





SAFETY DATA SHEET

Creation Date: 2-4-21

Revision Date: 2-4-21

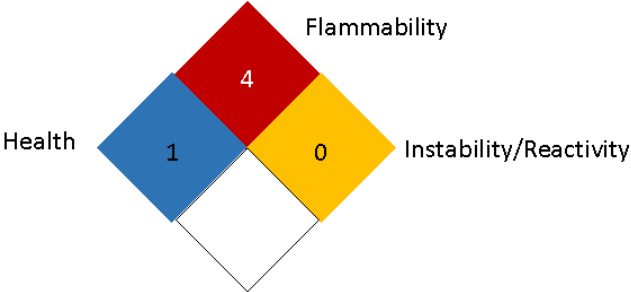
SDS-3, Revision Number: 1

1	Identification	<p>a) Product identifier used on the label: BG-005, BG-105, BG-620, BG-840, and BGA-302</p> <p>b) Other means of Identification: Bump Gas, n-Butane, Methylethylmethane; Diethyl; Butyl hydride; normal-Butane; butane</p> <p>c) Recommended use: Calibration Gas</p> <p>d) 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 substance or mixture: FLAMMABLE GASES - Category 1 GASES UNDER PRESSURE - Liquefied gas</p> <p>b) Signal word: Danger</p> <div style="display: flex; align-items: center;">   <div style="margin-left: 10px;"> <p>Hazard Statements: Extremely flammable gas. May form explosive mixtures with air. Contains gas under pressure; may explode if heated.</p> <p>Precautionary Statements: P410: Protect from Sunlight P403: Store in a well-ventilated place</p> </div> </div> <p>c) Hazards not otherwise classified: May displace oxygen and cause rapid suffocation.</p> <p>d) No component at 1% concentration or higher having unknown acute toxicity.</p>										
3	Composition/ information on ingredients	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th data-bbox="451 947 609 1052">Hazardous Ingredients</th> <th data-bbox="609 947 795 1052">Approximate Concentration %</th> <th data-bbox="795 947 992 1052">C.A.S. N.A. or U.N. Number</th> <th data-bbox="992 947 1291 1052">"Exposure limits"</th> <th data-bbox="1291 947 1490 1052">LD50/LC50</th> </tr> </thead> <tbody> <tr> <td data-bbox="451 1052 609 1241">n-Butane</td> <td data-bbox="609 1052 795 1241">100%</td> <td data-bbox="795 1052 992 1241">106-97-8</td> <td data-bbox="992 1052 1291 1241">800 ppm - ACGIH TWA 800 ppm - NIOSH TWA simple asphyxiant Oxygen should be maintained >19.5%</td> <td data-bbox="1291 1052 1490 1241">LC₅₀ 658 gr./m³/4 hrs. rat inhalation</td> </tr> </tbody> </table>	Hazardous Ingredients	Approximate Concentration %	C.A.S. N.A. or U.N. Number	"Exposure limits"	LD50/LC50	n-Butane	100%	106-97-8	800 ppm - ACGIH TWA 800 ppm - NIOSH TWA simple asphyxiant Oxygen should be maintained >19.5%	LC ₅₀ 658 gr./m ³ /4 hrs. rat inhalation
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4	First aid measures	<p>a) <u>Description of necessary measures:</u> Inhalation: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.</p> <p>b) <u>Most important symptoms/effects, acute and delayed:</u> <u>Potential acute health effects</u> Inhalation: No unusual health effects are anticipated after exposure to this product, due to the small container 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. Skin contact: No known significant chemical effects or critical hazards. Contact with liquid may cause frostbite (see below). Frostbite: try to warm frozen tissues and seek medical attention (Do not use hot water) Use lukewarm water (105-115°F). If water is unavailable, gently wrap affected parts in warm blankets. Get immediate medical attention. Eye contact: No known significant effects or critical hazards. <u>Over-exposure signs/symptoms</u> Skin contact No specific data Ingestion No specific data. Inhalation No specific data.: Eye contact No specific data.</p> <p>c) <u>Indication of immediate medical attention and special treatment needed, if necessary:</u> Treat symptoms, contact poison treatment specialist immediately if large quantities have been inhaled.</p>
5	Fire-fighting measures	<p>a) Suitable (and unsuitable) extinguishing media.: No unsuitable extinguishing agent for gas. Use an extinguishing agent suitable for surrounding fire.</p> <p>b) Specific hazards arising from the chemical (e.g., nature of any hazardous combustion products): Contains gas under pressure. Extremely flammable gas. In a fire, container may burst with the risk of a subsequent explosion. Decomposition products include the following materials: Carbon dioxide Carbon Monoxide</p> <p>c) Special protective equipment and precautions for fire-fighters.: Fire fighters should wear appropriate protective equipment and self-contained breathing apparatus with a full face piece. Remove all persons from the vicinity, fight fire from protected location or maximum possible distance.</p>
6	Accidental release measures	<p>a) Personal precautions, protective equipment, and emergency procedures: Accidental release poses a serious fire or explosion hazard. Evacuate surrounding areas. Shut-off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing gas. In a confined area, NIOSH approved respiratory equipment may be required.</p> <p>b) Methods and materials for containment and cleaning up: Immediately contact emergency personnel. Stop leak if without risk. Use spark-proof equipment and tools. Ventilate enclosed spaces.</p>

