



Laboratory Waste Materials Management Plan

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Introduction and Applicability of the Regulation:

The purpose of this Laboratory Management Plan (LMP) is to meet the requirements of 40 CFR 262.214 and to standardize the handling of materials discarded from Florida Gulf Coast University educational and research laboratories, and from the visual arts and theatre department studios, which are covered by the Resource Conservation and Recovery Act (RCRA) regulations under 40 CFR 262 Subpart K (simply referred to as “Subpart K”). These rules establish an alternate process for academic institutions to manage their hazardous wastes, but significantly differs from the one originally established by RCRA for the industrial generators of hazardous waste.

Subpart K allows more flexibility to eligible academic entities in certain areas that are unique to their operation. For the purposes of these regulations, Florida Gulf Coast University, as a public, degree-granting academic institution, meets the eligibility requirements of the Environmental Protection Agency (EPA) for these rules, and thus, can manage its hazardous wastes pursuant to Subpart K. After careful evaluation, we decided to modify the management process of our hazardous waste to comply with this alternate set of regulations. We officially opted-in to Subpart K on October 5, 2021.

It is vital to note that the waste management processes described in this Laboratory Management Plan apply only to laboratories as defined in Section 2; It does not apply to other operations, shops, or generators on campus who will continue to follow the normal generator standards under 40 CFR 262 and the State of Florida hazardous waste requirements.

Definitions:

Acute Hazardous Waste - A chemical or mixture of chemicals that contains one or more of the EPA P- Listed chemicals. The term Acute Hazardous Waste is only to be used following a formal hazard determination by Environmental Health & Safety.

Acute Reactive Waste - The term used to signify that a waste contains one or more of the six chemicals “retained” from the EPA P-List under 40 CFR Part 262, Subpart K. The term Reactive is used instead of Hazardous until a formal hazard determination is conducted. The list of six P-Listed chemicals is included in Section 3 of this plan.

Central Accumulation Area - An on-site hazardous waste accumulation area subject to the regulations of 40 CFR § 262.34(d)–(f), pertaining to a small quantity generator. A central accumulation area at an eligible academic entity that chooses to be subject to this subpart must

also comply with 40 CFR § 262.211 when accumulating unwanted material and/or hazardous waste.

Environmental Health & Safety (EH&S) - An employee who is designated by the employer, and who is qualified by training or experience, to provide technical guidance in the development and implementation of the provisions of this Laboratory Management Plan.

College / University - A private or public, post-secondary, degree-granting, academic institution, that is accredited by an accrediting agency listed annually by the U.S. Department of Education.

Eligible Academic Entity - A college or university, or a non-profit research institute that is owned by or has a formal written affiliation agreement with a college or university, or a teaching hospital that is owned by or has a formal written affiliation agreement with a college or university.

Hazardous Waste - A term reserved for classified wastes following a formal hazard determination by EH&S. Hazardous wastes are defined as such because they meet one or more of the EPA's four hazardous waste characteristics: ignitibility, corrosivity, reactivity, or toxicity (characteristic hazardous waste). The term could also be applied to OSHA hazardous wastes that are not necessarily EPA hazardous wastes.

Laboratory - An area owned by an eligible academic entity where relatively small quantities of chemicals and other substances are used on a nonproduction basis for teaching or research, and are stored and used in containers that are easily manipulated by one person. Photo laboratories, art studios, and field laboratories are considered laboratories for the purposes of the regulation and this Plan. Areas such as chemical stockrooms and preparatory laboratories that provide a support function to teaching or research laboratories are also considered laboratories.

Lab Waste - Any chemical, mixtures of chemicals, products of experiments, or other material from a Laboratory, as defined, that is no longer needed, wanted, or usable in the laboratory, and is destined for hazardous waste determination by EH&S.

Laboratory Clean-Out - An evaluation of the inventory of chemicals and other materials in a laboratory that are no longer needed or that have expired and the subsequent removal of those chemicals or other unwanted materials from the laboratory. A cleanout may occur for several reasons. It may be on a routine basis (e.g., at the end of a semester or academic year) or as a result of a renovation, relocation, or change in laboratory supervisor / occupant. A regularly scheduled removal of unwanted material as required by 40 CFR § 262.208 does not qualify as a laboratory clean-out.

