
Safety Advice No. 20

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Medical Oxygen and Medical Air Cylinders Used in Mines, Refuge Shelters and with Self Contained Breathing Apparatus (SCBA)

ANZIGA

ANZIGA is the peak industry group for the manufacture and distribution of gases in Australia and New Zealand. As a leading industry association, ANZIGA promotes the highest standards of safety, quality and reliability.

ANZIGA aims to:

- consult with government authorities and organisations that make policy or prepare regulations and standards which govern the production, transportation, storage, handling and use of gases.
- collaborate with other industry and trade organisations on safety and technical matters, including public programs that relate to the gases industry.
- produce information that promotes the safe storage, handling and use of gases.

The members of ANZIGA produce and distribute gases for the health and medical industries, manufacturing, food, scientific and hospitality industries.

Notice of Safety Advice

In general a notice of Safety Advice is intended to provide information and relevant recommendations on a safety concern relating to the production, transportation, storage, handling and use of gases.

Removal of Medical Oxygen & Medical Air Cylinders Used in Mines, Refuge Shelters and with SCBA

This Safety Advice addresses concerns relating to the use of medical oxygen and medical air cylinders in mines, refuge shelters and with SCBA for use other than medical or resuscitation purposes. For such uses, Dry Breathing Air and Dry Breathing Oxygen are the correct gas grades to be used.

Safety Concern

The Australia wide gas industry roll out of the pin indexed medical oxygen valve change (AS 2473.3) and medical cylinder colour change (AS 4484) has highlighted to the Healthcare sector of the Medical Gas industry that medical oxygen and medical air cylinders are being used in environments and applications other than those for medical purposes. Dry Breathing Air and Dry Breathing Oxygen are the correct gas grades for non medical related applications. Such applications include refuge shelters with SCBA in the mining industry.

In the provision of medical gases to the Healthcare sector, patient safety is the paramount concern. The use of medical oxygen and medical air cylinders in inappropriate environments may compromise the ability of the medical gas industry to guarantee the delivery of a suitable quality product and a package “fit for patient use”.

Some of these concerns include, but are not limited to:

- Contaminant ingress into valve parts by fine particulate matter, fluid or other compounds.
- An industrial environment where external contamination by oils, grease and other compounds not normally located in clean healthcare environments.
- Cylinders left unused for long periods of time in an unclean environment may impede future operations of valves with minimum pressure retention devices.
- Cylinders left in aggressive environments may contribute to parts seizure, contamination ingress and corrosion.
- Standards relevant to respiratory protective equipment (referenced below) were reviewed. Each of these standards specifies Dry Breathing Oxygen or Dry Breathing Air for use in these activities instead of medical grade product.
- The moisture content in medical grade oxygen and air is not controlled to a level specified for dry breathing oxygen and air increasing the risk of equipment seizure or freezing.
- Manifoldded gases do not have monitored alarm systems or compliant medical gas manifolds.

Advantages of Dry Breathing Oxygen and Dry Breathing Air for Use in Mines, Refuge Shelters and with SCBA

- Compliance with AS/NZS1715 with regard to the correct gas grade to be used with SCBAs and refuge shelters, and AS/NZS1716 with regard to the proper outlet connection.
- No requirement to upgrade manifolds to comply with AS2896.
- No requirement to clean and paint cylinders to the new medical cylinder colour scheme in compliance with AS4484.
- No requirement to upgrade cylinders valves to pin index valves to comply with AS 2473.3 for SCBA units or fit yoke connections to the units.
- No requirement to fit medical gas outlets in refuge shelters to comply with AS2896.

ANZIGA recommends the use of Dry Breathing Air and Dry Breathing Oxygen for use in mines, refuge shelters and with SCBA. Medical oxygen and medical air cylinders must only be used for medical treatment or resuscitation purposes. If further clarification is required regarding the use of Medical Oxygen or Medical Air for anything other than medical treatment, contact your Gas Supplier.

References

AS/NZS 1715 – *Selection, use and maintenance of respiratory protective equipment.*

AS/NZS 1716 – *Respiratory protective devices.*

AS 3848.2 – *Filling of portable gas cylinders Part 2: Filling of portable cylinders for self-contained underwater breathing apparatus (SCUBA and non-underwater self-contained breathing apparatus (SCBA) – Safe procedures.*

AS 2473.3 - *Valves for compressed gas cylinders Part 3: Outlet connections for medical gases (including pin-indexed yoke connections.*

AS 2896 - *Medical gas systems – installation and testing of non-flammable medical gas pipeline systems.*

AS 4484 – *Gas Cylinders for industrial, scientific, medical and refrigerant use – Labelling and colour coding.*

Yours sincerely,

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