1. PRODUCT AND COMPANY IDENTIFICATION

Product Code: XXXXXX

Product Name: Pentane

Company Name: Gas Innovations
18005 E. Hwy 225
La Porte, TX 77571

Web site address: www.gasinnovations.com

Phone Number: +1 (281)471-2200

Emergency Contact: 3E (within United States) +1 (866)303-2640

Information: Infotrac (outside of United States) +1 (352)323-3500

2. HAZARDS IDENTIFICATION

Flammable Liquids: **Category 2**

Specific Target Organ Toxicity (single exposure) **Category 3**

Aspiration Toxicity **Category 1**

Symbol:

GHS Signal Word: **Danger**

GHS Hazard Phrases: Extremely flammable liquid and vapor

May be fatal if swallowed and enters airways.

Causes skin and eye irritation. May cause respiratory irritation. May cause frostbite. May form explosive mixtures with air.

GHS Precaution Phrases: Do not handle until all safety precautions have been read and understood. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Wear protective gloves, protective clothing, eye protection, respiratory protection, and/or face protection.

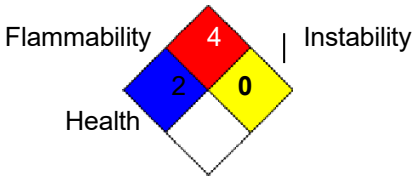
GHS Response Phrases: IN CASE OF FIRE: Use Carbon dioxide, Dry chemical, Water spray or fog to extinguish Contact the supplier for any special requirements.

GHS Storage and Disposal Phrases: Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment Use and store only outdoors or in a well-ventilated area. Protect from sunlight when ambient temperature exceeds 52°C (125°F). Dispose of contents/container in accordance with local/regional/national/international regulations. Contact the supplier for any special requirements.

Additional Hazards Information Use a back flow preventative device in the piping.

Do not open the valve until connected to equipment prepared for use. Close valve after each use and when empty. Use only with equipment of compatible materials of construction and rated for cylinder pressure.

Hazard Rating System:



NFPA: Special Hazard

Potential Health Effects (Acute and Chronic):

Inhalation: Remove person to fresh air and keep at rest in a position comfortable for breathing.

Skin Contact: Remove/take off immediately all contaminated clothing. Rinse skin with water/shower.

Eye Contact: May cause eye irritation.

Ingestion: Immediately call a POISON CENTER/doctor. Do NOT induce vomiting.

3. COMPOSITION/INFORMATION ON INGREDIENTS

CAS #	Hazardous Components (Chemical Name)	Concentration
109-66-0	pentane	100 %

4. FIRST AID MEASURES

Emergency and First Aid Procedures: Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

In Case of Inhalation: If breathed in, move person into fresh air. If not breathing give artificial respiration, preferably mouth-to-mouth. If breathing is difficult, oxygen should be administered by qualified personnel. Call a physician.

In Case of Skin Contact: Wash skin with soap and water for at least 15 minutes while removing contaminated clothing and shoes. Thoroughly clean and dry contaminated clothing and shoes before reuse. Get medical advice/attention.

In Case of Eye Contact: Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. After 5 minutes, if appropriate, remove contact lenses and continue flushing eyes for an additional 15 minutes. Get medical attention immediately.

In Case of Ingestion: Do NOT induce vomiting or give anything by mouth to an unconscious or convulsing person. If vomiting occurs, keep head lower than hips to help prevent aspiration. Get medical attention immediately.

5. FIRE FIGHTING MEASURES

Flash Pt: -49.9 °C (-56.9 °F)

Method Used: Closed Cup

Explosive Limits: Lower level:1.4% (Volume in air) Upper-level EL:7.8% (Volume in air)

Autoignition Pt: 260 °C (500 °F)

Suitable Extinguishing Media: The only safe way to extinguish a Pentane fire is to stop the flow. Fires may be brought under control using foam, carbon dioxide, water spray or a dry chemical fire extinguisher.

Fire Fighting Instructions: Move container from fire area if it can be done without risk. Cool containers with water spray until well after the fire is out. Stay away from the ends of tanks. For fires in cargo or storage area: Cool containers with water from unmanned hose holder or monitor nozzles until well after fire is out. Personnel may have to wear approach-type protective suits and positive pressure self-contained breathing apparatus. Firefighters' turnout gear may be inadequate. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tanks due to fire.

Extinguishing surrounding fire and keep cylinders cool by applying water from a maximum possible distance with a water spray. Avoid spreading burning liquid with water used for cooling. Keep work areas free of hot metal surfaces and other sources of ignition.

