

## 1 PRODUCT AND COMPANY IDENTIFICATION

<b>Product Name</b>	FROZENAIR 408A
<b>Chemical Formula</b>	CHC1 F2 + CHF2 – CF3 Plus CH3 – CF3
<b>Trade Name</b>	FrozenAir 408A
<b>Colour Coding</b>	Disposable cylinder with a beige body and the relevant grade stencilled onto the cylinder
<b>Valve (Cylinders)</b>	¼ inch flare fitting
<b>Company Identification</b>	African Oxygen Limited 23 Webber Street Johannesburg, 2001 Tel. No: (011) 490-0400 Fax No: (011) 490-0506
<b>EMERGENCY NUMBER</b>	<b>0860 020202 or (011) 873 4382 (24 hours)</b>

## 2 COMPOSITION/INFORMATION ON INGREDIENTS

<b>Chemical Name</b>	A prep of HFC22, HFC125, HFC143A
<b>Chemical Family</b>	Mixtures of Halocarbons
<b>CAS No's.</b>	HFC22, HFC125, HFC143A 075-45-6, 420-46-2, 354-33-6
<b>UN No.</b>	1078
<b>ERG No.</b>	126
<b>Hazchem Warning</b>	2 C Non flammable gas

## 3 HAZARDS IDENTIFICATION

### Main Hazards

All cylinders are portable gas containers, and must be regarded as under pressure cylinders at all times.

### Adverse Health effects

Contain a liquefied gas. Contact with liquid may cause frostbite and injury to the cornea. In high concentrations may cause asphyxiation.

### Chemical Hazards

Heating will cause a rise in pressure with a risk of the cylinders bursting. On combustion, toxic gases are released.

### Biological Hazards

Contact with liquid could cause frost burns.

### Vapour Inhalation

High exposures may cause an abnormal heart rhythm and prove suddenly fatal. May have a narcotic effect, very high concentrations may cause anaesthetic effects and asphyxiation.  
(For additional information see "Adverse `Health Effects" above)

## 4 FIRST AID MEASURES

Prompt medical attention is mandatory in all cases of overexposure to vapourised FrozenAir 408A. Rescue personnel should be equipped with self-contained breathing apparatus. Conscious persons should be assisted to an uncontaminated area and inhale fresh air. Unconscious persons should be removed to an uncontaminated area and given mouth-to-mouth resuscitation and supplemental oxygen. The use of adrenaline or similar drugs should be avoided.

**Eye Contact** **Liquid:** Rinse with water whilst keeping the eyes wide open for at least 15 minutes. Consult an eye specialist immediately.

**Skin Contact** **Liquid:** Thaw affected areas with water. Remove contaminated clothing and then rinse again with water. If it sticks, do not pull it off. Call a doctor immediately.

**Ingestion** Not specifically applicable (gas) Do not induce vomiting. If patient is conscious, wash out mouth with water and give 200 - 300ml water to drink. Obtain immediate medical attention.

**Inhalation** Remove patient from exposure, keep warm and at rest. Administer oxygen if necessary. Apply artificial respiration if breathing as ceased or shows signs of failing. In the event of cardiac arrest apply external cardiac massage. Obtain immediate medical attention.

## 5 FIRE FIGHTING MEASURES

### Extinguishing media

All extinguishing agents can be used. It there is a fire close by, use suitable extinguishing agents.

### Specific Hazards

Pressurised container. On heating there is a risk of bursting due to internal pressure build-up NOT flammable. However, it may present a risk in the event of fire. Toxic vapours (Halogen compounds) are released.

### Emergency Actions

Stay upwind. Evacuate all personnel away from the fumes. Cool down the containers/equipment exposed to heat with a water spray.

### Protective Clothing and Self-contained breathing apparatus

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

### Environmental precautions

Prevent the product from spreading into the environment.

## 6 ACCIDENTAL RELEASE MEASURES

### Personal Precautions

Avoid contact with skin and eyes. Do not breathe gas. For further information refer to 8 "Exposure-controls/Personal Protection" Heavy vapours. Shut off low-level openings in the vicinity (ventilation shafts, drains) Prevent the product from entering cellars, basements or pits. Stop the leak. Ventilate spillage area and basements.

