





SAFETY DATA SHEET

Creation Date: 3-11-21

Revision Date: 3-11-21

SDS-2, Revision Number: 1

1	Identification	<p>a) Product identifier used on the label: MH-620 and MCA-302</p> <p>b) Other means of identification: Hydrogen Sulfide in Methane Calibration Gas</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: Compressed gas H280</p> <p>b) Signal word, hazard statement(s), symbol(s) and precautionary statement(s) in accordance with paragraph (f) of §1910.1200: Signal Word: DANGER</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  GHS02 </div> <div style="text-align: center;">  GHS04 </div> </div> <p>Hazard Statements: H220 - extremely flammable gas H280 - contains gas under pressure; may explode if heated OSHA-H01 - may displace oxygen and cause rapid suffocation CGA-HG04 - may form explosive mixtures with air</p> <p>Precautionary Statements: P210 - Keep away from Heat, Open flames, Sparks, Hot surfaces. - No smoking P271+P403 - Use and store only outdoors or in a well-ventilated place P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing P313 - 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 CGA-PG05 - Use a back flow preventive device in the piping CGA-PG10 - Use only with equipment rated for cylinder pressure CGA-PG06 - Close valve after each use and when empty CGA-PG11 - Never put cylinders into unventilated areas of passenger vehicles CGA-PG02 - Protect from sunlight when ambient temperature exceeds 52°C (125°F) CGA-PG14 - Approach suspected leak area with caution CGA-PG21 - Open valve slowly</p> <p>c) Describe hazards not otherwise classified that have been identified during the classification process; No additional Information Available</p> <p>d) Where an ingredient with unknown acute toxicity is used in a mixture at a concentration = 1% and the mixture is not classified on testing of the mixture as a whole, a statement that X% of the mixture consists of ingredient(s) of unknown acute toxicity is required: N/A</p>															
3	Composition/information on ingredients	<p>Except as provided for in paragraph (i) of §1910.1200 on trade secrets: B</p> <table border="1" data-bbox="477 1696 1528 1959"> <thead> <tr> <th>Hazardous Ingredients</th> <th>Approximate Concentration %</th> <th>C.A.S. N.A. or U.N. Numbers</th> <th>"Exposure limits"</th> <th>LD50/LC50 Specify Species and Route</th> </tr> </thead> <tbody> <tr> <td>Methane</td> <td>100%</td> <td>74-82-8</td> <td>ACGIH – TLV: simple asphyxiant</td> <td>N.D.</td> </tr> <tr> <td>Hydrogen Sulfide</td> <td>25 ppm</td> <td>7783-06-4</td> <td>20 ppm C OSHA-PEL 10 ppm TWA ACGIH 15 ppm STEL ACGIH</td> <td>LC50 712 ppm/1hr. Rat Inhalation</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	Methane	100%	74-82-8	ACGIH – TLV: simple asphyxiant	N.D.	Hydrogen Sulfide	25 ppm	7783-06-4	20 ppm C OSHA-PEL 10 ppm TWA ACGIH 15 ppm STEL ACGIH	LC50 712 ppm/1hr. Rat Inhalation
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4	First aid measures	<p>a) Description of necessary measures, subdivided according to the different routes of exposure, i.e., inhalation, skin and eye contact, and ingestion:</p> <p><u>Inhalation:</u> No unusual health effects are anticipated after exposure to this product, due to the low concentration of hydrogen sulfide and 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><u>Skin Contact:</u> Adverse effects not expected from this product.</p> <p><u>Eye Contact:</u> Persons with potential exposure to hydrogen sulfide should not wear contact lenses. In case of eye contact, immediately flush with low pressure cool water for at least 15 minutes, opening eyelids to ensure flushing. Get immediate medical attention.</p> <p><u>Ingestion:</u> Ingestion is not considered a potential route of exposure.</p> <p>b) Most important symptoms/effects, acute and delayed.</p> <p><u>Inhalation:</u> May displace oxygen and cause rapid suffocation. May cause respiratory irritation.</p> <p><u>Skin Contact:</u> Adverse effects not expected from this product.</p> <p><u>Eye Contact:</u> Adverse effects not expected from this product.</p> <p><u>Ingestion:</u> Ingestion is not considered a potential route of exposure.</p> <p><u>General Advice:</u> Methane is a simple asphyxiant. 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>c) Indication of immediate medical attention and special treatment needed, if necessary: No further information is available.</p>