Laboratory Worker - A person who handles chemicals and/or unwanted material in a laboratory and may include, but is not limited to, faculty, staff, and paid or unpaid student laboratory workers. A person does not need to be paid or otherwise compensated for his/her work in the laboratory to be considered a laboratory worker. Students in a supervised classroom setting are not laboratory workers.

The Resource Conservation and Recovery Act (RCRA), enacted in 1976, is the principal federal law in the United States governing the disposal of solid waste and hazardous waste.

Trained Professional - A person who has completed the applicable RCRA training requirements of 40 CFR § 265.16, or is knowledgeable about normal operations and emergencies in accordance with 40 CFR § 262.34(d)(5)(iii). A trained professional may be an employee of the eligible academic entity or may be a contractor or vendor who meets the requisite training requirements. At FGCU, EH&S is tasked with EPA regulations, including RCRA and Subpart K rules.

Waste - A term used to define any “*unwanted material*” or “*chemical waste*,” including discarded chemical products and process wastes. This term applies to any waste, regardless of hazard, until such time that a proper hazard determination is conducted by EH&S

Waste Vendor - For purposes of this Plan and RCRA hazardous waste management on campus, the chemical waste vendor retained to assist in hazardous waste determinations, bulking, packaging, labeling, and transportation for proper off-site disposal of hazardous and non-hazardous chemical and biological wastes. The contractor field chemists qualify as trained professionals under this Plan.

Working Container - A small container (i.e., two gallons or less) that is in use at a laboratory bench, hood, or other work station, to collect unwanted material from a laboratory experiment or procedure.

What is Hazardous Waste?

A. Non-Hazardous Wastes

Any unwanted laboratory byproducts that do not meet any of the definitions of a “hazardous waste,” as outlined below, constitute a “non-hazardous waste.” Any material meeting this definition may therefore be disposed to the trash or sanitary sewer.

B. Hazardous Wastes

1. A waste is ignitable if:
 - a. It is a liquid, other than an aqueous solution containing less than 24% alcohol by volume, and has a flash point less than 60oC (140oF).
 - b. It is an oxidizer.
 - c. It is an ignitable compressed gas.
 - d. It is not a liquid and is capable, under standard temperature and pressure, of causing fire through friction, absorption of moisture, or spontaneous chemical changes, and when ignited burns so vigorously and persistently that it creates a hazard.
2. A waste is corrosive if its pH, when tested with an electronic pH meter, is less than or equal to 2.0 or greater than or equal to 12.5
3. A waste is reactive if it:
 - a. Is normally unstable and readily undergoes violent changes without detonating.
 - b. Reacts violently with water.

- c. Forms potentially explosive mixtures with water.
 - d. Generates toxic gases, vapors, or fumes in a quantity sufficient to present a danger to human health or the environment when mixed with water.
 - e. Is a cyanide- or sulfide-bearing waste that, when exposed to pH conditions between 2 and 12.5, can generate toxic gases, vapors, or fumes in quantity sufficient to present a danger to human health or the environment.
 - f. Is capable of detonation or explosive reaction if it is subjected to a strong initiating source or if heated under confinement.
 - g. Is readily capable of detonation, explosive decomposition, or reaction at standard temperature and pressure.
 - h. Or is a forbidden explosive as defined by 49 CFR 173.51, or a Division 1.1, 1.2, or 1.3 explosive as defined at 49 CFR 173.50.
4. A waste is toxic if it is a liquid that contains, or a solid capable of leaching, one or more toxic contaminants from the EPA D-List at or above the indicated concentrations (in parentheses; mg/L).
- a. Arsenic (5.0)
 - b. Barium (100.0)
 - c. Benzene (0.5)
 - d. Cadmium (1.0)
 - e. Carbon Tetrachloride (0.5)
 - f. Chlordane (0.03)
 - g. Chlorobenzene (100.0)
 - h. Chloroform (6.0)
 - i. Chromium (5.0)
 - j. Chromium (5.0)
 - k. o-Cresol (200.0)
 - l. m-Cresol (200.0)
 - m. p-Cresol (200.0)
 - n. Cresol (200.0)
 - o. 2,4-Dichlorophenoxyacetic Acid (10.0)
 - p. 1,4-Dichlorobenzene (7.5)
 - q. 1,2-Dichloroethane (0.5)
 - r. 1,1-Dichloroethylene (0.7)
 - s. 2,4-Dinitrotoluene (0.13)
 - t. Endrin (0.02)
 - u. Heptachlor (& Epoxide) (0.008)
 - v. Hexachlorobenzene (0.13)
 - w. Hexachlorbutadiene (0.5)
 - x. Hexachloroethane (3.0)
 - y. Lead (5.0)

