

Hydrogen Chloride (0.0001% - 0.9999%) in Nitrogen

Safety Data Sheet 50025MSA

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations
 Date of issue: 09/04/2014 Version: 1.0

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

1.1. Product identifier

Product form : Mixture
 Product name : Hydrogen Chloride (0.0001% - 0.9999%) in Nitrogen
 MSA P/N : 710210, 711080, 1002878, 10053747

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

Manufacturer:
 Calgaz, division of Air Liquide
 821 Chesapeake Drive
 Cambridge, MD 21613

U.S. Supplier
 Mine Safety Appliances Company
 100 Cranberry Woods Drive
 Cranberry Township
 Pennsylvania U.S.A. 16066

1-800-MSA-2222
 www.msanet.com/prism

1.4. Emergency telephone number

Emergency number : CHEMTREC: 1-800-424-9300
 Internationally: 1-703-527-3887

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (GHS-US)

Compressed gas H280
 Full text of H-phrases: see section 16

2.2. Label elements

GHS-US labeling

Hazard pictograms (GHS-US) :



GHS04

Signal word (GHS-US) : Warning
 Hazard statements (GHS-US) : H280 - Contains gas under pressure; may explode if heated
 OSHA-H01 - May displace oxygen and cause rapid suffocation
 Precautionary statements (GHS-US) : P202 - Do not handle until all safety precautions have been read and understood
 P271 - Use only outdoors or in a well-ventilated area
 P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing
 P313 - Get medical advice/attention
 CGA-PG20 - Use only with equipment of compatible materials of construction
 CGA-PG10 - Use only with equipment rated for cylinder pressure
 CGA-PG05 - Use a back flow preventive device in the piping
 CGA-PG06 - Close valve after each use and when empty
 CGA-PG14 - Approach suspected leak area with caution
 CGA-PG21 - Open valve slowly
 CGA-PG02 - Protect from sunlight when ambient temperature exceeds 52°C (125°F)
 P403 - Store in a well-ventilated place

Hydrogen Chloride (0.0001% - 0.9999%) in Nitrogen

Safety Data Sheet

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

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) |
|-------------------|--------------------|-------------------|-------------------------|
| Nitrogen | (CAS No) 7727-37-9 | 99.0001 - 99.9999 | Not classified |
| Hydrogen chloride | (CAS No) 7647-01-0 | 0.0001 - 0.9999 | Skin Corr. 1A, H314 |

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 to fresh air and keep at rest in a position comfortable for breathing.
- First-aid measures after skin contact : Adverse effects not expected from this product. If skin irritation or rash occurs: Get medical advice/attention.
- First-aid measures after eye contact : Adverse effects not expected from this product. If eye irritation develops, seek medical attention.
- 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 : Adverse effects not expected from this product.
- 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 : Adverse effects not expected from this product.

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

If you feel unwell, seek medical advice. If breathing is difficult, give oxygen.

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.

5.2. Special hazards arising from the substance or mixture

- Fire hazard : The product is not flammable.
- Explosion hazard : Product is not explosive. Heat may build pressure, rupturing closed containers, spreading fire and increasing risk of burns and injuries.
- Reactivity : Reacts with water to form corrosive acids. Corrosive vapors.

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.
- Special protective equipment for fire fighters : Standard protective clothing and equipment (e.g., Self Contained Breathing Apparatus) for fire fighters.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

- General measures : Ensure adequate ventilation.

Hydrogen Chloride (0.0001% - 0.9999%) in Nitrogen

Safety Data Sheet

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

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.

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. Do not pierce or burn, even after use. Use equipment rated for cylinder pressure.
- Precautions for safe handling : Do not handle until all safety precautions have been read and understood. Use only outdoors or in a well-ventilated area.
- Safe handling of the gas receptacle : Protect cylinders from physical damage; do not drag, roll, slide or drop. Do not remove or deface labels provided by the supplier for the identification of the cylinder contents.
- 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.
- Storage conditions : Do not expose to temperatures exceeding 52°C (125°F). Protect cylinder from physical damage. Keep container closed when not in use. Store in well ventilated area.
- Incompatible products : None known.
- Incompatible materials : Reducing agents. Bases or caustic materials.
- Storage area : Keep out of direct sunlight. Store away from heat. Store in a well-ventilated place.

