




SAFETY DATA SHEET

Creation Date: 8-12-21

Revision Date: 8-12-21

SDS-8, Revision Number: 1

1	Identification	<p>a) Product identifier used on the label: HN-105</p> <p>b) Other means of identification: Helium in Nitrogen</p> <p>c) Recommended use of the chemical and restrictions on use: Calibration Gas</p> <p>d) Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party: Bascom-Turner Instruments, Inc., 111 Downey Street, Norwood, MA 02062.</p> <p>e) Emergency telephone number: 781-769-9660</p>															
2	Hazard(s) identification	<p>a) Classification of the chemical in accordance with paragraph (d) of §1910.1200 GHS04 Gas Cylinder Gases Under Pressure – Compressed Gas Simple Asphyxiant</p> <p>b) Signal word, hazard statement(s), symbol(s) and precautionary statement(s) in accordance with paragraph (f) of §1910.1200: Signal Word: Warning Hazard Statements: H280 Contains gas under pressure; may explode if heated Simple Asphyxiant – May displace oxygen and cause suffocation Precautionary Statements: P410: Protect from Sunlight P403: Store in a well-ventilated place</p>  <p>c) Describe any hazards not otherwise classified that have been identified during the classification process: The rapid release of compressed gas may cause frostbite.</p> <p>d) Ingredient(s) with unknown acute toxicity: None</p>															
3	Composition/ information on ingredients	<table border="1"> <thead> <tr> <th data-bbox="451 1150 656 1251">Hazardous Ingredients</th> <th data-bbox="656 1150 860 1251">Approximate Concentration %</th> <th data-bbox="860 1150 1065 1251">C.A.S. N.A. or U.N. Numbers</th> <th data-bbox="1065 1150 1269 1251">"Exposure limits"</th> <th data-bbox="1269 1150 1474 1251">LD50/LC50 Specify Species and Route</th> </tr> </thead> <tbody> <tr> <td data-bbox="451 1251 656 1352">Helium</td> <td data-bbox="656 1251 860 1352">31%</td> <td data-bbox="860 1251 1065 1352">7440-59-7</td> <td data-bbox="1065 1251 1269 1352">ACGIH – TLV: simple asphyxiant</td> <td data-bbox="1269 1251 1474 1352">N/A</td> </tr> <tr> <td data-bbox="451 1352 656 1453">Nitrogen</td> <td data-bbox="656 1352 860 1453">69%</td> <td data-bbox="860 1352 1065 1453">7727-37-9</td> <td data-bbox="1065 1352 1269 1453">ACGIH – TLV: simple asphyxiant</td> <td data-bbox="1269 1352 1474 1453">N/A</td> </tr> </tbody> </table>	Hazardous Ingredients	Approximate Concentration %	C.A.S. N.A. or U.N. Numbers	"Exposure limits"	LD50/LC50 Specify Species and Route	Helium	31%	7440-59-7	ACGIH – TLV: simple asphyxiant	N/A	Nitrogen	69%	7727-37-9	ACGIH – TLV: simple asphyxiant	N/A
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4	First aid measures	<p>a) Description of necessary measures:</p> <p>Inhalation: No unusual health effects are anticipated after exposure to this product, due to the small cylinder size. If any adverse symptom develops after over-exposure to this product, remove victim(s) to fresh air as quickly as possible. Only trained personnel should administer supplemental oxygen and/or cardio-pulmonary resuscitation if necessary.</p> <p>Skin Contact: Generally does not cause skin irritation. Frostbite may occur in cases of contact with liquefied material. Immerse in lukewarm water (105°F) or wrap in warm blanket if water is unavailable. Consult a physician.</p> <p>Eye Contact: Not anticipated under normal use. Rinse under running water. Consult a physician.</p> <p>Ingestion: Not a likely route of exposure. If ingested and symptoms arise, consult a physician.</p> <p>General: Victim(s) who experience any adverse effect after over-exposure to this product must be taken for medical attention. Take a copy of the label and the MSDS to physician or other health professional with victim(s)</p> <p>b) Most important symptoms/effects, acute and delayed: Simple asphyxiant. Acute exposure may result in nausea, vomiting, dizziness, tingling sensation, suffocation, convulsions, and coma.</p> <p>c) Indication of immediate medical attention and special treatment needed, if necessary: No further information is available.</p>
5	Fire-fighting measures	<p>a) Suitable (and unsuitable) extinguishing media: Non-flammable gas mixture. Use fire extinguishing media suitable for surrounding fire.</p> <p>b) Specific hazards arising from the chemical (e.g., nature of any hazardous combustion products): The gas mixture is not flammable; however, containers, when involved in fire, may rupture or burst in the heat of the fire.</p> <p>c) Special protective equipment and precautions for fire-fighters: Use self-contained breathing apparatus and full protective gear.</p>
6	Accidental release measures	<p>a) Personal precautions, protective equipment, and emergency procedures. Due to the small size and content of the cylinder (e.g. 105 liters), an accidental release of this product presents significantly less risk of an oxygen deficient environment and other safety hazards than a similar release from a larger cylinder.</p> <p>b) Methods and materials for containment and cleaning up. Stop leak if possible without personal risk. Keep unnecessary people away, isolate hazard area and deny entry. Stay upwind and keep out of low areas. Ventilate closed spaces before entering. Damaged cylinders should be handled only by specialists.</p>
7	Handling and storage	<p>a) Precautions for safe handling. Contains gas under pressure; may explode if heated. May displace oxygen and cause rapid suffocation. Avoid breathing dust/fume/gas/mist/vapors/spray. Use only with adequate ventilation.</p> <p>b) Conditions for safe storage, including any incompatibilities. Cylinders must be protected from the environment, and preferably kept at room temperature. Cylinders should be stored in dry well ventilated areas, away from sources of heat, ignition, and direct sunlight. Protect cylinders against physical damage</p>