Flammable Properties and Hazards: High temperatures and fire conditions can result in the formation of carbon monoxide and carbon dioxide. Vapor forms explosive mixtures with air and oxidizing agents. If leaking gas catches fire, do not extinguish flames. Flammable and toxic vapors may spread from leak and could explode if reignited by sparks or flames.

6. ACCIDENTAL RELEASE MEASURES

Protective Precautions, Protective Equipment and Emergency Procedures: Use proper personal protective equipment as indicated in Section 8.

Environmental Precautions: Avoid release to the environment. Collect spillage.

Steps To Be Taken in Case Material Is Released or Spilled: Shut off all sources of ignition. Remove hot metal surfaces. Ventilate the area. For controlling larger flows, personnel may have to wear approach-type protective suits and self-contained breathing apparatus. Flush spilled material into suitable retaining areas or containers with large quantities of water. Small amounts of spilled material may be absorbed into an appropriate absorbent.

7. HANDLING AND STORAGE

Precautions To Be Taken in Handling: Avoid inhalation of vapor or mist. Keep away from heat, sparks and flames. Keep away from sources of ignition - No smoking. Use spark-proof tools and explosion proof equipment. Use in a closed system. Secure the cylinder to prevent it from falling or being knocked over. Install check valves or traps to prevent sucking back to the cylinder. Ground all lines and equipment. Leak check the lines and equipment. Have an emergency plan covering steps to be taken in the event of an accidental release.
Wear leather safety gloves and safety shoes when handling cylinders. Protect cylinders from physical damage; do not drag, roll, slide or drop. While moving the cylinder, always keep in place removable valve cover. Never attempt to lift a cylinder with its cap; the cap is intended solely to protect the valve. When moving cylinders, even for short distances, use a cart (trolley, hand truck, etc.) designed to transport cylinders. Never insert an object (e.g., wrench, screwdriver, pry bar) into cap openings; doing so may damage the valve and cause a leak. Use an adjustable strap wrench to remove over-tight or rusted caps. Slowly open the valve. If the valve is hard to open, discontinue use and contact your supplier. Close the container valve after each use; keep closed even when empty. Never apply flame or localized heat directly to any part of the container. High temperatures may damage the container and could cause the pressure relief device to fail prematurely, venting the container contents.

Precautions To Be Taken in Storing: Cylinders should be stored and used in dry, well-ventilated areas away from sources of heat or ignition. Store away from oxidizers. Do not store in direct sunlight.

Other Precautions: When handling a product under pressure, use piping and equipment adequately designed to withstand the pressures to be encountered. Never work on a pressurized system. Use a back flow preventive device in the piping. Gases can cause rapid suffocation because of oxygen deficiency; stored and used with adequate ventilation. If a leak occurs, close the container valve and blow down the system in a safe and environmentally correct manner in compliance with all international, federal/national, state/provincial, and local laws; then repair the leak. Never place a container where it may become part of an electrical circuit. Do not eat, drink or smoke when using this product.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

CAS #	Partial Chemical Name	OSHA TWA	ACGIH TWA	NIOSH IDLH
109-66-0	**Pentane**	**1000PPM**	1000 ppm	120PPM

Respiratory Equipment (Specify Type): If exposure limits are exceeded or respiratory irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Use an air-supplied or air-purifying cartridge if the action level is exceeded.

Eye Protection: Wear safety glasses when handling cylinders, vapor-proof goggles and a face shield during cylinder change out or whenever contact with product is possible. Select eye protection in accordance with OSHA 29 CFR 1910.133. Provide an

	emergency eye wash fountain and quick drench shower in the immediate work area.
Protective Gloves:	Wear appropriate protective gloves to prevent skin exposure. Impermeable gloves.
Other Protective Clothing:	Impermeable aprons. Wear appropriate protective clothing to prevent skin exposure.
Engineering Controls (Ventilation etc.):	Use explosion-proof ventilation equipment. Wear safety shoes while handling containers
Work/Hygienic/Maintenance Practices:	Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical States:	[ ] Gas [X] Liquid [ ] Solid
Appearance:	Colorless Liquid
Odor	Gasoline-like, Paraffinic
Specific Volume:	0.19 gal/lb. @ 1 atm, 68F.
Freezing Point:	NA
Boiling Point:	36.07 °C (97 °F)
Decomposition Temperature:	NA
Autoignition Pt:	260 °C (500 °F)
Flash Pt:	<-40 °C
Method used:	Closed Cup
Explosive Limits:	Lowerlevel:1.4% (Volume in air) Upper-level EL:7.8% (Volume in air)
Specific Gravity (Water = 1):	0.626
Density:	0.6262 g/ml
Bulk density:	NA
Vapor Pressure (vs. Air or mm Hg):	0.57 bar
Vapor Density(air=1)	NA
Evaporation Rate:	28.6
Solubility in Water:	0.04 %
Saturated Vapor Concentration:	NA
Viscosity:	<32 SUS
pH:	NA
Percent Volatile:	NA
VOC / Volume:	NA
Particle Size:	NA
Heat Value:	NA
Corrosion Rate:	NA
Molecular Formula:	C5H12
Molar mass:	72.15 g/mol

