MATERIAL SAFETY DATA SHEET (MSDS)
SAFETY GAS

Please ensure that this MSDS is received by the appropriate person

DATE: December 2017 Version 3

Ref. No.: MS111

1 PRODUCT AND COMPANY IDENTIFICATION

PRODUCT IDENTIFICATION

Product Name: SAFETY GAS (LIQUEFIED PETROLEUM GAS)
Chemical Formula: C3H8 PLUS C4 H10 PLUS C3 H6
Trade name: Safetysgas
Colour Coding: Plascon Dark Admiralty Grey (SABS 1091 – G.12) body, with a Handigas decal affixed to the cylinder. All cylinders fitted with an internal eductor tube for liquid withdrawal shall be clearly marked with two Yellow (B.49) stripes painted diametrically opposite each other along the length of the cylinder.

Valve: Brass 5/8 inch BSP left hand female, either single or two-way outlet.

Company Identification: African Oxygen Limited
23 Webber Street
Selby, Johannesburg
South Africa
Tel. No: (011) 490 0400
Fax. No: (011) 490 0506

EMERGENCY NUMBER 0860 020202 or 011) 873 4382 (24 hours)

2 COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name Butane / Propane / Propylene
Chemical Family Aliphatic Hydrocarbon
CAS NO. BUTANE 106-97-8 UN NO.1075
Propane 74-98-6 UN No. 1978
Propylene 115-07-01 UN No. 1077
UN No. 1075
ERG No. 115
Hazchem Warning 2A Flammable gas

3 HAZARDS IDENTIFICATION

Vapourised liquefied petroleum gas is highly flammable and can form explosive mixtures with air. The vapourised liquid does not support life. It can act as a simple asphyxiant by diluting the concentration of oxygen in the air below the levels necessary to support life. It can act as a simple asphyxiant.

Adverse Health effects
The liquefied petroleum gases are non-toxic. Prolonged inhalation of high concentrations has an anaesthetic effect

Chemical Hazards
Propane and butane (known as extensively in commercial and popular terms as Lpgas or LPG) have an extremely wide range of domestic, industrial, commercial, agricultural and internal combustion engine uses. It is estimated that two gases, un-mixed and in mixtures, have several thousand industrial applications and many more in other fields. Their very broad application stems from their occurrences as hydrocarbons between natural gas and natural gasoline, and from their corresponding properties. As a result of their wide application, misuse could result in serious chemical hazards.

Biological Hazards
Contact with the liquid phase of liquefied petroleum gases with the skin can result in frostbite.

Vapour Inhalation
As the vapourised liquid act as a simple asphyxiant death may result from errors in judgement, confusion, or loss of consciousness which prevents self-rescue. At low oxygen concentrations, unconsciousness and death may occur in seconds without warning.

Eye Contact
The liquid can cause severe burn-like injuries.

Skin Contact
Contact with the liquid phase can cause severe burn-like injuries.

Ingestion
No known effect

4 FIRST AID MEASURES

Prompt medical attention is mandatory in all cases of overexposure to vapourised liquefied petroleum gas. Rescue personnel should be equipped with self-contained breathing apparatus. In the case of frostbite from contact with the liquid phase, place the frost bitten part in warm water, about 40 – 42 °C. If warm water is not available. Or is impractical to use, wrap the affected part gently in blankets. Encourage the patient to exercise the affected part whilst it is being warmed. Do not remove clothing whilst frosted. Conscious persons should be assisted to an uncontaminated area and inhale fresh air. Quick removal from the contaminated area is most important. Unconscious persons should be removed to an uncontaminated area, and given mouth-to-mouth resuscitation and supplemental oxygen.

Eye contact (with liquid phase)
Immediately flush with large quantities of tepid water, or with sterile saline solution.

Seek medical attention

Skin Contact
See above for handling of frostbite

Ingestion
No known effect

Precautionary Statements:
P210: Keep away from heat/ sparks/open flames/hot surface.
No Smoking

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

P381: Eliminate all ignition sources if safe to do so.
P403: Store in a well-ventilated place.

Hazard Statements:
H220: Extremely flammable gas.

5 FIRE FIGHTING MEASURES

Extinguish media
Do not extinguish fire unless the leakage can be stopped. DO NOT USE WATER JET. Use dry chemical, CO2 or foam.

Specific Hazards
The rupturing of cylinders or bulk containers due to excessive exposure to fire could result in a BLEVE (Boiling Liquid expanding Vapour Explosion), with disastrous effects. As the flammability limits in the air for the main constituents of liquefied petroleum gas vary between approximately 2 and 11% by vol, extreme care must be taken when handling leaks.

Emergency actions
If possible shut off the source of spillage. Evacuate area. Post notices “No Naked lights – No Smoking”. Prevent liquid or vapour from entering sewers, basements and work pits. Keep cylinders or bulk vessels cool by spraying with water if exposed to fire. If tanker has overturned, do not attempt to right or move it. CONTACT THE NEAREST AFROX BRANCH.

