

 Environmental Health and Safety TITLE: Chemical Inventory	Effective Date: 09/25/2023	Procedure Number: EHS_SOP302
	Revision: 1	Page 1 of 8
	Approved by Director, Environmental Health & Safety	

1. APPLICABILITY

This policy applies to all faculty, staff, students, visiting scholars, volunteers, and affiliates who procure, use, or store hazardous materials. It outlines the local, state, and federal laws which require the University of Central Florida (UCF) chemical inventory to be kept current and updated in a timely manner. This document is applicable to all UCF owned, operated, or leased spaces.

The definitions and procedures described are to ensure that departments, Principal Investigators (PI), laboratory personnel, and shop workers understand the responsibility that they have to present an accurate and up-to-date chemical inventory. These procedures apply to all departments which use hazardous materials/chemicals.

2. PROCEDURE STATEMENT

A departmental employee knowledgeable of the work within the department, laboratory, or shop is responsible for ensuring that the chemical inventory presented to EHS is accurate and current.

Any chemical that has a National Fire Protection Association (NFPA) hazard rating of 2 or higher in any category must be included in the chemical inventory. All chemicals and mixtures that are considered hazardous (corrosive, acutely toxic, reproductive toxins, flammable, etc.) and require that a SDS be kept on hand according to OSHA (29 CFR 1910) or appear on the Department of Homeland Security (DHS) Chemicals of Interest list ([6 CFR 27 Appendix A](#)) must be included in the chemical inventory. Non-hazardous chemicals may be included for tracking by the department, but it is not a requirement.

Commercially available cleaning products, stock solutions, and samples that have been prepared from an inventoried parent container, biologically hazardous materials, radioactive materials, and non-hazardous chemical products are excluded from the chemical inventory. Biologically hazardous and radioactive materials are covered under other guidelines and require their own record-keeping.

On behalf of UCF, EHS uses the chemical inventory database to demonstrate compliance with statutory and regulatory requirements. The table below reflects some of the relevant regulatory agencies and documents.

Reasons for Chemical Inventory:	Required by:
Employee and Public Health	<ul style="list-style-type: none"> • State Fire Marshal • OSHA (29 CFR 1910)
Environmental Protection	<ul style="list-style-type: none"> • City of Orlando Industrial Waste Water • Florida Tier II (EPCRA) • RMP (40 CFR 68.130) • EPCRA Title III • OSHA (29 CFR 1910)
Emergency Planning, Spill Response, and Disaster Response	<ul style="list-style-type: none"> • Florida Tier II (EPCRA) • State Fire Marshal • CFATS (6 CFR 27) • RMP (40 CFR 68) • ATF • OSHA (29 CFR 1910)
Tax Free Alcohol Industrial Use Permit	<ul style="list-style-type: none"> • ATF (27 CFR 22)
Granting Agencies	<ul style="list-style-type: none"> • IACUC • NIH Grants Policy Statement 4.1.12

3. DEFINITIONS

ATF - Bureau of Alcohol, Tobacco, Firearms and Explosives

CERCLA - Comprehensive Environmental Response, Compensation and Liability Act of 1980; also known as Superfund

CFATS - Chemical Facility Anti-Terrorism Standards

CFR - Code of Federal Regulations

Commercially available - products for sale to the general public

DOT- Department of Transportation

EPCRA - Emergency Planning and Community Right-to-Know Act of 1986, commonly known as SARA Title III. The Florida EPCRA statutes can be found in the Florida EPCRA Act of 1988, Chapter 252, Part II

Hazardous chemical - any chemical or mixture with an NFPA rating of 2 or higher for Health, Flammability, and/or Reactivity (Note: This definition may also pertain to any chemical or mixture for which OSHA requires the SDS to be on hand and available to workers)

IACUC - Institutional Animal Care and Use Committee

LEPC - Local Emergency Planning Commission

NFPA - National Fire Protection Association

NIH - National Institutes of Health, U.S. Department of Health and Human Services

OSHA - Occupational Safety and Health Administration

Primary container - vendor- or manufacturer-supplied container

Physical inventory- the act of visually inspecting a container's location, integrity, and volume of contents

RMP- Risk Management Plan (40 CFR 68)

SARA - Superfund Amendments and Reauthorization Act of 1986

Secondary container - a container other than the vendor/manufacturer-supplied container

SDS - Safety Data Sheet

SERC - State Emergency Response Commission for Hazardous Materials

4. RESPONSIBILITY

Each department is responsible for assuring that their chemical inventory contains an accurate record of acquisition and consumption of all chemicals defined as hazardous by UCF, local, state, or federal guidelines. Environmental Health and Safety (EHS) will offer support, maintain a centralized database in which the chemical inventory is recorded, and periodically verify that the inventory is accurate. Departments are responsible for entering their chemical inventory into the centralized database. Maintenance areas, studios, and workshops are responsible for maintaining an accurate chemical inventory for that location and supplying that information to EHS.

