Gas Measurement Instruments Ltd

Safety Data Sheet

SDS No. 055 Version 1.1 Revised Date: 29/09/2015

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

1.1. Product identifier: TEST GAS COMBI –CH4,CO, H2S, O2 **Pt. No. 99146**

EC No	CAS No	EC Name	Molecular Formula
Hydrogen Sulphide	231-977-3	7783-06-4	H2S
Carbon Monoxide	211-128-3	630-08-0	CO
Methane	200-812-7	74-82-8	CH4
Oxygen	231-956-9	7782-44-7	O2
Nitrogen	231-783-9	7727-37-9	N

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

Industrial and professional use only.

1.3. Details of the supplier of the safety data sheet, company identification:

Gas Measurement Instruments Ltd
Inchinnan Business Park
Renfrew
PA4 9RG
Contact No: 0141 812 3211
Email address: sales@gmiuk.com

1.4. Emergency contact details:

Opening hrs: 9:00 a.m -5:00 p.m
Contact details: 0141 812 3211

2. Hazards Identification:

2.1. Classification of the substance and mixture: Mixture

Classification according to Regulation (EC) No 1272/2008 (CLP):

Press. Gas (Compressed gas) - Contains gas under pressure; may explode if heated.

2.2. Label elements: Hazard pictograms

Signal word: Danger

2.3. Hazard Statements:

H280 – Contains gas under pressure; may explode if heated.

Precautionary Statements:

Precautionary Statement Prevention:

P210 Keep away from heat/sparks/open flames/hot surfaces – No Smoking.

Precautionary Statement Response:

P377 Leaking gas fire: Do not extinguish, unless leak can be stopped safely.

P381 Eliminate all ignition sources if safe to do so.

Precautionary Statement Storage:

P403 Store in a well-ventilated place.

2.4. Other Hazards:

Distinctive rotten egg odour- Hydrogen Sulphide.

Olfactory fatigue (the ability to smell the gas can be lost instantaneously) risks.

High pressure gas.

Can cause rapid suffocation.

Self-contained breathing apparatus (SCBA) may be required.

Inhalation of Carbon Monoxide causes headache, dizziness, weakness of limbs, confusion, nausea, unconsciousness. Inhalation of high concentrations of Carbon Monoxide can cause sudden, unexpected collapse.

Environmental Effects: Not harmful.

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3. Composition/information on ingredients:

Substance/ Mixture: Mixture

Components	EC No	CAS No	Concentration (vol)	CLP Classification/ REACH Registration No
Hydrogen Sulphide	231-977-3	7783-06-4	50ppm	Press. Gas.; Flam Gas 1- H220. Acute Tox 2*- H330; Aquatic Acute 1-H400 
Carbon Monoxide	211-128-3	630-08-0	500ppm	Press. Gas.; Flam Gas 1- H220. Acute Tox 3*- H331 Repr 1A- H360D*** STOT RE 1- H372 

				 REACH Registration No: 01-2119480165-39
Methane	200-812-7	74-82-8	2.5%	Pres. Gas; Flam. Gas-H220 
Oxygen	231-956-9	7782-44-7	18%	Pres. Gas. H280; Ox. Gas. H270 
Nitrogen	231-783-9	7727-37-9	>79.44%	Pres. Gas. H280 

4. First Aid Measures:

4.1. Description of first aid measures:

General advice:

Remove victim to uncontaminated area wearing self-contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing has stopped.

Eye contact: Irrigate immediately.

Eye: Not applicable.

Skin contact: Not applicable.

Ingestion: Not considered a route of exposure.

Inhalation:

In case of shortness of breath, give oxygen. Move to fresh air. If breathing has stopped or is laboured, give assisted respiration. Supplemental oxygen may be required. If the heart has stopped, trained personnel should begin cardiopulmonary resuscitation immediately. Seek medical advice.

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

Exposure to oxygen deficient atmosphere may cause the following symptoms: Dizziness; salivation; nausea; vomiting; loss of mobility/consciousness; coma; asphyxia; convulsions.

