

SECTION 1: IDENTIFICATION

1.1. Product Identifier

Product Form: Substance

Product Name: Hexane

CAS-No.: 110-54-3

Formula: C6H14

1.2. Intended Use of the Product: Industrial use. Use as directed.

1.3. Name, Address, and Telephone of the Responsible Party

Company

High Precision Gas LLC
 10770 Painter Avenue
 Santa Fe Springs, CA 90670
 714-868-6525
www.highprecisiongas.com

1.4. Emergency Telephone Number

Emergency Number : Professional Emergency Resource Services (PERS)
 (800) 633-8253 24 / 7 / 365

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the Substance or Mixture

GHS-US Classification

Flam. Liq. 2	H225
Skin Irrit. 2	H325
STOT SE 3	H336
STOT RE 2	H373
Asp. Tox. 2	H304
Aquatic Chronic 2	H411

2.2. Label Elements

GHS-US Labeling

Hazard Pictograms (GHS-US)



Signal Word (GHS-US)

: Danger

Hazard Statements (GHS-US)

: H225 - HIGHLY FLAMMABLE LIQUID AND VAPOR
 H304 - MAY BE FATAL IF SWALLOWED AND ENTERS AIRWAYS
 H315 - CAUSES SKIN IRRITATION
 H336 - MAY CAUSE DROWSINESS OR DIZZINESS
 H373 - MAY CAUSE DAMAGE TO ORGANS THROUGH PROLONGED OR REPEATED EXPOSURE
 H411 - TOXIC TO AQUATIC LIFE WITH LONG LASTING EFFECTS

Precautionary Statements (GHS-US)

: P202 - Do not handle until all safety precautions have been read and understood
 P210 - Keep away from Heat/Open flames/Sparks/Hot surfaces. - No smoking
 P233 - Keep container tightly closed
 P240 - Ground/Bond container and receiving equipment
 P241 - Use explosion-proof electrical/ventilating/lighting/... equipment
 P242 - Use only non-sparking tools
 P243 - Take precautionary measures against static discharge
 P260 - Do not breathe gas/vapors
 P261 - Avoid breathing gas, vapors
 P264 - Wash exposed skin thoroughly after handling
 P271 - Use and store only outdoors or in a well-ventilated area
 P273 - Avoid release to the environment
 P280 - Wear protective gloves/protective clothing/eye protection/face protection
 P391 - Collect spillage
 P403+P233 - Store in a well-ventilated place. Keep container tightly closed
 P235 - Keep cool
 P405 - Store locked up
 P501 - Dispose of contents/container in accordance with container

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Supplier/owner instructions

2.3. Other Hazards

No additional information available

2.4. Unknown Acute Toxicity (GHS-US)

No data available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substance

Name : Hexane
CAS-No. : 110-54-3

Name	Synonyms	Product Identifier	%
Hexane (Main constituent)	Hexane	(CAS-No.) 110-54-3	100

Full text of H-phrases: see section 16

3.2. Mixture

Not applicable

SECTION 4: FIRST AID MEASURES

4.1. Description of First-aid Measures

First-aid Measures After Inhalation: Remove to fresh air and keep at rest in a position comfortable for breathing. If not breathing, give artificial respiration. If breathing is difficult, trained personnel should give oxygen. Call a physician.

First-aid Measures After Skin Contact: In case of contact, immediately flush affected areas with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Call a physician. Wash clothing before reuse. Discard contaminated shoes.

First-aid Measures After Eye Contact: Immediately call a poison center or doctor/physician. Hold the eyelids open and away from the eyeballs to ensure that all surfaces are flushed thoroughly. Contact an ophthalmologist immediately.

First-aid Measures After Ingestion: Immediately call a poison center or doctor/physician.

4.2. Most Important Symptoms and Effects Both Acute and Delayed

Symptoms/Injuries: May cause damages to organs.

Symptoms/Injuries After Inhalation: May cause drowsiness or dizziness.

Symptoms/Injuries After Skin Contact: Causes skin irritation.

Symptoms/Injuries After Ingestion: May be fatal if swallowed and enters airways.

Chronic Symptoms: None known.

4.3. Indication of Any Immediate Medical Attention and Special Treatment Needed

No additional information available.

SECTION 5: FIRE-FIGHTING MEASURES

5.1. Extinguishing Media

Suitable Extinguishing Media: Carbon dioxide, Dry chemical, Water spray or fog.

5.2. Special Hazards Arising From the Substance or Mixture

Fire Hazard: Highly flammable liquid and vapor.

