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| FScMain | | | |
| **PREVENTING AND HANDLING OF UNKNOWN CHEMICALS IN LABORATORIES**  **SAFETY POLICY** | | | |
| **CREATED:** | **04/22/2013** | **REVISED:** |  |

**(Adopted and edited from Preventing and Handling of Unknown Chemicals In Research Laboratories – Columbia University, Health Sciences Division,** [**http://ehs.columbia.edu/UnknownChemicals.pdf**](http://ehs.columbia.edu/UnknownChemicals.pdf)**)**

The purpose of this policy is to avoid unnecessary exposures to unknown chemicals, prevent the generation of such materials, minimize the disposal cost of such chemicals and ensure compliance with Saint Mary’s University current control measures.

An unknown chemical is a chemical or a mixture of chemicals whose identity cannot be determined due to lack of a proper label or other pertinent information affixed to the container.

Chemicals that are not routinely used may be left on a shelf or in a freezer for a long period of time without proper supervision. With the passage of time labels may peel off or deteriorate to the extent that it is no longer legible rendering the chemical unknown. In certain processes labels may peel off when wet. Under such circumstances, if a container is not labeled right away, it may become an unknown. Various stock solutions prepared in unlabeled beakers or test tubes may become unknowns if not properly disposed or stored after each use.

Unknown chemicals are normally noticed when lab personnel come across some unlabelled chemical container that they have not used, when there are changes in lab personnel or space, during laboratory inspections or preparing for lab renovation.

**Should an individual come across an unknown, the following steps should be followed to aid in identification:**

1. Place signage in the area notifying personnel that an unknown is present. Never attempt to handle (ie. move) a container which is unknown as some compounds are shock sensitive. Never attempt to identify an unknown by smelling or tasting it. Such activities are strictly prohibited. Note: The Workers Compensation Board (WCB) in some jurisdictions do not allow the handling of unknowns unless given a specific license to do so <http://www.civil.ubc.ca/home/safety/info/Disposal_of_Unknown_Lab_Chemicals.pdf>
2. Inquire from the laboratory personnel who are known to use the space if it can be accounted for. The type of research/teaching conducted in the lab can be helpful information for making determination for the chemicals left on the shelf or under a sink.
3. Eliminating certain chemicals as a possibility will also help narrow down the problem. This is especially important for chemicals such as Mercury, PCB or Dioxin, etc., because they must be handled differently from other hazardous materials.
4. If no one claims ownership of the unknown – notify the Science safety technician immediately so that arrangements for identification and disposal can be made.

**The following steps can be taken in order to prevent unknowns:**

1. Never remove manufacturers label from the container.
2. Label all secondary containers, including beakers and test tubes, even if used temporarily. This can be done with lab tape, water-proof markers or grease pencils.
3. Never pour an unknown chemical into an already filled large waste storage container as it will make the entire waste an unknown. Never pour an unknown down the sink or place in the regular trash.
4. Immediately replace labels that have fallen off, become damaged or illegible.
5. Label containers with chemical names, not abbreviations, chemical structures or formulae.
6. Label archived containers and boxes in a freezer with water resistant ink. (Archived research samples are often stored in boxes containing hundreds of small vials. Label and date the outside of the box with the chemical constituents paying special attention to regulated materials such as radioactive, solvents, heavy metals and other toxics. If the samples are non-hazardous substances, label them as such).
7. Keep the amount of chemicals stored in the laboratory to a minimum. Get rid of all the chemicals you do not need or have no intention to use in the near future.
8. When moving into another lab always go through old stock to ensure that no unknowns or expired chemicals are present on shelves, refrigerators, under the sink or in a storage room.
9. Keep an updated chemical inventory for all the chemicals used in your laboratory.

**Responsibility**

* **Management:** It is the responsibility of the lab supervisor to make sure all chemicals present in the laboratory are identified, labeled and properly managed.
* **Disposal:** It is the responsibility of the lab supervisor to make arrangements with the Science safety technician to ensure proper disposal of all unknowns. If the lab supervisor has left the university or cannot be located, the department will be responsible to designate an alternate.
* **Cost:** All costs related to the identification, special handling, packaging, transportation and disposal will be charged to the lab supervisor. If the lab supervisor has left the university the department will be responsible for all disposal costs.