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5	Fire-fighting measures	<p>a) Suitable (and unsuitable) extinguishing media. Highly flammable. Severe explosion hazard. If possible, stop the flow of gas. Extinguish flames with carbon dioxide or dry chemical. If venting or leaking gas catches fire, do not extinguish flames. Flammable vapors may spread from leak, creating an explosive reignition hazard. Vapors can be ignited by pilot lights, other flames, smoking, sparks, heaters, electrical equipment, static discharge, or other ignition sources at locations distant from product handling point. Explosive atmospheres may linger. Before entering an area, especially a confined area, check the atmosphere with an appropriate device.</p> <p>b) Specific hazards arising from the chemical: Vapor/air mixtures are explosive. The vapor is lighter than air. Vapors or gases may ignite at distant ignition sources and flash back.</p> <p>c) Special protective equipment and precautions for fire-fighters: 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. Evacuate all personnel from the danger area. 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.</p>
6	Accidental release measures	<p>a) Personal precautions, protective equipment, and emergency procedures: Ensure adequate ventilation. Due to the small size and content of the cylinders (e.g. 620 liters of gas), 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. Try to stop release if safe to do so. Ensure area is well ventilated.</p>
7	Handling and storage	<p>a) Precautions for safe handling: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use only non-sparking tools. Use only explosion-proof equipment. Protect cylinders from physical damage; do not drag, roll, slide or drop.</p> <p>b) Conditions for safe storage, including any incompatibilities: 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.</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.</p> <p style="padding-left: 20px;">Methane (74-82-8)</p> <table style="margin-left: 40px; border-collapse: collapse;"> <tr> <td style="padding-right: 20px;">NIOSH REL</td> <td style="padding-right: 20px;">TWA (ppm)</td> <td>0.1 mg/m³</td> </tr> <tr> <td>ACGIH</td> <td>Not established</td> <td></td> </tr> <tr> <td>USA OSHA</td> <td>Not established</td> <td></td> </tr> </table> <p style="padding-left: 20px;">Hydrogen sulfide (7783-06-4)</p> <table style="margin-left: 40px; border-collapse: collapse;"> <tr> <td style="padding-right: 20px;">ACGIH</td> <td style="padding-right: 20px;">ACGIH TWA (ppm)</td> <td>1 ppm</td> </tr> <tr> <td>ACGIH</td> <td>ACGIH STEL (ppm)</td> <td>5 ppm</td> </tr> <tr> <td>OSHA</td> <td>OSHA PEL (Ceiling) (ppm)</td> <td>20 ppm</td> </tr> </table> <p>b) Appropriate engineering controls: Use local exhaust ventilation to reduce concentrations to within current exposure limits and to prevent accumulation above the LEL. A laboratory type explosion proof hood is suitable for handling small or limited quantities.</p> <p>c) Individual protection measures, such as personal protective equipment: Eye Protection: Safety glasses. Do not wear contact lenses. Respiratory: Not required for normal use.</p>	NIOSH REL	TWA (ppm)	0.1 mg/m ³	ACGIH	Not established		USA OSHA	Not established		ACGIH	ACGIH TWA (ppm)	1 ppm	ACGIH	ACGIH STEL (ppm)	5 ppm	OSHA	OSHA PEL (Ceiling) (ppm)	20 ppm
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9	Physical and chemical properties	<p>a) Appearance (physical state, color, etc.): Colorless Gas</p> <p>b) Odor: Rotten egg odor.</p> <p>c) Odor threshold: N/A</p> <p>d) pH: N/A</p> <p>e) Melting point/freezing point: -182.5°C</p> <p>f) Initial boiling point and boiling range: -161.4°C</p> <p>g) Flash point: -188°C</p> <p>h) Evaporation rate: N/A</p> <p>i) Flammability (solid, gas): Highly Flammable</p> <p>j) Upper/lower flammability or explosive limits: Upper: 15% by volume. Lower: 5% by volume.</p> <p>k) Vapor pressure: N/A</p> <p>l) Vapor density (Air = 1): 0.56 (21°C 1 atm.)</p> <p>m) Relative density: N/A</p> <p>n) Solubility(ies): slight solubility in water</p> <p>o) Partition coefficient: n-octanol/water: N/A</p> <p>p) Auto-ignition temperature: 580°C</p> <p>q) Decomposition temperature: Not determined.</p> <p>r) Viscosity: N/A</p>																		
