


Carnegie Mellon University Environmental Health & Safety FIRE LAB WORK 	Environmental Health and Safety Purchasing Hazardous Materials - Guideline
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1. Purpose

Carnegie Mellon University has developed this guideline to ensure that applicable safety and compliance risks are considered and addressed before, during and after a hazardous material is procured.

2. Scope

This guideline applies to all purchases of chemicals or other hazardous materials that will be used or stored on campus. All persons who make these purchases must read and follow these guidelines. Also included are hazardous materials which are obtained as free samples or gifts.

3. Definitions

- a. **3D Printer:** A device that uses any of various processes in which material is joined or solidified under computer control to create a three-dimensional object with material being added together (such as liquid molecules or powder grains being fused together), typically layer by layer.
- b. **Biological Agent:** A subset of biological materials and toxins that have been determined to have the potential to pose a severe threat to both human and animal health, to plant health, or to animal and plant products are subject to the US Department of Health and Human Services and the United States Department of Agriculture Select Agent Regulations (7CFR Part 331, 9 CFR Part 121, & 42 CFR Part 73).
- c. **Biological Materials:** Any agent possessing or characteristic of an agent of biological origin that has the capacity to produce deleterious effects on humans or the environment, including yet not limited to, microorganisms, toxins, recombinant or synthetic nucleic acids, and allergens derived from those organisms, allergens and toxins derived from higher plants and animals. For purposes of this guideline, biological materials are those agents of biological origin that are not subject to US Department of Health and Human Services and the United States Department of Agriculture Select Agent Regulations (7CFR Part 331, 9 CFR Part 121, & 42 CFR Part 73).
- d. **Chemicals:** This broad category covers all chemicals including hazardous, nonhazardous, and lithium ion batteries. Included are laboratory chemicals & kits,

cleaning chemicals, fuels, art related chemicals, paints, pharmaceuticals, commercial products that are/or contain chemicals, pesticides, herbicides, fertilizer, metals and metal powders, and compressed gases.

- e. **Hazardous Chemical:** Any chemical that is identified by the Globally Harmonized System of Classification and Labelling of Chemicals as having a hazard warning pictogram in Section 2 of a product's Safety Data Sheet (SDS).
- f. **Hazardous Material:** Any item or agent (biological, chemical, radiological, and/or physical), which has the potential to cause harm to humans, animals or the environment, either by itself or through interaction with other factors.
- g. **Hazardous Materials Approved Buyer:** Person within a department, college or other administrative unit who has received the necessary training, and is authorized to review and process hazardous materials procurement requests.
- h. **Hazardous Material Inventory Holder:** Faculty or staff designated by the University to possess and conduct activities with hazardous materials. The hazardous material inventory holder is accountable for all compliance and safety issues relating to possession and use of hazardous materials. **Note: The Mellon Institute Storeroom is not considered a Hazardous Material Inventory Holder for the purposes of this document.**
- i. **Hazardous Materials (HazMat) PCard:** A CMU procurement card obtained through training and EH&S approval that is used for the purposes of procuring hazardous materials.
- j. **Hazard Warning Pictogram:** An alert system required by the Globally Harmonized System of Classification and Labelling of Chemicals (GHS) to communicate chemical hazards. Each pictogram consists of a symbol on a white background framed within a red border and represents a distinct hazard(s).
- k. **Laser:** A device that emits light through the process of optical amplification based on the stimulated emission of electromagnetic radiation.
- l. **Laser Cutter:** A device that is used to cut, engrave or modify through a process of optical amplification based on the stimulated emission of electromagnetic radiation.
- m. **Object Code (OC):** A number designation available through the Oracle Financial System used to categorize expenses in the University's General Ledger (GL).
- n. **Object Code #84806:** The number designation used for Hazardous Materials, Non-radioactive (Chemicals) purchases.
- o. **Object Code #84807:** The number designation used for 3D Printers, Radioactive Materials and Radiation Producing Device purchases, lasers and laser cutters.
- p. **Object Code #87105:** The number designation used for capital purchase of hazardous equipment such as 3D Printers, Radiation Producing Devices, lasers and laser cutters.

- q. **Purchase Order (PO):** A document a buyer sends to a seller to request and confirm the purchase of specific goods or services.
- r. **Radioactive Material:** Any chemical or isotope that gives off particles or energy in the form of alpha, beta or gamma radiation and are regulated by the Atomic Energy Act of 1954.
- s. **Radiation Producing Device:** A device that is used for analyzing materials through the process of X-ray or electron beam generation.
- t. **Safety Data Sheet (SDS):** Product safety and handling information supplied by the product manufacturer. It is a requirement of the OSHA Hazard Communication Standard that a copy of a chemical's SDS be made available to any person working with or around a hazardous material.

