Respiratory Medicine

Risk Assessment – RMU-RA-011

Risk Assessment: Safe Use of Cold Rooms

Dry ice can pose a number of hazards in the laboratory. These include:

- ✓ Asphyxiation due to the sublimation of carbon dioxide gas into the atmosphere leading to drop in ambient oxygen levels
- ✓ Inhalation of cold vapours which can cause lung damage and asthma attacks in asthma sufferers
- ✓ Cold burns from direct contact with the dry ice or equipment cooled by the material
- ✓ Cold damage to laboratory equipment leading to further hazards
- ✓ It is possible that air temperatures in the proximity of the dry ice may be lower than the general temperature, therefore hypothermia could be a hazard
- ✓ Pressurisation and rupturing of sealed systems
- ✓ The risk of asphyxiation if used or stored in a confined space.

This risk assessment aims to outline the hazards and precautions that must be adhered to when using dry ice.

Carried out by: Samantha Thulborn	Date carried out: April 2014	Review Date: April 2015 Reviewed – No changes made
		Review Date: April 2016

UNIVERSITY OF OXFORD

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Hazard (Cause and consequence)	Affected Group	Existing controls	Risk	Further Action Required
Asphyxiation due to the sublimation of carbon dioxide gas into the atmosphere leading to drop in ambient oxygen levels.	All staff and students working with Dry Ice	- Work in a well-ventilated area, personal O2 monitors are available from DSO.	Medium	Check personal CO2 monitors weekly
Inhalation of cold vapours which can cause lung damage and asthma attacks in asthma sufferers		- Work in a well-ventilated area and avoid breathing vapours and gases	Medium	
Cold burns from direct contact with the dry ice or equipment cooled by the material		Ensure that lab coat, glasses and insulated gloves are worn at all times when using dry ice.	Medium	None
Cold damage to laboratory equipment leading to further hazards		Ensure that the area in which the dry ice is to be used is free from obstruction including electrical cables for equipment.	Medium	None
It is possible that air temperatures in the proximity of the dry ice may be lower than the general temperature, therefore hypothermia could be a hazard		Ensure that users take regular breaks (every 15 mins) whilst using dry ice, move completely away from area	Medium	None
Pressurisation and rupturing of sealed systems		Ensure that dry ice is not stored or left in a sealed or pressurised system. Alwasys allow for the gas CO2 to escape	Medium	None
The risk of asphyxiation if used or stored in a confined space		Work in a well-ventilated area, personal O2 monitors are available from DSO	Medium	None