

INTRODUCTION

Recently a staff member received cryogenic burns to their chest and abdomen whilst working with liquid nitrogen. The liquid nitrogen tipped down in the inside of their laboratory coat whilst loading a one litre flask of liquid nitrogen onto a cold trap platform of an electron microscope.

LEARNINGS

The local area had current risk assessments and standard operating procedures for the storing and handling of liquid nitrogen. The documentation detailed the safety requirements for decanting liquid nitrogen from large tanks/vessels into smaller quantities, such as 25 litre dewars.

Employees in the local area had received specific training and instruction on loading the one litre flask of liquid nitrogen onto a cold trap platform of an electron microscope. Nevertheless there was not a risk assessment or an associated written standard operating procedure for this specific activity.

RECOMMENDATIONS

Following this incident local areas using liquid nitrogen should review their risk assessment(s) and standard operating procedures for liquid nitrogen handling tasks.

This is a timely reminder that risk assessments and procedures should be written for activities that use liquid nitrogen. In these risk assessments particular attention should be given to the:

- location where the liquid nitrogen is decanted ensuring that:
 - the area is well ventilated
 - there is adequate room to undertake the activity
 - personal protective equipment (PPE) is available. For example when decanting liquid nitrogen from large tanks/vessels into smaller quantities, such as 25 litre dewars use cryogenic or sturdy leather gauntlets, a non-woven apron that covers the chest and abdomen and a face shield to wear over safety glasses
- risks associated with the:
 - type and size of the vessels
 - distance and route of travel of the liquid nitrogen
- requirements/changes to PPE that may be required throughout the activity using liquid nitrogen. For example latex double/triple gloving may be required during an activity using small quantities of liquid nitrogen due to the need for dexterity and grip
- location where the activity using liquid nitrogen is undertaken ensuring that the area is suitable such as:
 - adequate lighting
 - appropriate bench height,
 - adequate room to undertake the activity
 - free from distractions
 - there is no through traffic close to the activity

Local first aid procedures should also be reviewed to ensure that adverse incidents using liquid nitrogen, such as cryogenic burns, are taken into consideration.