**List the Hazards and risk controls as per risk assessment**

<table>
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<tr>
<th>Associated assessment reference</th>
<th>Hazards</th>
<th>Risk controls</th>
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<tr>
<td></td>
<td>1. Spillage containment</td>
<td>1. Keep minimal volume of chemicals in the cupboard; flammable liquid cannot exceed 2.5L</td>
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<td>2. Contact toxic or obnoxious material or from flammable materials due to misuse</td>
<td>2. Proper induction and training to prevent misuse;</td>
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<td>3. Reduced effectiveness</td>
<td>3. Maintenance of the fans and regular checks of the sash pulleys:</td>
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<td>• the cupboard sash is not open too wide;</td>
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<td>• removing clutters which could interfere with the smooth flow of air or clogged dirt around the vents at the back of the cupboard.</td>
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<td>• fans are functioning well</td>
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<td>• sash cord is not broken</td>
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**List resources required including personal protective clothing, chemicals and equipment needed**

Maintenance of the fans and regular checks of the sash pulleys.  
Regular check-up and annual certification are required.  
PPE is required for users working in fume cupboard.

**List step by step instructions or order for undertaking the task**

Contact pharmacy.facilities@sydney.edu.au for issues with malfunctioning fume hoods, the faculty facilitate officer will request CIS for repairs and maintenance.

**Before use, check that:**
- the fume cupboard is suitable for intended use
- the unit is operating efficiently; the cupboard has been tested and certified within the previous 12 months.
- the fume cupboard is clean and free from contamination.
- there is enough space in the cupboard for the proposed work to be undertaken.
- the equipment is positioned at the back of the fume cupboard to reduce disturbances to the air flow. Where practicable that all materials and equipment required are placed inside the fume cupboard before beginning work.
- total flammable liquid in the fume cupboard is not exceeding 2.5 L (or 7.5 L/m²).
During use
• The sash is positioned properly: (a) fully open for access to set up equipment or reagents; (b) partially open when handling hazardous substances; and (c) lowered as far as practicable when the process is in operation.
• The minimum quantities of reaction materials/rates are employed to reduce the production of hazardous fumes.
• Use protective equipment appropriate to the task being undertaken.
• Use a decanting bench fitted with a local exhaust to decant chemicals.

After use
• Dispose of any hazardous waste in accordance with SWP;
• Remove any apparatus and clean the fume cupboard
• Lower fume cupboard sash enough to minimise outside disturbance effects to the laboratory environment.
• Ensure that the log of use has been completed if it is required, including all reagents, proposed products and length of time of operation of fume cupboard.
• For perchloric acid operations, the fume-scrubbing facility shall be run continuously. On completion of the operation with perchloric acid, the wash-down facility shall be operated for 15 min and any condensate, spills or dust deposits shall be manually washed from the interior of the fume cupboard chamber by means of a hand-held gentle spray of cold water. Similar requirements apply to the use of hydrofluoric acid.

Precautions:
1. A fume cupboard should not be used for the storage of chemicals.
2. Fume cupboards should not be used for work with micro-organisms. This type of work should be carried out in a Biological Safety Cabinet.
3. Recirculating Fume Cupboards filter or absorb fumes produced within the cupboard and discharge the air back into the laboratory. The chemicals used must be compatible with each other and with the absorbing material or filter. The filters should be regularly changed (according to the manufacturer’s instructions) and the cupboards regularly inspected and maintained.
4. Recirculating Fume Cupboards should NOT be used if:
   - Solvents used have a boiling point of less than 75°C;
   - solvents vapours are generated at greater than 50 ml per day;
   - greater than 50 ml of acid fumes are generated;
   - work with perchloric acid is proposed;
   - micro-organisms are handled;
   - radioisotopes are handled in quantities greater than 10 times the annual limit of intake for inhalation;
   - the laboratory temperature exceeds 37°C and the relative humidity exceeds 90%.
5. The interiors of fume cupboards must be kept tidy and the rear vents clear and free from a build-up of grime.
6. The front sash must be kept down as far down as is comfortable while working and closed when not actively working.
7. Heads must stay OUT of the fume cupboard whilst working.
8. To detect and be warned of any fan failure, a strip of tissue or some other visible indicator of air flow should be used. (More modern fume cupboards have built in air flow warning devices.)
9. The sash cords should be examined visually from time to time. If there is any visible wear on the cords or if the sash pulley seems to be stuck and the cord is just sliding over it, CIS work request may require to fix the problem. Great care must be taken until the cord is repaired. If a cord breaks, WORK MUST BE STOPPED IMMEDIATELY and the CIS should be informed. A CUPBOARD WITH A BROKEN SASHCORD MUST NEVER BE USED. A falling sash could easily shatter an arm or cause even more serious damage.

List emergency shutdown procedures

Stop working; close the containers which are being used in the fume cupboard; put up the warning notice, close the sash as down as possible.
Press EMERGENCY button and evacuate following evacuation procedure.
Follow local emergency procedures and approach emergency contacts.

List Emergency procedures for how to deal with fires, spills or exposure to hazardous substances

Fire in the fume cupboards
In case of fire, Turn off/remove sources of ignition, move any flammable substance away from fire. Cover the fire with a fire blanket if it can be fully contained underneath the blanket otherwise use a fire extinguisher (for trained users). Carbon dioxide or dry powder is suitable for flammable liquid spills.
Be prepared for re-ignition: do not leave the scene unless fumes or smoke are hazardous.
Big fire- need to evacuate: notify other lab members, fight fire if trained, set alarm, press EMERGENCY button and evacuate the room, notify local warden and follow evacuation procedure.

Hazardous substances exposure

Fan failure
If a fume cupboard has its warning notice turned over to red, it must not be used until declared safe.

Sash Cord Failure
- The procedure is: Stop work, turn over your warning notice, inform the supervisor.
- A FUME CUPBOARD WITH A BROKEN SASHCORD MUST NEVER BE USED.
- NO ONE SHOULD ATTEMPT TO LOWER A SASH WITH A BROKEN CORD BY THEMSELVES.
- COMPETENT HELP MUST BE OBTAINED.

List Clean up and waste disposal requirements

Check SWPs for chemical spill clean-up and hazardous waste disposals.

List references used in the development of this SWP, e.g. codes of practice

- AS/NZS 2243.8:2006 Section 6 Use of Fume Cupboards
- Work Health and Safety Act 2011
- NSW Poisons and Therapeutic Goods Regulation 2002
- WorkCover NSW Code of Practice – Control of Workplace Hazardous Substances 2006
- WorkCover NSW Code of Practice – Storage and Handling of Dangerous Goods 2005
- University's WHS Policy.

List competency required – qualifications, certificates, licensing, training - e.g. course or instruction:

Individual operators are required to complete induction and training to be competent to operate independently.

Staff approved to assess competence for this SWP

Research supervisors and lab supervisors
In signing this section the assessor agrees that the following persons are competent in following this SWP.

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<th>Signature</th>
<th>Date Competent</th>
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<th>Assessor/Authoriser signature</th>
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