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

Hyperbaric oxygen is the most efficient treatment of carbon monoxide and dramatically reduces the biological half-life of carboxyhemoglobin. Although less effective, 100% oxygen by mask is useful if hyperbaric facilities are not available. Stimulant drugs are not indicated. Central nervous system toxicity may cause respiratory paralysis requiring assisted ventilation. Irritation of the deep lung may cause chemical pneumonitis and pulmonary edema.

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5. Fire- fighting measures:

5.1. Extinguishing media:

Suitable extinguishing media: All known extinguishing media can be used.

5.2. Special hazards arising from the substance or mixture:

Upon exposure to intense heat or flame, cylinder will vent rapidly and or rupture violently. Move away from container and cool with water from a protected position. Keep containers and surroundings cool with water spray.

5.3. Advice for fire-fighters:

Wear self-contained breathing apparatus for fire- fighting if necessary. Standard protective clothing and equipment (Self Contained Breathing Apparatus) for fire fighters. Standard EN 137 - Self-contained open-circuit compressed air breathing apparatus with full face mask. Standard EN 469 - Protective clothing for firefighters. Standard - EN 659: Protective gloves for firefighters.

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6. Accidental release measures:

6.1. Personal precautions, protective equipment and emergency procedures:

Evacuate the area. Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe. Monitor oxygen level. Ventilate the area.

6.2. Environmental precautions: Do not discharge into any place where its accumulation could be dangerous. Should not be released into the environment. Prevent further leakage or spillage if safe to do so.

6.3. Methods and material for containment and cleaning up:

Ventilate the area. Approach suspected leak areas with caution. Additional advice: Increase ventilation to the release area and monitor concentrations.

6.4. Reference to other sections:

See sections 8 and 13.

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7. Handling and Storage:

7.1. Precautions for safe handling:

Protect cylinders from physical damage; do not drag, roll, slide or drop. Do not allow storage area temperature to exceed 50°C (122°F). Only experienced and properly instructed persons should handle compressed gases/cryogenic liquids. Before using the product, determine its identity by reading the label. Know and understand the properties and hazards of the product before use. When doubt exists as to the correct handling procedure

for a particular gas, contact the supplier. Do not remove or deface labels provided by the supplier for the identification of the cylinder contents. When moving cylinders, even for short distances, use a cart (trolley, hand truck, etc.) designed to transport cylinders. Leave valve protection caps in place until the container has been secured against either a wall or bench or placed in a container stand and is ready for use. Use an adjustable strap wrench to remove over-tight or rusted caps. Before connecting the container, check the complete gas system for suitability, particularly for pressure rating and materials. Before connecting the container for use, ensure that back feed from the system into the container is prevented. Ensure the complete gas system is compatible for pressure rating and materials of construction. Ensure the complete gas system has been checked for leaks before use. Employ suitable pressure regulating devices on all containers when the gas is being emitted to systems with lower pressure rating than that of the container. Never insert an object (e.g. wrench, screwdriver, pry bar, etc.) into valve cap openings. Doing so may damage valve, causing a leak to occur. Open valve slowly. If user experiences any difficulty operating cylinder valve discontinue use and contact supplier. Close container valve after each use and when empty, even if still connected to equipment. Never attempt to repair or modify container valves or safety relief devices. Damaged valves should be reported immediately to the supplier. Close valve after each use and when empty. Replace outlet caps or plugs and container caps as soon as container is disconnected from equipment. Do not subject containers to abnormal mechanical shock. Never attempt to lift a cylinder by its valve protection cap or guard. Do not use containers as rollers or supports or for any other purpose than to contain the gas as supplied. Never strike an arc on a compressed gas cylinder or make a cylinder a part of an electrical circuit. Do not smoke while handling product or cylinders. Never re-compress a gas or a gas mixture without first consulting the supplier. Never attempt to transfer gases from one cylinder/container to another. Always use backflow protective device in piping. When returning cylinder install valve outlet cap or plug leak tight. Never use direct flame or electrical heating devices to raise the pressure of a container. Containers should not be subjected to temperatures above 50°C (122°F).

