



This form is to be used in conjunction with the Environment Health and Safety Manual Procedure 3.2 Hazard Identification, Assessment and Control - Application.

## Information of Activity

Activity: Making dry ice\_

Location: \_\_\_Chemistry Store\_\_\_\_\_

Identified by: \_G. Papadopoulos\_\_\_\_\_

Date: \_\_\_\_\_3/7/07\_\_\_\_\_

Identified Hazard / Aspect: Cryogenic burns, noise, asphyxiation

## Risk Analysis matrix – level of risk

Identified Hazards	Risk Assessment			Risk Score	Risk Level
	Exposure (E)	Likelihood (L)	Consequence (C)	E x L x C	
Cryogenic burns (similar to handling boiling water)	6	0.3	2	3.6	M
Asphyxiation-displacement of oxygen	6	0.05	10	3	M
Noise	6	0.3	10	18	H

### Definitions

Exposure	E	Likelihood	L	Consequence	C	Risk Score	Hierarchy of Risk Controls
Continuously	10	Almost Certain	1.0	Catastrophic	20	<b>E</b> >20 <b>H</b> >10 <b>M</b> 3-10	<b>Elimination</b> is a permanent solution and should be attempted in the first instance.
Frequently	6	Likely	0.6	Major	10		<b>Substitution</b> involves replacing the hazard or environmental aspect by one of lower risk.
Occasionally	3	Possible	0.3	Moderate	5		<b>Engineering</b> controls involve physical barriers or structural changes to the environment or process.
Infrequently	2	Unlikely	0.1	Minor	2	<b>L</b> < 3	<b>Administrative</b> controls reduce hazard by altering procedures and providing instructions.
Rarely	1	Rare	0.05	Insignificant	1		<b>Personal protective equipment</b> last resort or temporary control.

### LEGEND

E: extreme/significant risk; immediate action required; must be managed by senior management with a detailed plan, notify RMO immediately.

H: high risk, senior management attention needed, detailed research and management planning at senior levels

M: moderate risk, management responsibility must be specified; manage by specific monitoring or response procedures

L: low risk, manage by routine procedures; unlikely to need specific allocation of resources

## Details of Risk Controls to be Taken

Risk Controls: (These should be determined by both the person(s) identifying the risk and the responsible manager and HSR or Environmental Representative). When determining risk controls refer to Hierarchy of Risk Control. Some examples are operating manuals, safe work procedures, licenses, permits to work, training and instruction etc

New Store personnel should become familiar with the manufacturers instructions and observe an experienced member of staff making dry ice, before attempting to make it for the first time.

Noise measurements show that the peak noise level in the first few seconds of the process can be up to 115dBA at the source (118dBA if both boxes are working simultaneously). This noise level trails off to 86dBA by the end of the process (1min, 15 seconds). There is diminished risk for passers by. The initial noise level is 92dBA and quickly trails off to 63dbA at a distance of two metres.

The equipment is set up in a relatively isolated area of the Store to minimise disruption to other personnel. The area has signage indicating the cylinders must be chained and that hearing protection is required. Do not operate if there is anyone else in the immediate vicinity.



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## RISK ASSESSMENT 3D Model

EHS Manual

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Ear muffs with an attenuation of 28dBA are used. Leather gauntlet gloves to handle the dry ice blocks are provided. Workplace Inspections are conducted and all PPE regularly inspected.

Person assessing the risk: G. Papadopoulos Date: 3/7/07

Authorised by: G. Papadopoulos Planned completion date: 3/7/07

### Risk Control Measures Completed

Actions by: G. Papadopoulos Completed (Initials & date): 3/7/07