environment. Refer to special instructions/Safety data sheets.
S62- If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.

HMIS (U.S.A.)



National Fire Protection Association (U.S.A.)



WHMIS (Canada) (Pictograms)

DSCL (Europe) (Pictograms)

TDG (Canada) (Pictograms)

ADR (Europe) (Pictograms)

Protective Equipment

Gloves.

Lab coat.

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

Splash goggles.

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Section 16. Other Information

MSDS Code	P3215
References	Not available.
Other Special Considerations	Not available.

Validated by Sonia Owen on 6/20/2008.	**Verified by Sonia Owen.** **Printed 6/27/2008.**

CALL (310) 516-8000

Notice to Reader

All chemicals may pose unknown hazards and should be used with caution. This Material Safety Data Sheet (MSDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this MSDS. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this MSDS is based on technical data judged to be reliable, Spectrum Quality Products, Inc. assumes no responsibility for the completeness or accuracy of the information contained herein.