POLICY NUMBER: S-001
APPROVAL DATE: 07/13/2010
EFFECTIVE DATE: 07/14/2010

TITLE: Approved Chemical Storage Amounts

1.0 PURPOSE

This policy outlines the amount of chemicals that are permitted to be stored in VAPHS laboratories.

2.0 REVISION HISTORY

Date	Revision #	Change	Reference Section(s)
May 20, 2010	N/A	New policy/procedure	

3.0 SCOPE

This policy applies to all laboratory research conducted at or under the auspices of VA Pittsburgh Healthcare System.

4.0 POLICY

4.1. There is no regulation on the amount of acids that can be stored in a laboratory. However, the Research and Development (R&D) Department recommends keeping the volumes of acids to the minimum necessary for the work being performed in the laboratories. Please note that inorganic acids (hydrochloric acid, sulfuric acid) should be stored separate from organic acids (acetic acid).

4.2. There is no regulation on the amount of bases that can be stored in a laboratory. However, the R&D Department recommends keeping the volumes of bases to the minimum necessary for the work being performed in the laboratories.

4.3. There is no regulation on the amount of hazardous chemicals (carcinogens, reproductive hazards, organic peroxides, oxidizers, and reactive chemicals) that can be stored in the laboratory. However, the R&D Department recommends keeping the volumes of hazardous chemicals to the minimum necessary for the work being performed in the laboratories.

4.4. The volume of flammable and combustible liquids in a lab is restricted by the VAPHS guidelines and the International Fire Codes.

4.4.1. The following table provides the maximum allowable container size and type based on the flammable and/or combustible liquid classification.

Liquid Classification and Maximum Container Size

Container Type	IA	IB	IC	II	III
Glass	1 pt (0.5L)	1 qt (1L)	1.3 gal (5L)	1.3 gal (5L)	5 gal (20L)
Metal or Approved Plastic	1.3 gal (5L)	5 gal (20L)	5 gal (20L)	5 gal (20L)	5 gal (20L)

Safety Can	2.6 gal (10L)	5 gal (20L)	5 gal (20L)	5 gal (20L)	5 gal (20L)

4.4.2. The combined volume of flammable and combustible liquid containers stored in a single fire area (5000 square feet of floor space) outside of a flammable materials storage cabinet or flammable liquid storage room must be restricted to the following (**the listed volumes must include flammable and combustible liquids as well as wastes):

1. Not in Safety Cans – No more than 1 gallon of Class IA; 5 gallons of Class IB or Class IC; no more than 10 gallons of Class I and Class II combined.
2. In Safety Cans – No more than 2.6 gallons of Class IA; 5 gallons of Class IB and Class IC; no more than 25 gallons of Class I and Class II combined.
3. Class IIIA liquid should not exceed 60 gallons (230 L).
4. Class IIIB liquids should not exceed four-55 gallon drums (applies only to mechanical areas).

***Please note**: Empty and partially full containers should be handled and stored like full containers.

4.5. A Flammable Materials Storage Cabinet is a cabinet that is constructed and arranged in accordance with NFPA and International Fire Code standards that is used to store flammable and combustible liquids.

4.5.1. A flammable materials storage cabinet must meet the following requirements:

(1) Underwriters Laboratories® (UL)/FM approved
(2) Must be marked with obvious lettering stating "Flammable".
(3) Limited so that the maximum quantity of Class IA liquids is 30 gallons within the cabinet.
(4) Unvented.
(5) Equipped with self-closing and self-latching doors if purchased after 2005.

4.5.2. A flammable materials storage cabinet should be used for storage of all flammable and combustible liquids that are not in immediate use. A maximum of three flammable materials storage cabinets can be located within a single fire area.

4.5.3. An approved flammable materials storage cabinet is required when:

(1) Collective volumes of Class I and Class II liquids in an individual fire area not in safety cans exceeds 10 gallons.
(2) Collective volume of Class I and Class II liquids in an individual fire area in safety cans exceeds 25 gallons.
(3) Collective volume of Class IIIA liquids exceeds 60 gallons.
(4) Collective volume of Class IIIB liquids exceeds 220 gallons (applies only to mechanical areas).
(5) Again, the collective amounts listed above must also include wastes.

4.6. Flammable and combustible materials that must be kept cold should be stored in refrigerators, freezers and coolers that are UL approved and rated for flammable materials storage.

4.7. Proper storage information for all chemicals should be obtained from the Material Safety Data Sheet (MSDS) or the manufacturer's label. MSDSs must be available for every chemical stored in the laboratory.

4.7.1 Storage considerations may include temperature, ignition control, ventilation, segregation, and identification.

4.7.2 When segregating chemicals in cabinets, consider the compatibility of the chemical with cabinet (i.e., strong acids would corrode a metal cabinet).

4.7.3 Weak bases and weak acids should not be treated like strong bases and strong acids; the storage requirements are not the same.

4.8 References:

Code of Federal Regulations - 29CFR §1910.106.
Code of Federal Regulations – 29CFR §1910.1200.
University of Pittsburgh Safety Manual, EHS Policy #02-003 and #04-006.

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