7	Handling and storage	<p>a) Precautions for safe handling: Put on appropriate personal protective equipment contains gas under pressure. Avoid breathing gas. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Do not puncture or incinerate container. Use equipment rated for cylinder pressure. Close valve after each use and when empty. Protect cylinders from physical damage; do not drag, roll, slide, or drop. Use a suitable hand truck for cylinder movement. Use only non-sparking tools. Avoid contact with eyes, skin and clothing. Empty containers retain product residue and can be hazardous. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment.</p> <p>b) Conditions for safe storage, including any incompatibilities: Store in accordance with local regulations. Store in a segregated and approved area. Store away from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Eliminate all ignition sources. Cylinders should be stored upright, with valve protection cap in place, and firmly secured to prevent falling or being knocked over. Cylinder temperatures should not exceed 52 °C (125 °F). Keep container tightly closed and sealed until ready for use. See Section 10 for incompatible materials before handling or use.</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-Butane Exposure Limits: NIOSH REL (United States, 10/2016). TWA: 1900 mg/m³ 10 hours. TWA: 800 ppm 10 hours. OSHA PEL 1989 (United States, 3/1989). TWA: 1900 mg/m³ 8 hours. TWA: 800 ppm 8 hours. ACGIH TLV (United States, 3/2017). STEL: 1000 ppm 15 minutes.</p> <p>b) Appropriate engineering controls: Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.</p> <p>c) Individual protection measures, such as personal protective equipment: NA</p>