Explosion Hazard: May form flammable/explosive vapor-air mixture

5.3. Advice for Firefighters

Firefighting Instructions: Evacuate all personnel from the danger area. Use self-contained breathing apparatus (SCBA) and protective clothing. Immediately cool containers with water from maximum distance. Stop flow of gas if safe to do so, while continuing cooling water spray. Remove ignition sources if safe to do so. Remove containers from area of fire if safe to do so. On-site fire brigades must comply with OSHA 29 CFR 1910.156 and applicable standards under 29 CFR 1910 Subpart L—Fire Protection.

Protection During Firefighting: DANGER: FLAMMABLE LIQUID AND VAPOR. Evacuate all personnel from danger area. Use self-contained breathing apparatus. Immediately cool surrounding containers with water spray from maximum distance, taking care not to extinguish flames. Avoid spreading burning liquid with water. Remove ignition sources if safe to do so. If flames are accidentally extinguished, explosive reignition may occur. Reduce vapors with water spray or fog. Stop flow of liquid if safe to do so, while continuing cooling water spray. Remove all containers from area of fire if safe to do so. Allow fire to burn out. On-site fire brigades must comply with OSHA 29 CFR 1910.156 and applicable standards under 29 CFR 1919 Subpart L - Fire Protection.

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Other Information: 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. Vapors are heavier than air and may collect in low spots. Explosive atmospheres may linger. Before entering area, especially confined areas, check with an appropriate device.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal Precautions, Protective Equipment and Emergency Procedures

General Measures: **DANGER: Flammable, liquefied gas.** FORMS EXPLOSIVE MIXTURES WITH AIR. Immediately evacuate all personnel from danger area. Use self-contained breathing apparatus where needed. Remove all sources of ignition if safe to do so. Reduce vapors with fog or fine water spray, taking care not to spread liquid with water. Shut off flow if safe to do so. Ventilate area or move container to a well-ventilated area. Flammable vapors may spread from leak and could explode if reignited by sparks or flames. Explosive atmospheres may linger. Before entering area, especially confined areas, check atmosphere with an appropriate device.

6.1.1. For Non-Emergency Personnel

No additional information available

6.1.2. For Emergency Personnel

Protective Equipment: Avoid breathing gas, vapors.

6.2. Environmental Precautions

Prevent waste from contaminating the surrounding environment. Prevent soil and water pollution. Dispose of contents/container in accordance with local/regional/national/international regulations. Contact supplier for any special requirements. Avoid release to the environment.

6.3. Methods and Materials for Containment and Cleaning Up

For Containment: On land, sweep or shovel into suitable containers.

6.4. Reference to Other Sections

See Section 8 for exposure controls and personal protection and Section 13 for disposal considerations.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for Safe Handling

Additional Hazards When Processed: Handle empty containers with care because residual vapors are flammable.

Precautions for Safe Handling: May irritate skin, eyes, and respiratory tract. Use only with adequate ventilation or respiratory protection. Do not get liquid or vapor in eyes, on skin, or on clothing. Have safety showers and eyewash fountains immediately available. May form explosive mixtures with air. Keep away from heat, sparks, and open flame. Use only spark-proof tools and explosion-proof equipment. Protect containers from damage. Use a suitable hand truck to move containers; do not drag, roll, slide, or drop. For other precautions in using this product, see section 16

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 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. For other precautions in using this product, see section 16.

7.2. Conditions for Safe Storage, Including Any Incompatibilities

Storage Conditions: Store only where temperature will not exceed 125°F (52°C). Post "No Smoking/No Open Flames" signs in storage and use areas. There must be no sources of ignition. Separate packages and protect against potential fire and/or explosion damage following appropriate codes and requirements (e.g. NFPA 30, NFPA 55, NFPA 70, and/or NFPA 221 in the U.S.) or according to requirements determined by the Authority Having Jurisdiction (AHJ). Always secure containers upright to keep them from falling or being knocked over. Install valve protection cap, if provided, firmly in place by hand when the container is not in use. Store full and empty containers separately. Use a first-in, first-out inventory system to prevent storing full containers for long periods. For other precautions in using this product, see section 16

All equipment in storage areas must be explosion-proof. Electric installation in storage areas must meet the requirements of National Electric Code (NEC) Article 500. This material is a static accumulator. To avoid ignition of vapors by static discharge, all metal parts and equipment must be grounded. Follow NFPA 77, Recommended Practice on Static Electricity (www.nfpa.org), and API Recommended Practice 2003, Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents.

