

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Isopentane

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

Phone Number: +1 (281)471-2200

Web site address: www.gasinnovations.com

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

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

2. HAZARDS IDENTIFICATION

Specific Target Organ Toxicity (single exposure), Category 3
Aspiration Toxicity, Category 1
Aquatic Toxicity (Chronic), Category 2



Danger

H224- Highly flammable liquid and vapor

H320 - Causes Eye irritation

GHS Signal Word:

GHS Hazard Phrases:

H304 - May be fatal if swallowed and enters airways.

H336 - May cause drowsiness or dizziness.

H411 - Toxic to aquatic life with long lasting effects.

GHS Precaution Phrases:

P210 - Keep away from heat/ sparks/ open flames/ hot surfaces. - NO SMOKING

P243 +240 Take precautionary measures against static discharge. Ground / bond container and receiving equipment

P261 - Avoid breathing gas/vapors/spray.

P271 - Use only outdoors or in a well-ventilated area.

P273 - Avoid release to the environment.

GHS Response Phrases:

P280 - Wear protective gloves/protective clothing/eye protection / face protection

P301+310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. P331 - Do NOT induce vomiting.

P304+340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P312 - Call a POISON CENTER or doctor/physician if you feel unwell.

P370 - In case of fire: Use foam, Carbon Dioxide or dry powder for extinction.

P391 - Collect spillage.

GHS Storage and Disposal Phrases:

P403+233+ 235 - Store container tightly closed in well-ventilated place. Keep cool. Keep Container closed

P501 - Dispose of contents/containers in accordance with local/regional/national/international regulations.

Hazard Rating System:



Potential Health Effects (Acute and Chronic):

Isopentane is a simple asphyxia. Inhalation of high concentrations may cause rapid respiratory tract irritation, light headedness, central nervous system and depression in high concentrations. May sensitize the heart muscle. Chronic exposure may effect the liver.

Inhalation:

May be harmful if inhaled. May cause irritation of the respiratory tract with burning pain in the nose and throat, coughing, wheezing, shortness of breath and pulmonary edema. Isopentane is a simple asphyxiant.

Skin Contact:

May be harmful if absorbed through the skin. May cause skin irritation. Prolonged or repeated skin contact may cause defatting and dermatitis. If this product comes into contact with the skin, wash with soap and water. Seek medical attention if irritation persists. Remove and wash contaminated clothing before re-use.

Eye Contact:

May cause eye irritation. If this product comes into contact with the eyes, flush with large quantities of water for several minutes, while gently holding the eyelids open. Seek medical attention if irritation persists.

3. COMPOSITION/INFORMATION ON INGREDIENTS

CAS #	Hazardous Components (Chemical Name)	Concentration	RTECS #
78-78-4	Isopentane	100.0 %	EK4430000

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, give oxygen. Do not administer Epinephrine or other heart stimulants. Call a physician.
In Case of Skin Contact:	Wash with soap and large quantities of water. 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. Get medical attention immediately.

5. FIRE FIGHTING MEASURES

Flash Pt:	< 0.00 F (-17.8 C) Method Used: Unknown
Explosive Limits:	LEL: 1.4% (V) UEL: 8.3% (V)
Autoignition Pt:	420.00 C (788.0 F)
Suitable Extinguishing Media:	The only safe way to extinguish an Isopentane fire is to stop the flow. Fires may be brought under control using foam, carbon dioxide, or a dry chemical fire extinguisher.
Fire Fighting Instructions:	Personnel may have to wear approach-type protective suits and positive pressure self-contained breathing apparatus. Firefighters' turnout gear may be inadequate. Cylinders exposed to fire may rupture with violent force. 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.
Hazardous Combustion Products:	High temperatures and fire conditions can result in the formation of carbon monoxide and carbon dioxide.

