

Risk Assessment Summary Report/Print (landscape)



Reference	2494	Description of Space or Activity/Task or Equipment	Superconductivity and Magnetism Group - Sample Preparation Laboratory. Preparation of samples including for scientific studies.
Assessment Date	01/07/2022	Publish To Portal	Yes
Assessor Name	Martin Lees	Risk Assessment Title	P128 Sample Preparation Laboratory on Level 1.
Assessment Team Members		Review Date	05/06/2025
Role / Space / Project Reference		Current Risk Level (1=Very Low, 2=Low, 3=Moderate, 4=High, 5=Very High)	2
Department	Use the search function above or double click here for org chart -> Academic Faculties -> Faculty of Science, Engineering and Medicine -> Physics	Final Risk Level (1=Very Low, 2=Low, 3=Moderate, 4=High, 5=Very High)	2
Location Details	01-042-000-015	Not in use	0
Risk Assessment Category	Space	Additional Information	Follow Room P128 Laboratory Rules (attached).
Date Record Created	05/06/2023		

Hazard Type & Hazard Description	Who may be at Risk? & How May Person(s) Be Harmed	Existing Control Measures	L	S	R	Where current risk is M, H or VH, what additional Control Measures are required?	L	S	R
Equipment/Plant Standard tube furnaces equipped with gas flow systems- can be hot and emit IR radiation.	Staff. Students. Burns from hot surfaces Accidental exposure to IR radiation from a hot furnace if looking down tube bore. Evaporation of chemicals from crucibles, evaporation of chemicals deposited in the furnace lining	Clearly indicate on furnace user sheet the nature of samples and the treatment to be followed. Do not modify gas handling systems unless indicated by risk assessment. Admin - Signage used to raise awareness. Admin - Only trained, competent operators permitted to use the equipment. PPE - Personal Protective Equipment (PPE) is issued and worn (specify). Admin - Specific training provided to equipment operators.	Minor	Possible	Low		Minor	Possible	Low

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<p>Work Environment Fire.</p> <p>Furnaces. Furnace gases. Evaporation of chemicals from crucibles, evaporation of chemicals deposited in the furnace lining.</p>	<p>Staff. Students.</p> <p>Burns. Fumes. Inhalation leading to poisoning, lung and or organ damage loss of consciousness, asphyxiation.</p>	<p>Use furnaces with care.</p> <p>Wear appropriate PPE, do not touch hot surfaces, only open furnaces when cool ($T < 50^{\circ}\text{C}$) unless indicated by risk assessment.</p> <p>Clearly indicate on furnace user sheet the nature of samples and the treatment to be followed. Do not modify gas ventilation systems unless indicated by risk assessment.</p>	Serious	Possible	Low		Serious	Possible	Low
<p>Work Environment Fire.</p> <p>Flammable substances including solvents, paper, flammable chemicals and samples.</p>	<p>Staff. Students.</p> <p>Burns, fumes. Inhalation leading to poisoning, lung and or organ damage loss of consciousness, asphyxiation.</p>	<p>Store chemicals and solvents properly, use solvents sparingly, avoid sources of ignition, especially furnaces.</p>	Serious	Unlikely	Low		Serious	Unlikely	Low
<p>Equipment/Plant Storage desiccators under vacuum.</p>	<p>Staff. Students.</p> <p>Flying glass from rapid failure of desiccator. Cuts to hands, face and eyes. Explosion, ignition of samples stored. Inhalation of pumped gas.</p>	<p>Do not tamper with desiccators. Vent and pump out with care. Beware of inhaling pumped gas. Tape desiccators. Turn off pump immediately after use.</p>	Minor	Possible	Low		Minor	Possible	Low
<p>Equipment/Plant Broken glassware. Sharps</p>	<p>Staff. Students Cuts</p>	<p>Take care to dispose of broken glass in the approved receptacles provided.</p> <p>Dispose of sharps in sharps bin.</p>	Minor	Possible	Low		Minor	Possible	Low

