

**Please ensure that this MSDS is received by the appropriate person**

DATE: April 2011

Version 1

Ref. No.: MS031

**1 PRODUCT AND COMPANY IDENTIFICATION**

**Product Name** Afroxpac Self-Contained Self-Rescuer (SCSR)  
**Synonym** Oxygen Generator  
**Trade Name** Afroxpac Self-Contained Self-Rescuer 60+  
**Company Identification** African Oxygen Limited  
 23 Webber Street  
 Johannesburg, 2001  
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**EMERGENCY NUMBER** 0860 020202 or +27(011) 873 4382 (24 hours)

**Use(s)** The AfroxPac SCSR is an oxygen generator that is designed to facilitate escape from irrespirable atmospheres e.g. an underground fire in the case of mining or tunnelling.

Furthermore, triggering of the oxygen capsule cannot initiate any chemical reaction.

**Adverse Health Effects** There are no recognized hazards associated directly with unused Afroxpac SCSR. If the SCSR is damaged in such a way that the chemical canister ruptures exposing and/or spilling chemicals, adverse health effects are as for the chemicals themselves.

**Chemical Hazards** Potassium superoxide is a strong oxidiser (Rating 5.1) and lithium hydroxide is a corrosive solid (Rating 8). When reacted with water, potassium superoxide produces potassium hydroxide as a by-product. Potassium hydroxide is a highly alkaline substance and must be dealt with accordingly.

**Biological Hazards** Unknown.

**Vapour Inhalation.** Inhalation of potassium superoxide can cause chemical burns to the respiratory tract. Inhalation of lithium hydroxide can cause severe irritation of the tissues of the respiratory tract.

**Eye/skin Contact** Contact with potassium superoxide and lithium hydroxide may cause irritation, inflammation or severe burns.

**Ingestion** Ingestion of potassium superoxide and lithium hydroxide can lead to irritation and chemical burns of the gastrointestinal tract.

**2 COMPOSITION INFORMATION**

**TABLE: COMPOSITION DATA (WT % of total device and of active chemicals contained in the device)**

Hazardous Ingredients	WT% of Chemicals Only	WT% of Total Device	UN No.	CAS No.
<b>SCSR CHEMICALS</b>				
Potassium Superoxide	81.2 – 82.4	12.7 13.7	2466	12030-88-5
Lithium Hydroxide	17.6 - 18.8	2.9	2680	7440-47-3
<b>OXYGEN STARTER</b>				
Oxygen	-	0.25 – 0.33	1072	7782-44-7
<b>GAS GENERATED</b>				
Oxygen	-		1072	7782-44-7

**UN No. (SCSR)** 3356  
**Hazchem Warning** Oxygen generator

**3 HAZARDS IDENTIFICATION**

**Main Hazards** The hazardous chemicals are safely contained in the device, which has been designed to withstand harsh underground mining conditions. If the protective container is opened small amounts of oxygen will be released as the chemical reacts to the moisture in the air – this process is very slow if not accelerated by actually donning the unit and breathing through it. The pressurised oxygen self-starter contains 6 to 8 g of compressed dry oxygen in a sealed capsule at a pressure of approximately 20 MPa. This oxygen is provided to partially fill the breathing bag of the device when the device is activated in order to provide breathable air to the user until the chemical reaction of the potassium superoxide produces sufficient oxygen. The capsule cannot be accidentally triggered and can only be triggered by means of deliberate operation of a triggering mechanism that is exposed when the protective container is opened.

**4 FIRST AID MEASURES**

Prompt medical attention is mandatory in all cases of severe overexposure to the chemical contents in the Afroxpac SCSR.

An unopened Afroxpac SCSR or an opened Afroxpac SCSR where the internal contents are still intact poses no danger to health and safety. If the SCSR is damaged in such a way that the chemical canister ruptures exposing and/or spilling the chemicals, first aid measures are to be followed as for the chemicals themselves.

**Eye/Skin Contact:** Irrigate thoroughly with water for at least 15 minutes and obtain medical attention.

**Ingestion** Wash out the mouth thoroughly using copious amounts of water. DO NOT induce vomiting. Obtain medical attention.

**Inhalation** Move person to fresh air and give artificial respiration if victim is not breathing. Administer oxygen if breathing is difficult. If not breathing, give artificial respiration. Obtain medical attention.