10. STABILITY AND REACTIVITY

Reactivity:	Forms explosive mixtures with air and oxidizing agents.
Stability:	Unstable [ ] Stable [X]
Conditions To Avoid - Instability:	Heat, flames and sparks. No smoking. Containers may rupture or explode if exposed to heat. Keep out of water supplies and sewers.
Incompatibility Materials to Avoid:	Oxidizing agents. especially. Oxygen. Chlorine. Fluorine.
Hazardous Decomposition or Byproducts:	Carbon monoxide and carbon dioxide.
Possibility of Hazardous Reactions:	Will occur [ ] Will not occur [X]
Conditions To Avoid - Hazardous Reactions:	No data available.

11. TOXICOLOGICAL INFORMATION

Epidemiology: No information available.
Teratogenicity: No information available.
Reproductive Effects: No information available.
Mutagenicity: No information available.
Neurotoxicity: No information available.

CAS#	**Acute toxicity**
109-66-0	LC50, Inhalation, Species: Rat, 364g/m3, 4H.

Carcinogenicity: NTP - No IARC Monographs - No OSHA Regulated - No

12. ECOLOGICAL INFORMATION

General Ecological Information: Environmental: No information available.
Physical: No information available.
Other: Do not empty into drains.

Results of PBT and vPvB assessment: No data available.

Persistence and Degradability: No ecological damage caused by this product.

Bio accumulative Potential: Bioconcentration potential in aquatic organisms is moderate based on a BCF value of 80.

Mobility in Soil: Expected to have high mobility in soil.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method: Do not attempt to dispose of residual or unused quantities. Return container to supplier. Dispose of contents/containers in accordance with local/regional/national/international regulations. Waste gas should be flared through a suitable burner with flash back arrestor. Do not discharge into areas where there is a risk of forming an explosive mixture with air.

14. TRANSPORT INFORMATION

LAND TRANSPORT (US DOT):
DOT Proper Shipping name: PENTANES liquid
DOT Hazard Class: 3 FLAMMABLE LIQUIDS
UN/NA number: UN1265
Sea Transport:
UN-No. (IMDG): 1265
Proper Shipping Name (IMDG): PENTANES
Class: 3 - Flammable liquids
Packing Group: I - substances presenting high danger
Air Transport:
Transport document description (IATA):
UN-No. (IATA): 1265
Proper Shipping Name (IATA): Pentanes
Class (IATA) 3 - Flammable Liquids
Packing Group: I - Great Danger

15. REGULATORY INFORMATION

EPA SARA (Superfund Amendments and Reauthorization Act of 1986) Lists

CAS #	Hazardous Components (Chemical Name)	S. 302 (EHS)	S. 304 RQ	S. 313 (TRI)
109-66-0	Pentane			

CAS #	Hazardous Components (Chemical Name)	Other US EPA or State Lists
109-66-0	Pentane	TSCA: Yes - Inventory; CA PROP.65: No; CA TAC, Title 8: No; MA Oil/HazMat: Yes; MI CMR, Part 5: No; NC TAP: No; NJ EHS: Yes - 1064; NY Part 597: No; PA HSL: Yes - 1; SC TAP: No; WI Air: Yes; MN: Yes;

CAS #	Hazardous Components (Chemical Name)	International Regulatory Lists
109-66-0	Pentane	Canadian DSL: Yes; Canadian NDSL: No; Mexico INSQ: Yes - 1265; Australia ICS: Yes; New Zealand IOC: Yes; China: Yes; Philippines: Yes; TH -TECI: Yes; TW: Yes; CN: Yes; VN (Draft): Yes;

16.OTHER INFORMATION

Revision Date: 08/13/2024

Additional Information About This Product: No data available.

NFPA Ratings:

0= Minimal Hazard
1= Slight Hazard
2= Moderate Hazard
3= Serious Hazard
4= Severe Hazard

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