7.2. Conditions for safe storage, including any incompatibilities:

Containers should be stored in a purpose build compound. Full containers should be stored so that oldest stock is used first. Containers should be stored in a purpose build compound which should be well ventilated, preferably in the open air. Stored containers should be periodically checked for general condition and leakage. Observe all regulations and local requirements regarding storage of containers. Protect containers stored in the open against rusting and extremes of weather. Containers should not be stored in conditions likely to encourage corrosion. Containers should be stored in the vertical position and properly secured to prevent toppling. The container valves should be tightly closed and where appropriate valve outlets should be capped or plugged. Container valve guards or caps should be in place. Keep containers tightly closed in a cool, well-ventilated place. Store containers in location free from fire risk and away from sources of heat and ignition. Full and empty cylinders should be segregated. Do not allow storage temperature to exceed 50°C (122°F).

Technical measures/Precautions: Containers should be segregated in the storage area according to the various categories (e.g. flammable, toxic, etc.) and in accordance with local regulations.

7.3. Specific end use(s): Refer to section 1 or the extended SDS if applicable.

8. Exposure controls / personal protection:

8.1. Control parameters:

Exposure limit(s): EU ELV and WEL (EH40)

Hydrogen Sulphide	TWA – 8Hrs	5ppm	7mg/m3
Hydrogen Sulphide	STEL- 15 mins	10ppm	14mg/m3
Carbon Monoxide	TWA – 8hrs	30ppm	35mg/m3
Carbon Monoxide	STEL- 15 min	200ppm	232mg/m3

8.2. Exposure controls:

Provide natural or mechanical ventilation to prevent oxygen deficient atmospheres below 19.5% oxygen.

Respiratory protection: Self-contained breathing apparatus (SCBA) or positive pressure airline with mask are to be used in oxygen-deficient atmosphere. Air purifying respirators will not provide protection. Users of breathing apparatus must be trained.

Hand protection: Wear working gloves when handling gas containers. Standard EN 388 - Protective gloves against mechanical risk.

Eye/face Protection: Safety glasses recommended when handling cylinders. Standard EN 166 - Personal eye-protection.

Skin and body protection: Safety shoes are recommended when handling cylinders. Standard EN ISO 20345 - Personal protective equipment - Safety footwear.

Special instructions for Protection and Hygiene: Ensure adequate ventilation, especially in confined areas.

Environmental Exposure Controls: If applicable, refer to the extended section of the SDS for further information on CSA.

9. Physical and chemical properties

9.1. Information on basic physical and chemical properties:

(a/b) Physical state/Colour: Compressed gas. Colourless gas.
(c) Odour: Not determined.
(d) Density: No data available
(e) Relative Density: 0.9814 (air=1) Lighter or similar to air.
(f) Melting point / freezing point: No data available.
(g) Boiling point/range: - No data available
(h) Vapour pressure: No data available.
(i) Water solubility: Not known, but considered to have low solubility.
(j) Partition coefficient (n-octanol/water): Not applicable.
(k) pH: Not applicable.
(l) Viscosity: Not applicable.
(m) Particle characteristics: No data available.

(n) Lower and upper explosion / flammability limits: No data available.
(o) Flash point: Not applicable.
(p) Auto ignition temperature: No data available.
(q) Decomposition: No data available.
(m) Particle characteristics: No data available.
(n) Lower and upper explosion/ flammability limits: No data available
(o) Flash point: No data available
(p) Auto ignition temperature: No data available
(q) Decomposition temperature: No data available.

9.2. Other information:

Explosive properties: No data available.
Oxidizing properties: No data available.
Molecular Weight: 28.42 g/mol.
Odour threshold: No data available.
Evaporation rate: Not applicable.
Flammability (solid, gas): Refer to product classification in Section 2
Relative vapour density: No data available.

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10. Stability and reactivity:

10.1 Reactivity:

Refer to possibility of hazardous reactions and/or incompatible materials sections.

10.2. Chemical stability: Stable under normal conditions.

10.3. Possibility of hazardous reactions: No data available.

10.4. Conditions to avoid: No data available.

10.5. Incompatible materials: No data available.

10.6. Hazardous decomposition products: Sulphur compounds. Hydrogen.

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11. Toxicological information:

Likely routes of exposure:

Effects on Eye: No data available.

Effects on Skin: No adverse effect.

Inhalation Effects:

In high concentrations, mixture may cause asphyxiation. Symptoms may include loss of mobility/consciousness. Victim may not be aware of asphyxiation. Asphyxiation may bring about unconsciousness without warning and so rapidly that victim may be unable to protect themselves.