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7.3. Specific End Use(s) No additional information available

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control Parameters

Hexane (110-54-3)		
ACGIH	ACGIH TLV-TWA (ppm)	50 ppm
USA OSHA	OSHA PEL (TWA) (mg/m ³)	1800 mg/m ³
USA OSHA	OSHA PEL (TWA) (ppm)	500 ppm
USA IDLH	US IDLH (ppm)	1100 ppm (>10% LEL)

8.2. Exposure Controls

Appropriate Engineering Controls

: Use a local exhaust system with sufficient flow velocity to maintain an adequate supply of air in the worker's breathing zone. Mechanical (general): General exhaust ventilation may be acceptable if it can maintain an adequate supply of air.

Personal Protective Equipment

: Avoid all unnecessary exposure.



Eye and Face Protection

: Chemical goggles or safety glasses. Wear safety glasses when handling cylinders; vapor-proof goggles and a face shield during cylinder changeout or whenever contact with product is possible. Select eye protection in accordance with OSHA 29 CFR 1910.133.

Skin and Body Protection

: Wear work gloves and metatarsal shoes for cylinder handling. Protective equipment where needed. Select in accordance with OSHA 29 CFR 1910.132, 1910.136, and 1910.138.

Respiratory Protection

: When workplace conditions warrant respirator use, follow a respiratory protection program that meets OSHA 29 CFR 1910.134, ANSI Z88.2, or MSHA 30 CFR 72.710 (where applicable). Use an air-supplied or air-purifying cartridge if the action level is exceeded. Ensure that the respirator has the appropriate protection factor for the exposure level. If cartridge type respirators are used, the cartridge must be appropriate for the chemical exposure. For emergencies or instances with unknown exposure levels, use a self-contained breathing apparatus (SCBA).

Other Information

: When using, do not eat, drink or smoke.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on Basic Physical and Chemical Properties

Physical State	: Liquid
Appearance	: Colorless liquid.
Color	: Colorless
Odor	: Slight petroleum
Odor Threshold	: 65 - 248 ppm
pH	: No data available
Evaporation Rate	: No data available
Melting Point	: -95 °C
Freezing Point	: No data available
Boiling Point	: 68.7 °C
Flash Point	: -22 °C
Critical Temperature	: 234.2 °C
Auto-ignition Temperature	: 225 °C
Decomposition Temperature	: No data available
Flammability (solid, gas)	: Extremely flammable gas
Vapor Pressure	: 124 mm Hg (at 20 °C)
Relative Vapor Density at 20°C	: No data available
Relative Density	: No data available
Density	: 0.672 g/cm ³ (at 15 °C)
Relative gas density	: 2.98

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Solubility	: Slightly soluble in water.
Log Pow	: No data available
Log Know	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available
Oxidizing properties	: No data available
Explosion limits	: 1 – 7.5 vol %

9.2. Other Information

No additional information available

SECTION 10: STABILITY AND REACTIVITY

- 10.1. Reactivity:** No additional information available.
- 10.2. Chemical Stability:** HIGHLY FLAMMABLE LIQUID AND VAPOR. May form flammable/explosive vapor-air mixture.
- 10.3. Possibility of Hazardous Reactions:** May occur.
- 10.4. Conditions to Avoid:** Extremely high or low temperatures. Open flame.
- 10.5. Incompatible Materials:** Strong oxidizers. Oxygen. Chlorine. Fluorine.
- 10.6. Hazardous Decomposition Products:** May releast flammable gases. Carbon monoxide. Irritating fumes.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on Toxicological Effects

Acute Toxicity: Not classified

Hexane (/f) 110-54-3	
LD50 oral rat	25 g/kg
LC50 dermal rabbit	3000 mg/kg
LC50 inhalation rat (ppm)	48000 ppm/4h
ATE US (dermal)	3000.000 mg/kg body weight
ATE US (gases)	48000.000 ppmV/4h

Skin Corrosion/Irritation: CAUSES SKIN IRRITATION

Serious Eye Damage/Irritation: Not classified

Respiratory or Skin Sensitization: Not classified

Germ Cell Mutagenicity: Not classified

Carcinogenicity: Not classified

Reproductive Toxicity: Not classified

Specific Target Organ Toxicity (Single Exposure): MAY CAUSE DROWSINESS OR DIZZINESS.

Specific Target Organ Toxicity (Repeated Exposure): MAY CAUSE DAMAGE TO ORGANS THROUGH PROLONGED OR REPEATED EXPOSURE.

Aspiration Hazard: MAY BE FATAL IF SWALLOWED AND ENTERS AIRWAYS.

Symptoms/Injuries After Inhalation: MAY CAUSE DROWSINESS OR DIZZINESS.

Symptoms/Injuries After Skin Contact: CAUSES SKIN IRRITATION.