- z. Lindane (0.4)
- aa. Mercury (0.2)
- bb. Methoxychlor (10.0)
- cc. Methyl Ethyl Ketone (200.0)
- dd. Nitrobenzene (2.0)
- ee. Pentachlorophenol (100.0)
- ff. Pyridine (5.0)
- gg. Selenium (1.0)
- hh. Silver (5.0)
- ii. Tetrachloroethylene (0.7)
- jj. Toxaphene (0.5)
- kk. Trichloroethylene (0.5)
- ll. 2,4,5-Trichlorophenol (400.0)
- mm. 2,4,6-Trichlorophenol (2.0)
- nn. 2,4,5-TP (Silvex) (1.0)
- oo. Vinyl Chloride (0.2)

5. Non-Specific Source Wastes

Non-specific source wastes are those listed and defined in the EPA F-List (40 CFR 261.31). Employees should refer to the Federal Register for specific information and technical language. Presented here is a list of chemicals listed therein and that are ultimately to be regulated as hazardous waste. Only those F-Listed wastes that are likely to occur at FGCU are included (F001 – F005, referred to as “spent solvents”).

F001/2 Tetrachloroethylene, methylene chloride, trichloroethylene, 1,1,1-trichloroethane, chlorobenzene, 1,1,2-trichloro-1,2,2-trifluoroethane, o-dichlorobenzene, trichlorofluoromethane, and 1,1,2-trichloroethane.

F003 Xylene, acetone, ethyl acetate, ethyl benzene, ethyl ether, methyl isobutyl ketone, n- butyl alcohol, cyclohexanone, and methanol.

F004 Cresols and cresylic acid, and nitrobenzene. Also, still bottoms from the recovery of acetone.

F005 Toluene, methyl ethyl ketone, carbon disulfide, isobutanol, pyridine, benzene, 2-ethoxy- ethanol, and 2-nitropropane.

6. Specific Source Wastes

Specific Source Wastes are those wastes listed and defined in the EPA K-List (40 CFR 261.32). All K-Listed wastes originate in manufacturing and industry, and by definition, are not applicable to the University. Therefore, the regulatory information is not included here.

7. Commercial Chemical Products

Commercial chemical products are those wastes listed in the EPA P-List (Acute Hazardous Waste) and EPA U-List (Toxic or Characteristic Waste). The lists are extensive (189 and 534 respectively), and so have been included in electronic form in the University's online Lab Management Plan (LMP). Any chemical that appears on the P- or U-List is to be automatically considered hazardous and collected for proper disposal. Similarly, any mixed waste containing one or more of these listed chemicals are also automatically to be considered hazardous waste.

8. Acute Reactive Wastes

Acute reactive wastes are any wastes that include one or more of the following P-Listed chemicals in any quantity.

P006	Aluminum Phosphide
P009	Ammonium Picrate
P065	Mercury Fulminate
P081	Nitroglycerine
P112	Tetranitromethane
P122	Zinc Phosphide (>10%)

9. Non-Hazardous, but Dangerous Wastes

There are a small number of non-EPA regulated chemicals that are hazardous in some way, but do not legally require proper disposal (other than disposal in the sewer or trash). As a best management practice, however, the University wishes to collect these wastes and treat them as hazardous. It is incumbent on the faculty or staff responsible for these waste streams, however, to determine whether the concentration of hazardous chemical warrants special disposal.

