


Risk Assessment Record

Department	Centre for Biological Engineering		
Item Description	BioCool 80 Control Rate freezer.		
Location	H34/H23		
Date	04/07/2013		
Highest Risk Rating	Medium Risk		
Review Date	04/07/2014		
Assessor	Kirsty Marrow		
Comments	<p>Control rate freezer based in H34 (will move into H23 after lab move). Uses 1.5L of methanol to operate. This will be siphoned out after each use and stored in the Gas Pod in the flammables cabinet. The purpose of the system is to freeze samples down at a variable control rate and also to monitor the system via a laptop and software.</p> <p>Only trained users will be able to operate the system. The responsible person and trainer is Kirsty Marrow.</p> <p>Up to six profiles can be set on the system to allow for easy access to files. The system is attached to a laptop and will be shut down after each use. There is a small risk of electrical fires as it is plugged into the mains however after each use it will be switched off and cleaned. It is situated inbetween two -80C freezers however the heater vent is situated at the back of the system and this allow the heated air to escape from the back not interfering with the -80C freezers. There is no heavy lifting or moving associated with this piece of equipment. Correct PPE will be available in the laboratory.</p> <p>There is a COSHH drawn up for the use of Methanol this will be kept with the manual and SOP at the side of the system.</p>		
Signature		Date	

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Supervisor	Karen Coopman		
Comments			
Signature		Date	

Safety Officer	R.I.Temple		
Comments			
Signature	<i>RI Temple</i>	Date	16/07/2013

Personnel at Risk

The Health & Safety at Work Act requires that you ensure, so far as is reasonably practicable, the health and safety of yourself and others who may be affected by what you do or fail to do. Indicate using the groups listed below the individuals (restricted high-risk users) and numbers of people (e.g. with restricted user privileges or unrestricted access) who may be at risk from the hazards. Classify the *maximum* level of activity/exposure to the equipment to be permitted for each group/individual using the categories indicated below.

Activity/Exposure Categories

- | | |
|------------------------------------|-------------------------------|
| 1. Reconfiguration (high exposure) | 5. Supervised reconfiguration |
| 2. Maintenance | 6. Supervised normal use |
| 3. Normal use | 7. Supervised observation |
| 4. Unsupervised observation | 8. Prohibited (no exposure) |

Personnel Groups

	Group	Individuals/Numbers	Activity/Exposure
+ -	Academic Staff	Q Rafiq	Reconfiguration
+ -	Technical Staff	Kirsty-Louise Marrow, A Chandra	Reconfiguration
+ -	Research Staff	A Picken, T Heathman, A Chan, T Morris, N Robins	Reconfiguration
+ -	Project Students	M Ginai, R Jones,	Supervised reconfiguration
	Others		Supervised normal use

Hazard Checklist

Indicate below whether or not a hazard is present for *each* type listed.

Category 1: Machinery & Work Equipment: Mechanical Hazards

Type	Yes	No
Crushing.....	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Shearing.....	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Cutting/severing.....	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Entanglement.....	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Drawing-in/Trapping.....	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Type	Yes	No
Impact.....	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stabbing/puncture.....	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Friction/abrasion.....	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other mechanical hazard(s).....	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Category 1: Machinery & Work Equipment: Electrical Hazards

Type	Yes	No
Direct contact.....	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Indirect contact.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Electrostatic phenomena.....	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Short circuit/overload.....	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Type	Yes	No
Source of ignition.....	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Electrical test labels current.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Other electrical hazard(s).....	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Category 2: Workplace

Type	Yes	No
Slips/trips/falls on a level.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Falls from a height.....	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Falling/moving objects/materials.....	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Striking objects.....	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Localised hot surfaces.....	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Type	Yes	No
Localised cold surfaces.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Storage and stacking.....	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Confined work area (knocks).....	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Confined space/lack of oxygen.....	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other workplace hazard(s).....	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Category 3: Hazardous Substances

Type	Yes	No
Toxic fluids.....	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Toxic gas/mist/fumes/dust.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flammable liquids.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flammable gas/mist/fumes/dust.....	<input type="checkbox"/>	<input checked="" type="checkbox"/>
High pressure gas/fluid.....	<input type="checkbox"/>	<input checked="" type="checkbox"/>
High pressure fluid injection.....	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Type	Yes	No
Corrosive substances.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Irritants/sensitising substances.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Oxidising substances.....	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Explosive substances.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Biological substances (infection).....	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other substance hazard(s).....	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Category 4: Work Activity