10	Stability and reactivity	<p>a) Reactivity: Highly reactive with air and 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);</p> <p>e) Incompatible materials: Strong oxidizers (chlorine, oxygen difluoride, nitrogen trifluoride)</p> <p>f) Hazardous decomposition products: Carbon monoxide (CO), carbon dioxide (CO₂)</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, ingestion, skin and eye contact):</p> <p><u>Inhalation:</u> No unusual health effects are anticipated after exposure to this product, due to the low concentration of hydrogen sulfide and the small cylinder size. (see section 11b)</p> <p><u>Skin Contact:</u> Adverse effects not expected from this product. (see 11c)</p> <p><u>Eye Contact:</u> Persons with potential exposure to hydrogen sulfide should not wear contact lenses. (see section 11c)</p> <p><u>Ingestion:</u> Ingestion is not considered a potential route of exposure.</p> <p>b) Symptoms related to the physical, chemical and toxicological characteristics:</p> <p><u>Inhalation:</u> Methane is a simple asphyxiant. Inhalation can result in nausea, vomiting, dizziness, tingling sensation, suffocation, convulsions, and coma due to lack of oxygen.</p> <p>c) Delayed and immediate effects and also chronic effects from short- and long-term exposure:</p> <p><u>Inhalation:</u> No further information is available.</p> <p><u>Skin Contact:</u> H₂S in an irritant of skin</p> <p><u>Eye Contact:</u> Repeated exposure to low concentration is reported to cause conjunctivitis, photophobia, tears, pain and blurred vision.</p> <p>d) Numerical measures of toxicity (such as acute toxicity estimates): LC50 of Product (specify species) H₂S: LC50 712 ppm/1hr. 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. No ingredient in this product has been identified as a probable, possible or suspected carcinogen by any agency of the United States.</p>
12	Ecological information (Non-mandatory)	<p>a) Ecotoxicity (aquatic and terrestrial, where available):</p> <p>Hydrogen sulfide (7783-06-4)</p> <p>LC50 fish 1: 0.0448 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus)</p> <p>EC50 Daphnia 1: 0.022 mg/l (Exposure time: 96 h - Species: Gammarus pseudolimnaeus)</p> <p>LC50 fish 2 : 0.016 mg/l (Exposure time: 96 h - Species: Pimephales promelas)</p> <p>b) Persistence and degradability: No data available.</p> <p>c) Bioaccumulative potential: No data available</p> <p>d) Mobility in soil: No data available.</p> <p>e) Other adverse effects (such as hazardous to the ozone layer): No data 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:</p> <p>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: 1954 b) UN proper shipping name: Flammable Gas c) Transport class(es): 2.1 (Flammable Gas). d) Packing group, if applicable; e) Environmental hazards (e.g., Marine pollutant (Yes/No)): No f) Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code); 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>SARA 302 Components Hydrogen Sulfide CAS No. 7783-06-4</p> <p>SARA 313 Components Hydrogen Sulfide CAS No. 7783-06-4.</p> <p>SARA 311/312 Hazards Fire Hazard</p> <p>Massachusetts Right To Know Components Methane CAS-No. 74-82-8 Revision Date 1993-04-24 Hydrogen Sulfide CAS No. 7783-06-4</p> <p>Pennsylvania Right To Know Components Methane CAS-No. 74-82-8 Revision Date 1993-04-24 Hydrogen Sulfide CAS No. 7783-06-4</p> <p>New Jersey Right To Know Components Methane CAS-No. 74-82-8 Revision Date 1993-04-24 Hydrogen Sulfide CAS No. 7783-06-4</p> <p>California Prop. 65 Components This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.</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> <table data-bbox="487 1176 730 1302"> <tr> <td>Health</td> <td>3</td> </tr> <tr> <td>Flammability</td> <td>0</td> </tr> <tr> <td>Physical Hazard</td> <td>2</td> </tr> </table> <div data-bbox="779 1155 1429 1428"> <p style="text-align: center;">Flammability</p> <p style="text-align: center;">4</p> <p style="text-align: center;">1 0</p> <p style="text-align: center;">Health Instability/Reactivity</p> </div> <p>The date of preparation of the SDS or the last change to it: 11 March 2021</p>	Health	3	Flammability	0	Physical Hazard	2
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