6. ACCIDENTAL RELEASE MEASURES

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

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Printed: 11/01/2023

Revision: 10/31/2023

Supersedes Revision: 03/27/2020

keep in place removable valve cover. Never attempt to lift a cylinder by 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 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; store and use 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.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

CAS #	Chemical Name	Jurisdiction	Recommended Exposure Limits	Notations
78-78-4	Isopentane	ACGIH TLV	TLV: 600 ppm	

Respiratory Equipment (Specify Type):

If exposure limits are exceeded or respiratory irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn.

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.

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. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

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 Liquid Solid

Appearance and Odor:

Appearance: Clear. Little to no color.
Odor: characteristic odor.

pH:

Not available

Freezing Point:

-160.00 C (-256.0 F)

Boiling Point:

30.60 C (87.1 F)

Flash Pt:

< 0.00 F (-17.8 C) Method Used: Unknown

Evaporation Rate:

Not available

Flammability (solid, gas):

No data available.

Explosive Limits:

LEL: 1.4% (V) UEL: 8.3% (V)

Vapor Pressure (vs. Air or

10 PSIA at 60.0 F (15.6 C)

mm Hg):	No data.
Vapor Density (vs. Air = 1):	Not available
Specific Gravity (Water = 1):	Not available
Density:	Heavier than air
Bulk density:	Not available
Solubility in Water:	Negligible
Saturated Vapor Concentration:	Not available
Octanol/Water Partition Coefficient:	No data.
Percent Volatile:	NA
VOC / Volume:	NA
HAP / Volume:	NA
Autoignition Pt:	420.00 C (788.0 F)
Decomposition Temperature:	NA
Viscosity:	Not available
Particle Size:	Not available
Heat Value:	Not available
Corrosion Rate:	Not available
Molecular Formula & Weight:	C5H12 72.0

Information with regard to primary physical hazard:

10. STABILITY AND REACTIVITY

Reactivity:	High temperatures and fire conditions can result in the formation of carbon monoxide and carbon dioxide.
Stability:	Unstable [] Stable [X]
Conditions To Avoid - Instability:	Heat, flames and sparks. No smoking.
Incompatibility - Materials To Avoid:	Oxidizing agents, Acids, Bases, selected amines.
Hazardous Decomposition or Byproducts:	High temperatures and fire conditions can result in the formation of 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

Toxicological Information:	Epidemiology: No information available. Teratogenicity: No information available. Reproductive Effects: No information available. Mutagenicity: No information available. Neurotoxicity: No information available.
	Other Studies: CAS# 78-78-4: Acute toxicity, LCLo, Inhalation, Species: Mouse, 419 g/m3, 2H.
Irritation or Corrosion:	May be fatal if swallowed and enters airways. May cause drowsiness or dizziness.
Symptoms related to Toxicological Characteristics:	Eye Contact: May cause eye irritation. Skin Contact: May be harmful if absorbed through the skin. May cause skin irritation. Prolonged or repeated skin contact may cause defatting and dermatitis. Inhalation: May be harmful if inhaled. May cause irritation of the respiratory tract with burning pain in the nose and throat, coughing, wheezing, shortness of breath and pulmonary edema. Isopentane is a simple asphyxiant. Ingestion: May be fatal if swallowed and enters airways. May cause lung damage. May cause irritation of the digestive tract. May cause headache. May cause nausea and vomiting.
Sensitization:	Not expected.
Carcinogenicity:	NTP? No IARC Monographs? No OSHA Regulated? No

CAS #	Hazardous Components (Chemical Name)	NTP	IARC	ACGIH	OSHA
78-78-4	Isopentane	n.a.	n.a.	n.a.	n.a.

