

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Mixture
Product name : n-Hexane (2.45% - 4.9999%) in Argon
Product code : SG-2002-01008

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Test gas/Calibration gas.

1.3. Details of the supplier of the safety data sheet

Air Liquide America Specialty Gases
6141 Easton Rd
Plumsteadville, PA 18949 - USA
T 1.800.217.2688
www.airliquide.com

1.4. Emergency telephone number

Emergency number : CHEMTREC: 1-800-424-9300

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (GHS-US)

| | |
|----------------|------|
| Flam. Gas 1 | H220 |
| Compressed gas | H280 |
| Repr. 2 | H361 |
| STOT RE 2 | H373 |

Full text of H-phrases: see section 16

2.2. Label elements

GHS-US labeling

Hazard pictograms (GHS-US)



Signal word (GHS-US)

: Danger

Hazard statements (GHS-US)

: H220 - Extremely flammable gas
H280 - Contains gas under pressure; may explode if heated
H361 - Suspected of damaging fertility or the unborn child
H373 - May cause damage to organs through prolonged or repeated exposure
OSHA-H01 - May displace oxygen and cause rapid suffocation
CGA-HG04 - May form explosive mixtures with air

Precautionary statements (GHS-US)

: P202 - Do not handle until all safety precautions have been read and understood
P210 - Keep away from open flames, sparks, hot surfaces. - No smoking
P260 - Do not breathe gas
P271 - Use only outdoors or in a well-ventilated area
P280 - Wear protective clothing, protective gloves, eye protection, face protection
P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing
P308+P313 - If exposed or concerned: Get medical advice/attention
P377 - Leaking gas fire: Do not extinguish, unless leak can be stopped safely
P381 - Eliminate all ignition sources if safe to do so
P403 - Store in a well-ventilated place
P405 - Store locked up
P501 - Dispose of contents/container in accordance with local/regional/national/international regulations
CGA-PG02 - Protect from sunlight when ambient temperature exceeds 52°C (125°F)
CGA-PG05 - Use a back flow preventive device in the piping
CGA-PG06 - Close valve after each use and when empty
CGA-PG10 - Use only with equipment rated for cylinder pressure
CGA-PG14 - Approach suspected leak area with caution

n-Hexane (2.45% - 4.9999%) in Argon

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

CGA-PG21 - Open valve slowly

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS-US)

Not applicable

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

| Name | Product identifier | % | Classification (GHS-US) |
|--------|--------------------|-----------------|--|
| Argon | (CAS No) 7440-37-1 | 95.0001 - 97.55 | Compressed gas, H280 |
| Hexane | (CAS No) 110-54-3 | 2.45 - 4.9999 | Flam. Liq. 2, H225 Skin Irrit. 2, H315 Repr. 2, H361 STOT SE 3, H336 STOT RE 2, H373 Asp. Tox. 1, H304 Aquatic Chronic 2, H411 |

Full text of H-phrases: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures after inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If you feel unwell, seek medical advice.
- First-aid measures after skin contact : Adverse effects not expected from this product.
- First-aid measures after eye contact : Adverse effects not expected from this product.
- First-aid measures after ingestion : Ingestion is not considered a potential route of exposure.

4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/injuries after inhalation : May displace oxygen and cause rapid suffocation. If you feel unwell, seek medical advice.
- Symptoms/injuries after skin contact : Adverse effects not expected from this product.
- Symptoms/injuries after eye contact : Adverse effects not expected from this product.
- Symptoms/injuries after ingestion : Ingestion is not considered a potential route of exposure.
- Symptoms/injuries upon intravenous administration : Not known.
- Chronic symptoms : Suspected of damaging fertility. Suspected of damaging the unborn child. May cause damage to organs through prolonged or repeated exposure (Inhalation).

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Use extinguishing media appropriate for surrounding fire.
- Unsuitable extinguishing media : Do not use water jet to extinguish.

5.2. Special hazards arising from the substance or mixture

- Fire hazard : This product is flammable. Extremely flammable gas.
- Explosion hazard : May form flammable/explosive vapor-air mixture. Heat may build pressure, rupturing closed containers, spreading fire and increasing risk of burns and injuries.
- Reactivity : None known.

5.3. Advice for firefighters

- Firefighting instructions : In case of fire: Evacuate area. Fight fire remotely due to the risk of explosion. Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire.
- Protection during firefighting : Standard protective clothing and equipment (e.g., Self Contained Breathing Apparatus) for fire fighters. Do not enter fire area without proper protective equipment, including respiratory protection.

n-Hexane (2.45% - 4.9999%) in Argon

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Ensure adequate ventilation.

