

## Users of Cryogenic Gases and Equipment

Personnel using cryogenic gases and equipment require information on the safe use of the gases and equipment in line with current H & S guidelines and Codes of Practice.

## Cryogenic Gas User Safety Course

Interactive course on cryogenic gases and equipment with topics including:

- Legislation
- Risk Assessment
- Gas properties
- Carbon dioxide & dry ice
- Embrittlement
- PPE
- Pressurised vessels
- Dewars
- Ice plugs
- Enclosed spaces
- Oxygen enrichment & deficiency
- Cryogenic spillage & emergency actions

Multiple choice questions are held throughout with a final test requiring 75% pass rate.

## Onsite practical – 1 hour session in groups of no more than 6 persons

The trainer will demonstrate decanting procedures from a pressurised vessel (less than 1,000 litres) to a dewar and invite learners to practice, to ensure compliance with safe procedures and practice.

(When taken following e-Learning, includes question and answer session which will require an additional 30 minutes per session.)

## Certification

Learners successfully completing both theory and practical course:

- Certificate of Achievement
- Gas Safety Passport Card

Certification is valid for 3 years after which refresher instruction is recommended.

Where e-learning or webinar takes place without practical session:

- Certificate of Achievement (pdf emailed on completion)



Delivery Options	Price (VAT at standard rate applicable)	Duration	Max no. of learners
Onsite classroom & up to 2 practical sessions	£995 + £85 per learner	Classroom session 3 hour Practical sessions 1 hour	12
e-Learning	£55 per learner	1.5 hours	Unlimited
Real-time Webinar	£595 + £55 per learner	3.5 hours	24
Onsite practical day (following e-Learning or webinar)	£995 + £30 per learner	up to 4 @ 1.5 hour practical sessions	24

## Onsite Training Facilities Required

- Suitable training room equipped with screen or monitor & electrical supply
- Access to decanting area with vessel and dewars

To participate in liquid nitrogen practical decanting learners must wear PPE according to local site conditions, the minimum being appropriate shoes, thermal gloves and face/eye protection, no bare arms or legs.



## Learning Objectives

At the end of the training all learners will:

1. Understand the effects of Oxygen deficient and enriched atmospheres, with particular reference to confined spaces
2. Understand the manufacture and filling processes of Cryogenic gases
3. Have a detailed knowledge of the hazards and properties of Cryogenics
4. Understand the hazards of cold burns, hypothermia and frostbite and the initial First-Aid treatment applicable in each case
5. Know the importance of Oxygen monitoring systems and understand their use
6. Understand the behaviour of Cryogenics during filling and transfer operations
7. Understand the reasons for the formation of Oxygen enriched atmospheres round transfer hoses and pipelines
8. Understand the hazards associated with the spillage of Cryogenic liquids and how to assess the correct actions to take
9. Know the definition and hazards of pressure, and its relevance to dewar and vessel construction with special reference to safety relief devices
10. Know how ice plugs are formed and the hazards posed by them
11. Know the hazards associated with the transport of Cryogenic vessels in lifts
12. Know the correct Personal Protective Equipment to wear
13. Be able to undertake a Before-Use safety assessment of their work area