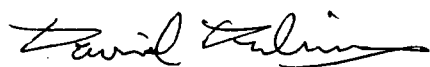


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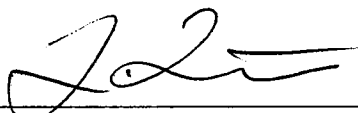
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Author of this Revision:
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Member, Joint Health and Safety Committee

05-Dec-17

Date



Reviewed by:
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Faculty Technician
Member, Joint Health and Safety Committee

05.12.2017

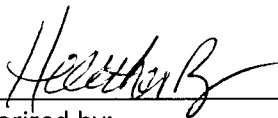
Date



Approved by:
Carolyn L. Cummins, Ph.D.
Associate Professor
Chair, Joint Health and Safety Committee

Dec 5, 2017

Date



Authorized by:
Heather Boon, B.Sc.Ph., Ph.D.
Professor and Dean

Dec 5, 2017

Date

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1. Scope

The scope of this SOP is to provide building-specific details regarding the safe transport, storage, and disposal of laboratory grade solvents, and solid material in contact with hazardous chemicals, in the Leslie Dan Faculty of Pharmacy.

This SOP is not intended to replace, supersede, or contravene any of the policies or training outlined by the Office of Environmental Health and Safety (OEHS), available online via the following website:

<http://www.ehs.utoronto.ca/resources/>

The SOP is intended to clarify how site-specific aspects of OEHS policies are dealt with in order to ensure they are appropriately implemented. OEHS policies will not be re-iterated in this document, but rather the reader is referred to the link above, to the Policies and Procedures Listing Health and Safety Manual.

The scope of this SOP does not include radioactive, cryogenic, or biohazardous substances, or chemical spills pertaining to these materials.

2. Objective

The objective of this SOP is to outline the appropriate training, resources, policies, and the building-specific procedures pertaining to solvent and chemical storage, transport, and disposal in the Leslie Dan Faculty of Pharmacy.

The SOP outlines the training students are provided with, as well as the logistics pertaining to solvent handling (both inorganic and organic), and chemical solid waste disposal.

3. Background

The Leslie Dan Faculty of Pharmacy is an organization committed to protecting and monitoring the health and safety of people in the building. The Joint Health and Safety Committee is the body responsible for overseeing this important task and reporting to the OEHS at the University of Toronto. SOPs are now required by the OEHS. This series of SOPs are compliant with this requirement.

Proper solvent handling and disposal are an essential aspect of safety, as improper storage, disposal, and even mislabelling can pose a risk to the public.

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4. Definitions and Abbreviations

A “solvent” in this document is defined as a liquid intended for laboratory use, for research or educational use in a laboratory setting.

Abbreviations used in this document are defined in this section:

SOP	Standard Operating Procedure
JHSC	Joint Health and Safety Committee of the Leslie Dan Faculty of Pharmacy, at the University of Toronto
OEHS	Office of Environmental Health and Safety, University of Toronto
TBD	To be determined
N/A	Not Applicable
Rev.	Revision

5. Policies

5.1.1 Chemical Spill Kits

1. Chemical spill emergency procedures are available on the OEHS website: <https://ehs.utoronto.ca/report-an-incident/emergency-procedures/>
2. Safety training for graduate students and research associates is a Faculty requirement, and occurs twice yearly in the Leslie Dan Faculty of Pharmacy. Chemical spill response is a component of the safety training course.
3. Standard chemical spill kits are available for purchase through the OEHS.
4. Each research floor (floors 7-12) shall be equipped with its own spill kit, visibly located in a central place and accessible to everyone on the research floor.
5. Principal Investigators can also opt to stock their individual laboratories with a spill kit and include the appropriate hazard-specific materials in their laboratory spill kit.
6. Principal Investigators may also adapt or compliment the floor spill kit to comply with the requirements of their laboratory.
7. Each spill kit shall contain an inventory list of its contents.
8. The inventory list shall be checked on a yearly basis by the Faculty Technician to ensure that it is complete.
9. In the event that a spill kit is used, the person using the spill kit shall inform the Faculty Technician so that the kit may be replenished.

5.1.2 Solvent Storage Room

1. Chemical storage guidelines are available on the OEHS website: <https://ehs.utoronto.ca/wp-content/uploads/2015/10/Storage-Rooms-Updated.pdf>
2. “Flammable Liquid Storage: Standard for Storage Rooms” guidelines are available on the OEHS website: <https://ehs.utoronto.ca/wp-content/uploads/2015/10/Storage-Rooms-Updated.pdf>

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3. Safety training for graduate students and research associates is a Faculty requirement, and occurs twice yearly in the Leslie Dan Faculty of Pharmacy. Proper solvent storage is a component of the safety training course.
4. Research laboratories in the Leslie Dan Faculty of Pharmacy are often limited in the quantities of specific chemicals they are permitted to store in their own laboratory space.
5. The Solvent Storage Room, located on the penthouse floor of 144 College Street, is designed to safely store chemicals which surpass the permitted storage quantity.
6. The Solvent Storage Room is designed to store only **new, unopened solvents and chemicals** only.
7. Access to the Solvent Storage Room is controlled and monitored via electronic FOB.
8. The Solvent Storage Room is protected by a preaction/foam sprinkler system.
9. The isolation valve of the Solvent Storage Room is located on the upper penthouse/north west corner.
10. The Solvent Storage Room contains separate sections for acids, and flammable solvents.