4. Roles and Responsibilities

- a. Carnegie Mellon University Environmental Health and Safety (EHS) is responsible for:
 - i. Developing the written Hazardous Materials Purchasing Guideline and revising the document as necessary;
 - ii. Developing and administering training programs on use, proper handling, and purchasing of hazardous materials through Hazardous Materials PCards;
 - iii. Approving CMU personnel to become approved buyers;
 - iv. Approving hazardous materials purchases made via Hazardous Materials PCard and PO(s); and
 - v. Conducting transaction report reviews, approval, training and ChemTracker, audits, and inspections to monitor compliance with related training materials and documents.
- b. Departments are responsible for:
 - i. Understanding and complying with the requirements of this guideline;
 - ii. Appointing approved buyers and hazardous material inventory holders; and
 - iii. Contacting CMU EHS if assistance is needed.
- c. Approved buyers are responsible for:
 - i. Completing training as necessary prior to becoming eligible to receive and use Hazardous Material PCards. Training is provided on-line through SciShield (formerly known as BioRAFT);
 - ii. Complying with the procedures outlined in this guideline;
 - iii. Using a PO whenever possible;
 - iv. Properly coding all purchases;
 - v. Using a preferred supplier whenever possible;
 - vi. Providing the name of the Hazardous Material Inventory Holder(s) for whom hazardous materials are purchased, and a list and quantity of all hazardous

- materials purchased during the Oracle PO and Hazardous Materials PCard justification/verification process; and
- vii. Contacting CMU EHS if assistance is needed.
- d. Hazardous materials requestors are responsible for:
 - i. Completing training as necessary to use hazardous materials, which is provided on-line via SciShield;
 - ii. Complying with the procedures outlined in this guideline;
 - iii. Submitting hazardous materials purchasing requests through certified buyers;
 - iv. Notifying approved buyers that hazardous materials are requested;
 - v. Providing approved buyers with the name of the Hazardous Material Inventory Holder(s) for whom hazardous materials are purchased, and a list and quantity of all hazardous materials purchased; and
 - vi. Contacting CMU EHS if assistance is needed.
- e. Hazardous materials inventory holders are responsible for:
 - i. Completing training as necessary to use hazardous materials, which is provided on-line via SciShield;
 - ii. Ensuring all personnel using hazardous materials listed in their lab/group have completed training as necessary to use hazardous materials, which is provided on-line via SciShield;
 - iii. Complying with the procedures outlined in this guideline;
 - iv. Entering hazardous materials into the hazardous materials owner's ChemTracker, Biological Materials or SciShield equipment inventory as applicable within 30 days of purchase;
 - v. Ensuring all safety and compliance requirements are met; and
 - vi. Contacting CMU EHS if assistance is needed.

5. Guidelines

- a. Exempt purchases
 - i. The following materials are exempt from this guideline and can be purchased via either normal P-card or PO without any other approvals:
 1. Latex Paint
 2. Alkaline Batteries
 3. Growth media (e.g. agar, DMEM) and non-toxic buffer solutions (e.g. PBS)
 4. Aqueous stains and dyes
 5. Dry milk, water, gelatin, vegetable oils and other edible products
 6. Amino acids and salts (e.g. asparagine, alanine, lysine, serine)
 7. Sugars (e.g. agarose, maltose, dextrose)
 8. Hand soap and lotion

9. Cosmetics
 10. Lumber, medium-density fiberboard (MDF), plywood and other similar wood-containing products
 11. Cement board, gypsum board and other similar building products
 12. Oils and fuels that will be used in vehicles or equipment
 13. Household cleaners (purchase limit of 5 gallons)
 14. Hand sanitizers
 15. Lithium/lithium ion batteries with an energy expenditure over of a period of one hour that is less than 100 watt-hours
- b. 3D Printers
- i. Whenever practical and feasible, 3D Printers should be purchased through a PO and coded using OC #84807 or OC #87105.
 - ii. Oracle PO purchase descriptions or verification/justifications must include; hazardous material inventory holder name, classification, make and model of 3D Printer purchased, filament(s) and or resin(s) that will be used for printing, location of installation and total quantity purchased.
 - iii. All 3D printers purchased must be entered by the Hazardous Materials Inventory Holder into their SciShield equipment inventory within 30 days of receipt.
- c. Biological Purchases
- i. Whenever practical and feasible, the purchase of biological materials should be done through a PO and coded using OC #84803. A Hazardous Materials PCard can be used when a PO is not practical or feasible.
 - ii. [Biological Agents](#) must be purchased via PO and coded using OC #84803.
 - iii. Oracle PO and Hazardous Materials PCard purchase descriptions or justifications must include; hazardous material inventory holder name, name of biological materials or agents(s) purchased, use or storage location and total quantity purchased.
 - iv. All biologicals purchased must be entered by the hazardous materials inventory holder into their Biological Materials inventory within 30 days of receipt.
- d. Chemical Purchases
- i. Whenever practical and feasible, the purchase of chemicals should be done through a PO. A Hazardous Materials PCard can be used when a PO is not practical or feasible.
 - ii. Methylene chloride (Dichloromethane) and [DEA Controlled Substances List I Chemicals](#) must be purchased through a PO and coded using OC #84806.
 - iii. The following chemicals/chemical volume limits must be purchased via PO and coded using OC #84806 or require pre-approval from EHS:
 1. Explosives-any amount