Ingestion Effects: Ingestion is not considered a potential route of exposure.

Symptoms:

Exposure to oxygen deficient atmosphere may cause the following symptoms: Dizziness; salivation; nausea; vomiting; loss of mobility/consciousness.

Acute Toxicity:

Acute Oral Toxicity: No data is available on the product itself.

Acute Inhalation Toxicity:

Inhalation Components

Hydrogen Sulphide	LC50 (1hr) 712ppm	Species: RAT
Carbon Monoxide	LC50 (1hr) 3760ppm	Species: RAT

Acute Dermal Toxicity: No data is available on the product itself.
Skin corrosion/irritation: No data available.
Serious eye damage/eye irritation: No data available.
S**ensitization**: No data available
Chronic toxicity or effects from long term exposures:
Carcinogenicity: No data available.
Reproductive toxicity: No data is available on the product itself.
Germ cell mutagenicity: No data is available on the product itself.
Specific target organ systemic Toxicity (single exposure): No data available.
Specific target organ systemic toxicity (repeated exposure): No data available.
Aspiration hazard: No data available.

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12. Ecological information:

12.1. Aquatic toxicity: No data is available on the product itself.
12.2. Persistence and degradability: No data available.
12.3. Bioaccumulative potential: No data is available on the product itself.
12.4 Mobility in soil: No data available.
12.5 Results of PBT and vPvB assessment: if applicable refer to the extended section of the SDS for further information on CSA.
12.6 Other adverse effects: This product has no known eco-toxicological effects.
Effect on the ozone layer
Ozone Depleting: No data available
Global Warming Potential: No data available

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13. Disposal Considerations:

13.1 Waste treatment methods:

Contact supplier if guidance is required. Return unused product in original cylinder to supplier. Refer to the EIGA code of practice Doc. 30 "Disposal of Gases", downloadable at http://www.eiga.org for more guidance on suitable disposal methods. List of hazardous waste codes: 16 05 05: Gases in pressure containers (including halons) containing other than those mentioned in 16 05 04.

Contaminated packaging: Return cylinder to supplier.

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14. Transport information:

ADR
UN/ID No. : UN1956.
Proper shipping name: COMPRESSED GAS N.O.S. (Nitrogen, Oxygen).
Class or Division: 2.
Tunnel Code: (E).

Label(s): 2.2.
ADR/RID Hazard ID no. : 20.
Marine Pollutant: No.
IATA
UN/ID No.:UN1956.
Proper shipping name: Compressed gas, N.O.S (Nitrogen, Oxygen).
Class or Division: 2.2.
Label(s): 2.2.
Marine Pollutant: No.
IMDG
UN/ID No. : UN1956.
Proper shipping name: COMPRESSED GAS N.O.S. (Nitrogen, Oxygen).
Class or Division: 2.2.
Label(s): 2.2.
Marine Pollutant: No.
RID
UN/ID No. : UN1956.
Proper shipping name: COMPRESSED GAS N.O.S. (Nitrogen, hydrogen sulphide).
Class or Division: 2.
Label(s): 2.2.
Marine Pollutant: No.

Further Information: 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. The transportation information is not intended to convey all specific regulatory data relating to this material. For complete transportation information, contact GMI customer service representative at 0141 812 3211.

15. Regulatory information

Country	Regulations	Notification
USA	TSCA	Included in inventory
EU	EINICS	Included in inventory
Canada	DSL	Included in inventory
Australia	AICS	Included in inventory
Japan	ENCS	Included in inventory
South Korea	ECL	Included in inventory
China	SEPA	Included in inventory
Philippines	PICCS	Included in inventory
		Included in inventory

16. Other requirements:

Ensure all national/local regulations are observed.

Hazard Statements:

H220 Extremely Flammable Gas

H270 May cause or intensify fire; oxidiser

H280 Contains gas under pressure; may explode if heated.

H330 Fatal if inhaled.

H331 Toxic if inhaled.

H335 May cause respiratory irritation.

H360d May damage the unborn child.

H372 Causes damage to organs through prolonged or repeated exposure

H400 Very toxic to aquatic life

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