

CHEMICAL INVENTORY REQUIREMENTS GUIDE

Version	Date	Comments
1	March, 2013	Initial <i>Chemical Inventory Requirements Guide</i>

A. INTRODUCTION

The purpose of this guide is to assist laboratory personnel in determining what chemical items must be included in their electronic chemical inventory. Each laboratory that uses or stores hazardous chemicals must maintain an electronic chemical inventory in the *EHS Assistant (EHSA)* software available at ehs.gmu.edu. These inventories are required for a number of purposes including meeting regulatory requirements that require accurate chemical inventories. Further, inventories are utilized by EHS personnel in order to conduct hazard assessments, to maintain maximum chemical storage limits, and to facilitate hazard communication efforts with external emergency response personnel.

B. SCOPE

This guide covers all laboratories at George Mason University using or storing chemicals in a designated laboratory location. It does not cover non-laboratory locations including Facilities Management, Intercollegiate Athletics, or the School of Art which may utilize or store chemicals in a non-laboratory environment. Contact safety@gmu.edu for more information on inventory requirements in non-laboratory locations.

C. RESPONSIBILITIES

All Principal Investigators and Laboratory Supervisors are required to maintain an accurate electronic chemical inventory. Chemicals must be entered or removed within one month of receipt or disposal of a chemical.

D. ADDITIONAL DOCUMENTS

Laboratory personnel responsible for entering inventory should also reference the *Chemical Inventory Work Instructions Guide* for detailed instructions on how to use EHSA for maintaining electronic inventory. This guide provides assistance on accessing EHSA, adding receipt and disposal of chemical products, as well as tips for troubleshooting.

E. CHEMICAL ITEMS TO INCLUDE ON INVENTORY

- Only chemicals that are considered hazardous need be included on the inventory. This includes all liquids, solids, and compressed or liquefied gases. Hazardous chemicals are defined in different ways by OSHA, EPA, DOT, and other regulatory bodies. In order to lessen the ambiguity in these definitions, EHS considers the types of items listed in Appendix A as hazardous chemicals and are required to be entered into EHSA.

- Each bottle as received from the manufacturer should be entered as a separate inventory item and receive a unique inventory number. Material removed from the manufacturer's bottle and transferred to another bottle as a working stock need not to be entered into the system.
 - For example, if you receive two 5-gallon drums of Ethanol (Drum A and Drum B) each should receive its own line item and associated inventory number.
- Quantities indicated should include the total container size, not that amount remaining in the container. This way a more conservative maximum on hand will be reported.

F. ITEMS NOT REQUIRED TO BE INCLUDED IN INVENTORY

- Retail products used for routine household-like activities (e.g., cleansers or dish soap; however, do include bleach used in laboratory processes)
- Materials to be expended within 1-2 days (e.g., working solutions)
- Radioactive materials*
- Biohazardous materials*
- Non-hazardous materials such as buffers**
- Growth media
- Enzyme preparations

*Radioactive materials and biohazardous materials may have other inventory requirements but are not required to be entered into the chemical inventory in EHSA.

**When moving laboratories these items may be required to be included on inventories.

Appendix A
Items Required for Entry into Chemical Inventory in EHSA

Hazardous Chemicals		
Hazard and Segregation Category	Description	Examples
Flammables/ Combustible Liquids	alcohols, aldehydes, amines, ketones, ethers, hydrocarbons	halogenated: trichloroethane, chloroform, ethylene chloride, carbon tetrachloride
		non-halogenated: diethyl ether, acetone, xylene, toluene, methanol
Corrosives	Acids	oxidizing acids: perchloric, nitric, chromic, sulfuric
		organic acids: acetic, formic, lactic
		inorganic acids: hydrochloric, hydrofluoric, and phosphoric
	Bases	hydroxides, carbonates, & bicarbonates of: ammonium, calcium, potassium, and sodium
	Acid chlorides	benzoyl chloride
Anhydrides	acetic anhydride, butyric anhydride	
Oxidizers	Liquid Oxidizers	hydrogen peroxide, nitric acid, perchloric acid, bromine, sulfuric acid, chromic acid
	Solid Oxidizers	nitrates, nitrites, perchlorates, peroxides, chromates, picrates, permanganates, hypochlorites, bromates, chlorites, chlorates
Metals (toxic land ban) & Poisons	soluble compounds / solutions of:	arsenic, barium, cadmium, chromium, copper, lead, zinc, molybdenum, nickel, selenium, silver, thallium
		mercury
	Carcinogens, reproductive toxins, acute health hazards	beryllium, coal tars, DDT, cyanides, azides, gallium arsenide, PCBs
	Certain dyes and stains	direct black GX, direct blue, direct brown
Reactives	Spontaneously combustible/ (DWW) Dangerous when wet/peroxide forming compounds	chromic acid, cyanides, sulfides, hypochlorites, organic peroxides, perchlorates, calcium/sodium oxide, sodium amide, fluorine, hydrides, calcium carbide, aluminum alkyls, calcium oxide, fluorine, picric acid, arsine, silane, 2,4 dinitrophenol
		Peroxide Formers- isopropyl ether, tetrahydrofuran, sodium amide and vinyl acetate (explosive hazards)