6.1.1. For non-emergency personnel

Protective equipment : Wear protective equipment consistent with the site emergency plan.
Emergency procedures : Escape the danger area by the closest safe route. Close doors and windows of adjacent premises. Keep containers closed. Mark the danger area. Seal off low-lying areas. Keep upwind.

6.1.2. For emergency responders

Protective equipment : Standard protective clothing and equipment (e.g., Self Contained Breathing Apparatus) for fire fighters. Equip cleanup crew with proper protection.
Emergency procedures : Evacuate and limit access. Ventilate area. Remove ignition sources. Monitor concentration of released product. Consider the risk of potentially explosive atmospheres. Wear self-contained breathing apparatus when entering atmospheres of unknown contaminant concentration until proven to be safe.

6.2. Environmental precautions

Try to stop release if safe to do so.

6.3. Methods and material for containment and cleaning up

For containment : Try to stop release if safe to do so.
Methods for cleaning up : Dispose of this material and its container in accordance with local regulations.

6.4. Reference to other sections

See also Sections 8 and 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed : Pressurized container: Do not pierce or burn, even after use. Handle empty containers with care because residual vapors are flammable. Use equipment rated for cylinder pressure. In use, may form flammable vapor-air mixture. Close valve after each use and when empty.
Precautions for safe handling : Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required. Keep away from heat/sparks/open flames/hot surfaces. – No smoking. Use only non-sparking tools. Use only outdoors or in a well-ventilated area.
Hygiene measures : Do not eat, drink or smoke when using this product.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Comply with applicable regulations. Proper grounding procedures to avoid static electricity should be followed.
Storage conditions : Do not expose to temperatures exceeding 52°C (125°F). Keep container closed when not in use. Protect cylinder from physical damage.
Incompatible products : None known.
Incompatible materials : Oxidizing materials. Air.

7.3. Specific end use(s)

Test gas/Calibration gas.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

| n-Hexane (2.45% - 4.9999%) in Argon | | |
|-------------------------------------|------------------------|------------|
| ACGIH | Not applicable | |
| OSHA | Not applicable | |
| Argon (7440-37-1) | | |
| ACGIH | Not applicable | |
| OSHA | Not applicable | |
| Hexane (110-54-3) | | |
| ACGIH | ACGIH TWA (ppm) | 50 ppm |
| OSHA | OSHA PEL (TWA) (mg/m³) | 1800 mg/m³ |

n-Hexane (2.45% - 4.9999%) in Argon

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

| Hexane (110-54-3) | | |
|-------------------|----------------------|---------|
| OSHA | OSHA PEL (TWA) (ppm) | 500 ppm |

8.2. Exposure controls

| | |
|----------------------------------|---|
| Appropriate engineering controls | : Ensure exposure is below occupational exposure limits. Provide adequate general and local exhaust ventilation. Systems under pressure should be regularly checked for leakages. Oxygen detectors should be used when asphyxiating gases may be released. Consider work permit system e.g. for maintenance activities. |
| Hand protection | : Wear working gloves when handling gas containers. 29CFR 1910.138: Hand Protection. |
| Eye protection | : Wear safety glasses with side shields. 29 CFR 1910.133: Eye and Face Protection. |
| Skin and body protection | : Wear suitable protective clothing, e.g. - lab coats, coveralls or flame resistant clothing. |
| Respiratory protection | : None necessary during normal and routine operations. |
| Thermal hazard protection | : None necessary during normal and routine operations. |
| Environmental exposure controls | : Refer to local regulations for restriction of emissions to the atmosphere. See section 13 for specific methods for waste gas treatment. |
| Other information | : Wear safety shoes while handling containers. 29 CFR 1910.136: Foot Protection. |

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

| | |
|---|--|
| Physical state | : Gas |
| Appearance | : Clear, colorless gas. |
| Color | : Colorless |
| Odor | : Odorless |
| Odor threshold | : No data available |
| pH | : No data available |
| Relative evaporation rate (butyl acetate=1) | : No data available |
| Relative evaporation rate (ether=1) | : Not applicable for gas-mixtures. |
| Melting point | : No data available |
| Freezing point | : No data available |
| Boiling point | : No data available |
| Flash point | : No data available |
| Auto-ignition temperature | : No data available |
| Decomposition temperature | : No data available |
| Flammability (solid, gas) | : See Section 2.1 and 2.2 |
| Vapor pressure | : No data available |
| Relative vapor density at 20 °C | : No data available |
| Relative density | : No data available |
| Relative gas density | : Heavier than air. |
| Solubility | : Water: Solubility in water of component(s) of the mixture : •: 61 mg/l •: Insoluble |
| Log Pow | : No data available |
| Log Kow | : No data available |
| Viscosity, kinematic | : No data available |
| Viscosity, dynamic | : No data available |
| Explosive properties | : Without adequate ventilation formation of explosive mixtures may be possible. |
| Oxidizing properties | : None. |
| Explosive limits | : No data available |

9.2. Other information

| | |
|------------------------|--|
| Additional information | : Gas/vapour heavier than air. May accumulate in confined spaces, particularly at or below ground level. |
|------------------------|--|

SECTION 10: Stability and reactivity

10.1. Reactivity

None known.

n-Hexane (2.45% - 4.9999%) in Argon

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Can form explosive mixture with air.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

Air. Oxidizing materials.

