Letter to be send out to those conducting laboratory chemical inventories

To: Faculty and Staff with Labs and Support Spaces at the Science Center
Re: Annual Request for Chemical Inventory Updates

To enhance safety, reduce risk and support regulatory compliance, Wellesley College, through the Environmental Health and Safety (EHS) Office, has committed to the annual tracking of hazardous chemicals on campus. Various agencies (ie. OSHA, EPA, DHS, DFS, MWRA[1]) require facilities to know what chemicals are being used and stored. To fulfill our obligation, we will need the engagement and cooperation of all faculty and staff who use and store hazardous chemicals.

At the Science Center, the Chemical Hygiene Plan, developed by Science Center faculty, staff and EHS states: (include studio art here?)

> (a) Lab personnel will be required to keep an accurate inventory of the chemicals used/stored in each space under their control (labs, refrigerators, freezers, cabinets, etc) and update it on an annual basis.
> (b) Unneeded items should be disposed of appropriately

Go to the EHS Website for information and instructions on updating the chemical inventory for your space. Should you have any questions, please contact Dawn Toon at dt100@wellesley.edu

COMPLETED INVENTORIES ARE DUE BACK TO EHS NO LATER THAN FEBRUARY 02, 2020

How to address those not on campus? Only those approved to be on campus. If not, highly recommend that someone looks at chemicals to ensure they are secure.

How to address those with physical limitations that need assistance. Contact EHS or make arrangement with _____ for assistance.

12/7/2020

- Has anyone completed an inventory in 2020? Gerard list who completed so can target those who did not.
- List of all labs/support spaces/etc
- SH develop website info

[1] Spell out each of the agencies here

Letter to be send out to those conducting non-laboratory chemical inventories will be separate

Why prepare or update a list of hazardous chemicals?
To ensure we are meeting our regulatory, safety and risk reduction goals, EHS has been asked to serve as the central collection point for all chemical inventories on campus. It provides EHS and the local emergency response teams with needed information, such as quantities of chemicals stored throughout campus and their locations. required personal protective equipment. In addition, the environmental benefits can be significant, if fewer chemicals are purchased, less hazardous waste will be generated.

Who can complete the chemical inventory?
Only those who have technical knowledge about the chemicals should be involved in the inventory; only trained students should be involved.

Which Departments at the Science Center are involved?
Chemistry, Biology, Geology, Physics, Neurobiology and all the support spaces like the stockroom and prep areas.

Do other departments on campus conduct inventories?
Yes, the Chemical inventory is not just for labs. Any location that stores hazardous chemicals is included. Examples of non-lab areas are those where materials such as cleaning products or maintenance supplies (such as lubricants, cleaning agents, paints, and industrial solvents) are stored. Other Departments include Facilities Management and Planning, PERA, Food Service, Studio Arts.

Where do I find previous inventories?

On a shared google doc folder located _____ . [how is this going to be shared with each person?

How do I update the inventory?

1. Select your current inventory listed as a spreadsheet on google (most titles have the year, lab # and researcher name all titles need to be the same – I did not

find the year, let's talk about how it is set up. Please set up a meeting with you, Gerard and myself)

2. Ensure that all the materials listed are still present in your lab.
    a. If the material is still present, put a "checkmark" in the box
    b. If the material is no longer in your lab, use the strikethrough function. Please, DO NOT delete.
3. To add new materials, add it to the bottom of the list after the line that says, "New Chemicals."
4. Feel free to add more columns to the right such as date received, or expiration date, or special hazards you want to keep track of.
5. You will know we have reviewed and updated your inventory when the title has the new year, strikethroughs are gone and no chemicals are listed after the "New Chemicals" line.

How do I obtain Safety Data Sheets (SDS) for the chemicals listed on the inventory?

OSHA requires that SDS be available to all who use a chemical product. Wellesley College faculty, staff and students can access Safety Data Sheets 1) on-line via MSDS on-line, 2) by going to your favorite browser and typing in "sds chemical-xyz" and 3) on the EHS desk in the mini-focus area there are three binders of SDS with many but not all chemicals. It is recommended that for commonly used products a hard copy be situated in the lab for quick and easy access.

There is a corresponding list with *MSDSonline* which EHS will keep updated annually, using the information you provide on the Google doc. This database provides Safety Data Sheets (SDS) for each chemical in the lab.

A SDS is a document that contains information on the potential hazards and how to work safely with a chemical product. More information on SDS can be found here: http://www.wellesley.edu/safety/sds. Information on how to access *MSDSonline* is in the attached document.

Information to be posted on website

By providing EHS with a chemical inventory list annually, the safety data sheets for all chemicals used on campus can be included on the MSDS Online site.
These instructions have been prepared to help you develop your chemical information including the identification, hazards, amounts and locations of the chemicals at your location.

CAMPUS CHEMICAL INVENTORY PROGRAM BACKGROUND

The Chemical Inventory database is available to track campus chemical inventories. It is available to campus users to enter and maintain their individual inventories. Maintaining a current inventory reduces the frequency of ordering materials that are already in-stock and facilitates the tracking of time-sensitive materials that should be disposed of. In addition, Wellesley College is required by federal and state law to track certain materials that are particularly hazardous, or above specified volumes.