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 data available.
Bioaccumulative Potential:	No data available.
Mobility in Soil:	No data available.
Other adverse effects:	No data available.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method:	Do not attempt to dispose of residual or unused quantities. Return container to supplier. Dispose of contents and containers in accordance with local, regional, national, and international regulations.
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14. TRANSPORT INFORMATION

LAND TRANSPORT (US DOT):

DOT Proper Shipping Name: PENTANES.
 DOT Hazard Class: 3 FLAMMABLE LIQUID
 UN/NA Number: UN1265 Packing Group: I



LAND TRANSPORT (European ADR/RID):

ADR/RID Shipping Name: PENTANES.
 UN Number: UN1265 Packing Group: I
 Hazard Class: 3 - FLAMMABLE LIQUID

MARINE TRANSPORT (IMDG/IMO):

IMDG/IMO Shipping Name: PENTANES.
 UN Number: UN1265 Packing Group: I
 Hazard Class: 3 - FLAMMABLE LIQUID

IMDG MFAG Number:

AIR TRANSPORT (ICAO/IATA):

ICAO/IATA Shipping Name: PENTANES.
 UN Number: UN1265 Packing Group: I
 Hazard Class: 3 - FLAMMABLE LIQUID

Additional Transport Information: Special precautions for user: Container(s) greater than 5 liters (liquid) or 5 kilograms (solids), shipped by water mode and ALL bulk shipments may require the shipping description to contain the "Marine Pollutant" notation [49 CFR 172.203(I)] and the container(s) to display the [Marine Pollutant Mark] [49 CFR 172.322].

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)
78-78-4	Isopentane	No	No	No

This material meets the EPA 'Hazard Categories' defined for SARA Title III Sections 311/312 as indicated:

<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Explosive	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Acute toxicity (any route of exposure)
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Flammable (gases, aerosols, liquid, or solid)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Skin Corrosion or Irritation
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Oxidizer (liquid, solid or gas)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Serious eye damage or eye irritation
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Self-reactive	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Respiratory or Skin Sensitization
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Pyrophoric (liquid or solid)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Germ cell mutagenicity
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Pyrophoric gas	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Carcinogenicity
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Self-heating	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Reproductive toxicity
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Organic peroxide	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Specific target organ toxicity (single or repeated exposure)
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Corrosive to metal	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Aspiration Hazard
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Gas under pressure (compressed gas)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Simple Asphyxiant
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	In contact with water emits flammable gas	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	(Health) Hazard Not Otherwise Classified (HNOC)
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Combustible Dust		
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	(Physical) Hazard Not Otherwise Classified (HNOC)		

CAS #	Hazardous Components (Chemical Name)	Other US EPA or State Lists
78-78-4	Isopentane	CAA HAP,ODC: No; CWA NPDES: No; 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

CAS #	Hazardous Components (Chemical Name)	International Regulatory Lists
78-78-4	Isopentane	Canadian DSL: Yes; Australia ICS: Yes; China IECSC: Yes; Japan ENCS: Yes - 2-5; Korea ECL: Yes - KE-23537; Philippines ICCS: Yes

Regulatory Information: SARA Section 311/312 (Tier II) Hazard Classes:

Fire hazard: YES

Sudden release of pressure hazard: NO

Reactivity hazard: NO

Immediate (acute) health hazard: YES

Chronic health hazard: NO

Coalition of Northeast Governors (CONEG): This product contains no lead, mercury, cadmium or hexavalent chromium.

16. OTHER INFORMATION

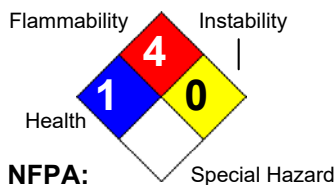
Revision Date: 10/31/2023

Previous revision: 03/27/2020

Hazard Rating System:

HEALTH	1
FLAMMABILITY	4
REACTIVITY	0
PPE	

HMIS:



Additional Information About This Product: 10/31/2023 Routine review and updates to section 2, 11, 12, 14, 15, 16
03/27/2020 - Updated DOT information.

Company Policy or Disclaimer:

The information, recommendations, and suggestions herein were compiled from reference material and other sources believed to be reliable. However, the SDS's accuracy or completeness is not guaranteed by Gas Innovations or its affiliates, nor is any responsibility assumed or implied for any loss or damage resulting from inaccuracies or omissions. Since conditions of use are beyond our control, no warranties of merchantability or fitness for a particular purpose are expressed or implied. This SDS is not intended as a license to operate under, or a recommendation to infringe on, any patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.