9	Physical and chemical properties	<p>a) Appearance (physical state, color, etc.): Invisible gas</p> <p>b) Odor: Unpleasant odor</p> <p>c) Odor threshold: 6.16 ppm</p> <p>d) pH: NA</p> <p>e) Melting point/freezing point: 138°C</p> <p>f) Initial boiling point and boiling range: -1°C</p> <p>g) Flash point: Closed cup: -60°C</p> <p>h) Evaporation rate: NA</p> <p>i) Flammability (solid, gas): Extremely flammable in the presence of open flames, sparks and static discharge, and oxidizing materials.</p> <p>j) Upper/lower flammability or explosive limits: Lower: 1.9% Upper: 8.5%</p> <p>k) Vapor pressure: 15.57 mmHg @20°C</p> <p>l) Vapor density (Air=1.0): 2.1</p> <p>m) Relative density: 0.1554 lb/ft³</p> <p>n) Solubility(ies); (water): (0°C, 1 atm): 15%</p> <p>o) Partition coefficient: n-octanol/water: 2.89</p> <p>p) Auto-ignition temperature: 365°C</p> <p>q) Decomposition temperature: NA</p> <p>r) Viscosity: NA</p>										
10	Stability and reactivity	<p>a) Reactivity: reacts with oxidizers</p> <p>b) Chemical stability: Stable</p> <p>c) Possibility of hazardous reactions:</p> <p>d) Conditions to avoid (e.g., static discharge, shock, or vibration): Cylinders should be firmly secured during storage and use to prevent falling or being knocked over. Cylinders should be stored in dry, well ventilated areas, away from sources of heat, ignition, and direct sunlight. Protect cylinders against physical damage.</p> <p>e) Incompatible materials: Strong Oxidizers (Chlorine, bromine pentafluoride, oxygen difluoride, nitrogen trifluoride)</p> <p>f) Hazardous decomposition products: does not decompose, but is extremely flammable releasing carbon dioxide (CO₂) and carbon monoxide (CO).</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: Inhalation</p> <table border="1" data-bbox="500 1318 1425 1381"> <thead> <tr> <th>Product/ingredient name</th> <th>Result</th> <th>Species</th> <th>Dose</th> <th>Exposure</th> </tr> </thead> <tbody> <tr> <td>N-Butane</td> <td>LC50 Inhalation</td> <td>Rat</td> <td>658000 mg/m³</td> <td>4 hours</td> </tr> </tbody> </table> <p>b) Symptoms related to the physical, chemical and toxicological characteristics: <u>Inhalation</u>: Effects of Acute Exposure to Product: Inhalation can result in central nervous system depression, difficulty breathing, nausea, vomiting, dizziness, tingling sensation, suffocation, convulsions, and coma. <u>Skin or eye contact</u>: Skin or eye contact with liquid or ingestion of liquid can cause freezing.</p> <p>c) Delayed and immediate effects and also chronic effects from short- and long-term exposure: 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 SDS to physician or other Health professional with victim(s).</p> <p>d) Numerical measures of toxicity (such as acute toxicity estimates): LD/LC50 values that are relevant for classification: 106-97-8 n-Butane Inhalative LC₅₀ 658 gr./m³/4 hrs. rat inhalation.</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.: Not available.</p>	Product/ingredient name	Result	Species	Dose	Exposure	N-Butane	LC50 Inhalation	Rat	658000 mg/m ³	4 hours
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N-Butane	LC50 Inhalation	Rat	658000 mg/m ³	4 hours								

12	Ecological information (Non-mandatory)	<p>a) Ecotoxicity (aquatic and terrestrial, where available): unknown.</p> <p>b) Persistence and degradability: No relevant information available.</p> <p>c) Bioaccumulative potential:</p> <table border="1" data-bbox="500 289 1110 359"> <thead> <tr> <th>Product/ingredient name</th> <th>LogPow</th> <th>BCF</th> <th>Potential</th> </tr> </thead> <tbody> <tr> <td>n-Butane</td> <td>2.89</td> <td>-</td> <td>Low</td> </tr> </tbody> </table> <p>d) Mobility in soil: No relevant information available.</p> <p>e) Other adverse effects (such as hazardous to the ozone layer): None</p>	Product/ingredient name	LogPow	BCF	Potential	n-Butane	2.89	-	Low
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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: Prior to disposal, vent any remaining gas in a well-ventilated area. 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: UN1011</p> <p>b) UN proper shipping name; compressed gasses, n.o.s. (BUTANE)</p> <p>c) Transport class(es): Hazard class number and description: 2.1 Flammable gas</p> <p>d) Packing group, if applicable: -</p> <p>e) Environmental hazards (e.g., Marine pollutant (Yes/No)): No</p> <p>f) Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code): DOT Label required: Flammable Gas. North American Emergency Response Guidebook Number (1996): 126</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.</p>								
15	Regulatory information (Non-mandatory)	<p>Safety, health and environmental regulations specific for the product in question:</p> <p>Section 355 (extremely hazardous substances): None of the ingredients are listed.</p> <p>Section 313 (Specific toxic chemical listings): None of the ingredients are listed.</p> <p>TSCA (Toxic Substances Control Act): All ingredients are listed or exempt from listing.</p> <p>Chemicals known to cause cancer: None of the ingredients are listed.</p> <p>Chemicals known to cause reproductive toxicity for females: None of the ingredients are listed.</p> <p>Chemicals known to cause reproductive toxicity for males: None of the ingredients are listed.</p> <p>Chemicals known to developmental toxicity: None of the ingredients are listed.</p>								
16	Other information, including date of preparation or last revision	<p>Hazardous Material Information System (U.S.A.) National Fire Protection Association (U.S.A.)</p> <p>Health 1 Flammability 4 Physical Hazard 3</p>  <p>SDS prepared on 02/4/2021</p>								