- a. Ethidium Bromide – A stain commonly used with electrophoretic gels. Due to its cancer-causing properties, it should be treated as hazardous. Gels and other solids should be placed in biohazardous waste containers for proper disposal. Liquids can be disposed as hazardous waste or chemically neutralized.
- b. Genotoxic Agents – Include a broad range of DNA/RNA damaging, anti-microtubule, and anti-cell cycle agents, as well as many chemotherapeutic drugs.
- c. Metabolic Poisons – Substances that interfere with bioenergetic pathways.

Collection of Wastes:

A. Working Containers

A working container is a small container (two gallon or less) that is in use at a laboratory bench, hood, or other work station, which is used to collect lab wastes from a laboratory

experiment or procedure. A working container may remain open until the end of the procedure or work shift, at which time it must either be closed or the contents emptied into a properly labeled waste container.

B. Labeling Requirements Before Container Use

Florida Gulf Coast University has chosen the term “waste” to refer to all “unwanted materials,” also known as “chemical waste” or “hazardous waste.”

All containers that will hold chemical wastes / unwanted materials must be labeled with the approved label. A guide to the label is included in Appendix A. The waste container must be labeled with either a yellow hanging “waste card” or a printed adhesive label. Before even a drop of waste can be added to the container, the following three requirements must also be minimally met:

1. The Date Container Started, which is the date on which the first wastes were added to the container, is included to ensure no waste is held within a laboratory for longer than the mandated six months.
2. Emergency Response Information, in the form of hazard categories, must be included. Such categories shall include flammable, toxic/poison, corrosive, reactive, oxidizer, and none (with additional space being provided for an “other” category). This information makes it possible for emergency responders, fire fighters, etc. to properly handle wastes in an emergency.
3. A basic list of Contents must be included, so emergency responders can know what constituents are present in the bottle. At this time, percent composition information is not required, and in fact, may not be appropriate, as wastes may be added to the bottle for months to come, so amounts and concentrations added to the container must be logged.

C. Labeling Requirements Before Transfer

In order to facilitate proper characterization of wastes as hazardous and to ensure proper disposal, additional information is required before a container will be accepted by EH&S for disposal.

1. The Contents of the waste, which includes concentration information, must be finalized. The information must be sufficient to make a hazardous waste determination, and includes, but may not be limited to:
 - a. Proper names of all constituents, including water and inert “solid waste.”
 - b. Percentage composition by mass of each constituent, including water and “solid waste.”
 - c. Any additional notes that may be of use when preparing wastes for disposal.
2. The Date Container Finished is included on containers of waste to help ensure the timely removal of wastes from the laboratory.

3. Contact Information, including the generator's name and the building and room in which the waste was generated, are provided so the appropriate person can be contacted with questions about the waste. Note that the name should be the faculty or staff member who possesses knowledge about the waste. The name of a department (for example) does not provide the name of a specific person who can be contacted.

D. Compatibility of Containers

Containers must be made of, or properly lined with, a material that is compatible with their contents, both to avoid reactions between the contents and the container, and to prevent an unintended loss of the waste.

E. Proper Handling and Storage of Containers

All containers of waste must be kept closed at all times, except:

1. When the waste is being temporarily collected in a working container, as described above.
2. When waste is being added to, removed from, or consolidated in the container.
3. When venting of the container is necessary for either the proper operation of laboratory equipment (such as HPLC), or to prevent the dangerous buildup of extreme pressure that may result from a reaction between the wastes being added.

F. Segregation by Class of Chemical

To facilitate the proper and most economical disposal of all wastes, generators are encouraged to collect and/or consolidate wastes into the following categories.

1. Ignitable / flammable wastes are often burned as a fuel by permitted facilities, and as such, cannot contain any hazardous wastes that fit into any other hazard class. Examples include most alcohols, ketones, and hydrocarbons.
2. Corrosive wastes include aqueous wastes whose pH is less than or equal to 2 or greater than or equal to 12.5.
3. Oxidizing wastes, usually in an aqueous form, must be segregated from flammable wastes due to the reactive nature of such wastes.
4. Toxic /poisonous wastes meet the definition of toxic as defined in 3.2.3.5. When possible, toxics should be collected in a separate waste container.
5. Halogenated wastes are often characterized as toxic, however, it is convenient to consider these hydrocarbons as their own waste stream.
6. Reactive wastes meet the definition of reactive as defined in 3.2.3.4 and should be segregated from other wastes whenever possible.