Legal requirements imposed by local, state, and federal hazardous material agencies require that records must be kept, listing the quantities of hazardous materials used and on hand. These records are subject to audit on-demand, with no advance notice. Fines and penalties from local, state, and federal agencies can be assessed for failing to meet these requirements. See Associated Documents (below) for a listing of applicable regulations.

5. ASSOCIATED DOCUMENTS

(a) Local and State Statutes:

The City of Orlando regulates industries (including UCF) that discharge to the City of Orlando wastewater treatment facilities under the City of Orlando Industrial Waste Pretreatment Program (Chapter 30). In 30.03.9.i and 30.03.10.h, an inventory of chemicals is required.

The Florida Emergency Planning and Community Right-to-Know Act of 1988, Chapter 252, Part II, Florida Statutes requires the State Emergency Response Commission (SERC) for Hazardous Materials to collect information on extremely hazardous substances, CERCLA hazardous substances, and toxic chemicals. This information is also collected at the local level by one of the 11 Local Emergency Planning Committees (LEPCs) to develop hazardous materials emergency plans in the event of a release or spill of hazardous or toxic substances.

The State Fire Marshal requires accurate information for the hazards associated with laboratories and buildings in the event of an emergency. Emergency responders should have an accurate representation of the associated hazards before they enter UCF facilities.

The State Fire Marshal requires individual permits for the possession of explosive compounds (Chapter 552, Florida Statutes).

(b) Federal Statutes:

The Chemical Facility Anti-Terrorism Standards (CFATS), as directed by the Department of Homeland Security (DHS), is part of the Code of Federal Regulations (6 CFR Part 27). On November 20, 2007, with the publication of the final [Appendix A](#) in the Federal Register, all provisions of 6 CFR Part 27 became enforceable.

The U.S. Environmental Protection Agency (EPA) regulates chemical process safety through its Risk Management Plan (RMP) and the Emergency Planning and Community Right-to-Know Act (EPCRA). The RMP guidelines are laid out in 40 CFR. In 40 CFR 68.130, a series of tables list substances covered under the chemical accident prevention provisions (40 CFR Part 68). EPCRA (Title III), Subtitle B requires reporting of chemical substances held in inventory, along with maintenance of SDS records for those compounds.

The U.S. Department of Justice, through the Bureau of Alcohol, Tobacco, Firearms, and Explosives (ATF), regulates through licenses and permits tax-free alcohol (190-proof or more) and explosive compounds. Each entity holding an industrial use permit to use tax-free alcohol shall file inventory on a biannual basis. Regulations (27 CFR 22.162) require physical inventory of tax-free alcohol to be

taken at the end of each month. Individuals possessing explosive compounds must be included on UCF's Federal ATF license and possess a State Explosive License from the Florida Division of State Fire Marshal.

The U.S. Department of Labor, through the Occupational Safety & Health Administration (OSHA), 29 CFR Part 1910, Subparts H (1910.101-126: Hazardous Materials) and Z (1910.1000-1450: Toxic and Hazardous Substances), requires regulation of substances in use that would present a catastrophic event at or above the threshold quantity. A chemical inventory also is helpful at meeting 29 CFR 1910.39, in particular, a list of all major fire hazards and proper handling and storage procedures for hazardous materials.

The National Institutes of Health (NIH) issued the National Institutes of Health Grants Policy Statement (NIHGPS) in 1998. This policy is part of the terms and conditions of NIH grant awards. The latest update of this policy became effective on October 1, 2022. Section 4.1.12 pertains to Health and Safety Regulations and Guidelines. This Section requires the adherence to 29 CFR 1910.

6. PROCEDURE

(a) Maintenance Area, Studio, and Workshop Inventory Procedure:

All chemicals and mixtures that are considered hazardous (corrosive, acutely toxic, reproductive toxins, flammable, etc.) and therefore require an SDS be kept on hand in accordance with OSHA (29 CFR 1910) must be included in the chemical inventory for that location. Any chemical that has a National Fire Protection Association (NFPA) hazard rating of 2 or higher in any category must be included in the chemical inventory.

Each location must maintain a spreadsheet of the following information:

- Item/Chemical Name;
- Manufacturer Name;
- Product Code, if available;
- Maximum Quantity on Hand;
- Building;
- Room Number(s) (storage location);
- Availability of the SDS;
- Whether the Item is Still in Use;
(Note: When no longer in use, the date when the item was removed from the premises must be recorded.)

- Comments/Descriptions (typically what the item is used for.)
(Note: If a new chemical is received during the calendar year, the date that the item was received must be reported.)