The campus Chemical Inventory Program is coordinated by the Office of Environment, Health & Safety (EHS). Every laboratory, shop, or other chemical storage location should maintain an up-to-date chemical inventory, and reconcile it at least annually.

Benefits of Maintaining a Chemical Inventory

- Ensures that chemicals are stored according to compatibility tables.
- Eliminates unneeded or outdated chemicals.
- Increases ability to locate and share chemicals in emergency situations.
- Provides opportunity to review and update the hazard warning signage on the laboratory door.
- Promotes more efficient use of laboratory space.
- A check for expiration dates of peroxide formers can be made.
- Ensures integrity of shelving and storage cabinets.
- Opportunity to inspect labels and caps on bottles.
- Ensures compliance with all federal, state, and local record-keeping regulations.
- The inventory program will also assist with tracking Department of Homeland Security (DHS) Chemicals of Interest (COI).
- Promotes good relations and a sense of trust with the community and the emergency responders.
- Opportunity to update Safety Data Sheets.

Guidelines for Conducting a Chemical Inventory

The first step in developing a comprehensive chemical health and safety plan is to inventory existing chemicals. This may pose significant risks to the individuals taking the inventory and ample time should be allowed to properly conduct the inventory. Serious injury can result from touching or moving chemicals that have become shock sensitive or pressurized. **If any chemical container is unmarked, bulging, leaking, rusted, cracked, or has a degraded top, liquid above a solid, or crystals in a liquid, it should not be moved, even for the inventory.** It is best to be cautious! Contact EHS if you have any concerns.

1. If necessary, cease all other work in the laboratory while performing the inventory and allow ample time to conduct the inventory.
2. Work in pairs and never work alone.
3. One person should act as the recorder and the other person should list the chemicals.
4. Wear appropriate personal protective equipment. This may include gloves, chemical splash goggles, a lab apron and closed toed shoes.
5. Use a chemical cart with side rails and secondary containment.
6. Use a safety step stool or a small stepladder if chemicals are stored above eye level.
7. Check that chemicals have legible and appropriate labels – Abbreviations of chemical names are not appropriate as the sole indicator of a chemical's identity.
8. Store flammable solvents that require storage at reduced temperature in refrigerators or freezers designed for storage of flammable liquids. (Household refrigerators are not appropriate for storage of flammable liquids.)
9. Check that chemicals in freezers are not frozen together or stuck to the sides or shelves. Also check that containers are placed in secondary containment and are in an upright position.
10. If kits are present, be sure to inventory all chemicals in each kit. Many older kits may contain unlabeled chemicals with only manufacturer's numbers on them. Record the manufacturer, the chemical number, and the size of the container and any information concerning the manufacturer such as phone number and address as well as the kit identification number.
11. If preserved specimens are present, record the preservative used. Many specimens contain some formaldehyde.
12. Ensure that any spills or other contamination are cleaned up properly – pay particular attention to cabinets and refrigerators.
13. Discard all chemicals that are no longer useful to your research, expired (or more than 5 years old), or degraded – look for crystals, phase separation, container damage. Properly pack these chemicals and complete a Hazardous Waste Pickup request to have them removed.
14. If peroxide formers are present, review Wellesley College Peroxide Former SOP

To update and maintain your inventory on google doc:

Step1: SELECT YOUR INVENTORY (most titles have the year, lab # and researcher name)

Step 2: REVIEW CHEMICAL INVENTORY

The inventory should include hazardous materials and chemicals stored or used in the classrooms, storage areas, and other building areas for cleaning, landscaping, maintenance, operations, and pest control. Include all hazardous materials in your inventory, so the information is readily available to emergency responders.

The following examples are materials required to be in inventory include: all materials that are toxic, oxidizing, corrosive, reactive, carcinogenic, or flammable, as well as any liquids and gases under pressure including liquid nitrogen tanks and compressed air cylinders.

This list provides some examples of hazardous materials and chemicals which may be found in various Research/Classroom/Facility areas

Chemicals to Be Included in the Inventory

All hazardous chemicals with an NFPA rating of a 2 or above need to be included in the laboratory's chemical inventory. General rule of thumb to know if you should add a chemical or not: if a chemical container has any GHS pictorial indicating a hazard or the diamond on the chemical has a 2 or above in any section, it should be added to your chemical inventory

Examples of types of Items Required to be in Inventory:	**Examples of types Items Not Required to be in the Inventory:**
• Acids and Bases and Corrosives • Carcinogenic, mutagenic, or teratogenic materials. • Toxic or poisonous chemicals • Flammable and Combustible Materials • Reactive or unstable materials • Solvents, Thinners, Varnishes, lacquers Resins and Stains • Volatile Organic Compounds (VOCs) • DHS chemicals of interest (COI) • Gasoline, Kerosene and Diesel fuel • Nitrates, Nitrites • Oxidizers • Sulfates, Sulfites • Ammonia • Bleach • Cleaning agents • Disinfectant products (e.g., soaps, sprays, wipes)	• Reagent working solutions • Radioactive materials • Biological materials • Non-hazardous buffers • Growth media • Enzyme preparations • Non-hazardous buffers, sugars and salts (solid Or liquid form). • Growth media without toxic (to humans) components. • Non-toxic biochemicals (e.g., nucleotides, enzymes, protein extracts, lipids, nucleic acids, etc.). • Commercial assay kits. • Biological specimen (e.g., cell lines, blood or body fluids, antibodies, microorganisms, etc.). • Hazardous waste. • Retail products used for routine household-like activities (cleanser, dish soap, bleach, etc.)

