Setting Up a New Laboratory

Guide for implementing LabCup in a new research laboratory with, or without previous inventory list

Setting up a new laboratory to work with LabCup would involve 3 steps:

1. **Stock taking and labeling uniquely each chemical in the lab. Collect as much as possible data from the chemicals'label. Take a picture if possible.**

2. **Complete missing data on chemicals (SDS sheets, hazard information, UN number etc.)**

3. **Using the data collected, make a new, safer storage plan for the laboratory and reorganize it according to that. Label each cabinets according to the hazards contained.**

Step 1. Stock taking – as it is

What will you need?
- Need to be in the laboratory
- Computer, good network connection, modern web browser (latest Firefox or Chrome)
- Barcode labels (pre-printed, chemically resistant PP or PE, printed with chemically resistant ink)
- Permanent Marker (for labeling the cabinets)
- Web-camera attached to the computer (autofocus, min resolution 1024x768)

Name the storage cabinets/locations

-Use stickers or the permanent marker to name the locations.
-Any name of your choice is possible

Good examples would be:
-Cabinet A
-Cabinet B (Corrosives, inorganic)
-Cabinet C (Flammable solids)
-Shelf B (Salts)
...etc

Label the chemicals

-Label with barcode clearly, do not covering any information on the label
-Label on the top, as it will be easier to read it in the crowd
-Best to add the items to LabCup immediately, when labeling and the chemical is still in your hand by entering all information you can find on the label, you will be able to complete the rest of the information later.

Quick Add
Quick add is the recommended option to set up a laboratory initially! Add many chemicals at the same place by selecting the location only once!

"Menu -> Stock control -> Quick Add"

-It is useful only if you add many chemicals to the same location one after the other
-Taking a picture is strongly recommended whenever it is possible (min resolution 1024x768)
-If you take a picture of the chemical label, especially targeting the product number, LabCup will try to recognize it. If not recognized properly, then continue entering it manually
-Insert barcode/brand/product number if not recognized
-Insert 'Chemical name on the bottle'
-If all is good then Save & Finish

Entering data one-by-one

Recommended only if you wish to add only a few chemicals and maybe to different locations!
"Menu -> Stock control -> Add or edit chemicals"
-Taking a picture is strongly recommended whenever it is possible (min resolution 1024x768)
-If you take a picture of the chemical label, LabCup will try to recognize it. If not recognized properly, then continue entering it manually
-Insert barcode/brand/product number
-Upload SDS sheet
-Check or enter hazard classifications (SDS section 2)
-Check or enter UN number, Transport hazard class's, packing group (SDS section 14)
-Check owner and location and the other fields
-If all is good then Save & Finish

Importing XLS or CSV file

Depreciated and I would strongly advice against using this to add chemicals as you will need to label each chemical and collect information on those as well!

"Stock control -> Import/Export"

-Once chemicals are barcoded with a unique ID, for bulk import you can use the XLS or CSV import
-**Barcode number**, **product code**, **brand** fields are mandatory
-Use the XLS template downloaded from "Stock control -> Import/Export"
-If you choose "with macro"then it will tell you which chemicals are known already
-Work on the data until you get no errors (warnings are acceptable), fill in as much as possible
-If any information is unknown type in "**Unknown**"but it is much better on a long term if as many data is filled out as many possible
-If the chemicals can be properly identified from the spreadsheet file, LabCup tries to acquire as many additional information as possible from online databases (eg. synonimes, molecular structure etc) but you will need to approve each item afterwards one by one (see 'Review chemical's data').

Step 2. Completing information on chemicals

What will you need?
-Just a computer with network access to LabCup and to the chemical suppliers' homepages. This can be done in the write up area out of the laboratory.

