

Submission No.229

SkillPro

Services Pty Ltd

ACN 096 918 884

PO Box 795

BOOVALL QLD 4304

General Enquiries:

Phone: 07 3282 7009

Fax: 07 3282 7019

Email: info@skillpro.com.au

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Draft

The Secretary
Parliamentary Inquiry into the Incidence and Impact of Bushfires
House of Representatives
Parliament House
Canberra 2600 ACT

Dear Sir

Re: Submission to the Parliamentary Inquiry into the Incidence and
Impact of Bushfires

SkillPro Services Pty Ltd wishes to make a submission to the Parliamentary Committee Inquiry into the Incidence and Impact of Bushfires particularly in regard to the safety of firefighters as may be relevant under terms(g), (h), (i) and (j) of the inquiry.

SkillPro is the Australian representative for breathing apparatus provided by the French firm Fenzy-Bacou. Our primary areas of activity are the provision of consulting, and product services to the mining industry. Fenzy-Bacou manufacture a wide range of emergency breathing apparatus that include products used in the underground coal industry to provide mine workers with a means of escape from toxic and irrespirable atmospheres. Their range extends to units for use in other industries and one particular unit that has been developed specifically to provide emergency breathing protection for forest or bush-fire fighting personnel. This is the Micro-K Forest Fire Chemical Oxygen Self-Rescuer.

It has long been recognized in the underground mining industry that there is a requirement for a means of personal emergency breathing protection for individual workers in the event of a fire or explosion. Because of the confining environment, it is necessary to provide each worker with a device that allows escape to a fresh air environment despite the toxic or irrespirable or smoke laden atmosphere that might occur. For many years workers used a simple belt-worn catalytic device to provide protection against carbon monoxide but this could not provide protection against other toxic gases or inadequate oxygen levels. In recent times there has been a change to self-contained self-rescuers which are largely based upon the use of the chemical potassium super-oxide, or KO_2 . Potassium super-oxide has the property that when

exposed to moisture and carbon dioxide it produces oxygen. This chemical has been used to design a range of self-rescue apparatus that provide the wearer with protection against any irrespirable or toxic atmosphere.

In general when a worker dons a KO_2 based self-rescuer a small cylinder of oxygen is used to initially inflate a breathing bag. As the wearer breaths in and out, clean oxygen enriched air is drawn in from the breathing bag and the expired breathe passes through a canister containing a quantity of KO_2 . Reactions between expired carbon dioxide, water vapour and the KO_2 produce oxygen which replenishes oxygen consumed by the wearer. Because the wearer is only breathing the oxygen-enriched air from the breathing bag, he is protected from any toxic, irrespirable or smoky atmosphere in which he is caught.

The Micro K unit works on the same principle but has dispensed with the oxygen cylinder to inflate the breathing bag. Instead a small valve arrangement is incorporated into the breathing bag to allow some air to be breathed in and to inflate the bag. Once the bag is fully inflated by breathing, the valve closes and the wearer is now completely protected from the surrounding atmosphere. The Micro K generates sufficient oxygen to protect the wearer for a minimum of 6 minutes and has been worn for up to 58 minutes. The weight of the unit is 800g and it is designed to be worn permanently at the belt for immediate access.

There is an obvious use for the Micro-K Forest Fire Chemical Oxygen Self-Rescuer amongst the volunteer and fulltime fire fighting forces involved in bush fire operations. At present, bush fire fighters have no form of emergency breathing protection in the event of being caught in sudden wind changes or surrounded by fire. Firefighters may suddenly face the hazards of reduced oxygen, toxic gases and smoke. Micro-K provides the means of avoiding the effects of oxygen reduction, excess carbon dioxide, carbon monoxide, other toxic gases, and smoke and reduces the risk of panic or disorientation. It gives firefighters valuable time to escape a life-threatening situation.

Micro-K has been shown to a number of members of regional bushfire brigades in Queensland and has always received favourable responses. However, universally this response has been tempered by the advise that the decision to equip firefighters with the Micro-K would only be made at the state level. SkillPro is making this submission to bring the potential of the Micro-K to the attention of the parliamentary committee in an attempt to open up the channels of communication on a vitally important item of personal protection equipment.

A copy of the Micro-K brochure is attached to this document.

Yours faithfully

David Humphreys
Principal Consultant and Company Director
Phone 07 3272 4221
Mobile 0417 221 698

LAST RESORT
MICRO - K




COMMEINHES

COMMEINHES-REMCO Bacon division respiration
13, rue de la perdrix 95 943 Roissy CDG CEDEX / France
Tel : 0033 (0)1 49 90 71 00 Fax : 0033 (0)1 49 90 71 49


GROUPE BACOU

LAST RESORT

MICRO-K FOREST FIRE CHEMICAL OXYGEN SELF-RESCUER

For the first time ever, an apparatus designed for evacuation during forest fires has been developed with and for fire-fighters to ensure respiratory protection adapted to this type of mission.

Most of the time, rapid accumulation of smoke because of wind of variable strength and direction, heat and the lack of oxygen can cause serious intoxications and also panic or disorientation. By using MICRO-K and therefore breathing "pure" air, the wearer will be isolated and will be able to move to an area of safety.

MICRO-K, certified and recognised after numerous missions under real conditions, is a single-use chemical oxygen isolating apparatus and comprises a KO₂ (potassium dioxide) cartridge mounted on a respiratory bag and a half-mask which adapts perfectly to all types of faces.

As soon as it is opened, MICRO-K generates sufficient pure oxygen to ensure an autonomy of 6 minutes depending on the conditions of use (respiratory rate, level of effort, etc.). To preserve its performance characteristics, MICRO-K is vacuum-packed in an aluminised bag.

Contained in a holder, MICRO-K is compact (800 g) and can be worn permanently at the belt without any problem. Thus always ready for use, MICRO-K is the last resort when the environment suddenly becomes unbreathable.

MICRO-K presents the advantage of being very easy to use. The holder is equipped with a quick-release flap, the aluminised vacuum bag tears very easily thanks to a tear tab on the upper part, and the half-mask is equipped with a quick-adjustment strap which can be directly fitted over the wearer's helmet.

MICRO-K requires no maintenance operation. It is simply necessary to check periodically that the aluminised bag is still under vacuum and correctly sealed. MICRO-K is designed to have a service life of 4 years in its original packaging. There is also a training MICRO-K to be used for training users under very realistic conditions.



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