G. Waste Collection Area

Formerly referred to as “Satellite Accumulation Areas,” each lab must have within it one or more areas (usually a fume hood) denoted as “Waste Collection Areas,” where containers of waste are stored until removed from the lab. This requirement is included to ensure the orderly collection of wastes and prevent “missing containers” from being “lost” elsewhere in the laboratory.

H. Collection Limits

Each laboratory may collect, at a maximum, 55 gallons of “waste” or 1 quart of “acute reactive waste.” If either of these volumes is exceeded, the waste must be removed from the lab by EH&S within 10 calendar days of the date that 55 gallons was exceeded.

I. Damaged Collection Containers

Waste collection containers that become damaged during use must be either replaced or overpacked within a second, larger container, to ensure safe storage of the waste.

J. Venting of Containers

Venting is allowed when deemed necessary, as in the following situations:

1. For the proper operation of laboratory equipment, such as with in-line collection of unwanted materials from high performance liquid chromatographs, or
2. To prevent dangerous situations, such as build-up of extreme pressure.

Removal of Laboratory Wastes:

Any containers deemed to be “full” or “unneeded” shall be removed within three days of such determination. The responsible lab person shall submit a Material Pick-up Request form to EH&S immediately to request the transfer, which shall occur within three calendar days of notification.

A. Regularly-Scheduled Removal

All containers of waste shall be removed from all laboratories on a six-month recurring schedule based on the start of the school year. This provision shall ensure that no container of waste is retained within the laboratory for more than six months.

B. Removal upon Exceeding Storage Thresholds

1. If a laboratory accumulates a total volume of waste (including acute reactive waste) in excess of 55 gallons before the regularly scheduled removal, all containers of waste must be removed from the lab within 10 calendar days. When this happens, the date on which 55 gallons was exceeded must be written on the containers’ labels and EH&S must be notified immediately.
2. If a laboratory accumulates a total volume of acute reactive waste in excess of one quart before the regularly scheduled removal, all containers of acute reactive waste must be removed from the lab within 10 calendar days. When this happens, the date on which one quart was exceeded must be written on the containers’ labels and EH&S must be notified immediately.

C. Procedures for Removal

EH&S will remove all wastes directly to the Central Accumulation Area, after which point the hazard determination shall be completed within four calendar days.

D. Labeling of Wastes

Once a waste has been characterized as a hazardous waste, the following must appear on a characterization label:

- The words "Hazardous Waste."
- The appropriate hazardous waste code(s).
- An indication of the hazards of the contents, such the applicable hazardous waste characteristic(s) (i.e., ignitable, corrosive, reactive, toxic), hazard communication consistent with the Department of Transportation requirements, a hazard statement or pictogram consistent with the OSHA Hazard Communication Standard, or a chemical hazard label consistent with the NFPA.
- The accumulation start date for the container.

E. Laboratory Clean-Outs

All faculty and staff are encouraged to periodically evaluate their inventory of chemicals and other materials in the laboratory that are no longer needed or have expired. Those chemicals that are unwanted or unneeded should be removed from the lab and disposed. In these cases, a formal "laboratory clean-out" request should be made to EH&S before beginning the process. Such a formalized clean-out is of great benefit to the University because newly generated "waste" will not be counted towards our generator status, which if changed, could cause the University to incur significant increases in fees, training and record-keeping requirements.

1. Allowed Time Frame

Laboratory clean-outs are allowed one time per 12 months for each laboratory. Up to 30 days are allowed for the clean-out.

2. Volume Limits

An exception is allowed to the 55 gallon or 1 quart rule in the case of laboratory clean-outs. Such wastes need not be removed within 10 days as long as all clean-out wastes are completely removed from the lab within 30 calendar days from the start of the clean-out.

