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| Health and safety services |

Risk assessment form

Using the freeze dryer

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| **RISK ASSESSMENT DETAILS** | **DEGREE OF RISK** | **RISK RATING MATRIX** |
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| Faculty/School/Service | Earth and Environment |
| Team | Cohen |

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| Risk Assessment Title | Using the freeze dryer |
| Risk Assessment Log Reference |  |
| Date | 09/02/2016 |
| Name of Assessors | Andy Connelly |
| Manager Responsible | Caroline Peacock |
| Location | Cohen lab suit (level 8 & 9) 9.133 |
| Details of ActivityUsing the freeze dryer to dry samples by sublimation of ice at low pressures. This is for the Scanvac CoolSafe 110-4 freeze dryers (Labogene) |

Other assessments which might also be required, ✓ if needed:Manual Handling REF COSHH ✓ REF Personal Protective Equipment (PPE) ✓ REFNoise REFOther REF |

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| **LIKELIHOOD (L)** |
| 5 | Inevitable |
| 4 | Highly Likely |
| 3 | Possible |
| 2 | Unlikely |
| 1 | Remote Possibility |

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|  |  | **SEVERITY** |
|  **LIKELIHOOD** |  | 1 | 2 | 3 | 4 | 5 |
| 1 | 1 | 2 | 3 | 4 | 5 |
| 2 | 2 | 4 | 6 | 8 | 10 |
| 3 | 3 | 6 | 9 | 12 | 15 |
| 4 | 4 | 8 | 12 | 16 | 20 |
| 5 | 5 | 10 | 15 | 20 | 25 |

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| **SEVERITY (S)** |
| 5 | Very High -Multiple Deaths |
| 4 | High - Death, serious injury, permanent disability |
| 3 | Moderate - RIDDOR over 3 days |
| 2 | Slight - First Aid treatment |
| 1 | Nil - Very Minor |

 | **PERSONS AT RISK** |
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| PERSONS AT RISK |
| Employees |
| Students |
| Clients |
| Contractors |
| Members of the public |
| Work Experience students |
| Other Persons |

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| **REVIEW DATES** |
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| RISK RATING SCORE | ACTION |
| 1 - 4 | Broadly Acceptable - No action required |
| 5 - 9 | Moderate - Reduce risks if reasonably practicable |
| 10 -15 | High Risk - Priority Action to be undertaken |
| **16 -25** | Unacceptable **-Action must be taken IMMEDIATELY** |

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| **HAZARD AND RELATED ACTIVITIES**e.g. trip, falling objects, fire, explosion, noise, violence etc. | **PERSONS** **AT RISK**e.g. Employees, Customers, Contractors, Members of the public | **POSSIBLE OUTCOME** | **RISK RATING BEFORE CONTROLS (LxS)** | **EXISTING CONTROLS**e.g. Guards, Safe Systems of Work, Training, Instruction, Authorised Users, Competent Persons, Personal Protective Equipment (PPE) | **RISK RATING AFTER CURRENT CONTROLS (LxS)** | **FURTHER CONTROLS REQUIRED?** | **RISK RATING AFTER ADDITIONAL CONTROLS (LxS)** |
| Experiment specific hazards | Users must carry out risk and COSHH assessments to identify issues with their own experiments. Any lab users at risk from the experiment must be informed. |
| Contact with very cold surfaces | Users and others close by | Burns from cold surfaces | 3(l) x 2(s) = 6 | Do not touch the insideof the refrigerationchamber whilst thefridge is on orimmediately afterwardsas inside temperaturescan be as low as -110°C. | 2(l) x 2(s) = 4 |  |  |
| Vacuum pressure used in operation | Users and others close by | Implosion, personal injury | 2(l) x 3(s) = 6 | Follow SOP. Handle the Perspexflask carefully andcheck regularly for anyabrasions or fracturesthat might impair thestrength of thechamber. Wear appropriate PPE | 1(l) x 3(s) = 3 |  |  |
| Freeze drying with glass vessels | Implosion of glass within Perspex cover | Danger of cuts from sharp glass | 3(l) x 2(s) = 6 | Wear appropriate PPE and follow SOP. | 2(l) x 2(s) = 4 |  |  |
| Fumes from vacuum pump | Lab users | Potential toxic output from natural samples | 2(l) x 3(s)=6 | Oil collection filter and activated carbon filter placed on the pump outlet | 1(l) x 3(s)=3 |  |  |
| Electric Shock | User | Electrocution or electric burns | 2(l)x4(s)=8 | Regular PAT testing of all electrical equipment | 1(l)x4(s)=4 |  |  |
| Slips, trips and falls | Personal injury |  |  | Do not climb onto stoolsto load the freeze drier -use the step-stool. |  |  |  |
| Handling of isopropanol and silicon grease | See COSHH assessment |
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| **MANAGEMENT AGREED****ADDITIONAL CONTROL MEASURES REQUIRED** | **ACTIONED BY** | **ACTION COMPLETE** |
| **POSITION** | **NAME** | **DATE** | **MANAGER SIG** | **DATE** |
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| **COMMUNICATION OF RISK ASSESSMENT FINDINGS TO STAFF** |
| **REFERENCE OF FORMAL COMMUNICATION TO STAFF** | **METHOD** | **YES** | **DATE** | **COMMENTS** |
| Copy of risk assessment issued to staff |  |  |  |
| Controls covered in team procedure issued to staff |  |  |  |
| Staff Handbook issued to staff |  |  |  |
| Other -  |  |  |  |
| **ADDITIONAL METHODS OF COMMUNICATION** | Induction |  |  |  |
| Toolbox Talk |  |  |  |
| Team Meeting |  |  |  |
| E-mail circulation |  |  |  |
| Other -  |  |  |  |

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| **COMMENTS AND INFORMATION**(Use this section to record any dynamic risk assessment comments and information) |
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| **Do additional controls adequately lower high risk activities to an acceptable level?** | **YES / ~~NO~~**If NO explain in comments box above | **SIGNATURE OF MANAGER**"The risks identified in this assessment are controlled so far as is reasonably practicable" |
| Signature:  | Date:  |

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| **DATE OF REASSESSMENT**(Every two years minimum) | **ARE THERE ANY CHANGES TO THE ACTIVITY SINCE THE LAST ASSESSMENT?** | **SIGNATURE OF MANAGER** |
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| **LOCATION OF CURRENT SIGNED RISK ASSESSMENT** |  |

**RISK ASSESSMENT LOG - SAMPLE**

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| RISK ASSESSMENT LOG |
| Directorate: | Area: |
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| Section/Team | Risk Assessment Title | Version No. | Risk Assessment Category | Code/Location | Risk Assessor | Manager responsible for signing off risk assessment | Date assessment signed off | Review Due | Review Date | Outstanding Controls/ActionsYes/No | Comments |
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