BOC GASES
A Member of The Linde Group

MATERIAL SAFETY DATA SHEET (MSDS)
ETHANE
(Please ensure that this MSDS is received by the appropriate person)

Ref. n.: MS057 DATE: December 2015
Version no.1

1 PRODUCT AND COMPANY IDENTIFICATION

PRODUCT IDENTIFICATION

Product Name	ETHANE
Chemical Formula	C_2H_6
Trade Name	Ethane
Colour coding	Signal Red (A.11) body with the relevant stencilling on the body.
Valve female	Neriki – Brass 5/8-inch BSP left hand
Company Identification	BOC Kenya Limited Kitui Road Industrial area 18010-00500 Nairobi Tel. No:(+254)020 6944000
EMERGENCY No	**(+254)719 069000 (24 hr)**

2 COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	Ethane
Chemical Family	Saturated hydrocarbon
CAS No.	74-84-0
UN No.	1035
ERG No	115
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. Ethane is highly flammable and is slightly heavier than air. This could cause pockets of gas to collect in low-lying areas.

Adverse Health Effects The gas is a simple asphyxiant, and at high concentrations could cause narcosis. No definite symptoms have been observed in concentrations up to 5%. Direct contact with the liquid form can cause frostbite and freeze-burns in exposed tissues.

Chemical hazards None.

Biological Hazards

Eye contact	(gas)	No known effect
	(Liquid)	Serious burns
Skin contact	(gas)	No known effect
	(Liquid)	Serious burns
Ingestion	(liquid)	Serious burns

4 FIRST AID MEASURES

Prompt medical attention is mandatory in all cases of overexposure to vaporized Ethane. Rescue personnel should be equipped with self-contained breathing apparatus. In case of frostbite from contact with the liquid phase, place the frostbitten 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 while 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
(With liquid phase) See above for handling frostbite.

Ingestion Ingestion is unlikely. Liquid could cause severe burns.

5 FIRE FIGHTING MEASURES

Extinguishing media Do not extinguish fire unless the leakage can be stopped. Do not use water jet, use dry chemical, CO_2 or foam.

Specific hazards The rupturing of cylinders or bulk containers due to excessive exposure to a fire could result in a BLEVE (Boiling Liquid Expanding Vapour Explosion), with disastrous effects. As the flammability limits in air for Ethane are between 3 and 12,5%, extreme care must be taken when handling leaks.

Emergency actions If possible, shut off the source of the spillage. Evacuate area. Post notices, "No naked lights - no smoking". Prevent liquid or vapour from entering sewers, basements and workpits. Keep cylinders or bulk vessels cool by spraying with water if exposed to a fire. CONTACT THE NEAREST BOC BRANCH

Protective clothing Self-contained breathing apparatus. Safety gloves and shoes, or boots, should be worn when handling cylinders.

Environmental Precautions Vaporized Ethane 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 Ethane has been spilled unless tests have shown that it is safe to do so.

Environmental Precautions the danger of widespread formation of explosive Ethane/air mixtures should be taken into account. Accidental ignition could result in a 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 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 evaporating. Take the precautions as listed above under "Emergency Actions". Restrict access to the area until completion of the clean-up procedure. Ventilate the area using forced draught if necessary. All electrical equipment should be flameproof.

7 HANDLING AND STORAGE

Cylinders containing Ethane 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 other oxidants. Comply with all local legislation. Keep out of reach of children.

8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure hazards as vaporized Ethane is a simple asphyxiant, avoid any areas where spillage has taken place. Only enter once testing has proved the atmosphere to be safe.

Engineering Control measures Engineering control measures are preferred to reduce exposures. General methods include forced-draught ventilation, separate from other exhaust ventilation systems. Ensure that sufficient fresh air enters at, or near, floor level. Ensure that all electrical equipment is flameproof.

Personal protection Self-contained breathing apparatus should always be worn when entering an area where oxygen depletion may have occurred. Safety goggles, gloves and shoes or boots should be worn when handling cylinders.

Skin Wear loose-fitting overalls, preferably without pockets.

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9 PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL DATA

Chemical Symbol	C_2H_6
Molecular Weight	30,07
Specific volume @ 20°C & 101,325 kPa	796 ml/g
Relative density of gas @ 101,325 kPa (Air=1)	1,048
Auto ignition temperature	472,2°C
Flammability limits in air	3,0 - 12,5% (by volume)
Colour	None
Taste	None
Odour	None

10 STABILITY AND REACTIVITY

Conditions to avoid The dilution of the oxygen concentration in the atmosphere to levels that cannot support life. The formation of explosive gas/air mixtures.

Incompatible Materials Any common, commercially available metals may be used with Ethane because it is non-corrosive, though installation must be designed to withstand the pressures involved and must comply with all state and local regulations.

Hazardous Decomposition Products Ethane is relatively stable. However, on combustion, toxic compositions, typically carbon monoxide may be formed, depending on conditions.

11 TOXICOLOGICAL INFORMATION

Acute Toxicity	No known effect
Skin & eye contact	No known effect
Chronic Toxicity	No known effect
Carcinogenicity	Severe cold burns can result in carcinoma
Mutagenicity	No known effect
Reproductive Hazards	No known effect

For further information see Section 3. Adverse Health Effects

12 ECOLOGICAL INFORMATION

Vaporized Ethane 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 mixture is ignited.

13 DISPOSAL CONSIDERATIONS

Disposal Methods Disposal of Ethane, as with other 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 Ethane, the best procedure, as for other flammable gases, is to burn them in suitable burning units available in the plant. This should be done in accordance with appropriate regulations.

Disposal of Packaging The disposal of containers must only be handled by the gas supplier.

14 TRANSPORT INFORMATION

ROAD TRANSPORTATION

UN No.	1035
ERG No	115
Hazchem warning	2 A Flammable gas
SEA TRANSPORTATION	
IMDG	1035
Label	Flammable gas
AIR TRANSPORTATION	
ICAO/IATA Code	1035
Class	2.1
Packaging group	none
Packaging instructions	
- Cargo	200
- Passenger	Forbidden
Maximum quantity allowed	
- Cargo	150 kg
- Passenger	Forbidden

15 REGULATORY INFORMATION

EEC Hazard class Flammable gas
National legislation OHSact and Regulations 85 of 1993
SABS 10234 and its supplement 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
SANS 10265 - Labelling of Dangerous Substances

17 EXCLUSION OF LIABILITY

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For product and safety enquiries please phone

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