10.6. Hazardous decomposition products

Under normal conditions of storage and use hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

Argon (7440-37-1)

| | |
|---------------------------|---------------|
| LC50 inhalation rat (ppm) | 820000 ppm/4h |
|---------------------------|---------------|

Hexane (110-54-3)

| | |
|--------------------|------------|
| LD50 dermal rabbit | 3000 mg/kg |
|--------------------|------------|

| | |
|---------------------------|--------------|
| LC50 inhalation rat (ppm) | 48000 ppm/4h |
|---------------------------|--------------|

Skin corrosion/irritation : Not classified

Serious eye damage/irritation : Not classified

Respiratory or skin sensitization : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Suspected of damaging fertility or the unborn child.

Specific target organ toxicity (single exposure) : Not classified

Specific target organ toxicity (repeated exposure) : May cause damage to organs through prolonged or repeated exposure.

Aspiration hazard : Not classified

Symptoms/injuries after inhalation : May displace oxygen and cause rapid suffocation. If you feel unwell, seek medical advice.

Symptoms/injuries after skin contact : Adverse effects not expected from this product.

Symptoms/injuries after eye contact : Adverse effects not expected from this product.

Symptoms/injuries after ingestion : Ingestion is not considered a potential route of exposure.

Symptoms/injuries upon intravenous administration : Not known.

Chronic symptoms : Suspected of damaging fertility. Suspected of damaging the unborn child. May cause damage to organs through prolonged or repeated exposure (Inhalation).

SECTION 12: Ecological information

12.1. Toxicity

Hexane (110-54-3)

| | |
|-------------|---|
| LC50 fish 1 | 2.1 - 2.98 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through]) |
|-------------|---|

12.2. Persistence and degradability

Argon (7440-37-1)

| | |
|-------------------------------|--|
| Persistence and degradability | No ecological damage caused by this product. |
|-------------------------------|--|

12.3. Bioaccumulative potential

Argon (7440-37-1)

| | |
|---------|-------------------------------------|
| Log Pow | Not applicable for inorganic gases. |
|---------|-------------------------------------|

n-Hexane (2.45% - 4.9999%) in Argon

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Argon (7440-37-1)

| | |
|---------------------------|--|
| Bioaccumulative potential | No ecological damage caused by this product. |
|---------------------------|--|

12.4. Mobility in soil

Argon (7440-37-1)

| | |
|----------------|--|
| Ecology - soil | No ecological damage caused by this product. |
|----------------|--|

12.5. Other adverse effects

| | |
|------------------------------|--|
| Effect on ozone layer | : |
| Effect on the global warming | : No known ecological damage caused by this product. |

SECTION 13: Disposal considerations

13.1. Waste treatment methods

| | |
|--------------------------------|--|
| Waste treatment methods | : Contact supplier if guidance is required. 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. |
| Waste disposal recommendations | : Refer to the CGA Pamphlet P-63 "Disposal of Gases" available at www.cganet.com for more guidance on suitable disposal methods. |
| Additional information | : None. |

SECTION 14: Transport information

| | |
|---|--|
| In accordance with DOT | |
| Transport document description | : UN1954 Compressed gas, flammable, n.o.s., 2.1 |
| UN-No.(DOT) | : UN1954 |
| Proper Shipping Name (DOT) | : Compressed gas, flammable, n.o.s. |
| Department of Transportation (DOT) Hazard Classes | : 2.1 - Class 2.1 - Flammable gas 49 CFR 173.115 |
| Hazard labels (DOT) | : 2.1 - Flammable gas |



| | |
|--|---|
| DOT Symbols | : G - Identifies PSN requiring a technical name |
| DOT Packaging Exceptions (49 CFR 173.xxx) | : 306 |
| DOT Packaging Non Bulk (49 CFR 173.xxx) | : 302;305 |
| DOT Packaging Bulk (49 CFR 173.xxx) | : 314;315 |
| DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) | : Forbidden |
| DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) | : 150 kg |
| DOT Vessel Stowage Location | : D - The material must be stowed "on deck only" on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers or one passenger per each 3 m of overall vessel length, but the material is prohibited on passenger vessels in which the limiting number of passengers is exceeded. |
| DOT Vessel Stowage Other | : 40 - Stow "clear of living quarters" |

