

MATERIAL SAFETY DATA SHEET

Pentane

SECTION 1 . Product and Company Identification

Product Name and Synonym: Pentane
Product Code: P1035
Material Uses:
Manufacturer: Science Stuff
1104 Newport Ave
Austin, TX 78753
(512) 837-6020
Entry Date : 6/13/2013
Print Date: 6/13/2013
24 Hour Emergency Assistance : Chemtrec 800-424-9300
Canutec 613-996-6666

Health:	2
Flammability:	3
Reactivity:	0

Hazard Rating:
Least Slight Moderate High Extreme
0 1 2 3 4

NA=Not Applicable NE=Not Established

SECTION 2 HAZARD IDENTIFICATION

Keep away from heat and ignition sources. Harmful if swallowed. Avoid breathing vapors. Use with adequate ventilation. Avoid contact with eyes, skin, and clothes. Wash thoroughly after handling. Keep container closed.

Physical state: Liquid. (Colorless)
Odor: Gas
OSHA/HCS status: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Emergency overview:

DANGER!
CAUSES RESPIRATORY TRACT, EYE AND SKIN IRRITATION.
HARMFUL IF INHALED
MAY BE FATAL IF SWALLOWED.
EXTREMELY FLAMMABLE LIQUID AND VAPOR.
VAPOR MAY CAUSE FLASH FIRE.
CAUSES DAMAGE TO THE FOLLOWING ORGANS:
RESPIRATORY TRACT, SKIN, EYES, CENTRAL NERVOUS SYSTEM, LENS OR CORNEA.
ASPIRATION HAZARD

Do not ingest.
Avoid contact with skin and clothing.
Avoid breathing vapor or mist.
Keep away from heat, sparks and flame. Keep container closed.
Use only with adequate ventilation. Wash thoroughly after handling.

Routes of entry:
Inhalation. Ingestion.

Potential acute health effects:

Eyes: Irritating to eyes.
Skin: Irritating to skin.
Inhalation: Toxic by inhalation. Irritating to respiratory system.
Ingestion: Very toxic if swallowed. Aspiration hazard if swallowed. Can enter lungs and cause damage.
Carcinogenicity: No known significant effects or critical hazards.
Mutagenicity: No known significant effects or critical hazards.
Teratogenicity/ Reproductive toxicity: No known significant effects or critical hazards.

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Medical conditions aggravated by over-exposure:
Repeated skin exposure can produce local skin destruction or dermatitis. Repeated or prolonged exposure to the substance can produce lung damage. Repeated or prolonged exposure to contact with spray or mist may chronic eye irritation and severe skin irritation. Repeated or prolonged exposure to the substance can produce target organs damage.

SECTION 3 MIXTURE COMPONENTS

SARA 313	Component	CAS Number	Percent Comp.	Dimension	Exposure Limits
<input type="checkbox"/>	Pentane	CAS# 109-66-0	100%	V/V	OSHA TWA 600 ppm (1800 mg/mf), STEL 2250 mg/mf

SECTION 4 FIRST AID MEASURES

Keep away from heat and ignition sources. Harmful if swallowed. Avoid breathing vapors. Use with adequate ventilation. Avoid contact with eyes, skin, and clothes. Wash thoroughly after handling. Keep container closed.

FIRST AID: SKIN: Remove contaminated clothing. Wash exposed area with soap and water. If symptoms persist, seek medical attention

EYES: Wash eyes with plenty of water for at least 15 minutes, lifting lids occasionally. Seek Medical Aid. INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen

INGESTION: Give several glasses of milk or water. Vomiting may occur spontaneously, but DO NOT INDUCE! Never give anything by mouth to an unconscious person.

SECTION 5 FIRE FIGHTING MEASURES

Fire Extinguisher Type:	Carbon Dioxide, dry chemical powder or appropriate foam
Fire / Explosion Hazards:	Vapor may travel considerable distance to source of ignition and flash back. Containers may explode under fire conditions.
Fire Fighting Procedure:	Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and clothing.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Evacuate area. Wear self-contained breathing apparatus and protective clothing. Eliminate all sources of ignition. Absorb spill with inert material, then place in a chemical waste container.

Personal precautions: Immediately contact emergency personnel. Eliminate all ignition sources. Keep unnecessary personnel away. Use suitable protective equipment. Do not touch or walk through spilled material.

Environmental precautions: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Methods for cleaning up: If emergency personal are unavailable, contain spilled material. For small spills, add absorbent (soil may be used in the absence of other suitable materials), and use a non-sparking or explosion-proof means to transfer material to a sealable, appropriate container for disposal. For large spills, dike spilled material or otherwise contain material to ensure runoff does not reach a waterway. Place spilled material in an appropriate container for disposal.

