Technical and Safety information for Customers of BOC

Handling Liquid Nitrogen

Liquid Nitrogen is widely used as a source of refrigerant. It is typically stored in vacuum insulated vessels (dewers, liquid cylinders etc.).

Liquid Nitrogen must be handled with great care because of two of its properties:

It is cryogenic liquid at a temperature of about -196 deg C which can cause severe cold burn;

When vaporised to gaseous nitrogen, it is an asphyxiant which is colourless, odourless and tasteless.

Personal protective equipment is vital when handling liquid nitrogen:

* Wear suitable gloves
* Wear suitable eye and face protection
* Wear suitable foot protection
* Use an oxygen monitor if working in a confined or poorly ventilated space.

*Key Message: Don’t take risks. If in doubt, stop and seek advice.*

PFTE Tape and Oxygen Service

PTFE tape is used in a variety of applications for sealing gas and liquid pipework, and is available in various grades, differing in purity, thickness and width. Some grades of tape contain a large proportion of material other than PTFE, and may be lubricated with hydrocarbon based oils and greases. If these grades of tape come in contact with high pressure oxygen there is a chance that an ignition will occur with the risk of injury to the operator and damage to equipment.

Pure PTFE tape can be, and is, used for sealing components in oxygen service provided it is lubricant-free. Even then it should be applied with care by experienced personnel to ensure that loose strands are not exposed to high velocity gas streams. Thus, oxygen cylinders and regulators prepared by or for BOC do have PTFE tape on them but only for certain applications and used only in accordance with strictly controlled procedures.

Because of the possibility of ignition if a low grade of PTFE tape is used or if tape is incorrectly applied, BOC does not recommend its use by customers for oxygen service. In particular, the practice of using PTFE tape to form a seal between the oxygen cylinder valve outlet and regulator can be especially high risk. If you experience difficulty in producing an effective seal without the use of PTFE tape, the surfaces of the valve outlet and regulator bullnose should be examined for damage and then refer any problems to the supply branch or Gas & Gear centre.

Storage of Entonox

Entonox is a 50/50 mixture of medical oxygen and nitrous oxide widely used as an analgesic in obstetrics and accident and emergency situations. If Entonox is stored incorrectly there is a danger that it may separate into oxygen and nitrous oxide.

Please follow these guidelines:

Cylinders should be protected from the cold and not stored in the open;

Where possible, cylinders should be stored horizontally, preferably at a temperature above 10 degree celsius for 24 hours before use;

Alternatively, the cylinder should be placed in warm water for five minutes and then completely inverted 3 times.

Gas Equipment Safety Checks

Onsite inspection by a fully qualified inspector. Thorough functional and leak tests of regulators, flashback arrestors, hoses, torches and associated fittings. Full report of findings. Certificate of compliance. Update on current Health and Safety and BCGA Codes of Practice. Competitive rates on replacement parts.

Gas welding and cutting equipment must be checked regularly.

The British Compressed Gases Association (BCGA’s) Code of Practice 7 (CP7) (the safe use of oxy-fuel gas equipment) and Guidance Notes 7 (GN7) (the safe use of individual portable or mobile cylinder gas supply equipment) recommends that regulators and flashback arrestors be checked annually and replaced every five years.

Checks need to be undertaken by a person who has sufficient practical experience of oxy-fuel gas equipment and theoretical knowledge of the functioning of the equipment, the properties of gases used, the potential defects and hazards that may occur and their importance to the integrity and safety of the equipment.

BOC CP7 checks are available and are performed by a qualified BOC Industrial Inspector (certified by Btec). The inspection includes:

A thorough functionality and leak test of all components – regulators flashback arrestors, hoses, torches and associated fittings;

A full report of the inspector’s findings and Certificate of Compliance.

*Please Note:*

*Gas equipment can be a hazard at work if it is not maintained properly. Using unsafe equipment or failing to test equipment fully could result in accidents and serious injury in the workplace.*

*Under Section Safety, Health and Welfare at Work Act 2005, an employer or self-employed person has a responsibility to provide and maintain plant and systems of work that are, so far as reasonably practical, safe and without risk to health.*

*Under Safety and Welfare at Work General Applications (Amendment) 2007: Require the user of an installed system and the user of a Mobile system to ensure that the system is properly maintained in good repair so as to prevent danger. Statutory Instrument 2000 No 128: The Pressure Systems Safety Regulations 2000 requires equipment to be examiner regularly.*