**5 FIRE FIGHTING MEASURES**

**Extinguishing Media** Use a dry powder fire extinguisher.

**Specific Hazards** Water must NOT be used to extinguish the fire as water will react with any exposed oxidizing chemical from the Afrox SCSR leading to the generation of oxygen. This could result in localised oxygen-enrichment of the atmosphere thus potentially promoting combustion.

**Emergency Actions** If possible, remove all containers from the vicinity of fire. Do not use water to cool the containers. Evacuate the area. CONTACT

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THE NEAREST AFROX BRANCH OR THE SUPPLIER.

**Protective Clothing** Approved hazardous dust respirator, safety goggles, rubber gloves and overalls.

## 6. ACCIDENTAL RELEASE MEASURES

### Personal Precautions

Do not enter any area where the chemical contents of the Afroxpac SCSR have been spilled unless safe to do so.

### Environmental Precautions

Do not allow the chemical contents to enter the environment or sewers.

### Large/Small Spills

Contain the Afroxpac SCSR apparatus and any material in a clean and dry container (a steel bin is recommended) and cover. Provided there is no fire, wash down spillage area with large amounts of water whilst ensuring good ventilation to dissipate any excess oxygen.

## 7 HANDLING AND STORAGE

**Handling** When sealed in its protective plastic container, the Afroxpac SCSR can be handled without any special personal protective equipment.

**Storage** Storage of the device should be in a clean and dry environment away from direct heat and sunlight. The preferred temperature range is -10 to 55 °C.

## 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

### Occupational Exposure Hazards

Keep containers closed. In the event of accidental opening, seal the contents of the device in a durable polyethylene bag.

### Engineering Control Measures

Not applicable.

### Personal Protection

Use an approved hazardous dust respirator, safety goggles, rubber gloves and overalls in the event of exposure of the chemicals contained in the Afroxpac SCSR.

## 9 PHYSICAL AND CHEMICAL PROPERTIES

### PHYSICAL DATA

<b>Colour</b>	Black plastic protective casing engraved with identification information.
<b>Taste</b>	None.
<b>Odour</b>	None.

## 10 STABILITY AND REACTIVITY

### Conditions to Avoid

In a situation where the unit gets badly damaged by some event causing the chemicals to be exposed or spill from it, the following hazards can occur; if in contact with moisture, the exposed chemicals could start reacting and release oxygen in fairly large amounts (up to 150 litres per SCSR). This reaction is exothermic and generates heat.

### Incompatible Materials

Substances incompatible with the exposed chemicals are: acids, oxidising materials, organic materials, reducing agents and combustibles. Exposure to any of these could potentially result in fire.

### Hazardous Decomposition Products

There are no hazardous decomposition products from the oxygen generator; only oxygen which supports combustion is produced from the decomposition of the chemicals in the generator. When reacted with water, potassium superoxide produces oxygen and potassium hydroxide as a by-product. Potassium hydroxide is a highly alkaline substance and must be dealt with accordingly.

## 11 TOXICOLOGICAL INFORMATION

Detailed toxicological information is contained in the material safety data sheets for the active chemical contents of the device.

## 12 ECOLOGICAL INFORMATION

The SCSR chemicals pose a potential hazard to the ecology. Detailed ecological information is contained in the material safety data sheets for these. The material is highly alkaline and must be disposed of safely.

## 13 DISPOSAL CONSIDERATIONS

### General

Do not discharge into any place where its accumulation could be dangerous. Do not discharge the chemical contents into sewers. Waste disposal must be in accordance with appropriate national, state or local regulations. Contact Afrox or the relevant supplier if guidance is required.

## 14 TRANSPORT INFORMATION

UN No.	3356
Oxygen generator, chemical	
CL – 5.1	
PG – II	
PI – 565	
Pieces 1 – 10kg	

## 15 REGULATORY INFORMATION

This device is an oxygen generator and there is no regulatory information known. However the device is classified as an "article" as defined in American legislation "29 CFR 19100.1200 (b)(6)(v) -July 1, 1995". 'Articles' do not require MSDS.

## 16 OTHER INFORMATION

### Bibliography

Handbook of Compressed Gases - 3rd Edition  
Matheson. Matheson Gas Data Book - 6th Edition  
SANS 10265 - Labelling of Dangerous Substances  
American legislation "29 CFR 19100.1200 (b)(6)(v) -July 1, 1995

### EXCLUSION OF LIABILITY

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