7.3. Specific end use(s)

Test gas/Calibration gas.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

| Hydrogen Chloride (0.0001% - 0.9999%) in Nitrogen | | |
|---------------------------------------------------|-----------------------------------------|---------------------|
| ACGIH | Not applicable | |
| OSHA | Not applicable | |
| Nitrogen (7727-37-9) | | |
| ACGIH | Not applicable | |
| OSHA | Not applicable | |
| Hydrogen chloride (7647-01-0) | | |
| ACGIH | ACGIH Ceiling (ppm) | 2 ppm |
| OSHA | OSHA PEL (Ceiling) (mg/m ³) | 7 mg/m ³ |
| OSHA | OSHA PEL (Ceiling) (ppm) | 5 ppm |

Hydrogen Chloride (0.0001% - 0.9999%) in Nitrogen

Safety Data Sheet

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

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. See sections 5 & 6. |
| 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. |
| Molecular mass | : Not applicable for gas-mixtures. |
| Color | : Colorless |
| Odor | : Irritating/pungent odour |
| Odor threshold | : No data available |
| pH | : Not applicable for gas-mixtures. |
| 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) | : Not flammable - not combustible |
| Vapor pressure | : Not applicable. |
| Relative vapor density at 20 °C | : No data available |
| Relative density | : No data available |
| Relative gas density | : Lighter or similar to air. |
| Solubility | : Water: Solubility in water of component(s) of the mixture : •: 720000 mg/l •: 20 mg/l |
| Log Pow | : Not applicable for gas-mixtures. |
| Log Kow | : Not applicable for gas-mixtures. |
| Viscosity, kinematic | : Not applicable. |
| Viscosity, dynamic | : Not applicable. |
| Explosive properties | : Not applicable - not flammable. |
| Oxidizing properties | : None. |
| Explosive limits | : Not applicable - not flammable |

9.2. Other information

| | |
|------------------------|---------|
| Additional information | : None. |
|------------------------|---------|

SECTION 10: Stability and reactivity

10.1. Reactivity

Reacts with water to form corrosive acids. Corrosive vapors.

10.2. Chemical stability

Stable under normal conditions.

Hydrogen Chloride (0.0001% - 0.9999%) in Nitrogen

Safety Data Sheet

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

10.3. Possibility of hazardous reactions

May react violently with reducing agents.

10.4. Conditions to avoid

Moisture.

10.5. Incompatible materials

Reducing agents. Bases or caustic 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

| Nitrogen (7727-37-9) | |
|-------------------------------|---------------|
| LC50 inhalation rat (ppm) | 820000 ppm/4h |
| Hydrogen chloride (7647-01-0) | |
| LD50 oral rat | 700 mg/kg |
| LD50 dermal rabbit | > 5010 mg/kg |
| LC50 inhalation rat (ppm) | 1560 ppm/4h |

Skin corrosion/irritation : Not classified
pH: Not applicable for gas-mixtures.

Serious eye damage/irritation : Not classified
pH: Not applicable for gas-mixtures.

Respiratory or skin sensitization : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

| Hydrogen chloride (7647-01-0) | |
|-------------------------------|----------------------|
| IARC group | 3 - Not classifiable |

Reproductive toxicity : Not classified

Specific target organ toxicity (single exposure) : Not classified

Specific target organ toxicity (repeated exposure) : Not classified

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 : Adverse effects not expected from this product.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : Classification criteria are not met.

12.2. Persistence and degradability

| Hydrogen Chloride (0.0001% - 0.9999%) in Nitrogen | |
|---------------------------------------------------|----------------------------------------------|
| Persistence and degradability | No data available. |
| Nitrogen (7727-37-9) | |
| Persistence and degradability | No ecological damage caused by this product. |

Hydrogen Chloride (0.0001% - 0.9999%) in Nitrogen

Safety Data Sheet

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

| Hydrogen chloride (7647-01-0) | |
|-------------------------------|-------------------------------------|
| Persistence and degradability | Not applicable for inorganic gases. |

12.3. Bioaccumulative potential

| Hydrogen Chloride (0.0001% - 0.9999%) in Nitrogen | |
|---------------------------------------------------|----------------------------------|
| Log Pow | Not applicable for gas-mixtures. |
| Log Kow | Not applicable for gas-mixtures. |
| Bioaccumulative potential | No data available. |

| Nitrogen (7727-37-9) | |
|---------------------------|----------------------------------------------|
| Log Pow | Not applicable for inorganic gases. |
| Bioaccumulative potential | No ecological damage caused by this product. |

| Hydrogen chloride (7647-01-0) | |
|-------------------------------|-------------------------------------|
| Log Pow | Not applicable for inorganic gases. |
| Bioaccumulative potential | No data available. |

12.4. Mobility in soil

| Hydrogen Chloride (0.0001% - 0.9999%) in Nitrogen | |
|---------------------------------------------------|--------------------|
| Mobility in soil | No data available. |

| Nitrogen (7727-37-9) | |
|----------------------|----------------------------------------------|
| Ecology - soil | No ecological damage caused by this product. |

| Hydrogen chloride (7647-01-0) | |
|-------------------------------|---------------------------------------------------------------------------------------------|
| Ecology - soil | Because of its high volatility, the product is unlikely to cause ground or water pollution. |

12.5. Other adverse effects

- Effect on ozone layer : None.
- 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. Do not discharge into any place where its accumulation could be dangerous. Ensure that the emission levels from local regulations or operating permits are not exceeded.
- 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.

