

Aerosol Lab S51 Risk Assessment

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Hazards	Who Might be Harmed?	What Control Measures Are In Place?
General – covering all hazards listed below	Room users	- No unauthorised working out of hours - All users receive training and authorisation before starting work - Appropriate level of supervision given to all users - Entry controlled and briefed on hazards - Hazardous activities reduced as far as reasonably practical
Hazardous substances	Room users	COSHH assessments are required for substances in use. Transfer fine powders using suitable containment/extraction; avoid creating airborne dust. Aerosol generation takes place inside the fume cupboard. Use appropriate PPE and dust-safe spill cleaning. Label samples and dispose of waste through approved routes.
Failure of fume cupboards	Room users	Warning lights indicate extraction failure; fume cupboards are checked annually. Stop use and make the system safe if extraction fails; do not resume until the fault is resolved. Confirm that the cupboard is suitable for the operations undertaken.
Aerosol Equipment • Topaz aerosol generator • Wrightson dust feeder • Aerodynamic Particle Sizer	Room users	GENERIC AEROSOL EQUIPMENT Use restricted to trained, authorised operators. Aerosol generator operates within the fume cupboard; route exhaust to suitable extraction/collection. Check tubing, connections and exhaust before operation. Follow instrument manuals and approved start-up/shutdown procedures. Do not undertake unauthorised servicing. Equipment manuals: https://eodg.atm.ox.ac.uk/eodg/equipment/alr.html
• Sequential Mobility Particle Sizer + Counter (SMPS+C)		SMPS — RADIOACTIVE NEUTRALISER AND HIGH VOLTAGE The charge neutraliser may only be used by personnel who have completed the required radiation safety training and received authorisation. Store in the safe when not in use; maintain the existing monthly checks and safety-book records, subject to confirmation by the Radiation Protection Supervisor. Wear disposable gloves when handling the neutraliser in accordance with the approved source procedure. Do not dismantle or modify the radioactive source. Refer to the current source-specific radiation assessment, inventory and incident procedures. The SMPS contains high voltage during operation; interlocks must not be bypassed. Disassemble only when switched off and in accordance with the manual by authorised personnel.
Electricity	Room users	Portable electrical equipment is inspected/tested under departmental arrangements; circuits have appropriate protection. Only competent persons undertake electrical repairs or modifications. Report damaged leads, faults or defective enclosures and withdraw affected equipment from use.
Compressed gases: helium and nitrogen cylinders	Room users; trained cylinder handlers	Secure cylinders upright with suitable restraints; use gas-compatible, pressure-rated regulators and connections. Restrict cylinder movement and regulator changes to trained, authorised personnel. Check for leaks and isolate supply after use.

Gas pyknometer and pressure system	Instrument users	Operate only after training and according to manufacturer instructions. Observe rated pressure limits and use approved gas supplies. Depressurise the sample chamber before opening; inspect seals and connections. Pressure-system servicing restricted to competent personnel.
Mineral powder spills and sample cleaning	Room users; cleaners	Avoid resuspending settled dust. Isolate significant spills and follow spill procedures. Store and label powders; clean trays and tools using approved procedures.
General conduct, emergencies and unattended work	Room users; visitors	Follow current MPLS Laboratory Code of Conduct and S51 Local Rules. No food or drink; suitable lab coat, eye protection and footwear as required. Maintain clear walkways. Report incidents and near misses through University procedures. Out-of-hours or lone working requires relevant authorisation and assessment; unattended experiments require the applicable display/contact arrangements.