July 2024

** MACY PAN (the manufacturer) has not responded to specific questions regarding the actual dosage of Oxygen at the mask whilst an occupant is at pressure.

From: OXYMED Australia <info@oxymed.com.au>
Sent: Tuesday, July 23, 2024 12:28 PM
To: MACY PAN CHAMBERS Hyperbaric oxygen chamber <xuyun@macy-pan.com>
Subject: RE: MACY PAN Oxygen levels
Hi Sunny,
There are a number of clinics across Australia, providing Macy Pan 2.0ATA, advertising that your chambers are "medical grade".
What is the O2 levels at the mask when using a O2 concentrator operating at 0.3bar (30kpa) whilst a patient at pressure (2ATA).
What are the CO2 levels?
Mal

From: Hyperbaric oxygen chamber <xuyun@macy-pan.com>
Sent: Tuesday, July 23, 2024 11:56 AM
To: OXYMED Australia <info@oxymed.com.au>
Subject: Re: MACY PAN Oxygen levels

Hello Mr. Hooper
Thank you for your reply.
Our hyperbaric oxygen chamber is not registered with TGA, so it should not be sold in Australia.
Can you also buy a 2ata hyperbaric oxygen chamber without TGA?

From: OXYMED Australia <info@oxymed.com.au>
Send time: Tuesday, July 23, 2024 08:43 AM
To: Sunny Xu: <xuyun@macy-pan.com>
Cc: Peter Eng <drpetereng@gmail.com>
Subject: MACY PAN Oxygen levels

Hi Sunny,
Can you please assist our inquiry.
Are the Macy Pan chambers registered with the TGA (ARTG)?
The Macy Pan Oxygen concentrators operate between 30 to 50 kpa and, provide a maximum flow rate at 10LPM.
Of course, the higher the flow rate the lower is the actual concentration of Oxygen.

According to ASME and PVHO standards, the Oxygen delivery is to be at a minimum of 4 bar (400kpa) **delivery pressure** to the chamber.
Recommendations also include flow rates to the patient, between 20-25LPM whilst a patient is at depth.
Australian Worksafe have recently stated that that the Oxygen delivery to a chamber at 2 ATA, should ideally be at between 6-8 bar.

If the O2 concentrator is providing 10LPM and operating maximally between 30-50kpa (0.3-0.5bar). What is the percentage of Oxygen delivered at the mask whilst a patient is at 2 ATA inside the Macy Pan chamber?

How does the Oxygen concentrator push the Oxygen into a chamber at 100kpa (1 bar depth) not withstanding inadequate flow rates?
Have you measured the O2 level at the mask when the patient is at 2 ATA?

What is the level of CO2 inside the chamber over a time duration, as the Macy Pan chamber does not provide BIBS system.

Obviously, our concerns include the potential of gas re-breathing as the patient is exhaling directly into the chamber ambient.

Can you please provide this testing evidence.

From: notifications=cliniko.com@mg.cliniko.com <notifications=cliniko.com@mg.cliniko.com>
On Behalf Of OXYMED (via Cliniko)
Sent: Thursday, July 11, 2024 2:18 PM
Subject: Are all HBOT chambers the same? WHAT ABOUT MACY PAN, SOFT INFLATABLE, AIR POD & ALUMINIUM CHAMBERS?

Virtually ALL "wellness" Hyperbaric Oxygen chambers do NOT meet ASME or PVHO codes.

- *The American Society of Mechanical Engineers (ASME) provides the minimum requirements for designing, fabricating, inspecting, testing, and certifying pressure vessels. A standard for construction of clinical hyperbaric chambers is ASME's Pressure Vessels for Human Occupancy (PVHO-1) or an international equivalent.*

Australian Hyperbaric Oxygen Therapy Chambers that meet ASME and PVHO codes include **Sechrist, Perry, HYOX, HTA (Hyperbaric Technologies Australia).** HTA chambers are used at OXYMED.