Additional information

| | |
|-------------------|---|
| Other information | : No supplementary information available. |
|-------------------|---|

ADR

| | |
|---|---------------------|
| Transport document description | : UN 1954, 2, (B/D) |
| Class (ADR) | : 2 - Gases |
| Hazard identification number (Kemler No.) | : 23 |
| Classification code (ADR) | : 1F |

n-Hexane (2.45% - 4.9999%) in Argon

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Orange plates

:



Tunnel restriction code (ADR)

: B/D

LQ

: 0

Excepted quantities (ADR)

: E0

Transport by sea

UN-No. (IMDG)

: 1954

Proper Shipping Name (IMDG)

: COMPRESSED GAS, FLAMMABLE, N.O.S.

Class (IMDG)

: 2.1 - Flammable gases

Air transport

UN-No.(IATA)

: 1954

Proper Shipping Name (IATA)

: COMPRESSED GAS, FLAMMABLE, N.O.S.

Class (IATA)

: 2

SECTION 15: Regulatory information

15.1. US Federal regulations

Argon (7440-37-1)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

n-Hexane (110-54-3)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Listed on United States SARA Section 313

| | |
|---------------------------------------|-------|
| SARA Section 313 - Emission Reporting | 1.0 % |
|---------------------------------------|-------|

15.2. International regulations

CANADA

Argon (7440-37-1)

Listed on the Canadian DSL (Domestic Substances List)

| | |
|----------------------|--------------------------|
| WHMIS Classification | Class A - Compressed Gas |
|----------------------|--------------------------|

n-Hexane (110-54-3)

Listed on the Canadian DSL (Domestic Substances List)

| | |
|----------------------|--|
| WHMIS Classification | Class B Division 2 - Flammable Liquid Class D Division 2 Subdivision A - Very toxic material causing other toxic effects Class D Division 2 Subdivision B - Toxic material causing other toxic effects |
|----------------------|--|

EU-Regulations

Argon (7440-37-1)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

n-Hexane (110-54-3)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Not classified

Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

15.2.2. National regulations

Argon (7440-37-1)

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 Korean ECL (Existing Chemicals List)

Listed on NZIoC (New Zealand Inventory of Chemicals)

Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)

n-Hexane (2.45% - 4.9999%) in Argon

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

n-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)

15.3. US State regulations

Argon (7440-37-1)

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

n-Hexane (110-54-3)

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

- Indication of changes : Revised safety data sheet in accordance with OSHA final rule on GHS implementation promulgated March 26, 2012.
- Other information : This Safety Data Sheet is offered pursuant to OSHA's Hazard Communication Standard, 29 CFR, 1910.1200. Other government regulations must be reviewed for applicability to this product.

Full text of H-phrases:

| | |
|-------------------|---|
| Aquatic Chronic 2 | Hazardous to the aquatic environment - Chronic Hazard Category 2 |
| Asp. Tox. 1 | Aspiration hazard Category 1 |
| Compressed gas | Gases under pressure Compressed gas |
| Flam. Gas 1 | Flammable gases Category 1 |
| Flam. Liq. 2 | Flammable liquids Category 2 |
| Repr. 2 | Reproductive toxicity Category 2 |
| Skin Irrit. 2 | Skin corrosion/irritation Category 2 |
| STOT RE 2 | Specific target organ toxicity (repeated exposure) Category 2 |
| STOT SE 3 | Specific target organ toxicity (single exposure) Category 3 |
| H220 | Extremely flammable gas |
| H225 | Highly flammable liquid and vapor |
| H280 | Contains gas under pressure; may explode if heated |
| H304 | May be fatal if swallowed and enters airways |
| H315 | Causes skin irritation |
| H336 | May cause drowsiness or dizziness |
| H361 | Suspected of damaging fertility or the unborn child |
| H373 | May cause damage to organs through prolonged or repeated exposure |
| H411 | Toxic to aquatic life with long lasting effects |

SDS US (GHS HazCom 2012)

This Safety Data Sheet is offered pursuant to OSHA's Hazard Communication Standard, 29 CFR, 1910.1200. Other government regulations must be reviewed for applicability to this product. To the best of Air Liquide America Corporation's knowledge, the information contained herein is reliable and accurate as of this date; however, accuracy, suitability or completeness are not guaranteed and no warranties of any type, either express or implied, are provided. The information contained herein relates only to this specific product. If this product is combined with other materials, all component properties must be considered. Data may be changed from time to time. Be sure to consult the latest edition.