

**Risk Assessment Form**

Title of Risk Assessment

Date of assessment

Department

Date review due

Description of Task/Process

Assessment carried out by

**Additional information**

University of Warwick Risk Assessment Form

<u>Hazards and how they may cause harm</u>	<u>Who may be at Risk?</u>	<u>Existing Control Measures</u>	<u>Current Risk Level</u> (VL,L,M,H,VH)	<u>Where current risk is M, H or VH, what additional Control Measures are required?</u>	<u>Action required by whom &amp; by when?</u>	<u>Final Risk Level</u>
<b>Use of evacuable pellet press – possible component failure and impact injuries</b>	User	Ram fitted with surrounding guard plates - must be in place when ram under load. Hands etc to be kept out of enclosure while loading. Specifically trained and authorised users only.	M	Only trained users to be present in the lab during operations where the press is under load.	User, and (reduced risk) personnel in lab during operation	L
<b>Use of acids and bases – Burns, skin or eye irritation, organ damage</b>	User	Read all relevant safety data sheets, university and Departmental Safety regulations and guidance, and pass any required safety tests. Minimise exposure, use appropriate PPE.	L	Any spills must be correctly cleaned, and major spills require department to be notified.	User, and (reduced risk) personnel in lab during operation	VL
<b>Use of chemical solvents – irritation to skin or eyes</b>	User	Use PPE. Try to avoid direct contact with skin.	L	Any spills must be correctly cleaned, and major spills require department to be notified. All solvents to be correctly disposed of.	User, and (reduced risk) personnel in lab during operation	VL
<b>Handling chemicals samples – inhalation or ingestion. Irritation, damage to skin/eyes</b>	User	MSDS to be consulted in each case and appropriate PPE worn and individual measures taken such as use of fume hoods in some cases. Standard lab procedures to be observed - no eating or drinking, hands to be washed after leaving etc.	L	Any spills must be correctly cleaned, and major spills require department to be notified.	User, and (reduced risk) personnel in lab during operation	VL

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<b>Laboratory sharps – blades, needles and used glassware</b>	User	Adherence to safe lab protocol to be followed. Safe storage of sharps, and tidiness of work surfaces to keep hazards clear and identifiable. All sharps to be disposed of in dedicated sharps containers.	L			L
<b>Use of Cryogenics: Filling nitrogen/helium dewar and transferring to instruments – Oxygen depletion and possible asphyxiation</b>	All personnel in lab environment	Receive training before first use. Suitable ventilation is provided - asphyxiation hazard due to boiling cryogenic liquids. Dewars containing gases or cryogenic liquids are not to be accompanied in elevators. Oxygen monitors installed in laboratories.	L			L
<b>Use of Cryogenics: Filling nitrogen/helium dewar and transferring to instruments – possible contact with cold surface</b>	User	Receive training before first use. Use all appropriate PPE (e.g. gloves). Avoid contact with cold gas, liquids or cold surfaces..	L			L

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<b>Use of instruments involving large magnetic fields – possible interference with pacemakers or metal implants</b>	All personnel in lab environment	Warning signs displayed to warn any entering lab of hazard. Lab p127 is keycard locked to restrict access, due to the presence of the strong 17 Tesla magnet system. Loose metal objects or sensitive electronics to be kept outside 5 Gauss radius of magnet – this is marked on the floor, along with the 10 Gauss line.	L	Non-essential personnel to be kept out of labs with strong magnetic fields active or potentially active.	All personnel in lab environment who may enter 5 Gauss line of magnet in question	L
<b>Us of Arc Melter – Hot surfaces, intense UV light, electric shock and explosion of vacuum systems</b>	All personnel in lab environment	Wear appropriate PPE with long sleeves and gloves. Wear rubber soled shoes. Ensure UV shield and curtain are in place and secure before use. Ensure water cooling is active.	L	Non-essential personnel to be kept out of surrounding area when in use.	All personnel in lab environment	L
<b>Use of box furnaces and tube furnaces – Hot surfaces, explosion of vacuum/pressure systems, dangerous fumes, cut sfrom broken glass and sharp metallic wire.</b>	All personnel in lab environment	Wear appropriate PPE. Ensure pressure gauges read safe pressures. Do not touch surfaces when furnace in use. Do Ensure sealed quartz tubes are not over pressurised. Ensure adequate ventilation when there is a risk of dangerous fumes. Dispose of sharps and broken glass in approved bin. Do not modify gas ventilation systems.	L			L

