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**

<table>
<thead>
<tr>
<th>Hazard and Segregation Category</th>
<th>Description</th>
<th>Examples</th>
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</table>
| **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  
beryllium, coal tars, DDT, cyanides, azides, gallium arsenide, PCBs |
| | Carcinogens, reproductive toxins, acute health hazards | |
| | 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, arsenic, silane, 2,4 dinitrophenol  
Peroxide Formers- isopropyl ether, tetrahydrofuran, sodium amide and vinyl acetate (explosive hazards) |