• Glass cleaner
• Insecticides
• Pesticides
• Clay/Plaster-silica
  • Extremely Hazardous Substances as defined by 40 CFR 355, Subpart D.
  • Controlled substances (DEA listed materials).
  • Chemicals of Interest (Dept. of Homeland Security listed materials).
  • 3D Printer Filaments
  • Welding Rods
	with a duration and frequency of exposure that is equivalent to a consumer's home use.

STEP 3: COMPLETE THE FORM AS OUTLINED BELOW:

- **DEPARTMENT**: Indicate the name of the department or office that controls the hazardous material inventory.
- **BUILDING**: Indicate the building where material is located.
- **ROOM:** Indicate the room number where material is located.
- Check the box if the chemical is still in your lab.
- If new chemicals are added, make note that they are new on form.
- Please format with a strikethrough any chemicals no longer kept in your lab.

PRODUCT NAME: The product name refers to the name that the Manufacturer assigns to the product and may be different from the name of the chemical substance contained in the product. For example, Bleach is the name that the Clorox Company assigns to their product that is made of 6.15% sodium hypochlorite (substance name).
For products that have multiple hazardous ingredients (i.e. mixtures or multi-ingredient products) there isn't a straightforward way to inventory each ingredient in the mixture. Put the product name in the compound name field, and in parenthesis include the primary hazardous ingredients including percentages (if known). For example, "Aqua Regia (hydrochloric acid 75%, nitric acid 25%)."
Be sure to include any prefixes, (i.e., n-butanol). DO NOT USE abbreviations or chemical formulas.

MANUFACTURER: Indicate the name of the vendor or company that manufactures or sells the chemical listed.

CAS No.: The Chemical Abstracts Service (CAS) Registry Number may be found for specific chemicals on the chemical container, material safety data sheets (SDSs) or at online search sites, available below. This information is critical to the effectiveness of the database. Paints and some chemical mixtures do not have unique CAS numbers. Please include dashes in the number. Example: 7768-77-0

PRODUCT NUMBER: (Required if not a pure chemical with a CAS Number). The product number is not the same as the CAS number.

NUMBER OF CONTAINERS: Indicate number of containers of chemical.
AMOUNT: Indicate the total amount of the chemical using a numerical value ONLY. Quantities should represent typical amounts; For example, a partially used container is entered as the jar capacity, not how much changed in the past year, e.g., a 500 gram container doesn't need to specify 300 v. 200 grams full, it is just 500 grams.

UNITS: Use the following abbreviations

Unit	Description	Unit	Description
GAL	GALLONS	IU	INTERNATIONAL UNITS
ML	MILLILITERS	LB	POUNDS
L	LITERS	N/A	N/A
MG	MILLIGRAMS	NG	NANOGRAMS
G	GRAMS	OZ	OUNCES
KG	KILOGRAMS	PSI	LBS/SQ INCH
AMP	AMPULES	PT	PINTS
CC	CUBIC CENTIMETERS	QT	QUARTS
CFT	CUBIC FEET	TAB	TABLETS
DR	DRAMS	UG	MICROGRAMS
EA	EACH - UNIT	UL	MICROLITERS
FOZ	FLUID OUNCES	UNI	UNITS
IN	INCHES		

Step 4: Save the newly updated file and e-mail it to xxxxxxx. Your file will be inserted into the college inventory and reviewed by EHS. Keep a copy of your inventory for future use as this is an annual reporting requirement.

Room No.	Product Name	Manufacturer or Supplier	CAS #	# of Ctnrs	Amount	Units	Flam Class	Other Physical Hazards	Health Hazards	Comment
			x				x	x	x	

How to Keep an Up-to-Date Chemical Inventory

New Chemicals entering the lab/Facility
Updating of chemical inventories and Safety Data Sheets (SDSs) is an ongoing task. As new chemicals or updated SDSs for existing chemicals are received, the corresponding chemical inventory must be updated. At the same time, the web-based database MSDSonline must be checked to ensure the SDS is available.

Removing used/expired chemicals
When chemicals on your inventory expire, you must remove them from the inventory . Similarly, if the contents are completely used up, remove the item from the inventory prior to disposing.

Redistributing/sharing chemicals with other labs or moving to another location
it is very important not to move chemicals to another location without first deleting them from your inventory and adding to the inventory of the receiving lab.

Lab closing/disposal
Should your lab close or move for some reason, please do not leave any chemicals for the next person moving into the space. If you no longer want the chemicals in your chemical inventory it is required that you follow the procedures for redistributing chemicals should another researcher want them.