2. Acutely toxic chemicals- greater than 2 kg
 3. Flammable liquids- greater than 95 liters or 25 gallons
 4. Corrosives-greater than 40 liters or 45 kg
 5. Oxidizers-greater than 5 kg or 20 liters
 6. Compressed gases-greater than 300 cubic feet (single cylinder)
- iv. Full natured alcohol (180-200 proof) must be purchased through Mellon Stores.
 - v. Chemical purchases that require agreements, authorizations, or certifications must be approved by [EHS](#).
 - vi. Oracle PO and Hazardous Materials PCard purchase verification/ justifications must include; name of hazardous material inventory holder name, use or storage location, chemical(s) purchased and total quantity purchased.
 - vii. All chemicals purchased must be entered by the hazardous materials inventory holder into their ChemTracker inventory within 30 days of receipt. Chemicals used within 30 calendar days of purchase are not required to be entered into ChemTracker.
- e. Compressed Gas Cylinders
- i. Compressed gas cylinders should always be leased through the Mellon Institute Storeroom. All inquiries and requests for leasing may be made by calling the Storeroom at 412-268-3212.
 - ii. For lease or purchase of gas cylinders outside of the Mellon Institute Storeroom though an approved vendor source, the lab or group must first [contact EHS](#) for approval via. Orders of this nature must be placed via PO and coded using OC #84806.
 - iii. Oracle PO and Hazardous Materials PCard purchase verification/justifications must include; hazardous material inventory holder name, compressed gas cylinder(s) leased or purchased, use or storage location and total quantity purchased.
 - iv. All compressed gas cylinders purchased must be entered by the Hazardous Materials Inventory Holder into their ChemTracker inventory within 30 days of receipt. Compressed gas cylinders that are used within 30 days are not required to be entered into ChemTracker.
- f. Lasers and Laser Cutters
- i. Lasers and laser cutters must be purchased through a PO and coded using OC #84807 or OC #87105 and cannot be ordered via PCard or Hazardous Materials PCard.
 - ii. Oracle PO purchase descriptions or verification/justifications must include; hazardous material inventory holder name, classification, make and model of laser or laser cutter(s) purchased, location of installation and total quantity purchased.

- iii. All lasers or laser cutters purchased must be entered by the Hazardous Materials Inventory Holder into their SciShield equipment inventory within 30 days of receipt.
- g. Radioactive materials and radiation producing devices
 - i. Radioactive materials must be purchased through the Radiation Safety Office by [contacting EHS](#).
 - ii. Radiation producing devices must be placed via PO and coded using OC #84807 or OC #87105.
 - iii. Oracle PO and Hazardous Materials PCard purchase verification/justifications must include, hazardous material inventory holder name, use or storage location, radioactive material name, make and model of radiation producing device purchased and total activity/quantity purchased.
 - iv. All radiation producing devices purchased must be entered by the hazardous material inventory holder into their SciShield equipment inventory within 30 days of receipt.
- h. Lithium/Lithium Ion Batteries
 - i. Whenever practical and feasible, the purchase of lithium/lithium ion batteries with an energy expenditure over of a period of one hour that is greater than or equal to 100 watt-hours should be done through a PO and coded using OC #84803.
 - ii. A Hazardous Materials PCard can be used when a PO is not practical or feasible.
 - iii. Oracle PO and Hazardous Materials PCard purchase descriptions or justifications must include; hazardous material inventory holder name, item use or storage location and total quantity purchased.
 - iv. All applicable batteries purchased must be entered by the Hazardous Materials Inventory Holder into their ChemTracker inventory within 30 days of receipt.

6. Non-Compliance

If the requirements outlined in this guideline are not consistently met, the Hazardous Materials PCard and ability to purchase hazardous materials may be suspended. Escalation for non-compliance will occur as follows:

- a. First Instance
 - i. EHS will contact Hazardous Materials PCard holder to obtain additional information and to provide information on additional requirements that must be met.
- b. Second Instance
 - i. EHS will contact appropriate ALG representative to request compliance of cardholder.
- c. Third Instance
 - i. EHS will contact Internal Audit to report non-compliance of cardholder.

7. Revisions

Date	Documented Changes	Initials
2/6/2019	Lithium/lithium ion Batteries Added	
3/23/2021	Updated Format and Accessibility Update	MAS
1/22/2024	Reviewed – no updates necessary	AJL
4/10/2025	Updated DEA Controlled Substances List I Chemicals Link	MAS
6/4/2025	Added Section 5.d.ii for Methylene chloride (DCM)	AJL