Protective Clothing
Self contained breathing apparatus. Safety gloves and shoes, or boots, should be worn when handling containers.

Environmental precautions.
Vapourised liquefied petroleum gas is heavier than air and could form pockets of oxygen-deficient atmosphere in low lying areas.

6 ACCIDENTAL RELEASE MEASURES

Personal Precautions
Do not enter any area where liquefied petroleum gas has been spilled unless tests have shown that it is safe to do so.

Environmental Precautions
The danger of widespread formation of explosive LPG/Air mixtures should be taken into account. Accidental ignition could result in massive explosion.

Small spills
DO NOT extinguish the fire unless the leakage can be stopped immediately. Once the fire has been extinguished and all spills have been stopped, ventilate the area.

Large spills
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Stop the source if it can be done without risk. Contain the leaking liquid, with sand or earth, or disperse with special water/fog spray nozzle. Allow to evaporate. Restrict access to the area until completion of the clean-up procedure. Ventilate the area using forced-draught if necessary. All electrical equipment must be flameproof.

7 HANDLING AND STORAGE
Cylinders containing liquefied petroleum gas should only be handled and stored in the vertical position. Cylinders should never be rolled. Do not allow cylinders to slide or come into contact with sharp edges and they should be handled carefully. Ensure that cylinders are stored away from oxidants. Comply with local legislation.

8 EXPOSURE CONTROLS/PERSONAL PROTECTION
Occupational Exposure Hazards.
As vapourised LPG is a simple asphyxiant, avoid any areas where spillage has taken place.
Engineering control measures.
Engineering control measures are preferred to reduce exposure to Oxygen-depleted atmospheres. General methods include forced-draught ventilation, separate from other exhaust ventilation, separate from other exhaust ventilation systems. Ensure that all electrical equipment is flameproof.
Personal Protection.
Self-contained breathing apparatus should always be worn when entering area where oxygen depletion may have occurred. Safety goggles, gloves and shoes, or boots, should be worn when handling containers. Skin. Wear loose-fitting overalls, preferably without pockets.

9 PHYSICAL AND CHEMICAL PROPERTIES
Physical Data
Specific Volume @ 20°C & 101.325 kPa 471ml/g
Auto ignition temperature 450°C
Relative density ( Air=1 ) @ 101.325kPa +1.75
Flammability in air 2.2-9.5%
Colour – Liquid Clear
Taste None
Odour Ethyl/Mercaptan
Specification SANS 1174

10 STABILITY AND REACTIVITY
Conditions to avoid
The dilution of the oxygen concentration in the atmosphere to levels which cannot support life. The formation of explosive gas/air mixtures.
Incompatible Materials
Any common, commercially available metal may be used with commercial (or higher ) grades of liquefied petroleum gases because they are non-corrosive, though installations must be designed to withstand the pressure involved and must comply with all state local regulations.
Hazardous Decomposition Products.
The constituents of liquefied petroleum gas are relatively stable. However, on combustion, toxic compositions, typically carbon monoxide, may be formed, depending on conditions.

11 TOXICOLOGICAL INFORMATION
Acute Toxicity TLV 1000 VPM
Skin & eye contact No known effect.
Carcinogenicity Severe cold burns can result in carcinoma
(For Further information see Section3. Adverse Health Effects)

12 ECOLOGICAL INFORMATION
Vapourised liquefied petroleum gas is heavier than air, and can cause pockets of oxygen-depleted atmosphere in low-lying areas. It does not pose a hazard to the ecology, unless the gas/air is ignited.

13 DISPOSAL CONSIDERATIONS
Disposal Methods Disposal of Propane, as with other flammable gases, should be undertaken only by personnel familiar with the gas and the procedures for disposal. Contact the supplier for instructions. In general, should it become necessary to dispose of Propane, the best procedure, as for other flammable gases, is to burn them in suitable burning unit available in the plant. This should be done in accordance with appropriate regulations.

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

14 TRANSPORT INFORMATION
ROAD TRANSPORTATION
UN No. 1075
ERG No. 115
Hazard warning 2A-Flammable gas
SEA TRANSPORTATION
IMDG 1075
Label Flammable gas
AIR TRANSPORTATION
ICAO/IATA Code 1075
Class 2.1
Packaging group
Packaging instructions Cargo 200
Passenger Forbidden
Maximum Quantity allowed Cargo 150kg
Passenger Forbidden

15 REGULATORY INFORMATION
EEC Hazard class Non-flammable
National legislation OHSact and Regulations 85 of 1993
Reference SANS 10234 and its supplement.

16 OTHER INFORMATION
Bibliography
Handbook of Compressed Gases - 3rd Edition
Supplement to SANS 10234 – List of classification and labelling of chemicals in accordance with Globally Harmonized System (GHS)

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