TIERED SYSTEM - SCOPE OF PRACTISE
New Orleans 11th Annual International Symposium for Hyperbaric Medicine (2017)
Hyperbaric Oxygen Therapy Scope of Practice - Tiered System (HOOPER)

TIER 1 (NON MEDICAL)
Include soft, mild and aluminum constructed chambers.
Tier 1 are **low pressure applications** ie 1.3 - 1.5 ATA.

- 1.3 ATA is equivalent to **30 kpa** equal to **0.3 bar**
- 1.5 ATA is equivalent to **50 kpa** equal to **0.5 bar**

Most Tier 1 chambers across Australia are using only **pressurised air** i.e. **no additional oxygen.**

AirPod Wellness.
Air Pod chambers are very professional looking, however totally inadequate to the claims being promoted. **Air pod is pressured to 1.3 ATA and delivers "only air".**

Interestingly, the majority of treatment benefits being promoted by the growing number of 'wellness' providers are in fact **Tier 2 and Tier 3 benefits** and not at Tier 1 pressures including **cytokine modulation and stem cell activation.**

Medical conditions require Tier 2 pressure protocols.

Many Tier 1 chambers attach an Oxygen concentrator (5-10LPM) similar to the **Macy Pan** pictured above. These Oxygen concentrators operate at a maximum pressure of **30-50kpa with a minimal flow rate between 5-10LPM.**

HOWEVER this flow is inadequate when one measures the actual "dose" of Oxygen being delivered at the **"mask" of the patient** at pressure.

What is ATA?
ATA refers to the total pressure on the human frame - we live at sea level pressure i.e. 1 ATA.

Inside a hyperbaric chamber pressurised to 1 bar or 100kpa means the occupant is at **10m of depth** (33 feet of sea water pressure). The "absolute" pressure on the individual is both **sea level pressure + inside the chamber pressure** ie 1 + 1 = 2.0 ATA.

MEDICAL TIER 2 chambers operate typically at 2.0 ATA, using 100% medical grade Oxygen with flow rates typically between 20-25LPM.
The Oxygen delivered to the chamber is at 4.0 bar (400kpa).

Medical HBOT require a BIBS system (PVHO approved - Built In Breathing System). The BIBS system is what is used in all hospitals and medical clinics providing proper HBOT. The Oxygen is delivered to the patient via "medical grade" hosing and connections. The exhaled from the patient is extracted by a separate hose and eliminated outside of the chamber.

Chambers using a soft mask with single hose is not a BIBS system.
The occupant is breathing exhaled gas back into the chamber. This is referred to as "re-breathing gases" i.e. CO2 and not preferred and potentially dangerous depending on the patients condition.

Macy Pan, Oxygen concentrator operating at 30 or 50 kpa **does not have the "push" to deliver any meaningful Oxygen flow to the occupant at 2.0 ATA (100kpa or 1 bar).**

According to **ASME and PVHO standards**, the Oxygen delivery MUST be a **minimum of 4 bar (400kpa) delivery pressure to the chamber.**

According to Australian Worksafe, the Oxygen delivery ideally should be at between **6-8 bar.** Of course, this is a TIER 3 (Hospital) standard where patients are being treated at greater depth i.e. decompression illness.

So what is the actual Oxygen at the mask in a Tier 2 chamber using 100% O2 delivered at 4 bar?
Answer: Approximately 98-99%.

What is the delivery of Oxygen at the mask in a Macy Pan chamber at 2 ATA?
Answer - **possibly air only** as the Oxygen concentrator operating maximally between 30-50kpa cannot push the Oxygen into a chamber at 100kpa (1 bar depth). Notwithstanding rebreathing of gases.

MALCOLM R. HOOPER
Speaker, Author, Clinical Director & Researcher OXYMED Australia.

Past International Executive Director, Hyperbaric Medicine International (HMI).
International Executive Director, International Hyperbaric Medical Foundation (IHMF)
OXYMED Australia, 643 Chapel Street South Yarra Victoria 3141. T +61 3 9826 9898 | M +61 4000 44955