3. Unused Chemicals and Generator Status

Though all chemical waste, including those wastes generated during the course of a semester may be cleaned-out at the time of the official clean-out, only unused commercial chemical products ("virgin chemicals") will not count against the University's generator status. Any mixtures of "regular" laboratory waste generated at the clean-out will count against the generator status and must be handled as any standard waste.

4. Documentation & Notification

Records shall be maintained that include the laboratory location, start and end dates of any laboratory clean-outs, as well as a complete listing of all wastes and their respective volumes generated during that time. These records must be maintained for at least five years from the date of the clean-out.

Transfer to the Central Accumulation Area:

A. Hazardous Waste Determination

1. Conducted by Trained Personnel

Upon removal from the lab, a hazardous waste determination shall be conducted by EH&S personnel, who have received all appropriate training prior to such determination.

2. Timeframe

The waste determination must be made within four calendar days of the arrival of the waste at the Central Accumulation Area (CAA).

3. Labeling Requirements

Upon completion of the hazardous waste determination, any waste determined to be hazardous shall be given the label of "Hazardous Waste" along with the appropriate waste codes, which will be verified for accuracy by the University's designated waste transporter before being moved off-site to a permitted treatment, storage, or disposal facility.

4. Logging

Records shall be maintained that count the hazardous waste generated toward the University's generator status during the month the hazardous waste determination was made.

B. Time Limits on Storage in the Central Accumulation Area

As a very Small Quantity Generator, wastes may be collected in the Central Accumulation Area indefinitely, up to 2200 lbs. As a Small Quantity Generator, wastes may be collected for up to 180 days. To ensure compliance, the date on which the first container of hazardous waste entered the CAA shall be recorded.

C. Transfer from the Laboratory

EH&S personnel will accompany the transfer of all hazardous waste moved from the laboratories.

D. Transport and Disposal

All hazardous wastes will be transported from FGCU for treatment or disposal only by licensed hazardous waste transporters.

At present, the University uses Triumvirate Environmental Services for its hazardous waste treatment and disposal services.

Response to Dangerous Wastes or Chemicals:

A. Procedures for Notification of Suspicion of Extreme Danger

If a dangerous situation, or even a slight suspicion thereof exists, it is imperative that the situation be handled properly, as follows:

1. Do not touch the container in question, but gather as much information as possible about the contents and what hazard may exist.
2. Contact the University Police Department and Environmental Health & Safety.
3. In consultation with the appropriate lab personnel, the best means of handling the suspicious container will be decided upon.

B. Procedures for Removal of Dangerous Wastes

Upon consultation with the appropriate personnel, EH&S personnel will decide how to best handle dangerous wastes:

1. If the container of dangerous waste can be handled safely and does not pose an immediate risk, the waste should be handled as hazardous waste and disposed properly.
2. If the container is deemed explosive and cannot be moved safely, or if that determination cannot be made, EH&S will take the appropriate steps to have the container moved by the appropriate personnel.

C. Timeframe for Characterization

Whenever a dangerous or unidentified waste has been identified, it must be isolated from accidental handling. Once isolated, the dangerous waste must be characterized and removed within one week.

D. Degradable or Peroxidizable Chemicals

Under this section can be found a list of chemicals that become more dangerous when they exceed their expiration date and/or as they degrade.

The broadest category included herein is that of the peroxide-forming chemicals, which are also discussed in the University's Chemical Hygiene Plan. The following list is some of those peroxide-formers that may be found on-campus.

- Acetaldehyde
- Benzyl Alcohol
- Diethyl Ether
- Dimethoxymethane
- 2,6-Dimethyl-4-heptanol
- 1,4-Dioxane
- 2-Methoxyethyl Ether
- 3-Methyl-1-butanol
- Styrene
- Tetraethylene Glycol

- Tetrahydrofuran
- Vinyl Acetate

On-Site Treatment of Hazardous Wastes:

A. Treatment Permitted On-Site

Federal and state law provides exceptions for the legal treatment of hazardous wastes to remove that condition that causes it to be hazardous. These types of treatment merely require that the University notify the State of Florida Department of Environmental Protection.