SECTION 14: Transport information

- In accordance with DOT
- Transport document description : UN1956 Compressed gas, n.o.s. (Hydrogen chloride, Nitrogen)
- UN-No.(DOT) : UN1956
- Proper Shipping Name (DOT) : Compressed gas, n.o.s.
- Hazard labels (DOT) : 2.2 - Non-flammable gas



- DOT Symbols : G - Identifies PSN requiring a technical name
- DOT Packaging Exceptions (49 CFR 173.xxx) : 306;307
- 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) : 75 kg
- DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 150 kg
- DOT Vessel Stowage Location : A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel.

Hydrogen Chloride (0.0001% - 0.9999%) in Nitrogen

Safety Data Sheet

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

Additional information

- Other information : No supplementary information available.
- Special transport precautions : Avoid transport on vehicles where the load space is not separated from the driver's compartment. Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency. Before transporting product containers:
- Ensure there is adequate ventilation. - Ensure that containers are firmly secured. - Ensure cylinder valve is closed and not leaking. - Ensure valve outlet cap nut or plug (where provided) is correctly fitted. - Ensure valve protection device (where provided) is correctly fitted.

ADR

- Transport document description : UN 1956, 2.2
Class (ADR) : 2 - Gases
Danger labels (ADR) : 2.2 - Non-flammable compressed gas



Transport by sea

- UN-No. (IMDG) : 1956
Proper Shipping Name (IMDG) : COMPRESSED GAS, N.O.S.
Class (IMDG) : 2.2 - Non-flammable, non-toxic gases

Air transport

- UN-No.(IATA) : 1956
Proper Shipping Name (IATA) : COMPRESSED GAS, N.O.S.
Class (IATA) : 2

SECTION 15: Regulatory information

15.1. US Federal regulations

| Nitrogen (7727-37-9) | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|
| Listed on the United States TSCA (Toxic Substances Control Act) inventory | |
| Hydrogen chloride (7647-01-0) | |
| Listed on the United States TSCA (Toxic Substances Control Act) inventory Listed on the United States SARA Section 302 Listed on United States SARA Section 313 | |
| SARA Section 302 Threshold Planning Quantity (TPQ) | 500 (gas only) |
| SARA Section 313 - Emission Reporting | 1.0 % (acid aerosols including mists, vapors, gas, fog, and other airborne forms of any particle size) |

15.2. International regulations

CANADA

| Nitrogen (7727-37-9) | |
|-------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Listed on the Canadian DSL (Domestic Substances List) | |
| WHMIS Classification | Class A - Compressed Gas |
| Hydrogen chloride (7647-01-0) | |
| Listed on the Canadian DSL (Domestic Substances List) | |
| WHMIS Classification | Class A - Compressed Gas Class D Division 1 Subdivision A - Very toxic material causing immediate and serious toxic effects Class E - Corrosive Material |

EU-Regulations

| Nitrogen (7727-37-9) |
|----------------------------------------------------------------------------------------------------|
| Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances) |

Hydrogen Chloride (0.0001% - 0.9999%) in Nitrogen

Safety Data Sheet

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

Hydrogen chloride (7647-01-0)

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

Nitrogen (7727-37-9)

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)

Hydrogen chloride (7647-01-0)

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 Poisonous and Deleterious Substances Control Law
Listed on the Canadian IDL (Ingredient Disclosure List)

15.3. US State regulations

Nitrogen (7727-37-9)

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

Hydrogen chloride (7647-01-0)

U.S. - Massachusetts - Right To Know List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard 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:

| | |
|----------------|----------------------------------------------------|
| Compressed gas | Gases under pressure Compressed gas |
| Skin Corr. 1A | Skin corrosion/irritation Category 1A |
| H280 | Contains gas under pressure; may explode if heated |
| H314 | Causes severe skin burns and eye damage |

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 gas mixture. To the best of Calgaz'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 gas mixture 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.