8	Exposure controls/personal protection	<p>a) OSHA permissible exposure limit (PEL), American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Value (TLV), and any other exposure limit used or recommended by the chemical manufacturer, importer, or employer preparing the safety data sheet, where available: N/A Both Nitrogen (7727-37-9) and Helium (7440-59-7) are non-toxic and are simple asphyxiants</p> <p>b) Appropriate engineering controls. No special ventilation systems or engineering controls are needed under normal circumstances of use.</p> <p>c) Individual protection measures, such as personal protective equipment: Eye/Face Protection: Wear splash resistant safety goggles. Skin Protection: Protective clothing is not required for the gas. Respiratory Protection: Not needed under normal operation. A self-contained breathing apparatus may be required if a large release of the gas displaces oxygen in a confined area. Glove Recommendation: Protective gloves are not required for the gas.</p>
9	Physical and chemical properties	<p>a) Appearance (physical state, color, etc.): Clear gas</p> <p>b) Odor: Odorless</p> <p>c) Odor threshold: N/A</p> <p>d) pH: N/A</p> <p>e) Melting point/freezing point: Helium: -272°C @ 26 atm.; Nitrogen: -210°C</p> <p>f) Initial boiling point and boiling range: Helium: -269°C; Nitrogen: -195.8°C</p> <p>g) Flash point: N/A</p> <p>h) Evaporation rate: N/A</p> <p>i) Flammability (solid, gas): N/A</p> <p>j) Upper/lower flammability or explosive limits: N/A</p> <p>k) Vapor pressure: Helium 1719 mmHg @ -269°C</p> <p>l) Vapor density (Air =1): Helium: 0.138; Nitrogen: 0.906</p> <p>m) Relative density: Not determined.</p> <p>n) Solubilities in water: Helium: 0.94% @0°C; Nitrogen: 0.023 vol/vol.</p> <p>o) Partition coefficient: n-octanol/water: Not determined.</p> <p>p) Auto-ignition temperature: N/A</p> <p>q) Decomposition temperature: N/A</p> <p>r) Viscosity: N/A</p>
10	Stability and reactivity	<p>a) Reactivity: Unreactive under most conditions</p> <p>b) Chemical stability: Stable under normal conditions.</p> <p>c) Possibility of hazardous reactions: Nitrogen can react with some metals (calcium, titanium)</p> <p>d) Conditions to avoid (e.g., static discharge, shock, or vibration): None</p> <p>e) Incompatible materials: Calcium, Titanium</p> <p>f) Hazardous decomposition products: None.</p>

