**PRESS RELEASE**

Revolutionary new Potassium Hyperoxide (KO2) breathing apparatus launched by MSA Africa

***16 April, 2013:*** *MSA has enhanced its reputation of being a global leader in the development, manufacture and supply of sophisticated products that protect people's health and safety, following the development of the AirElite 4h - the world's first KO2 breathing apparatus.*

The MSA closed circuit breathing apparatus is specifically designed for long duration missions, and comes fully fitted with potassium hyperoxide (KO2)canisters that provide for four hours of breathing support for emergency and rescue teams in confined spaces.

The MSA AirElite 4h was officially introduced to the South African market in November 2012 by MSA Africa. Respiratory Products Manager **Suraksha Mohun** points out that the breathing apparatus is particularly well suited to numerous applications, including; mining rescue teams, firefighters, chemical industries, refineries, military facilities and port authorities.

**KO2 - function and reaction:**

2KO2 + CO2 *[Potassium Hyperoxide]* + H2O >> [K2CO3\*H2O]*[Potassium Carbonate]* + 1.5 O2 + E *[Heat]*

Exhaled air, enriched with carbon dioxide (CO2) and moisture, is directed into the exhalation bag by the valve control. A blower assists the air in its passage through the air distributor and into the two parallel connected KO2 canisters. Inside the KO2 canisters, with their maintenance free cooling, the exhaled air is liberated of carbon dioxide and humidity, and is enriched with fresh oxygen (O2).

Mohun highlights the fact that another important aspect of KO2 is that it offers optimal O2 surplus, due to the fact that there is no compressed O2 reserve, which may cause CO2 intoxication if the soda lime cartridge is exhausted prematurely. She continues: "The risk of CO2 intoxication is therefore entirely eliminated with the MSA AirElite 4h."

According to Mohun, the functioning principle of KO2 makes bottled compressed oxygen and additional carbon dioxide absorbers obsolete. "If nitrogen needs to be flushed, this occurs automatically by the oxygen surplus. The reaction heat is reliably absorbed by the air cooled heat exchanger and the entirely maintenance free water cooling effect of the canisters. Enriched with fresh oxygen and pleasantly cool, the breathing air then passes through the particle filter into the inhalation bag, and from there through the inhalation hose to the full face mask."

**Safety matching economy**

By making use of the TR conversion kit, Mohun points out that a unit for real life operation can be quickly and easily converted into a training unit. "All of the training exercises can then be performed at practically no cost with a reusable training canister. The integrated P3 particle filter permits training under realistic conditions in mist and non-toxic smoke. With P3 particle filters, training under realistic conditions in high dust environments, mist and non-toxic smoke is possible."

Furthermore, Mohun explains that the MSA AirElite 4h does not require any additional logistics such as expensive testing equipment, oxygen transfer pumps or deep freezers. "This reduces the investment and maintenance costs of the AirElite 4h to a minimum. The service time is entirely dependent on consumption and, with an average breathing rate of 30 ℓ /min, the expected time is between four and six hours," she adds.

**Approved safety**

Mohun stresses that MSA places the safety of the user as its top priority. "This is clearly evident in the fact that the MSA AirElite 4h not only satisfies the approval requirements of the DIN 58652-2 and vfdb 0802 standards, but has also passed the tough Flame Engulfment Test for mining and fire brigades, with flying colours. The MSA AirElite 4h is also controlled by an integrated control and display unit, with digital consumption indications that provide three warning stages at 50%, 20% and 5% remaining capacity with visual and acoustic warnings. It also comes standard with an automatic motion sensor and alarm, in addition to a manually activated emergency alarm," she concludes.

The MSA AirElite 4h has an operational temperature tolerance ranging from minus 15 °C to 60 °C, and provides breathing resistance at 30 ℓ /min at minus 3 mbar during inhalation, and 5 mbar during exhalation. It is stored in a polycarbonate, self-extinguishing, impact-resistant housing with antistatic coating, and has standard casing dimensions of 600 mm x 360 mm x 190 mm and a total weight of 15 kg. For more product information visit [www.MSAsafety.com](http://www.msanet.com)

***Ends***

**Notes to the Editor**There are numerous photographs specific to this press release. Please visit <http://media.ngage.co.za> and click the MSA Africa link.

**About MSA**MSA been the world's leading manufacturer of high-quality safety products since 1914. MSA products may be simple to use and maintain, but they’re also highly-sophisticated devices and protective gear - the result of countless R&D hours, relentless testing, and an unwavering commitment to quality that saves lives and protects thousands of men and women each and every day. Many of MSA's most popular products integrate multiple combinations of electronics, mechanical systems, and advanced materials to ensure that users around the world remain protected in even the most hazardous of situations. MSA's dedication to safety has been the key to its impressive year-over-year growth. In eight of the past ten years, MSA has achieved record growth numbers, with annual revenues of more than US$1 billion.

**MSA Africa Contact Details**Suraksha Mohun  
MSA Africa Product Manager: Respiratory Protection  
Tel: (+27) 11 610 2637   
Email:  [Surashka.Mohun @msasafety.com](mailto:Robbie.Taitz@msasafety.com)  
Web: [www.MSAsafety.com](http://www.msanet.com)

**Media Contact**  
Benjamin Iwisi   
NGAGE Public Relations   
Phone: (011) 867 7763  
Fax: 086 512 3352  
Cell: 076 263 2001  
Email: [benjamin@ngage.co.za](mailto:renay@ngage.co.za)   
Web: [www.ngage.co.za](http://www.ngage.co.za)

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