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<p>Equipment/Plant Standard Box Furnaces - can be hot and emit IR radiation.</p>	<p>Staff. Students Burns from hot surfaces or accidental exposure to IR radiation from a hot furnace if the furnace door is opened.</p> <p>Evaporation of chemicals from crucibles, evaporation of chemicals deposited in the furnace lining</p>	<p>Do not look open hot furnace unless wearing appropriate PPE, working in a pair, and this is required by the experiment, e.g. flux growth. Follow separate risk assessment for working with a hot furnace. Otherwise do not open the furnace doors when furnace is in use.</p> <p>Use with care, wear appropriate PPE, do not touch hot surfaces, only open furnaces when cool ($T < 50$ °C).</p> <p>Clearly indicate on furnace user sheet the nature of samples and the treatment to be followed.</p> <p>Admin - Signage used to raise awareness. Eng/Admin - Access is restricted to authorised personnel. Admin - Information, instruction, supervision & training. Admin - Good levels of housekeeping maintained with clean as you go policy in place. Admin - Signage used to raise awareness. Admin - Only trained, competent operators permitted to use the equipment. Admin - Maintenance operations are conducted by competent persons and covered by dynamic assessments. PPE - Personal Protective Equipment (PPE) is issued and worn (specify). Admin - Specific training provided to equipment operators. Admin - Specific risk assessment/survey completed.</p>	<p>Minor</p>	<p>Possible</p>	<p>Low</p>		<p>Minor</p>	<p>Possible</p>	<p>Low</p>
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<p>Working at Height Fall</p>	<p>Staff. Students Falls.</p>	<p>When using any steps students and staff are not to overreach and are to keep two feet on the steps at all times.</p> <p>Steps are visually inspected before each use.</p> <p>Admin - students and staff are provided with information, instruction and training through lab inductions.</p>	<p>Serious</p>	<p>Unlikely</p>	<p>Low</p>		<p>Serious</p>	<p>Unlikely</p>	<p>Low</p>
<p>Work Environment Wet floors. Obstructed walkways. Closely spaced Equipment</p>	<p>Staff. Students Cleaners Slip and trips Hit by falling objects.</p>	<p>Dry floors if wet, be aware of potential hazard.</p> <p>Caution wet floor signage is used if floors are wet to warn those using the area of the potential hazard.</p> <p>Do not block walkways with equipment or personal belongings. Be aware.</p> <p>Walkways are not obstructed by trailing cables. Cable floor covers are to used where necessary.</p> <p>Take care when using stairs, and use the provided handrail.</p> <p>Do not place any items on mezzanine guard rail.</p> <p>Eng - Adequate lighting in place. Eng - Adequate ventilation in place. Eng - Cooling/heating equipment used. Admin - Information, instruction, supervision & training. Admin - Signage used to raise awareness. Admin - University policy & procedure guidance followed.</p>	<p>Minor</p>	<p>Unlikely</p>	<p>Very Low</p>		<p>Minor</p>	<p>Unlikely</p>	<p>Very Low</p>

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<p>Electricity Electrocution, burns.</p> <p>Contact with live electrics.</p> <p>Electrical overload.</p> <p>Incorrect isolation.</p> <p>Unauthorized access to electrical systems / infrastructure</p>	<p>Staff. Students.</p> <p>Electrocution, burns.</p>	<p>Do not tamper with or attempt to modify apparatus.</p> <p>Do not use untested apparatus.</p> <p>Eliminate - No live working permitted.</p> <p>Eng - Cables and leads are appropriately insulated.</p> <p>Eng - Electrical cabinets are secured.</p> <p>Eng - Electrical equipment is suitably fused and earthed.</p> <p>Admin - All fixed wire electrical installations are tested as per regime. All portable electrical equipment are PAT tested.</p> <p>Admin - Extension reels fully unwound before use.</p> <p>Admin - Information, instruction, supervision & training.</p> <p>Admin - Signage used to raise awareness.</p> <p>Admin - University policy & procedure guidance followed.</p>	<p>Serious</p>	<p>Unlikely</p>	<p>Low</p>		<p>Serious</p>	<p>Unlikely</p>	<p>Low</p>
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<p>Substances Solvents (ethanol, acetone, propanol). Acids, bases. Pump oil, vacuum greases. All chemicals in use to prepare samples. Samples after preparation.. Contact or interaction with dangerous substances. Inhalation of hazardous substances or fumes. Skin exposure to hazardous substances. Eye exposure to hazardous substances.</p>	<p>Staff Students Contact or interaction with dangerous substances. Skin exposure to hazardous substance. Eye exposure to hazardous substance. Chemical burns. Poisoning. Organ damage. Inhalation of a hazardous substance or gas. Ignition, reaction, exposure to fumes etc. due to reactions or mixing</p>	<p>Read all relevant safety data sheets, University and Departmental Safety regulations and guidance, and pass any required safety tests. Minimise exposure, use appropriate PPE. Use appropriate PPE, minimise exposure, do not ingest. Admin - Awareness training provided. Admin - General ventilation used. Admin - Information, instruction, supervision & training. Admin - Refer to relevant COSHH Assessment (state). Admin - Signage used to raise awareness. Admin - Spill response/containment equipment in place. Admin - Storage in accordance with substance requirement. Admin - Substance awareness sheet available at point of use. Admin - University policy & procedure guidance followed. Admin - Wash facilities close by. PPE - Personal Protective Equipment (PPE) is issued and worn (gloves, goggles, masks, lab coats).</p>	<p>Serious</p>	<p>Unlikely</p>	<p>Low</p>		<p>Serious</p>	<p>Unlikely</p>	<p>Low</p>
<p>Assessment Conclusion</p>	<p>All risks minimized.</p>								