Type	Yes	No
Highly repetitive actions.....	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stressful posture.....	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Awkward/heavy lifting/handling.....	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Mental overload/stress.....	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Type	Yes	No
Visual fatigue (e.g. >3 hours VDU)...	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Poor workplace design.....	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Use of hand tools.....	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other work activity hazard(s).....	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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Category 5: Work Organisation

Type	Yes	No
Contractors/service.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Type	Yes	No
Other work organisation hazard(s)	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Category 6: Work Environment

Type	Yes	No
Significant noise.....	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Significant vibration.....	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Poor/excessive lighting	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Type	Yes	No
Hot/cold ambient temperature	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Poor ventilation	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other work environment hazard(s)....	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Category 7: Other Hazard Types

Type	Yes	No
Violence	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stress	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Drugs.....	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Type	Yes	No
Substance abuse.....	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other hazard(s).....	<input type="checkbox"/>	<input type="checkbox"/>

Category 8: Outdoor Work

Type	Yes	No
Outdoors on campus.....	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Outdoors off campus	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Overseas fieldwork.....	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Type	Yes	No
Site visit: construction	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Site visit: non-construction.....	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other hazard(s).....	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Other Hazards: Radiation

Type	Yes	No
Radiation: Lasers.....	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Radiation: Electromagnetic effects ...	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Type	Yes	No
Radiation: Ionising/non-ionising	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other radiation hazard(s).....	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Hazard Assessment

Describe the hazards identified above on the following pages. For each hazard assess the risk to health and safety using the risk rating formula and categories indicated below.

Risk Calculation

Severity	×	Probability	=	Risk
Major = 3 (e.g. death, major injury as per RIDDOR, irreversible health damage)		High = 3 (where certain or near certain harm will occur)		High = 6,9
Serious = 2 (e.g. injuries causing >3 days absence or reversible health damage)		Medium = 2 (where harm will frequently occur)		Medium = 2,3,4
Minor = 1 (e.g. first aid treatments and other lost time)		Low = 1 (where harm will seldom occur)		Low = 1

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Hazard Risk Rating

Activity	Groups at risk	Hazard Description	Controls in place	Severity	Probability	Risk	Action needed?	
							Yes	No
Normal use		flammable liquid, electrical hazard	un plugging and good maintenance of flammable storage of the chemical.	Minor	Low	Low	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Normal use		Methanol	PPE and storage containment in flammables cupboard.	Serious	Low	Medium	<input type="checkbox"/>	<input type="checkbox"/>
Add Row							Delete Row	

Risk Reduction

Physical

Determine whether the risk to health and safety can be reduced by modifications to the equipment or workspace, especially for those hazards identified as having medium to high risk. List planned action and completion dates below.

Hazard	Action to be taken	Responsible Personnel	Completion Date

Add Row	Delete Row
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Procedural

Determine and indicate below whether acceptable levels of risk to health and safety can only be achieved when equipment use must follow prescribed procedures, and/or where use must be restricted to specified personnel. Prepare and attach user guides, user restriction and other HSE documents as appropriate. Contact the Department Safety Officer for guidance/assistance as necessary.

Item	Yes	No
Does the equipment/process need an operating procedure document?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
• If yes, has one been prepared and appended to this form?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Must protective equipment be worn to use the equipment/process safely? (cf. Personal Protective Equipment (PPE) regulations)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
• If yes, have the users been adequately notified?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
• If yes, is suitable protective equipment available for all potential users/observers?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Should the use of this equipment be restricted to certain qualified personnel?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
• If yes, has a list of permitted users been prepared, appended to this form and displayed near the equipment?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Is training required to use the equipment/process safely?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
• If yes, have all identified users been adequately trained?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Does the equipment have a CE mark?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
• If not, does the equipment need a separate Machinery Risk Assessment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
• If yes, has one been prepared and appended to this form?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
If a lifting hazard has been identified is a manual handling assessment required?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
• If yes, has one been prepared and appended to this form?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
If hazardous substances will be in use, is a COSHH form required?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
• If yes, has one been prepared and appended to this form?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Does the equipment involve the use of lasers?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
• If yes, has a laser description form been completed and appended to this form?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

