Chemical Inventory Guidance

It is a requirement of Massachusetts Fire Safety Code to comply with Maximum Allowable Quantities of hazardous chemicals in MIT buildings. The collection, aggregation, and reporting of accurate chemical inventory data is required for MIT to meet its regulatory requirements. This document defines lab level requirements as to what chemicals should be inventoried, the minimum information that is required to be tracked and how often it should be updated. It also suggests additional information that is recommended to be tracked and who to contact for help.

Bold text indicate new requirements for October, 2025.

A. What is the meaning of "chemical" in reference to the requirement to maintain a chemical inventory in each lab at MIT?

- Hazardous chemicals include any material that because of its quantity, concentration, physical characteristics, or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released. These include, but are not limited to, laboratory chemicals; compressed gases; liquids under pressure; explosives; highly reactive, corrosive, flammable and toxic substances; and substances such as lubricating oils, dielectric oils, fuel oils, fuels and propellants. Inventoried chemicals can be in any physical state: solid, liquid (pure or mixtures) or gas (pure / mixtures / cryogenic).

B. What is the meaning of "inventory" in reference to the requirement to maintain a chemical inventory in each lab at MIT?

- A chemical inventory must include all purchased chemicals (as defined above) including cylinders of gas provided by vendors such as Linde.
- Research samples not stored in purchased chemical containers of the following categories, must also be included in the inventory:
    - Explosive Class 1.1, 1.2, 1.3, 1.5 and 1.6
    - Oxidizers Class 4 & 3
    - Organic peroxides Class UD & 1
    - Pyrophoric
    - Unstable reactive Class 4 & 3
    - Water reactive Class 3
    - Highly Toxic
- **Research samples not stored in purchased chemical containers and in unusually large quantities must also be included in the inventory. Unusually large quantities can generally be defined as when the research sample quantity exceeds the quantity depleted from stock containers. In such instances, labs can estimate the total quantity of each chemical so that each sample container does not need to be inventoried.**
- Chemical inventories should also include engineered nanomaterials, both those that are purchased and those that are fabricated in the lab as described on ehs.mit.edu >> keyword search "Nanomaterials"
- A chemical inventory must include the following information about each substance:

This document was created using information from the Massachusetts Fire Code and from the MIT Committee on Toxic Chemicals

  - PI / Supervisor for the lab
  - Building-Room location for the chemical container
  - Chemical Name (not acronyms)
  - Amount (volume/weight and unit of measure)
  - **CAS number (if a CAS number exists)**
- It is highly recommended that the following information be tracked for each substance:
  - Concentration (for purchased dilutions / mixtures)
  - Physical State (solid, liquid or gas)
  - Number of containers
  - Expiration Date (when applicable)
- Labs that are not using the MIT provided chemical inventory platform (see below for more information) are required to submit their inventory in Excel and in a template that is provided by EHS. Labs may be expected to assist with the proper data formatting and correction of errors and inconsistencies. Proper formatting is essential to the campus efforts to properly classify each inventoried container and aggregate quantities for the purposes of meeting regulatory requirements.

C. When must a chemical inventory be updated and submitted to EHS?

- Chemical inventories should be maintained on a regular, ongoing basis, but at a minimum they should be updated before they are required to be submitted, as outlined below.
- **Chemical inventories must be submitted once per year during annual chemical reporting season (generally starting in October of each year). Note that the requirement to submit the entire inventory should not be confused with other requirements for annual chemical reporting.**
- **Chemical inventories must also be submitted to EHS in the following instances:**
  - **At the request of an outside regulatory authority**
  - **When the inventory may be needed to determine compliance with fire codes, for example, during a construction or renovation project**
  - **There may be regulatory or other developments or changes that labs to submit their inventory**

D. Does MIT provide a chemical inventory system?

- The EHS Office provides and supports a chemical inventory system free of charge, for all labs to use for their chemical inventory. If your inventory is up to date in this system, then there is no need to submit your inventory (as required, above) as EHS already has access to it.

- EHS Staff can assist your lab getting started using the EHS provided inventory platform by providing a demonstration, administering user access permissions, providing guidance materials, and uploading your initial well-formatted inventory. Please contact EHS at 617-452-3477 or email environment@mit.edu.

- More information can be found on the EHS Office website using the following link: https://ehs.mit.edu/chemical-safety-program/chemical-inventory/