

RSPHys Risk Assessment: RA_076111 – Micro_Diamond_Scriber

- This form is used when a documented risk assessment is required in accordance with Appendix A of WHSMS Handbook Chapter 3.1.
- Original risk assessments must be provided in a convenient location accessible by all people affected by the risk assessment.
- Static risk assessments must be forwarded to local WHS Manager for inclusion in the School Static Risk Assessment Register.

Static Risk Assessment No.		Assessment Date	Reviewed by Date	Version	Top Residual Risk
RA_076111_Micro_Diamond_Scriber		02.07.2024	02.07.2027	1.0	Low
Name of the activity	Micro Diamond Scriber (OEG MR200) for scribing and cleaving specimens (wafers, glasses, etc.) Hazards Assessed: Electrical, Plant and Equipment, Ergonomics and Manual Tasks				
Description of the activity	Precisely scribing wafers using the Micro Diamond Scriber and cleaving wafers.				
School/ Department	Research School of Physics, EME	Location	Building 56, Level 4, Room 4.30		
Risk Assessment Team Have you completed ANU WHS Risk Management Training? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No IF NO, DO NOT PROCEED	Supervisor	Horst Punzmann	Email	Horst.punzmann@anu.edu.au	Ph 02 612 50001
	Name	Naiyin Wang	Email	Naiyin.wang@anu.edu.au	Ph 02 612 56242
	Name	Huma Latif	Email	Huma.latif@anu.edu.au	Ph 0406681584
	Name	Rick Walsh	Email	Rick.walsh@anu.edu.au	02 6125 0105
	Name		Email		Ph
Who is affected by this RA?	<input checked="" type="checkbox"/> All people at the location <input type="checkbox"/> A group of people (list right) <input type="checkbox"/> A single person (list right)	People consulted on this RA (All persons affected, or their representatives need to be consulted)	Kaushal Vora, Lily, Olivier Lee Cheong Lem		
WHS Legal and Other Requirements	Work Health and Safety Act 2011 (Cth) Work Health and Safety Regulations 2011 (Cth) Hazard Management (WHSMS Handbook Chapter 3.1) Manual Tasks and Ergonomics Safety Management (WHSMS Handbook Chapter 3.11)				
Type of RA	<input checked="" type="checkbox"/>	Static RA (long term, > 6 months)	Send a copy to WHS Manager and keep original locally near the activity/location, accessible to all people affected.		
	<input type="checkbox"/>	Dynamic RA (short term < 6 months)	Keep the original locally (electronically or physically) near the activity/location, accessible to all people affected.		

Risk Assessment Instruction

1. Using **Table 6** as a guide, list the hazards of the activity in the 'Hazards' column of the RA Form. Include information on when and where the hazard is present during the activity.
2. Estimate inherent risk of the hazard (without any controls in place) using the Likelihood against Consequences definitions described in **Table 1** and **Table 2** and the ANU WHS Risk Matrix (**Table 3**). List them in 'Inherent Risk' column of the RA Form for each hazard.
3. Develop control measures in accordance with the Hierarchy of Control Principle (**Table 4**) and list them in 'Control' column of the RA Form.
4. Estimate the residual risk of the hazard after implementing all controls. Remember that engineering, administrative and PPE controls only reduce the likelihood of an event occurring, not the consequences.
5. Identify any controls that are not in place as corrective actions and implement them before undertaking the activity.
6. Obtain approval from relevant people as identified.
7. Identify if this is a static risk assessment (> 6 months) or dynamic risk assessment (< 6 months).
8. Send a copy of the static risk assessments to WHS Managers– Keep on file for 7 years.
9. Keep originals of risk assessments in close vicinity of the activity. Dynamic risk assessments can be destroyed 1 year after the activity ceases.
10. Review the static risk assessments and associated safe work procedures in accordance with **Section 3.1.2.6: Step 4 of Chapter 3.1** requirements

