

RISK ASSESSMENT DETAILS

RISK ASSESSMENT TITLE

LIQUID NITROGEN

RISK ASSESSMENT COMPLETED BY:	SUBJECT MATTER EXPERT:	RA NUMBER:
Kate Millan – Health & Safety Officer	John Mackrill	CHEM102
VERSION:	VERSION DATE:	REVIEW DATE:
1	09/07/2010	09/07/2011

IMPORTANT NOTES

Liquid Nitrogen is primarily stored in the Liquid Nitrogen Storage Tanks in MLS room G22. It is used in various laboratories in small quantities and is occasionally used on external sites by staff and students.

PERSONS AT RISK

Any person using Liquid Nitrogen, or is in the vicinity of the substance.

REFERENCED DOCUMENTATION: (list any other sources of information that relates to this risk assessment, e.g. SOPs, other Risk Assessments etc)

INFO Sheet – Liquid Nitrogen
 RA (104MBS) – Liquid Nitrogen Storage Tanks & SOP
 RA (109MBS) – Dewar Flasks

OVERALL RISK RATING

Medium

HAZARD IDENTIFICATION & RISK ASSESSMENT (use the Risk Matrix below to assess the risk)

HAZARD 1:

Extreme Cold

ASSOCIATED RISKS:

Severe burns (either direct contact or vapour), soft tissue damage.

MEASURES REQUIRED TO REDUCE RISK:

1. Full face protection/shield, cryo-gloves & Lab Coat must be worn at all times.
2. Training must be undertaken prior to using or coming in contact with Liquid Nitrogen and records are to be kept in the Training Needs Analysis.
3. Liquid Nitrogen room is to be kept locked when not in use.
4. Any tasks that utilise liquid nitrogen must be risk assessed and have an up to date Safe Operating Procedure.

RESIDUAL RISK (When all control measures have been implemented)	CONSEQUENCE	LIKELIHOOD	RISK RATING
	Major	Unlikely	Medium

HAZARD 2:

Pressure

ASSOCIATED RISKS:

Shattering of materials caused by increase of pressure inside containers if oxygen warms slightly. Cuts/abrasions from broken materials.

MEASURES REQUIRED TO REDUCE RISK:

1. Full face protection/shield, cryo-gloves & Lab Coat must be worn at all times.
2. Training must be undertaken prior to using or coming in contact with Liquid Nitrogen and records are to be kept in the Training Needs Analysis.
3. An oxygen monitor should be fitted to storage facilities.
4. Liquid Nitrogen room is to be kept locked when not in use.
5. Only vials/containers with an internal thread must be used.
6. Any tasks that utilise liquid nitrogen must be risk assessed and have an up to date Safe Operating Procedure.

RESIDUAL RISK (When all control measures have been implemented)	CONSEQUENCE	LIKELIHOOD	RISK RATING
	Moderate	Unlikely	Medium

HAZARD 3:			
Oxygen Level			
ASSOCIATED RISKS:			
Asphyxiation – level of oxygen in the atmosphere can decrease rapidly.			
MEASURES REQUIRED TO REDUCE RISK:			
<ol style="list-style-type: none"> 1. Full ventilation of room where Liquid Nitrogen is stored. 2. Training must be undertaken prior to using or coming in contact with Liquid Nitrogen and records are to be kept in the Training Needs Analysis. 3. Liquid nitrogen must be stored in appropriate flasks (e.g. dewar). 4. Lifts will be locked out when transporting more than the recommended amount of Liquid Nitrogen. 5. An oxygen monitor should be fitted to storage facilities. 6. Liquid Nitrogen storage area should be locked when not in use. 7. Any tasks that utilise liquid nitrogen must be risk assessed and have an up to date Safe Operating Procedure. 			
RESIDUAL RISK (When all control measures have been implemented)	CONSEQUENCE	LIKELIHOOD	RISK RATING
	Severe	Rare	Medium
ADDITIONAL CONTROLS AFTER REVIEW			
RISK CONTROL:			
DATE OF REVIEW:		REVIEWED BY:	
RISK CONTROL:			
DATE OF REVIEW:		REVIEWED BY:	
RISK CONTROL:			
DATE OF REVIEW:		REVIEWED BY:	
HAZARD REGISTER			
If the residual risk is high or very-high after controls have been implemented, the risk assessment must be signed off by the Head of School and transferred to the Hazard Register.			
DATE ENTERED ON HAZARD REGISTER:		HEAD OF SCHOOL SIGNATURE:	
30/06/2009			
RISK MATRIX			

Consequence

		Negligible	Minor	Moderate	Major	Severe
Likelihood	Almost Certain	M	H	V	V	V
	Likely	M	M	H	V	V
	Slight	L	M	H	H	V
	Unlikely	L	L	M	M	H
	Rare	L	L	L	M	M

Almost Certain	There is an expectation that such an event will occur.	Severe	Injury resulting in death or permanent disability.
Likely	There is an expectation that such an event could occur but not certain to occur.	Major	Injury requires extensive medical treatment, hospitalisation.
Slight	The expectation of this event occurring is between "could" and "improbable".	Moderate	Injury requires formal medical treatment e.g. treatment as an outpatient in a medical facility.
Unlikely	The expectation of this event occurring is doubtful or improbable.	Minor	Injury requires first aid.
Rare	There is no expectation that this event will occur.	Negligible	Injury requires minor first aid or results in short term discomfort e.g. headache, bruise etc.