Symptoms/Injuries After Ingestion: MAY BE FATAL IF SWALLOWED AND ENTERES AIRWAYS.

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecology – water : Toxic to aquatic life with long lasting effects.

Hexane (110-54-3)	
LD50 fish1	2.1 - 2.98 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through])

12.2. Persistence and Degradability

Hexane (110-54-3)	
Persistence and Degradability	May cause long-term adverse effects in the environment.

12.3. Bioaccumulative Potential

Hexane (110-54-3)	
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Bioaccumulative Potential	Not established.
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12.4. Mobility in Soil No additional information available

12.5. Other Adverse Effects

Other Information : Avoid release to the environment.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste Treatment Methods

Waste Disposal Recommendations: Dispose of contents/container in accordance with local, regional, national, and international regulations. Contact supplier for any special requirements.

Additional Information: Handle empty containers with care because residual vapors are flammable.

Ecology - Waste Materials: Avoid release to the environment.

SECTION 14: TRANSPORT INFORMATION

The shipping description(s) stated herein were prepared in accordance with certain assumptions at the time the SDS was authored, and can vary based on a number of variables that may or may not have been known at the time the SDS was issued.

14.1. In Accordance with DOT

Transport document description : UN1208 Hexanes, 3, II
Un-No. (DOT) : UN1208
Proper Shipping Name (DOT) : Hexanes
Class (DOT) : 3 – Class 3 – Flammable and combustible liquid 49 CFR 173. 120
Hazard labels (DOT) : 3



Packing group (DOT) : II – Medium Danger
DOT Special Provisions (49 CFR 172.102) : IB2 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized T4 - 2.65 178.274(d)(2) Normal..... 178.275(d)(3) TP1 - The maximum degree of filling must not exceed the degree of filling determined by the following: Degree of filling = $97 / 1 + a (tr - tf)$
Where: tr is the maximum mean bulk temperature during transport, and tf is the temperature in degrees celsius of the liquid during filling

Marine pollutant : P



Additional information

Other information : No supplementary information available.

14.2. In Accordance with IMDG

Transport by sea
UN-No. (IMDG) : 1208
Proper Shipping Name (IMDG) : Hexanes
Hazard Class (IMDG) : 3 – Flammable liquids



Package group (IMDG) : II – substances presenting medium danger

14.3. In Accordance with IATA

Transport by air
UN-No. (IATA) : 1208
Proper Shipping Name (IATA) : Hexanes
Hazard Class (IATA) : 3 – Flammable liquids

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Package group (IATA) : II – Medium danger

SECTION 15: REGULATORY INFORMATION

15.1. US Federal Regulations

Hexane (110-54-3)	
Listed in the United States TSCA (Toxic Substances Control Act) inventory	
Subject to reporting requirements of United States SARA Section 313	
CERCLA RA	5000 lb
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard
SARA Section 314 – Emission Reporting	1.0%

15.2 International Regulations

Canada

Hexane (110-54-3)
Listed on the Canadian DSL (Domestic Substances List)

EU- Regulations

Hexane (110-54-3)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

15.2.2 National Regulations

Hexane (110-54-3)
Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on the Korean ECL (Existing Chemicals List)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Japanese Pollutant Release and Transfer Register Law (PRTR Law)
Listed on the Canadian IDL (Ingredient Disclosure List)
Listed on INSQ (Mexican National Inventory of Chemical Substances)
Listed on CICR (Turkish Inventory and Control of Chemicals)

15.3. US State Regulations

Hexane (110-54-3)
U.S. – California – Proposition 65 – Carcinogens List – No
U.S. – California – Proposition 65 – Developmental Toxicity – No
U.S. – California – Proposition 65 – Reproductive Toxicity - Female – No
U.S. – California – Proposition 65 – Reproductive Toxicity - Male – No
U.S. - Massachusetts - Right To Know List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List

SECTION 16: OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

Other Information	: When you mix two or more chemicals, you can create additional, unexpected hazards. Obtain and evaluate the safety information for each component before you produce the mixture. Consult an industrial hygienist or other trained person when you evaluate the end product. Before using any plastics, confirm their compatibility with this product.
NFPA health hazard:	: 1 – Exposure could cause irritation but only minor residual injury even if no treatment is given.
NFPA fire hazard:	: 3 – Liquid and solid that can be ignited under almost all ambient conditions.

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NFPA reactivity

: 0 – Normal stable, even under fire exposure conditions, and are not reactive with water.



HMIS III Rating

Health

: 1 Slight Hazard - Irritation or minor reversible injury possible

Flammability

: 3 Serious Hazard

Physical

: 0 Minimal Hazard

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

SDS US (GHS HazCom)