Risk Assessment							
Hazards Also list where and when can the hazards present?	Inherent Risk			Control Measures When designing controls, follow the Hierarchy of Controls Principle, assigning the most effective controls before less effective controls (see Table 4). <i>List the control category and the controls for each hazard below. For any controls that are not in place, fill in the Actions table on the next page.</i>	Residual Risk		
	Likelihood	Consequence	Risk rating		Likelihood	Consequence	Risk rating
Electrical ➤ Electrical Shock (both minor and major) ➤ Electrocutation	Possible	Catastrophic	Extreme	Engineering <ul style="list-style-type: none"> Room access limited to trained staff through Cardex/Salto Testing and tagging of all electrical equipment and power cords. Residual Current Devices (RCDs) installed on all electrical circuits in the area. Emergency Off/ EPO (Emergency Power Off) button available in the room. Administration <ul style="list-style-type: none"> Tier 3 Induction (056_L1_058B_L4_ANFF_Induction) Signage on lab door indicating type of hazards. 	Rare	Minor	Low
Ergonomics and Manual Tasks ➤ Repetitive or sustained forces ➤ Repetitive movements ➤ Long duration of the same posture (e.g., standing, sitting)	Unlikely	Minor	Medium	Administration <ul style="list-style-type: none"> Tier 3 Induction (056_L1_058B_L4_ANFF_Induction) Tier 2 training: Setting up your workstation (WHSO29, Pulse). Regular movement breaks. 	Rare	Minor	Low

Risk Assessment							
Hazards Also list where and when can the hazards present?	Inherent Risk			Control Measures When designing controls, follow the Hierarchy of Controls Principle, assigning the most effective controls before less effective controls (see Table 4). <i>List the control category and the controls for each hazard below. For any controls that are not in place, fill in the Actions table on the next page.</i>	Residual Risk		
	Likelihood	Consequence	Risk rating		Likelihood	Consequence	Risk rating
Plant and Equipment <ul style="list-style-type: none"> ➤ Cutting parts ➤ Ejection of piece/s; shattering or fragmentation causing eye damage ➤ Stabbing, puncturing, shearing on sharps fragments 	Possible	Moderate	High	Engineering <ul style="list-style-type: none"> • Room access limited to inducted workers through Cardex/Salto. • Appropriate sample holding equipment (Tweezer) Administration <ul style="list-style-type: none"> • Tier 3 Induction (056_L1_058B_L4_ANFF_Induction) • Tier 2 training: Manual tasks at ANU (WHSO22, Pulse) • Tier 2 Training: ANU Risk Management Training (WHSO03, Pulse) • First aid kits available at the Physics Reception in the Oliphant Building. • Dispose of the unwanted sharp materials (wafers, glasses, etc.) into the sharps waste yellow bin. • Use brush and tray to clean sharp wafer fragments in case wafer drops onto the floor; to be disposed into dedicated yellow sharps container. • Competency Check • Refer to the equipment instruction manual for details of operation: IM_076111_Micro_Diamond_Scriber. • Signage affixed to equipment describing hazards. • Replace filter as required. PPE <ul style="list-style-type: none"> • Safety gloves (mandatory). • Safety goggles (mandatory). 	Rare	Minor	Low

Actions			
The activity must not be commenced until all controls are in place.			
List below which controls are currently not in place, who will implement them and by when. Add additional rows as needed.			
List of Controls not in place	Who is to implement them?	Timeframe	Date Completed

If the level of residual risk is assessed as high or extreme,

1. Stop the activity immediately; AND
2. Tag out the plant/equipment; and/or
3. Secure any chemical; and
4. Implement, or seek advice from WHS Officer or Subject Matter Experts to implement, additional controls to reduce the residual risk further to medium [Supervisor signature required];
5. If the above is not possible, seek approval from relevant authority (High – School/Division Director/College Dean; Extreme – COO). **NOTE: Approval will only be granted in exceptional circumstances after consultation with Associate Director, WEG and/or a Subject Matter Expert.** See Chapter 3.1 for details.

Approval required					
Worker conducted RA			Student conducted RA		
Residual Risk Level	Authority required	Signature and date	Residual Risk Level	Authority required	Signature and date
Low	Author of RA		Low	Supervisor	
Medium	Supervisor		Medium	Supervisor	
High	School Director		High	School Director	
Extreme	COO		Extreme	COO	



Table 1. Likelihood Table

Ranking	Description	Probability or frequency of event happening
Almost certain	The hazard is expected to lead to an event in most circumstances at the University	A daily to monthly occurrence
Likely	The hazard could lead to an event in most circumstances at the University	Between monthly to yearly occurrence
Possible	The hazard has led to an event at some time at the University	Occurs once between 1 to 5 years
Unlikely	The hazard could lead to an event at some time	Occurs once between 5 to 20 years
Rare	The hazard may lead to an event in exceptional circumstances	Occurs once between 20+ years