1. Elementary Neutralization

Liquid wastes that are hazardous merely because of their pH (which is less than or equal to 2, or greater than or equal to 12.5) may be neutralized using an appropriate agent (sodium carbonate, sodium hydroxide, hydrochloric acid, etc.) to remove their corrosive hazard.

If the waste is also hazardous due to some additional characteristic, then neutralization may be performed, however, the waste must still be handled as hazardous.

2. Precipitation of Heavy Metals

If a waste is considered hazardous merely due to the presence of a heavy metal, that hazard characterization may be removed by the precipitation of the metal from solution. The precipitate must then be collected by filtration and the filtrate must still be treated as hazardous, however, this method of treatment is beneficial because a large volume of aqueous waste (for example) can be reduced in size (and therefore, cost) to a few grams.

3. Evaporation of Aqueous Wastes

The only evaporation allowed by law is the evaporation of aqueous wastes to reduce their volume. If the mixture of aqueous waste was initially hazardous, evaporation of the aqueous component does not remove that hazard. In fact, concentration may make the mixture more hazardous.

B. Treatment Not Permitted

Though only those treatments listed above are permitted, what follows is a list of those treatments that are utterly illegal and must not be performed.

1. Dilution

Dilution is only allowed to remove the flammability characteristic. Absolutely no other dilution is permitted for any reason.

2. Incineration

No hazardous wastes may be burned / incinerated using any method on-campus.

3. Evaporation of Organics

The evaporation of organic / flammable wastes is strictly prohibited by law. No organic waste may be evaporated (except when the evaporation of solvent is required as part of an experimental procedure).

4. Transportation Off-Campus

The transportation of wastes off-campus to avoid waste handling rules. If the waste was generated on-campus, it must be disposed from campus.

Training of Laboratory Workers:

Training for laboratory workers and students must be commensurate with their duties so they understand the requirements of the EPA's Subpart K waste handling requirements. For this reason, we broadly categorize laboratory workers as 1) Faculty and Staff, 2) Individualized Research Students, and 3) Classroom Students.

A. Training Content by Audience

1. Faculty and Staff

All professional staff, including faculty, staff, and lab instructors who have direct hands-on or supervisory responsibilities in any laboratory that generates any hazardous (or potentially hazardous) wastes receive training in all provisions of this plan.

Content of such training includes:

- How to differentiate between hazardous and non-hazardous waste,
- How to collect and properly label wastes,
- Treatment of wastes on-site, and
- How/when to have those wastes removed from the laboratory, and by whom.
- How/when a formal "Hazard Determination" is conducted.

2. Individualized Research Students

Students, who are usually upperclassmen (second through fourth year), often have the opportunity to conduct faculty-directed individualized research in the laboratory with minimal supervision. These students receive standard laboratory safety training, which does not cover hazardous waste training except to state that the students' faculty advisors will direct them in the collection of wastes within their individual labs. In this way, each student receives the most appropriate, lab-specific training possible.

3. Classroom (non-Individualized Research) Students

Students who attend a laboratory as part of a for-credit course do not receive training outside of class in the handling of chemical wastes. Each lab's instructor

(either adjunct or full-time faculty) discuss a lab's particular waste handling situation on a weekly basis, as the procedures each week change with the lab.

B. Trainer(s)

Training is to be conducted by personnel familiar with, and trained in, the appropriate RCRA standards. At Florida Gulf Coast University, this responsibility primarily falls to EH&S.

C. Methods of Training

Training of faculty, staff, and research students typically occurs online through the university Learning Management System, the university human and financial management software, and periodically during special in-person meetings. Training programs include the use of handouts and PowerPoint presentations. Attendance is taken, and records are maintained for at least five years.

D. Attendance Records

Records of attendance at all trainings (live and electronic) shall be maintained for at least five years, and include the participant's name and signature, (for live trainings). Electronic trainings are tracked by the university Learning Management System, the university human and financial management software, and email correspondence.

Availability and Review:

A. Availability of this Plan

This Laboratory Management Plan must remain available to laboratory workers, students, or any other interested parties who request it.

