

Safety Advice No. 12

Equipment used in Breathing Gas Systems

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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.

Equipment used in breathing gas systems

This notice of Safety Advice addresses a safety concern relating to equipment used in breathing gas systems.

Safety concern

A breathing gas system with an oxygen content of 25% by volume or above, and at a pressure above 30 bar (3,000 kPa) may be hazardous if the system contains halogenated polymers. This is due to the potential for the release of toxic fumes, should these halogenated polymers ignite when in direct contact with the gas flow.

Halogenated polymers include such common products as Teflon®, Kevlar®, Viton® and PVC.

Breathing gas systems may contain components manufactured from halogenated polymers in valves, regulators and hoses. However, such materials have been found to be unsuitable for use in these gas systems because of the risk outlined above.

A publication by the European Industrial Gas Association provides technical information regarding this safety concern.

- **IGC 73/00/E** – *High Pressure Breathing Gas Systems Toxicity Risks of Using Non Metallic Materials*

This publication is freely available on the EIGA website www.eiga.org.

Recommendation

This recommendation applies to components of a breathing gas system with an oxygen content of 25% by volume or above, and operating at a pressure above 30 bar (3,000 kPa). Such components include valves, regulators and manifolds.

This recommendation does not apply to low pressure components of a breathing gas system, such as breathing masks, tubing and canulas.

Breathing gas systems should be investigated to identify whether they include components containing halogenated polymers.

If breathing gas system components containing halogenated polymers operating at 30 bar or above are present, their suitability must be assessed to ensure that their continued use will not pose a safety risk.

ANZIGA recommends owners or operators of breathing gas systems should contact their supplier of breathing gases to assess equipment used in breathing gas systems. Information can also be obtained from your equipment installer or maintenance contractor.

Yours sincerely,

The Australia New Zealand Industrial Gas Association

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