AFROX
A Member of The Linde Group

MATERIAL SAFETY DATA SHEET
Mathane Calibration Gas Standards
(Please ensure that this MSDS is received by the appropriate person)

DATE.:July 2011 **Version 2**

Ref No.:MS050

1 PRODUCT AND COMPANY IDENTIFICATION

PRODUCT IDENTIFICATION

Product Name	Methane Calibration Gas Standards
Chemical Formula	CH4 plus O2 plus N2
Trade Names	MethCal 8 (0,76 – 0,84%) MethCal 10 (1,96 – 1,04%) MethCal 11 (1,06 – 1,14%) MethCal 12 (1,16 – 1,24%) MethCal 14 (1,36 – 1,44%) MethCal 25 (2,46 – 2,54%)

The above figures in brackets indicate the tolerances of mixtures in % Methane. The actual concentrations would be indicated on the analytical certificate attached to the cylinder.

Colour Coding	Mist-Green (E.77) body with a Red (A.11) shoulder, with the word "METHCAL" & relevant concentration stencilled on the body of the cylinder.
Valve	3 SH – Brass, 5/8 left hand female
Company Identification	African Oxygen Limited 23 Webber Street Johannesburg, 2001 Tel. No: (011) 490-0400 Fax No: (011) 490-0506
Emergency phone No	**0860 111185 or 011 873 4382 (24 hours)**

2 COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Names	Methane plus Oxygen plus Nitrogen
UN No.	1954
Hazchem code	2 SE
Hazchem Warning	2 A Flammable gas

3 HAZARDS IDENTIFICATION

Main Hazards	All cylinders are portable gas containers, and must be regarded as pressure vessels at all times. Although the methane component of the above standards will burn when ignited by a flame, the methane will not significantly add to the fire.
Adverse Health Effects	As the methane component is non-toxic, there are no adverse effects to prolonged exposure.
Chemical Hazards	There are no hazardous products formed when methane burns in air.
Biological Hazards	No known effects.
Vapour Inhalation	No known effects.
Eye Contact	No known effects.
Skin Contact	No known effects.
Ingestion	No known effects.

4 FIRST AID MEASURES

Care should be taken with the exposure to either oxygen-deficient, or oxygen-enriched atmospheres. Conscious persons should be assisted to an uncontaminated area and inhale fresh air. They should be kept warm and quiet. Quick removal from the contaminated area is most important. The physician should be informed when a patient has experienced hyperoxia.

Eye Contact	No known effect.
Skin Contact	No known effect.
Ingestion	No known effect.

5 FIRE FIGHTING MEASURES

Extinguishing media	The release of any of these gas standards in the vicinity of a fire will not significantly add to the fire. Suitable extinguishing media for the surrounding fire should be used.
Specific Hazards	None.
Emergency Actions	All cylinders should be removed from the vicinity of the fire. Cylinders that cannot be removed should be cooled with water from a safe distance. Cylinders which have been exposed to excessive heat should be clearly identified and returned to supplier.CONTACT THE NEAREST AFROX BRANCH.
Protective Clothing	Safety goggles, gloves and safety shoes should be worn when handling cylinders.

Environmental precautions. No known effect.

6 ACCIDENTAL RELEASE MEASURES

Personal Precautions	Ensure that the surrounding atmosphere is safe before entering an area where large volumes of MethCal have been released.
Environmental precautions.	These listed MethCal standards do not pose a hazard to the environment.
Small spills	No known effect.
Large spill	Beware of the possible increase in the levels of Methane

7 HANDLING AND STORAGE

Do not allow cylinders to slide or come into contact with sharp edges. Cylinders of MethCal should not be stored near cylinders of acetylene or other combustible gases. MethCal cylinders may be stacked horizontally provided that they are firmly secured at each end to prevent rolling. Prevent dirt, grit of any sort, oil or any other lubricant from entering the cylinder valves, and store cylinders well clear of any corrosive influence, e.g. battery acid. Compliance with all relevant legislation is essential. Use a "first in - first out" inventory system to prevent full cylinders from being stored for excessive periods of time. Keep out of reach of children.

8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Hazards.	No known effect.
Engineering control measures	Not required.
Personal protection	Safety goggles, gloves and shoes should be worn when handling cylinders.
Skin contact	No known effect.

9 PHYSICAL AND CHEMICAL PROPERTIES

METHANE

Chemical Symbol	CH_4
Molecular Weight	16,04
Specific Volume @ 20°C & 101,325 kPa	1474 ml/g
Relative density (Air = 1) @ 101,325 kPa	0,555
Colour	None
Taste	None
Odour	None

NITROGEN

Chemical Symbol	N_2
Molecular Weight	28,01
Specific Volume @ 20°C & 101,325 kPa	861,5ml/g
Relative density (Air = 1) @ 101,325 kPa	0,967
Colour	None
Taste	None
Odour	None

OXYGEN

Chemical Symbol	O_2
Molecular Weight	32,00
Specific Volume @ 20°C & 101,325 kPa	755ml/g
Relative density (Air = 1) @ 101,325 kPa	1,053
Colour	None
Taste	None
Odour	None

10 STABILITY AND REACTIVITY

Conditions to avoid	Never use cylinders as rollers

or supports, or for any other purpose than the storage of MethCal. Never expose the cylinder to excessive heat, as this may cause sufficient build-up of pressure to rupture the cylinders.

Incompatible Materials Since dry MethCals are non-corrosive, most materials of construction are suitable.

Hazardous Decomposition Products - None

11 TOXICOLOGICAL INFORMATION

Acute Toxicity	No known effect.
Skin & eye contact	No known effect.
Chronic Toxicity	No known effect.
Carcinogenicity	No known effect.
Mutagenicity	No known effect.
Reproductive Hazards	No known effect

(For further information see Section 3. Adverse Health Effects).

12 ECOLOGICAL INFORMATION

No known effect.

13 DISPOSAL CONSIDERATIONS

Disposal Methods Small amounts may be blown to the atmosphere under controlled conditions. Large amounts should only be handled by the gas supplier.

Disposal of packaging The disposal of cylinders must only be handled by the gas supplier.

14 TRANSPORT INFORMATION

ROAD TRANSPORTATION

UN No.	1954
Hazchem code	2 SE
Hazchem warning	2A Flammable gas

SEA TRANSPORTATION

IMDG	1954
Label	Flammable

AIR TRANSPORTATION

ICAO/IATA Code	1954
Class	2.1
Packaging instructions	
- Cargo	200
- Passenger	Forbidden
Maximum quantity allowed	
- Cargo	150kg
- Passenger	Forbidden

15 REGULATORY INFORMATION

EEC Hazard class	Toxic gas
Risk phrases	R10 Flammable gas R44 Risk of explosion if heated under confinement
Safety phrases	S2 Keep out of reach of children S3 Keep in a cool place S16 Keep away from sources of ignition S21 When using do not smoke
National Legislation:	None

Refer to SABS 0265 for explanation of the above.

16 OTHER INFORMATION

Bibliography

Compressed Gas Association, Arlington, Virginia
Handbook of Compressed Gases - 3rd Edition
Matheson. Matheson Gas Data Book - 6th Edition
SABS 0265 - Labelling of Dangerous Substances

17 EXCLUSION OF LIABILITY

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For product and safety enquiries please phone

0860020202 (24hr)