

Risk Assessment Title: Grinder-Polisher	Ref No: 2023-2024
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School/Institute/Directorate:	Location:	Supervisor	Date:	Review Date:
EPS	Energy Lab, Dubai	Dr Rehan Ahmed	2023-09-11	Whenever there is a change in SOP and risk involved. Last update: 2023-09-11

Risk Rating Matrix (RR)	Likelihood(L)		
Severity (S)	Certain or near certain to occur (High)	Reasonably likely to occur (Medium)	Unlikely to Occur (Low)
Fatality, major injury or illness causing long term disability (High)	HIGH(H)	HIGH(H)	MEDIUM(M)
Injury or illness causing short term disability (Medium)	HIGH(H)	MEDIUM(M)	LOW(L)
Other Injury or Illness (Low)	MEDIUM(M)	LOW(L)	LOW(L)

Description:
<p><u>Background:</u></p> <p>Metallographic samples often need to be grinded down and polished before use in experiments; the surface with unaccounted for roughness may experience faster rates of corrosion and erosion. The Buelher grinder-polisher is used to prepare samples in-house.</p> <p>In this procedure, the grinder-polisher is supplied with electrical and compressed air supply. Electrical power is used to power the motor and interface while compressed air is used to apply controlled amounts of force to workpieces. The workpiece holder and base plate rotate, in order to provide uniform grinding and polishing action to all workpieces.</p> <p><u>Personal Protective Equipment (PPE)</u></p> <p>Wear gloves and lab coat with folded sleeves while using grinder polisher. Enclosed shoes must be worn while using the machine. Avoid entanglement of hair with hairband.</p> <p><u>Procedural Controls</u></p> <p>Care should be taken to avoid operating equipment unless properly trained.</p> <p>Avoid accessing the rear of instrument.</p> <p>Low stocks of consumable items (gloves, paper towels, etc) should be reported to Supervisor or Lab Manager.</p>

What are the Hazards?	Who might be harmed?	Uncontrolled Risk Rating	Control measures (What are you already doing?)	Controlled Risk Rating	Responsible Person(s)
Rotating mechanisms	Equipment User Lab User	High	Users are trained and supervised until fully competent. Users are trained to not access mechanical parts of the grinder-polisher while running. Sample holder and platen have grooves cut into them for easier removal of consumables from equipment.	Medium	Equipment User Supervisor
Electric Shock	Equipment User Lab User	High	Use of waterproof electrical socket for electrical connection. Avoid touch of electrical source and connections using wet hands. Keep hands dry whenever touch the electrical source. Switch off the ultrasonic probe when not in use. Check PAT testing is up to date.	Low	Equipment User
Hand, Hair, or Clothing entanglement	Equipment User Lab User	Medium	Long hair and loose clothing should be secured to avoid contact with moving parts. Users must wear lab coat with folded sleeves, as well as nitrile gloves. Jewellery (eg. rings) should be removed.	Low	Equipment User Supervisor
Contact with lubricants	Equipment User	Low	Avoid touching cutting lubricants and pastes. Use of nitrile gloves should control this; MSDS does not list short-term risks. Wash hands if lubricants come into contact with hands.	Low	Equipment User

Additional Work Practice Information:

If Lab Users are sensitive to noise or poor quality air, avoid use of equipment.

Ensure that compressed air supply is available when using equipment.

Facilities Management and Housekeeping usually do not touch equipment. Keep space around cavitation equipment clean to avoid interference.

Avoid use of grinder-polisher when classes occur in the lab. Avoiding noise disturbance is a courtesy worth extending to other lab users.

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Verifier			

Declaration

I confirm that I have read the Risk Assessment, I understand the hazards, and risks involved and will follow all the control measures stated. If I have any queries or concerns, I will contact the above.

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