SAFE WORK PROCEDURE

Decanting Solvents in Solvent Store

Description: Organic solvents are decanted into 2.5L & 4L Winchester bottles from bulk storage drums located in the Faculty Solvent Store N208 and N207.

Prepared by: Sarah Cui, Alpesh Patel and Padmaja Dhanvate

Responsible supervisor/s: Research supervisors/Technical officers/Laboratory managers

List the Hazards and risk controls as per risk assessment

<table>
<thead>
<tr>
<th>Associated assessment reference:</th>
<th>Hazards</th>
<th>Risk controls</th>
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<tbody>
<tr>
<td>1. Physical injury from heavy items</td>
<td>1. Purchase as little amount as possible for bulk solvents.</td>
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<td>2. Fire, Physical injury or health hazards due to exposure or spills from chemicals</td>
<td>2. Only trained users should conduct the procedure, two persons are required to lift the drums; collecting containers are limited to 2.5L and 4L Winchester bottles (correctly labelled).</td>
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<td>3. Cuts or related physical injuries, especially from glassware handling Winchester bottles</td>
<td>3. Users need to be familiar with procedures for safe lifting.</td>
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<td>4. PPE; no sources of ignition are to be taken into the store including mobile phones; be familiar with the procedures to use the spill and first aid kits, emergency eye washes and safety showers; make sure MSDS available and fire equipment is available and operational; floor bunding to contain spills. Use carriers to transfer Winchester bottles. Check the ventilation is operating properly prior to work.</td>
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<td>5. Use preferably leather gloves to handle (if necessary) broken glassware. Use dustpan and brush to clear glass and place in a glass bin. Preferentially use 2.5L Winchester bottles for decanting into.</td>
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List resources required including personal protective clothing, chemicals and equipment needed

- PPE: laboratory coats, safety glasses, face shield, chemical resistant gloves, covered (enclosed) footwear
- At least two person to work together
- Properly labelled Winchester bottles 2.5L or 4L and Winchester carrier
- Pumps

List step by step instructions or order for undertaking the task

Onsite training:
Users are required to complete Faculty WHS essential procedures before submitting a training request for Decanting Solvents to pharmacy.labsupport@sydney.edu.au,
Access to Solvent Store N207/208 for authorised users
• Keys for Solvent Store N207/208 is located at Faculty administration office
• Keys for Solvent Store is available for authorised users only from 9 am to 3pm Monday to Friday

Procedures:
• From May 2016, new bulk solvent purchase procedures are in place. According to these procedures only hexane, ethanol 100% and ethanol 80%v/v will be ordered in 20 L drum, all other solvents are ordered in 2.5 L or 4 L Winchester.
• Turn off your mobile phone and any other electrical devices in your possession before starting this procedure.
• Two trained users with approved access to the solvent store must be present when decanting.
• The drum to be decanted must be moved into the designed working station. Do not lift loads that are too heavy for you—use team lifting when appropriate.
• Choose appropriate pump from the ones available.
• Assemble the pump into the drum:
  1. Loosen drum seal expander completely on the pump
  2. Insert drum seal fully into the drum neck
  3. Keeping pump firmly pressed down; tighten seal expander until firmly fitted to container neck opening
• One person holds the Winchester, one person start pump operation: maintain a slow, smooth pumping action to build up pressure in the drum. Liquid can be dispensed in small amounts by manually controlling the tap, or dispensed in a continuous flow by leaving the tap in the fully open position
  1. Pump slowly to pressurize container
  2. Open tap to dispense liquid
  3. Close tap to stop liquid flow
  ❖ Warning:
    1. After you stop dispensing, please tap the spout to release small drops of fluid held by vacuum
    2. Do not lean over a pressurized container. If improperly fitted, the drum seal could become loose during use, ejecting the pump with potentially hazardous forces.
• Manual pressure release: a manual pressure release valve on the side of the pump can be opened to vent pressure. Pressure must be released before removing the pump from a container.
• To remove the pump, release pressure as above, then loosen the drum seal expander and pull the pump and siphon tube out of the container. Always release pressure first before removing pump.
  ❖ Warning:
    1. Do not attempt to remove the pump from a pressurized container.
    2. Do not move or transport any container with the pump attached. Remove pump and seal container before moving
    3. Always exercise caution when working with toxic substances. During pressure release, high concentrations of potentially hazardous vapours may be released.
• Always, leave a bit of air space at the top of each Winchester to allow for expansion. Swap for another empty bottle and repeat.
• Once the drum is empty it should be taken outside of the cage and aired out. After the drum is completely dry and residue free, the label must be defaced to be illegible and the drum disposed of in a recycling bin or general waste bin (to be sorted for recycling later).
• Newly filled Winchester bottles must be taken to the designated lab or storage area. Glass bottles must be stacked in carrier for transportation.

List emergency shutdown procedures
Remove the pump from the drum; replace caps on receiving containers and drum. Put all the containers on a safe place.
Press the EMERGENCY button; Evacuate and close door(s).
Follow local emergency procedures and approach emergency contacts.

List Emergency procedures for how to deal with fires, spills or exposure to hazardous substances
Fire: Raise the alarm. Use Fire extinguishers present only if fire can be contained and operator is confident using the appliance. Do not use more than one extinguisher if the fire cannot be put out.
Spills: Use the spill kit located in the Store. Follow SWPS for dealing with chemical spills. Only tackle spills if you are confident to do so. If spillage you are not prepared to manage internally, Faculty Lab Manager (Sarah Cui: 9351 2312), and call Emergency Number x13333, if PGI spillage > 500 ml or PGII and III spillage > 2.5L.

Exposure: Inhalation: seek medical help and evacuate to fresh air. Skin contact: wash area immediately; for significant spills remove lab coat immediately and use safety shower for 15 min; follow the special treatment required according to MSDS; seek medical help. Eye contact: seek medical help; use eye wash station in the store to thoroughly rinse eyes for 15 min.

Follow local emergency procedures and approach emergency contacts.

List Clean up and waste disposal requirements

See SWPs for chemical spills and chemical waste disposal

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

- 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:

This procedure is not to be operated without prior training and approval by the faculty lab manager or laboratory technical staff.

Users need to complete an onsite training by a technical officer and quiz before getting approved to access to the solvent store.

Staff approved to assess competence for this SWP

Technical officers and Lab manager
In signing this section the assessor agrees that the following persons are competent in following this SWP.

<table>
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<tr>
<th>Name</th>
<th>Signature</th>
<th>Date Competent</th>
<th>Name Assessor/Authoriser of</th>
<th>Assessor/Authoriser signature</th>
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