Table 2. Consequences Table

Ranking	Injury, Illness or Disease	Plant, Equipment, and materials	Environment
Catastrophic	Fatality / fatalities or permanent disability. Permanently unable to work	Destroyed or cannot be reused	Long term permanent effect to ecosystems. Significant intervention required to remediate
Major	Requiring extensive medical treatment such as hospitalisation as in patient and possibly a Notifiable Incident LTI >1 week	Damage requiring repairs/rebuild and possible recertification prior to reuse, lost use for one or more days	Notification to environmental agency, ecosystem will need time to recover, intervention required to remediate
Moderate	Minor medical treatment injury, such as treated by a health professional, hospital outpatient, no potential to be a Notifiable Incident LTI < 1 week and can return to normal duties	Damage requiring a repair/service by a trade/technician within the day	Contamination event that does not impact on ecosystem. Short impact does not need intervention
Minor	Injury needing significant first aid treatment and can return to work within shift	Equipment able to be reset or gotten back into operation by the operator	Minor contained contamination ceasing when the short event is over, can remediate (e.g., spill kit)
Insignificant	Report only, no injury OR minor first aid (e.g., Band-Aid); short-term discomfort	Report only, no damage	Report only, no contamination

Table 3. ANU WHS Risk Matrix

	Insignificant	Minor	Moderate	Major	Catastrophic
Almost certain	Medium (10)	High (14)	Extreme (21)	Extreme (22)	Extreme (25)
Likely	Medium (7)	High (13)	High (16)	Extreme (20)	Extreme (24)
Possible	Low (4)	Medium (9)	High (15)	High (18)	Extreme (23)
Unlikely	Low (2)	Medium (6)	Medium (8)	High (17)	High (19)
Rare	Low (1)	Low (3)	Low (5)	Medium (11)	Medium (12)

Table 4. Hierarchy of Controls

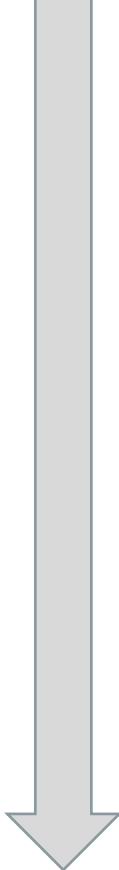
Level	Examples	Effectiveness
Elimination	<ul style="list-style-type: none"> Remove the hazards completely Cease the activity Dispose of unwanted hazardous chemicals or plant etc 	<p style="text-align: center;">Most Effective</p>  <p style="text-align: center;">Least Effective</p>
Substitution	<ul style="list-style-type: none"> Use less hazardous chemicals Use safer plant equipment Use handset instead of telephone Move smaller weight loads instead of large weight 	
Isolation	<ul style="list-style-type: none"> Physical separation from the hazard by distance or complete shielding Install guard rails around edges and holes to floors Move workers to a new room away from hazardous noise 	
Engineering Control	<ul style="list-style-type: none"> Use ventilation system Use fume cupboard when working with hazardous chemicals Install guarding around rotating and crushing parts Use trolley or hoist to lift heavy loads Use duress alarm system while doing home interview or offsite field work 	
Administrative Control	<ul style="list-style-type: none"> Use Safe Work Procedures [See section 3.1.3.1] or instructions Induction and WHS information Training [See Handbook Chapter 3.2] Contingency Planning and Testing [See section 3.1.3.2] Permit to Work system [See section 3.1.3.3] Signage 	
Personal Protective Equipment (PPE)	<ul style="list-style-type: none"> Lab coat Safety glasses/face shield Gloves/cryogenic gloves Respirators/Masks Personal hearing protectors 	

Table 5. Risk Assessment and SWP review timeframe

Use this Table to determine review timeframe and frequency for the risk assessment and any safe work procedures.

Residual Risk	Review Frequency		What to do during the review.
Extreme	6 months	And/or <ul style="list-style-type: none"> After an incident where deficiencies in identifying or controlling hazards have been observed When changes to the activity need to occur When significant changes (e.g., renovation) to the workplace occur When HSRs request a review 	Stop work. Review the control measures and introduce additional control measures to reduce the residual risk to Medium as a maximum.
High	1 Year		
Medium	2 Years		Review the control measures.
Low	3 Years		