

Independent & Cost-Effective Gas Safety Solutions

PREPARED BY: DAVID BAYLISS, TECHNICAL MANAGER
DATE: 18.06.06. Rev No: 03



1. Welcome to the Summer 2006 edition of our Client Update. Firstly, I would like to offer my apologies for not being able to get the Spring edition of our Update issued; we will, no doubt, recycle its content into future Updates. However, with the recent spell of warm weather it seemed that some lighter fare might prove palatable.

2. Given our interest (& that of some of our clients too) in Heat Stress, I thought that the following story might be of interest...

From metro.co.uk, 23.03.06:

'A drug user boiled to death while wearing a rubber body suit, it was revealed yesterday'

'Robert Garnett, 35, died after his body temperature soared causing his brain to swell while dressed in a 'gimp' suit made famous by the film Pulp Fiction.'

'Test later revealed potentially lethal traces of cocaine & ketamine in his body.'

'Southwark Coroner's Court was told the rubber clothing, combined with the drugs, caused excessive overheating leading to cerebral oedema and respiratory failure.'

'An accidental death verdict was recorded.'

This sad story highlights the potential impact of wearing vapour impermeable clothing on the body's core temperature. Whilst it seems that in this case, the rise in body temperature would have been accelerated by the use of illegal drugs, it is fair to say that if sweat cannot evaporate from the body surface then effective cooling will be severely impaired.

Remember to evaluate the insulation effect of clothing when carrying out Hot Environments assessments and to allow ~+5 ~+6 degree correction to the measured WBGT value if vapour impermeable clothing (e.g. chemical protection suits) are to be worn.

Also, in assessing worker suitability for work in hot environments (age, fitness, acclimatisation, etc.) it is important to bear in mind that a very wide variety of drugs (both legal and illegal) can have adverse effects on the body's ability to maintain a healthy core temperature.

From one extreme to another...

3. Further to our recent report on liquid nitrogen burn injuries, have a look at the photograph on page 2 and see if you can spot the obvious liquid nitrogen handling errors. If you can spot the deliberate(?) mistakes then all's well and good; if you can't then you may be in need of some guidance.

On the subject of liquid nitrogen handling, in particular the use of portable dewars and pouring of the liquid, we have recently added two new products to our range:

PART No. 99-238-323: 2 litre PORTABLE HDPE LIQUID NITROGEN DEWAR @ £155.00 + VAT
PART No. 99-238-324: 4 litre PORTABLE HDPE LIQUID NITROGEN DEWAR @ £189.00 + VAT



PHOTOGRAPH 1. POURING LIQUID NITROGEN!

Both of these [two] new products have a permanently attached carrying handle, integral pouring lip and recess in the base for ease of pouring and tipping and lid which secures to the flask via a keyway arrangement.

4. Given the item above, it may be timely to consider a refresher on cylinder handling too?!



Before attempting to handle or move any cylinder, remember to check that the cylinder is in good condition....
...and that your manual handling technique (lifting, carrying, churning, etc.) is appropriate to vessel size, weight and the working conditions...



For more information on any of the subjects in this months Update, please contact: David Bayliss (e-mail: david@bj-industries.co.uk, telephone: 01909 501771)

Gas Safety UK supply the following services/goods:

1. Safety training for those who use, handle or store cylinder gases or cryogenic liquid gases like liquid nitrogen.

2. A comprehensive range of gas regulators and associated safety devices.

3. The installation of gas cylinder manifolds and pipeline systems.

4. The testing & inspection of pressure regulators, manifolds (including the safety devices) and pipelines.

5. The planned or remedial maintenance of gas cylinder manifolds and pipeline systems.

6. Consultancy, reporting and site safety survey services relating to the above areas.

Independent & Cost-Effective

Gas Safety Solution Provider

And finally -

Over the last few weeks we have had a number of questions regarding the use of regulators with liquid withdrawal carbon dioxide cylinders e.g. in conjunction with freezer cabinets as an emergency back-up of coolant or where the liquid carbon dioxide is to be used as a supercritical solvent.

Please bear in mind that in situations such as these a regulator is NOT required. Generally, these kinds of application require the installation of suitable high pressure hoses (freezers) or small-bore metallic tubing and, where necessary, appropriate isolation valves and safety relief valves or bursting discs.

Conventional carbon dioxide regulators are NOT designed to deal with the liquid phase and liquid entrapment within a such a regulator can lead to internal damage and subsequent regulator failure.

If you are unsure, please ask; there seems to be an amount of mis-information in circulation at the moment.

Above all, please ensure that you do not mis-connect carbon dioxide cylinders; both vapour withdrawal and liquid withdrawal (with the vertical white stripe painted on the side of the cylinder) have identical valve outlet connections (BS 341 No. 8).

Have a wonderful and wonderfully safe summer

Best regards, David.