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<b>Use of optical floating zone furnace – Hot surfaces, explosion of vacuum/pressure systems, dangerous fumes and intense UV/IR light.</b>	User	Wear appropriate PPE. Do not touch surfaces when furnace in use. Do not look directly into the light in the furnace, always observe image on the TV/monitor screen. Do not open the furnace doors when in use and wait until the furnace is cooled down before removing sample. Ensure sealed quartz tubes are not over pressurised.	L			L
<b>Spillages and trip hazards</b>	All personnel in lab environment	Fluid spillages or trailing wiring etc may constitute slip or trip hazards. Labs to be kept tidy and organised, and any spillages or mess to be cleared promptly.	L			L
<b>Use of low speed diamond saw – burns from metling glue and cut injury</b>	User	Use guard. Use appropriate PPE.	VL			VL

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<b>Use of instruments involving X-ray generation (Ionising radiation source) – possible radiation burns or cellular damage</b>	User of instrument, and other personnel present while radiation source is in use.	Diffractometers are located in designated X-ray areas and are commercial controlled setups including interlocking doors and shields to prevent radiation exposure the surroundings, coupled with warning systems to indicate source is in use. Only to be used following proper training.	M	onising radiation safety course and training on individual instruments to be completed.	User of instrument, and other personnel present while radiation source is in use.	VL
<b>Soldering - fumes may be harmful in high concentrations or over long periods of exposure.</b>	All personnel in lab environment	Solder using appropriate air extraction system and in a well ventilated area. Consider using PPE if suitable. Do not look over the work too closely to avoid inhaling fumes.	VL			VL
<b>Soldering - solid solder - can get onto and into skin and be harmful.</b>	User	No food or drink near soldering station. Always wash hands after soldering and before consuming food or drink.	VL			VL
<b>Soldering - electrical faults - the cable joining the iron to the station is susceptible to strain/heat from the iron etc.</b>	User	Do not use soldering irons with any obvious damage. Keep soldering iron away from cable.	VL			VL

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<b>Soldering - burns.</b>	User	Ensure to use a suitable holster to hold the iron in place when it is not in use. Always make a conscious effort to look at what you are doing with the iron to avoid accidentally touching the wrong end. Allow soldered components to cool before touching.	VL			VL
<b>Hot air gun - fire, burns.</b>	User	Use with care and as trained. Point away from people and flammable objects.	L			L

**Work should not be carried out until the assessment is completed and all required control measures are in place.**

<b>Overall Final Risk Rating</b> (Highest level in final column above)	L
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<b>Additional Comments from Risk Assessor</b> (e.g. funding or practical implications)	
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Approved By	Geetha Balakrishnan
Date	04/11/2022

Position	Principal Investigator
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Please print a copy, sign it and keep for your records

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	Severity				
Likelihood	Superficial	Minor	Serious	Major	Extreme
Unlikely	Very low	Very low	Low	Low	Moderate
Possible	Very low	Low	Low	Moderate	High
Likely	Low	Low	Moderate	High	Very high
Very likely	Low	Moderate	High	Very high	Very high
Extremely likely	Moderate	High	Very high	Very high	Very high

See ['Matrix for risk evaluation'](#) for further guidance.

Risk Level	
Very low	Acceptable risk - no action required
Low	Tolerable risk - further control measures not required, but status must be monitored
Moderate	Further control measures required to reduce risk as far as is reasonably practical
High	Urgent action required to allow activity to continue
Very high	Risk intolerable - activity must cease until the risk has been reduced