



Current Oxygen Resources



- Oxygen cylinders
 - ❖ High output but cumbersome
 - ❖ May present an explosion and projectile risk
- LOX
 - ❖ High output but bulky, off-gasses, and risk of burns and spills
- Concentrators
 - ❖ Bulky, limited output, requires electricity to operate



O2PAK – Portable Oxygen Generator

Pure oxygen...in seconds.

The O2PAK™ Emergency Oxygen System



- **Usage:** One time
- **Duration:** 22 minutes and greater
- **Weight:** 3 lbs (1.36 kg)
- **Length:** 9.8 in (2.6 cm)
- **Shelf Life:** 10 Years
- **Certification:** FDA 510(k)
- **Patented:** 2012

Product Features

- Single-use oxygen source for the **battlefield and remote locations**
- **Safe to use** in extreme situations (non-explosive)
- **Easy and quick to activate** under challenging, stressful conditions. Flow indicator shows user Oxygen is flowing.
- **Always ready** (zero maintenance up to 10 years)
- **Rugged, handheld, compact and light weight** (under 3 lbs.)
- **FDA 510(k) Approved**



Designed to operate in austere and extreme Environments



Extreme Heat



Extreme Cold



High Altitude (up to 40,000 ft)



High Humidity

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MAIN CHARACTERISTICS

TYPE	Solid State Chemical
	Medically pure oxygen (<i>USP99% - odorless - colorless</i>)
DURATION	22 minutes minimum guaranteed. Longer durations recorded. Longer duration units in development.
FLOW CHARACTERISTICS	
<i>Flow rates</i>	8-4 LPM for 22 minutes minimum. See flow / duration profiles
<i>Oxygen availability</i>	Within 4 seconds of actuation
CAPACITY	90 liters minimum
PRESSURE	3 psig max. during operation 30 psig max. during initial surge
	Pressure relief at approximately 25-35 psi
GAS TEMPERATURE	maximum 6° C above ambient
ORIENTATION	Works any position (<i>vertical, horizontal</i>)
SHELF LIFE	10 Years
MAINTENANCE	No battery, no electricity, no filling, no mixing (No Maintanance)



*The most compact non-explosive oxygen source
Available to the market for emergency use by trained military medical personnel*

SOME OF THE TESTS PERFORMED

REPRESENTATIVE OF FIELD CONDITIONS

All tests confirmed that the O2PAK does NOT explode under severe conditions



SOAK TEST



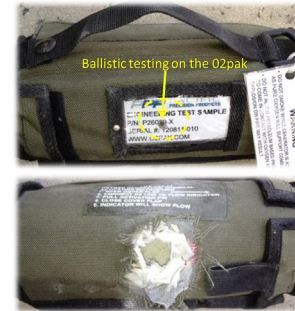
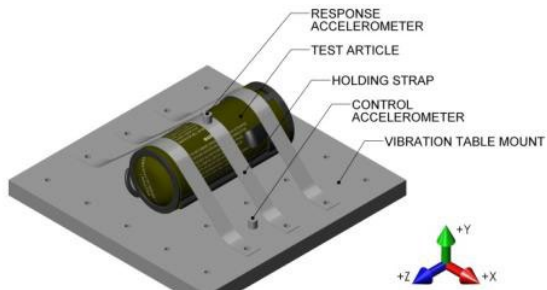
BLAST TEST



