

**Safety and Environmental**

**Protection Service**

**CRYO 01: Introduction to Cryogenic Safety**

**Course Overview**

This short course is designed to provide an introduction to the hazards associated with cryogenic solids and liquids and what safety measure can be introduced to manage the risk associated with these substances. The course is for those who have responsibility for areas where cryogenic substances are stored, decanted or handled. It is not intended to provide a comprehensive overview of every aspect of cryogenic safety but concentrates on covering the key points with a focus on liquid nitrogen as one of the most the most common cryogenic substances used at the university of Glasgow.

The course begins with a review of the physical and chemical properties of liquid nitrogen covering the most common uses in the university and some of the more obscure places in which it can be found. Having established what cryogenic substances are used for we will then discuss the hazards associated with them ranging from the extreme cold temperatures it provides through to the effect it has on equipment and other materials.

The course then moves on to cover storage facilities for cryogenic substances and the containers in which it is generally stored and transported throughout the campus. We will discuss how the design of storage facilities using examples of both good and bad practices and the safety systems that are required to manage cryogenic substances safely. Using real world incidents to illustrate the dangers associated with liquefied asphyxiant gases we will also discuss emergency procedures and first aid measures to ensure that users have an understanding of what to do in the event of a leak, major release or other unforeseen event.

Where practical, the session ends with a short practical exercise using a local liquid nitrogen dispensing / storage facility to allow delegates to refresh their practical skills and see the systems and equipment discussed earlier first hand. To facilitate this, we request the use of a local decanting facility and the services of a staff member who is familiar with the facility. The course generally lasts for between 2 and 2.5h depending on the availability of a suitable area for the practical session.

**Learning Outcomes**

* Physical and chemical properties of cryogenic liquids
* Common uses of cryogenic liquids
* Hazards associated with cryogenic liquids
* Safe handling and decanting
* Transporting cryogenic substances
* Design and management of storage areas
* Safety equipment (including PPE selection)
* Emergency procedures

**Who Should Attend?**

This course is intended for new and existing users of cryogenic solids and liquids in particular those who have management responsibility for storage areas or are involved in transport or decanting of cryogenic liquids. The course is open to academic staff, support / technical staff and postgraduate students. This course assumes no prior experience of working with liquid nitrogen and basic skills and knowledge will be covered during the session.

**To book your place, please use the CoreHR system or send an e-mail to** **safety@glasgow.ac.uk** **including your name, school / department and staff number. If the upcoming dates aren’t suitable you can ask to be put on the waiting list for future courses and you will be contacted when another date becomes available.**