It shall be made readily available on the FGCU EH&S website.

B. Periodic Review

This plan shall be reviewed and revised as needed.

Appendix A: Guide to the Unwanted Materials Label

All containers of laboratory chemical waste (referred to simply as “waste”) must include one of these completed labels or hang-tags. All information is required and must be filled- in. There are no exceptions to this rule. Please read the following information to help in your completion of the label.

When preparing a container for use, at minimum, you must include the Date Container Started, basic Contents, and complete the Hazards section. All other information can be completed when the container is full, no longer needed or used.

A container is considered full when contents are 1-2 inches from the top or are at 80% capacity. Do not fill to the very top of any container.

Hazards

Emergency response personnel can use the generalized hazard class you indicate on a container to quickly determine the best manner of emergency response. For this reason, it is critical that you choose one primary hazard class from the list provided. For more detailed definitions of the terms used below, refer to 40 CFR 261 Subpart C.

- **Flammable:** A chemical or mixture that exhibits the characteristic of “ignitability.” Many organic solvents, and alcohols in concentrations greater than 24% are examples.
- **Toxic/Poison:** A chemical or mixture that represents significant health hazards to people and the environment. The list of such chemicals is found in the EPA D-List, and include heavy metals and toxic organics, including some halogenated hydrocarbons.
- **Corrosive:** A chemical or mixture that is aqueous and has a pH less than or equal to 2 or greater than or equal to 12.5.
- **Reactive:** A chemical or mixture that meets any of the EPA definitions, including (for example) a chemical that reacts violently with water, forms explosive mixtures with water, is capable of detonating if subjected to an ignition source, and others.
- **Oxidizer:** A chemical or mixture that is not necessarily combustible, but may, generally by yielding oxygen, cause or contribute to the combustion of another material. Examples include nitric and sulfuric acids, iodine, hydrogen peroxide, and potassium nitrate.
- **Other:** Please consult with EH&S for guidance. Whenever possible, one of the five main hazard classes should be used.

UNWANTED MATERIALS	
FEDERAL LAW PROHIBITS IMPROPER DISPOSAL	
Container Name: _____	
Date Container Started ____/____/____	
CONTENTS	
FULL CHEMICAL NAME-No Formulas or Abbreviations	
List all/additional chemicals on Pick-Up Request	
1. _____	%
2. _____	%
3. _____	%
4. _____	%
5. _____	%
Date Container Finished ____/____/____	
HAZARDS	
<input type="checkbox"/> Ignitable/Flammable	<input type="checkbox"/> Corrosive
<input type="checkbox"/> Oxidizer	<input type="checkbox"/> Toxic/Poison
<input type="checkbox"/> Other (Specify): _____	<input type="checkbox"/> Reactive
Bldg: _____	Rm No. _____
PI/Mgr: _____	Tel: _____
SOP #/Title: _____	

Contents

In order to properly classify and treat / dispose of wastes, it is imperative that you provide a complete and accurate listing of all contents in your waste. Please use the following guidelines to assist you.

- Always include percentages that are based on volumes or masses present. For example, 1L of “50% ethanol waste” would contain 50% ethanol and 50% water.
- When appropriate or necessary, include other concentration units (such as molarity), to more accurately describe the total quantity of a given waste.
- If you don't know the exact percentages, rounding and estimating is acceptable. Your estimates, however, must represent your best educated guess. Do not simply “invent” numbers.
- If you need more room, please include additional contents information on a separate piece of paper or label.

Other Information

- **Date Container Started:** The date on which you first began adding waste to the container is a requirement of Federal law and must be included. We are legally bound to remove waste from all labs within six months of the accumulation start date.
- **Date Container Finished:** include the date on which the container was 1) full or 2) no longer being used. This information allows for increased safety and tracking of wastes.
- **PI/Mgr:** This information is needed in case Environmental Health & Safety needs to contact you with questions. The “PI/Manager” must be an actual person who can answer questions about the waste.
- **Bldg./Room:** The building and room in which the waste was generated.

Don't Forget: Your container(s) cannot be accepted unless all information on the label has been completed.