BULLET TEST



BURN TEST



Vibration and shock Test



Land Mine



Snow/ Cold



IED Explosion



Evaluation of Chemical Oxygen Generators

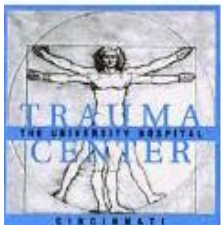
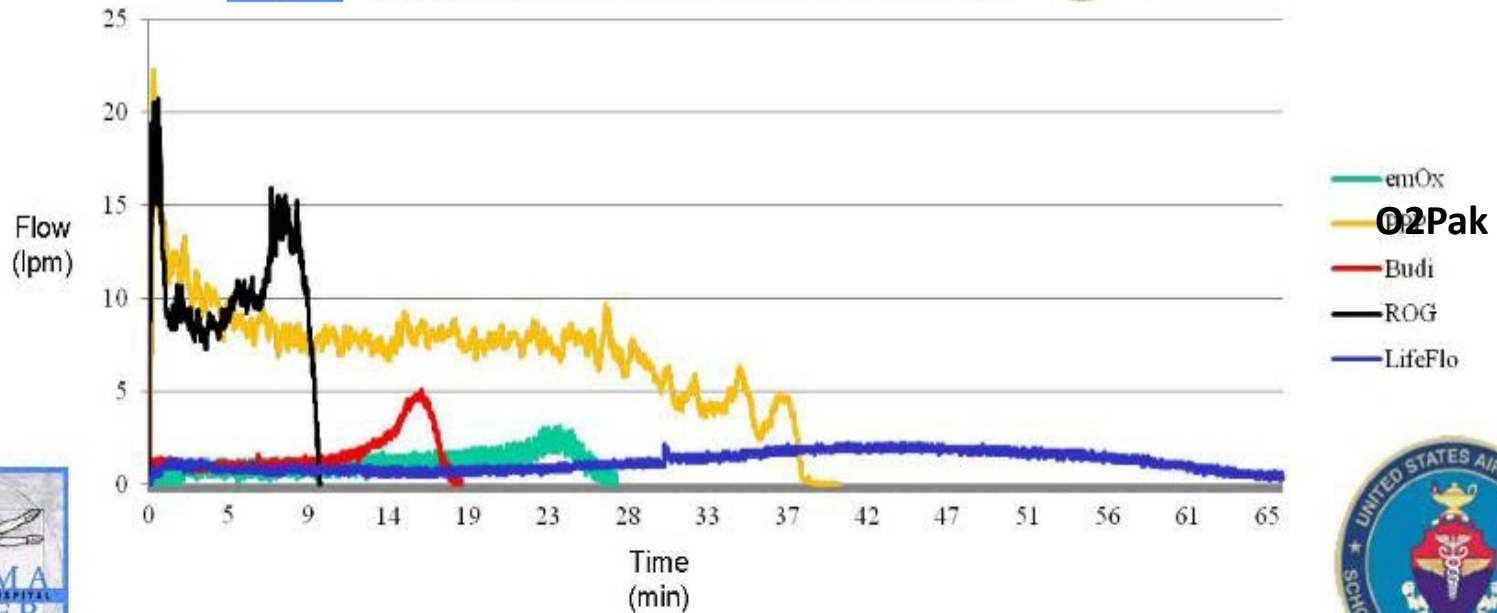


The Center for Sustainment of Trauma and Readiness Skills Institute of Military Medicine University of Cincinnati

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Distribution A: Approved for public release; distribution is unlimited. Case Number: 88ABW-2012-4366, 8 Aug 2012



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FAQ - FREQUENTLY ASKED QUESTIONS

Where do I find the expiration date?

On the label of the O2PAK (10 Years from Production Date)

Does it make a difference which pin I pull out first?

NO (*but both pins need to be removed*)

What happens if I remove only 1 pin?

The flow will not start until Both pins have been removed
(*2nd pin guarantees O2PAK will not actuate inadvertently*)

How do I know the unit is activated?

Visual indicator on the delivery hose spinning

Can pressure build up if the port is blocked?

NO (*there is a relief valve*)

Is it possible to stop the flow?

NO (*trying to putt a pin back will not stop the flow*)

Is it possible to regulate the flow?

NO the flow is pre-determined

Can the O2PAK be used with ventilators (10-15LPM)?

Not unless user combines multiple O2PAK to reach flow

Will the O2PAK explode if a bullet goes through?

NO, the O2PAK will not explode

What are the O2PAK storage temperatures?

Optimal : +50°F to +95°F (+10°C to +35°C)
Full range: -40°F to 158°F (-40°C to +70°C)

What are the O2PAK operating temperatures?

Optimal : +35°F to +95°F (+2°C to 35°C)
Full range: -4°F to 155°F (-20°C to 68°C)

Is a mask supplied with the O2PAK?

NO, the O2PAK is an oxygen source only.

The O2 pack supply hose will interface with standard medical *oral-nasal* Cannulas and Masks



Stowage in Ground vehicles, rotorcraft, Fixed wing or Medical packs.



	1	2	3	4
Flow (LPM)	2	4	6	10
Duration (Min)	60	30	20	12

Longer duration generator. Up to 60 minute durations as an alternate to using 2 O2Paks. Interested customers to advise of interest.

US Military Customers:

Fort Campbell/Blanchfield Army Hospital – 101st Airborne/ISMA

Fort Bragg - USSOCOM

Pope Airfield - USSOCOM

NAVSOC Coronado - NSWG1 LOGSUP MED SUPPLY

Fort Eustis – JBLE Training

Cannon AFB – 27th SOW AFSOC

Developing Interest:

Fort Benning/75th Rangers

Fort Carson/10th SF

Other Customers:

United Nations

GIGN – France

POLICE FEDERALE – Belgium

FRESTEMS OY (Police) – Finland

Chicago SWAT

NATO Allies Interest:

UNOps

Israel - IDF

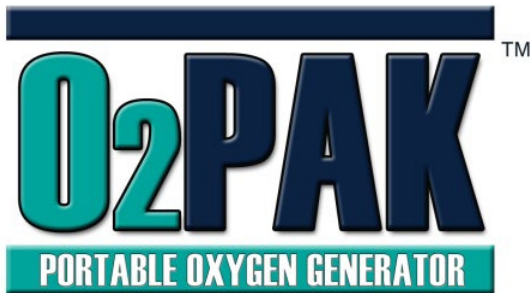
Japan – JMOD

Hong Kong – SWAT Training

UK - Special Forces

Australian Police

Questions?



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