(b) Teaching and Research Laboratory Inventory Procedure:

All primary (vendor-supplied) containers of chemicals and mixtures must have a UCF bar code and be entered into the main UCF chemical inventory database if they have an NFPA rating of 2 or higher in any category. The NFPA rating can usually be found on the SDS supplied by the vendor.

- Additions: Items with an NFPA rating of 2 or higher in any category need to be added to the system as soon as they are received. Items must be added to the UCF database within five (5) days of receipt.
- Disposals: Items that have been consumed or are considered waste by the researcher (in addition to following the UCF Hazardous Waste Disposal Procedures) must be marked as disposed in the database within the month that they are consumed or prior to being picked up as waste. It is the PI's responsibility to maintain their chemical inventories in the UCF database.
- Relocations: Items that are being relocated must be transferred in the chemical inventory if they will be stored in that space overnight. Chemicals must only be relocated to another approved chemical storage space.

Individual research groups may choose to keep track of all chemicals (including those in non-manufacturer/secondary containers) and their lot numbers using the UCF maintained database, but this is not required.

- UCF Bar Code Generation: Bar codes will be supplied by EHS. Requests can be made by contacting the Chemical Safety Officer, 407-823-3307, or by sending an email via the "Requesting bar code labels" link found at <https://ehs.ucf.edu/chemical-inventory>.

If a research group will be generating its own bar codes (inventory numbers), rather than using numbers supplied by EHS, a unique prefix or suffix must be requested from the Chemical Safety Officer. This assigned prefix or suffix must then be part of the bar code affixed to the chemicals inventoried.

- Placement of the UCF Bar Code: A single bar code must be placed on each container. Do not obscure the labeling that is on the container, including the vendor's name, warnings, and hazards. Horizontal placement (parallel to the shelf) is preferred, but vertical placement may be the only option on small bottles. If necessary, the sticker may be trimmed down, but the number and bar code must be left intact. Place the bar code on a flat or slightly curved face of the container. On "squared" containers, do not place the bar code "around a corner."

- Secondary and Tertiary Locations: It may be helpful when trying to locate items within a large research group or laboratory to designate secondary and tertiary storage locations (e.g., shelf A; shelf B, tray 1; refrigerator 1, tray 1.)

These locations can be recorded in the EHS-maintained database, EHSA. The field "Storage_Location" within EHSA follows the secondary location naming convention, "building abbreviation-room number (without a dash)," followed by the secondary location.

(c) Gas Cylinder and Cryogenic Dewar Inventory Procedure:

Gas cylinders or cryogenic dewars which are refilled by a vendor are required to be recorded in the chemical inventory.

Refillable vessels should be assigned a bar code for each chemical or mixture due to frequent return to vendor; do not affix bar codes to them.

Lecture bottles and other small canisters require bar codes to be affixed and shall be included in the chemical inventory.

The required information is: chemical name; supplier; product number; mass of gas (or cubic feet) in tank as received; and physical state.

If personnel have difficulty determining the mass or cubic feet of gas, they should supply the Chemical Safety Officer with the vendor, product number, and size of the cylinder.

It is the responsibility of the researcher (or designee) to update the database and inform EHS when gases will no longer be in use or are moved to another location.

(d) Tax Free Alcohol (Ethanol 190-proof or higher) Inventory Procedure:

Because UCF holds an industrial use permit for tax-free alcohol, each primary point of distribution (whomever ordered the alcohol) shall file inventory with EHS every six months. Regulations require physical inventory of tax-free alcohol to be taken at the end of each month (27 CFR 22.162). Forms and additional information can be found at <https://ehs.ucf.edu/tax-free-alcohol>.

In addition, because ethanol has an NFPA rating (both health and flammability) of 2 or higher, ethanol must be bar coded and tracked within the chemical inventory. These inventory items must have their amount verified and updated at the end of each month within the centralized database.

(e) Lead-Acid Battery Inventory Procedure:

If lead-acid batteries are used by a department in non-DOT registered vehicles (forklifts, gators, golf carts, etc.), generators, or large banks of batteries (server UPS systems), the department must report the overnight location of the equipment/battery, the number of batteries, and the weight of each battery. If the percentage of the individual components are known (through the manufacturer-supplied SDS), that information should be included in the report.

Each department must maintain a spreadsheet of the following information:

- Number of batteries on hand;
- Weight of each battery;
- Overnight location of the equipment/battery; (building and room number, if applicable.)
- Percentage of individual components (if known);
- If the item is still in use; (Note: if no longer in use, the date when the item was removed from the premises must be noted.)

If batteries are added during the calendar year, through the acquisition of new vehicles or UPS, the date that the batteries were received must be noted.

7. RECORD KEEPING

8. ARCHIVES

9. DISTRIBUTION

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10. DOCUMENT HISTORY

Date	Revision number	Author	Modifications
09/25/2023	1	Sandra Hick	Format and Annual Review
08/01/2012	0	EHS	FSP 2012 EHS0005