### Environmental precautions

Prevent the product from spreading into the environment.

### Small spills

Shut off source of product. Ventilate area.

### Large spills

Evacuate the area. Shut off the source of the spill if this can be done without risk. Restrict access to the area until completion of the clean-up procedure. Ventilate the area using forced-draught if necessary.

## 7 HANDLING AND STORAGE

Suck back of water into the container must be prevented. Do not allow back-feed into the container. Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Contact your gas supplier if in doubt. Refer to supplier's container handling instructions. Keep container below 50°C in a well-ventilated place. Do not allow cylinders to slide or come into contact with sharp edges. Cylinders should be stacked vertically at all times, and should be firmly secured in order to prevent them from being knocked over. 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

As FrozenAir 408A is a simple asphyxiant, avoid any areas where spillage has taken place. Only enter once testing has proved the atmosphere to be safe, and remember that the gas is heavier than air.

### Engineering control measures

Engineering control measures are preferred to reduce exposures to oxygen depleted atmospheres. General methods include forced-draught ventilation, separate from other exhaust ventilation systems. Ensure that sufficient fresh air enters at, or near, floor level.

### 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 cylinders.

### Skin

No known effect.

## 9 PHYSICAL AND CHEMICAL PROPERTIES

### PHYSICAL DATA

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Ref. No.: MS095

Chemical Symbol	Mixture
Molecular Weight	Mixture
Boiling point @ 101,325 kPa	-43,5 °C
Colour	Colourless
Taste	Not Applicable
Odour	Slightly ethereal

**10 STABILITY AND REACTIVITY**

The dilution of oxygen concentration in the atmosphere to levels which cannot support life. Never use cylinders as rollers or supports, or for any other purpose than the storing of FrozenAir 408A. Never expose the cylinders to excessive heat, as this may cause sufficient build-up of pressure to rupture the cylinders.

**Incompatible materials**

Since the performance of plastic materials is affected by polymer variations, compounding agents, fillers, and moulding processes, verify compatibility using actual fabricated parts under end-use conditions. The effects on specific customers depend on the nature of the polymer, the compounding formulation used and the curing of vulcanizing conditions. Actual samples should be tested under end-use conditions before specifying customers for critical components.

**Hazardous decomposition products**

Combustion, or thermal decomposition, will release toxic gases. (Fluorinated compounds).

**11 TOXICOLOGICAL INFORMATION**

Acute Toxicity (TWA 8 + 12 hr)	
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**

Dangerous to the ozone layer.

**13 DISPOSAL CONSIDERATIONS**

Do not allow the product to be released into the environment. Consult the manufacturer of supplier for information regarding recovery and recycling of the product.

**14 TRANSPORT INFORMATION**

**ROAD TRANSPORTATION**

UN No.	1078
ERG No	126
Hazchem warning	2C Non-flammable gas

**SEA TRANSPORTATION**

IMDG	1078
Class	2.2

**AIR TRANSPORTATION**

ICAO/IATA Code	1078
Class	2.2
Packaging instructions	
-Cargo	200
-Passenger	200
Maximum quantity allowed	
-Cargo	150 kg
-Passenger	75 kg

**15 REGULATORY INFORMATION**

EEC Hazard class Non-flammable

Risk Phrase	Description	Safety Phrase	Description
R20	Harmful by inhalation	S9	Keep container in a well-Ventilated place
R34	Liquid phase could cause burns	S15	Keep away from heat
R44	Risk of explosion if heated under confinement	S23	Do not breathe the gas
R59	Dangerous for the ozone layer	S36	Wear suitable protective clothing
		S41	In case of fire/explosion do not breathe fumes
		S51	Use only in well ventilated areas
		S59	Refer to manufacturer/supplier for information on recovery/recycling
		S61	Avoid release to the environment

Refer to SANS 10265 for explanation of the above.

**16 OTHER INFORMATION**

**Bibliography**

Occupational Exposure Standard (UK HSE EH40)  
SANS 10265 - Labeling of Dangerous Substances  
SANS 10019 and SANS 1825

**17 EXCLUSION OF LIABILITY**

Information contained in this publication is accurate at the date of publication. The company does not accept liability arising from the use of this information, or the use, application, adaptation or process of any products described herein.