11	Toxicological information	<p>Description of the various toxicological (health) effects and the available data used to identify those effects, including:</p> <p>a) Information on the likely routes of exposure: <u>Inhalation</u>: nausea, vomiting, tingling sensation, suffocation, convulsions, coma, headache, drowsiness, dizziness, loss of coordination, Unconsciousness, fatigue, impairment of judgement, irregular heartbeat. <u>Skin Contact</u>: No further information available. <u>Eye Contact</u>: irritation <u>Ingestion</u>: Unlikely route of exposure.</p> <p>b) Symptoms related to the physical, chemical and toxicological characteristics: see 11a) above.</p> <p>c) Delayed and immediate effects and also chronic effects from short- and long-term exposure: see 11a) above.</p> <p>d) Numerical measures of toxicity (such as acute toxicity estimates): No further data is available.</p> <p>e) Whether the hazardous chemical is listed in the National Toxicology Program (NTP) Report on Carcinogens (latest edition) or has been found to be a potential carcinogen in the International Agency for Research on Cancer (IARC) Monographs (latest edition), or by OSHA. No components are listed by the US or US states as possible carcinogens, mutagens, or reproductive toxins.</p>																					
12	Ecological information (Non-mandatory)	<p>a) Ecotoxicity (aquatic and terrestrial, where available): No data available.</p> <p>b) Persistence and degradability: No further information is available.</p> <p>c) Bioaccumulative potential: No further information is available.</p> <p>d) Mobility in soil: No further information is available.</p> <p>e) Other adverse effects (such as hazardous to the ozone layer): No further information is available.</p>																					
13	Disposal considerations (Non-mandatory)	<p>Description of waste residues and information on their safe handling and methods of disposal, including the disposal of any contaminated packaging: Once the cylinders are relieved of pressure (empty) they are not considered hazardous material or waste. It is acceptable to place empty cylinders in a landfill if local laws permit.</p>																					
14	Transport information (Non-mandatory)	<p>a) UN number: UN 1981</p> <p>b) UN proper shipping name: Rare Gasses and Nitrogen mixtures.</p> <p>c) Transport class(es); Hazard class 2.2 (Non-Flammable Gas)</p> <p>d) Packing group, if applicable;</p> <p>e) Environmental hazards (e.g., Marine pollutant (Yes/No)); No further information is available.</p> <p>f) Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code): IMDG Information: Shipping Name: COMPRESSED GAS, N.O.S., (Contains: Nitrogen, compressed gas, Helium) Hazard Class: 2.2 UN#: UN1956 Required Label(s): 2.2 International Bulk Chemical Code This material does not contain any chemicals required by the IBC Code to be identified as dangerous chemicals in bulk.</p> <p>g) Special precautions which a user needs to be aware of, or needs to comply with, in connection with transport or conveyance either within or outside their premises: None.</p>																					
15	Regulatory information (Non-mandatory)	<p>Safety, health and environmental regulations specific for the product in question.</p> <p>U.S. Federal Regulations None of this product's components are listed under SARA Sections 302/304 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), CERCLA (40 CFR 302.4), TSCA 12(b), or require an OSHA process safety plan.</p> <p>SARA Section 311/312 (40 CFR 370 Subparts B and C) reporting categories Gas Under Pressure; Simple Asphyxiant</p> <p>U.S. State Regulations: The following components appear on one or more of the following state hazardous substances lists:</p> <table border="1" data-bbox="597 1780 1370 1885"> <thead> <tr> <th>Component</th> <th>CAS</th> <th>CA</th> <th>MA</th> <th>MN</th> <th>NJ</th> <th>PA</th> </tr> </thead> <tbody> <tr> <td>Nitrogen, compressed gas</td> <td>7727-37-9</td> <td>No</td> <td>Yes</td> <td>Yes</td> <td>Yes</td> <td>Yes</td> </tr> <tr> <td>Helium</td> <td>7440-59-7</td> <td>No</td> <td>Yes</td> <td>Yes</td> <td>Yes</td> <td>Yes</td> </tr> </tbody> </table> <p>California Safe Drinking Water and Toxic Enforcement Act (Proposition 65) Not listed under California Proposition 65.</p>	Component	CAS	CA	MA	MN	NJ	PA	Nitrogen, compressed gas	7727-37-9	No	Yes	Yes	Yes	Yes	Helium	7440-59-7	No	Yes	Yes	Yes	Yes
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16	Other information, including date of preparation or last revision	The date of preparation of the SDS or the last change to it. 08/12/21
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