Chapter 3.1 – Appendix B WHS Hazard and Risk Assessment Template

- 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_160_L3_P3.51			1.0	**Medium**

Name of the activity	Work undertaken in P3.51 of Building 160, Cleanroom					
Description of the activity	Equipment and work undertaken to ensure that RSPhys Cleanroom Facilities are maintained and operational.					
School/ Department	Research School of Physics, Cleanroom		**Location**	Building 160, Room P2.50		
Risk Assessment Team Have you completed ANU WHS Risk Management Training? ☒ Yes ☐ No **IF NO, DO NOT PROCEED**	**Supervisor**	Horst Punzmann	**Email**	Horst.punzmann@anu.edu.au	**Ph**	50001
	Name	Rick Walsh	**Email**	Rick.walsh@anu.edu.au	**Ph**	50105
	Name		**Email**		**Ph**	
	Name		**Email**		**Ph**	
	Name		**Email**		**Ph**	

Who is affected by this RA?	☒ All people at the location ☐ A group of people (list right) ☐ A single person (list right)	**People consulted on this RA** (All persons affected, or their representatives need to be consulted)	Graeme Cornish, Hoe Tan, Steve Madden, Simon Foxcroft
WHS Legal and Other Requirements	Work Health and Safety Act 2011 (Cth) Work Health and Safety Regulations 2011 (Cth) ANU Chemical Management Handbook ANU WHSMS Handbook Chapter 3.7: Hazardous Chemicals		

Type of RA	☒	**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.
	☐	**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 Error! Reference source not found. 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). 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.	Residual Risk		
	Likelihood	Consequence	Risk rating		Likelihood	Consequence	Risk rating
Electrical Use of electrical Appliances	Unlikely	Catastrophic	High	**Engineering** • RCDs installed on all circuits. **Administration** • Test and Tag of all equipment plugged into electrical sockets. • All equipment certified to AS standard for electrical safety requirements.	Rare	Moderate	Low
Chemical Non-toxic Non-Flammable Gas Lines piped into room.	Rare	Catastrophic	Medium	**Substitution** • Cylinder size limited to Man 15. **Engineering** • Room HVAC systems. • Alarms on HVAC system in system shuts down. • Low and high oxygen monitoring **Administration** • RSPhys Gas Hazard Calculation to determine consequence without HVAC.	Rare	Insignificant	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). 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.	**Residual Risk**		
	Likelihood	Consequence	Risk rating		Likelihood	Consequence	Risk rating
Chemical Corrosive Detergents (Concentrates)	Likely	Minor	High	**Administration** • Cleanroom gowning protocols enforcing PPE requirements. **PPE** • Cleanroom garb • Gloves; safety googles	Rare	Minor	Low
Noise	Possible	Moderate	High	**Engineering** • Installation of noise damping enclosures around equipment that generate high level of noise. **Administration** • Noise assessment of room to be conducted after each new piece of equipment in installed. • Noise assessment to be conducted once a year. • PPE required in areas where noise level excess safety limits. • Health Monitoring if noise exceeds limits. **PPE** • Hearing protection in areas where noise level excess safety limits • Hearing protection for comfort in low noise areas if requested.	Rare	Moderate	Low
Ergonomics and Manual Tasks Manual Handling Static Postures	Possible	Major	High	**Administration** • Tier 2 Training: Setting up your workstation (WHSO29) • Rest Breaks • Provide access to appropriate handling tools to perform task (e.g. trolleys, jacks, racks, height-adjustable tables or working platforms, etc.)	Rare	Major	Medium

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). 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.	**Residual Risk**		
	Likelihood	Consequence	Risk rating		Likelihood	Consequence	Risk rating
Heat Generating Equipment Ovens and Hotplates	Possible	Major	High	**Administration** • Safe work procedures for heat generating equipment. • Induction; Training	Rare	Major	Medium
COVID 19 Exposure	Likely	Catastrophic	Extreme	**Elimination** • People with COVID symptoms must get tested in line with ACT or ANU requirements whichever is stricter. They are NOT to attend Campus if found to be Positive. • Workers suspecting, they may be infected are not allowed on campus. **Engineering** • Access to buildings restricted via Cardex/Salto to people who have confirmed to abide by the school COVID Protocols/Procedures • Separation of workstations to adhere to physical distancing conditions. • Automatic hand sanitiser stations in the foyers of all buildings. • Handwashing facilities in building bathrooms. **Administration** • Follow University Guidelines requirements. • Maintain hygiene practices on entering and leaving buildings • If a staff member working on campus is diagnosed with COVID-19 – ANU procedures are followed for disinfection of workspace. • Safe Work Procedure or local area specific rules on work arrangements addressing work under COVID-19 restrictions.	Unlikely	Moderate	Medium

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**	Horst Punzmann 20.07.2023	**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	• Remove the hazards completely • Cease the activity • Dispose of unwanted hazardous chemicals or plant etc	**Most Effective** ↓ **Least Effective**
Substitution	• Use less hazardous chemicals • Use safer plant equipment • Use handset instead of telephone • Move smaller weight loads instead of large weight	
Isolation	• 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	• 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	• 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)	• 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 month	And/or • 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		