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SECTION 7 HANDLING AND STORAGE

Store in a cool dry well ventilated area. Keep away from heat and flame. Do not get in eyes, on skin, or on clothing.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Respiratory Protection: NIOSH/MSHA-approved respirator
Ventilation
Local Exhaust
Mechanical
Protective Gloves: Wear appropriate gloves to prevent skin exposure
Eye Protection: Splash Goggles
Other Protective Equipment: Wear appropriate clothing to prevent skin exposure
Petroleum Spirits

NIOSH REL (United States, 12/2001)

CEIL: 1800 mg/m³ 15 minute(s)

CEIL: 610 ppm 15 minute(s)

TWA: 350 mg/m³ 8 hour(s)

TWA: 120 ppm 10 hour(s)

OSHA PEL (United States, 8/1997)

TWA: 2950 mg/m³ 8 hour(s)

TWA: 1000 ppm 8 hour(s)

OSHA PEL 1989 (United States, 3/1989)

STEL: 1800 mg/m³ 15 minute(s)

STEL: 400 ppm 15 minute(s)

TWA: 1350 mg/m³ 8 hour(s)

TWA: 300 ppm 8 hour(s)

ACGIH TLV (United States, 1/2006). Notes: 1998 Adoption

TWA: 600 ppm 8 hour(s)

Engineering measures: Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Hygiene measures: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking, and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal Protection

Eyes: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts.

Recommended: splash goggles

Skin: Personal protective equipment for the body should be selected based on the task being performed and risks involved and should be approved by a

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specialist before handling this product.
Body recommended: lab coat

Respiratory: Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
Recommended: nitrile rubber

Hands: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Melting Point:	-130°C	Percent Volatile by Volume:	100%
Boiling Point:	36°C	Evaporation Rate	>1
Vapor Pressure:	426mm Hg @ 20°C	Evaporation Standard	Butylacetate =1
Vapor Density:	2.48	Auto Ignition Temp	N/E
Solubility in Water:	Insoluble	Lower Flamm. Limit in Air	1.4%
Appearance /Odors:	Colorless liquid, aromatic odor	Upper Flamm. Limit in Air	8.3%
Flash Point:	-49°C		
Specific Gravity:	0.626		

SECTION 10 STABILITY AND REACTIVITY INFORMATION

Stability:	Stable
Conditions to Avoid:	Avoid contact with heat, sparks, flames, or other sources of ignition.
Materials to Avoid:	Oxidizing materials
Hazardous Decomposition Products:	Toxic fumes of: Carbon Monoxide, Carbon Dioxide
Hazardous polymerization:	Will Not Occur
Conditions to Avoid:	None known

SECTION 11 Toxicological Information

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Ld50 >2000 mg/kg Oral Rat

Chronic effects on humans:
Causes damage to the following organs: upper respiratory tract, skin, central nervous system (CNS), eye, lens and cornea.

Other toxic effects on humans: Extremely hazardous in case of ingestion.
Very hazardous in case of skin contact (irritant), of eye contact (irritant), of inhalation (lung irritant).

Specific effects
Carcinogenic effects: No known significant effects or critical hazards
Mutagenic effects: No known significant effects or critical hazards

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Teratogenicity/Reproductive toxicity: No known significant effects or critical hazards

Sensitization

Ingestion: No known significant effects or critical hazards

Inhalation: Irritating to respiratory system.

Eyes: Irritating to eyes.

Skin: Irritating to the skin.

SECTION 12 Ecological Information

Environmental precautions:

Toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment.

Products of degradation: These products are carbon oxides (CO, CO₂) and water,

Toxicity of the products of biodegradation: The products of degradation are less toxic than the product itself.

SECTION 13 Disposal Considerations

Waste disposal: the generation of waste should be avoided or minimized wherever possible. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Disposal of this product, solutions and any by-product should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.

Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

SECTION 14 Transport Information

DOT Classification: UN1265, Pentanes, 3, PG I F.P. -49°C

DOT Regulations may change from time to time. Please consult the most recent D.O.T. regulations.

SECTION 15 Regulatory Information

United States

HCS Classification:

Flammable liquid

Target organ effects

Irritating material

Highly Toxic material

U.S. Federal regulations:

United States inventory (TSCA 8b): listed

SARA 302/304/311/312 extremely hazardous substances: No products were found.

SARA 302/304 emergency planning and notifications: No products were found.

SARA 302/304/311/312 hazardous chemicals: Pentane

SARA 311/312 MSDS distribution- Chemical inventory- hazard identification: Pentane

Fire Hazard: Immediate (acute) health hazard, Delayed (chronic) health hazard

Clean Water Act (CWA) 307: No products were found

Clean Water Act (CWA) 311: No products were found

Clean Air Act (CAA) 112 accidental release prevention: Pentane

Clean Air Act (CAA) 112 regulated flammable substance: Pentane

Clean Air Act (CAA) 112 regulated toxic substance: No products were found.

State regulations:

Pennsylvania RTK: Pentane

generic environmental hazard);

Massachusetts RTK: Pentane

New Jersey: Pentane

Canada

WHMIS (Canada) :

Class B-2 : Flammable liquid

Class D-2B: Material causing other toxic effects (Toxic)

CEPA DSL/ CEPA NDSL : CEPA DSL: Pentane

This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

SECTION 16 Additional Information

Pentane

Flammability

Health

Reactivity

Revisions

NFPA

0.1

The information herein is believed to be accurate and is offered in good faith for the user's consideration and investigation. No warranty either expressed or implied is made for the completeness or accuracy of the information whether originating from the above mentioned company or not. Users of this material should satisfy themselves by independent investigation of current scientific and medical knowledge that the material can be used safely.