5.1.3 Solvent and Chemical Waste Room

1. Laboratory Hazardous Waste Management and Disposal Guidelines are available on the OEHS website:
<https://ehs.utoronto.ca/laboratory-hazardous-waste-management-and-disposal-manual/>
2. Safety training for graduate students and research associates is a Faculty requirement, and occurs twice yearly in the Leslie Dan Faculty of Pharmacy. Solvent and chemical waste disposal is a component of the safety training course.
3. The Solvent and Chemical Waste Room, located on the penthouse floor of 144 College Street, is designed to safely store chemicals which are intended for disposal.
4. The Solvent and Chemical Waste Room is designed to store only **used solvents and chemicals**.
5. Access to the Solvent and Chemical Waste Room is controlled and monitored via electronic FOB.
6. Radioactive materials are not permitted in the Solvent and Chemical Waste Room.
7. Disposal of solid material in contact with hazardous chemicals may also be placed in the Solvent and Chemical Waste Room.

6. Procedures

6.1.1 Transport and Storage of Unopened Solvents

1. Solvents should be transported in their original packaging. The unopened bottles should be appropriately labeled (the product label is sufficient).
2. The unopened bottles should also be affixed with a label indicating which lab the chemicals belong to. A labeled box may also be used to group chemicals by laboratory.
3. Glass bottles and containers should be transported using one of the following two methods:

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- a) Using rubber carrying basket(s). These baskets are available in the Solvent Storage Room.
 - b) Using a laboratory cart. Glass Bottles on carts should be in a secondary container, e.g. a regular box or plastic tub to secure them on the cart.
4. Solvents are then transported via the service elevator to the Solvent Storage Room.
 5. The bottles should be placed on the shelves in the Solvent Storage Room.
 6. Each laboratory is responsible for maintaining their own inventory regarding what is stored in the Solvent Storage Room, in the appropriate designated area.

6.1.2 Disposal of Used Solvents

1. Solvents should be disposed of in an appropriate glass container, affixed with a chemical waste label. The label should be accurately and completely filled out:

CHEMICAL WASTE	
NAME OF RESEARCHER: Dr. David Dubins	
BUILDING: 144 College St.	
ROOM # PB860	PHONE # 6-5303
LIST OF CHEMICALS	APPROXIMATE %
FeCl ₃	<1 %
Salicylic Acid	<5 %
	%
NO SYRINGES, BIOHAZARDS OR RADIOACTIVES	
Special Hazards:	
<input type="checkbox"/> Unstable/Explosive	<input type="checkbox"/> Organic Peroxide
<input type="checkbox"/> Carcinogen	<input type="checkbox"/> Air or Water Reactive
<input type="checkbox"/> Other _____	
WASTE WILL NOT BE REMOVED IF ALL SECTIONS ARE NOT COMPLETED	
For pickup or more labels call (416) 978-4821 For further information call (416) 978-7000	

2. Transport of glass containers should be done with a laboratory cart, or rubber carrying basket(s). These baskets are available in the Solvent Storage Room.
3. Solvents are then transported via the service elevator to the Solvent and Chemical Waste Room.
4. The bottles should be placed on the shelves in the Solvent and Chemical Waste Room, in the appropriate designated area.

6.1.3 Disposal of Solid Material in Contact with Hazardous Chemicals

1. Place solid materials in contact with hazardous chemicals into a clear plastic bag.
2. Completely fill out and attach a chemical waste label (as illustrated above).
3. Transport the solid waste via the service elevator to the Solvent Storage Room.

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4. The bag is then placed in the Solvent Storage Room, in the appropriate designated area.

6.1.4 *Darkroom Procedures: Darkroom Use and Chemical Disposal*

1. Consult the MSDSs (Materials Safety Data Sheets) for the chemicals to be used. More information can be found on the EHS website under the Resources section:
<http://www.ehs.utoronto.ca/resources/>
2. Use tongs for chemical baths.
3. Do not mix solutions in the sink. Mix solutions in your laboratory fumehood, then bring them to the Darkroom.
4. Do not touch electrical equipment with wet hands.
5. Wear protective personal protective equipment (latex or nitrile gloves, lab coat, and eye protection).
6. No food or drink is permitted in the Darkroom.
7. Take care not to splash chemicals while mixing solutions.
8. Avoid prolonged contact with chemicals.
9. Any spills should be cleaned up immediately.
10. No hazardous Darkroom chemicals should go down the sinks. A waste bucket is provided for developer waste solutions.
11. Notify the faculty technician if the waste bucket is more than $\frac{3}{4}$ full.
12. After using the darkroom, ensure that you clean up after yourself. Any objects left on the countertops should be stored neatly at the end of the counter, with an info label providing the name and contact information of the person.
13. Report any concerns to the Faculty Technician.

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7. Revision History

Rev #	Date	SOP Section(s)	Revision Description	Revised By
0	20-Mar-12		SOP PBSOP002 created.	David Dubins (author)
1	05-Dec-12	6.1.1	<ul style="list-style-type: none"> • Item 1: Added the sentence "Solvents should be transported in their original packaging." Added the policy that Glass Bottles on carts should be in a secondary container, e.g. a regular box or plastic tub to secure them on the cart. • Item 2: Added the policy that Glass Bottles on carts should be in a secondary container, e.g. a regular box or plastic tub to secure them on the cart. 	David Dubins (reviser)
2	29-Jan-14	6.1.2 5.1.3	<ul style="list-style-type: none"> • Item 1: Location of disposal of chemical solvents changed from "Solvent Storage Room" to "Solvent and Chemical Waste Room". • Item 2: Policy 5 removed (not applicable to solvent disposal): "Each laboratory is responsible for maintaining their own inventory regarding what is stored in the Solvent Storage Room, in the appropriate designated area." • Item 3: References to the "Solvent Storage Room" have been changed to the "Solvent and Chemical Waste Room" in section 5.1.3. 	David Dubins (reviser)
3	05-Dec-17	6.1.4	Darkroom Procedures: Darkroom Use and Chemical Disposal policies added.	David Dubins (reviser)