Chemicals need attention

"Stock control -> Review chemical's data"

-Select owner and laboratory and search
-Work on this list by checking and filling in data until all is gone:

1. Upload SDS sheet
2. Check or enter hazard classifications (SDS section 2)
3. Check or enter UN number, Transport hazard class's, packing group (SDS section 14)

Safety Data Sheets (SDS) upload

-If your SDS sheet is not recognized automatically but you would have a lot from the same brand, send it to us to support@labcup.net

Step 3. Organizing chemicals and sorting by compatibility

Once you have the necessary data on the properties of chemicals you should start segregating the chemicals that could pose a risk of dangerous interactions – if not done yet - (runaway reaction, toxic fumes, fire, explosion) when stored together.

What will you need?
-Decide how are you going to store chemicals within each cabinet
-Work out a good segregation system in the office and then go to the lab and reorganize the chemicals according to that
-ADR transport hazard labels to label the cabinets

Options for storage order in cabinets

Once the location is decided, you have to decide how you are going to store them *within* the cabinets.

Alphabetic order
Upside:
-Everyone understands
Drawback:
-Worst option because of the numerous synonyms
-Too many bottle beginning with the same letter -> slow to find
-No compatibility segregation

By sub-location
If possible try to organize solids on the top, and liquids on the bottom of the cabinet.
Upside:
-Subdivision with limited number of chemicals
-Compatibility segregation
Drawback:
-No logic behind it

By barcode number
Upside:
-Everyone understands
-Very fast to locate chemicals
-Subdivision with limited number of chemicals
-Compatibility segregation
Drawback:
-Have to compress the shelves once chemicals are used up
-Extreme large numbers a more difficult to manage

Identifying compatible groups of chemicals

 "Sorter -> Segregation of chemicals into cabinets"

-The *left side* column you will contain the chemicals in your inventory grouped into compatibility groups.
-On the *right side* you will see your cabinets and locations listed and being empty first.
-*Drag&drop* - from left to right - the group of chemicals onto the storage locations where you wish to store it in the future.

However, before you can decide which way to organize the group of chemicals the most economic way, you need to check *how many* you have in each compatibility group. Then you need to figure out what *properties the locations/cabinets* needs to have to store those chemicals.

Storage requirements

Chemical category	Storage location requirements
Freezer	Chemical freezer, controlled at -20C
Fridge	Chemical fridge, controlled at 0-8C
Explosives	Ventilated cabinet, Explosion proof
Gases	Ventilated cabinet, Fire safety cabinet
Flammable solids	Ventilated cabinet, Fire safety cabinet
Oxidizing substances and organic peroxides	Ventilated cabinet, Fire safety cabinet
Corrosive substances – Bases	Ventilated cabinet
Corrosive substances – Acids	Ventilated cabinet
Corrosive substances – Oxidizers	Ventilated cabinet, Fire safety cabinet
Flammable liquids	Ventilated cabinet, Fire safety cabinet
Toxic substances	Ventilated cabinet, Lockable
Miscellaneous dangerous goods and articles	Ventilated cabinet
Non hazardous chemicals	No requirements

Using storage boxes for segregation

In case you have not enough storage cabinets for a complete segregation, in certain cases you might use storage boxes to segregate chemicals *further* within a storage cabinet.
        -Use polypropylene (PP) or polyethylene (PE) boxes
        -If not enough cabinet, segregate chemicals using boxes within the cabinets

Best thing to do

1.) Grab several PP or PE storage boxes for temporal storage
2.) Name each box according to the *colored* names in the category table above and collect those chemicals. These categories must be segregated for storage in any case.
3.) Don't put the following pairs into the same cabinet:
        a.   Corrosive bases – Corrosive Acids

   b. Corrosive oxidizers – anything
   c. Oxidizing substances and organic peroxides – Flammable solids/liquids
   d. Flammable solids – Flammable liquids
   e. Explosives – anything
  4.) Fridge&Freezer: Put back the chemicals that needs to be stored at low temperature

Hazard labeling cabinets

"Sorter -> Chemicals per current location"

-The labels (transport hazard labels) are shown for each cabinet. Label the cabinets accordingly.

Administration

Creating / Deleting users

The "Group admin" can **create new users** for that group by clicking on their profile name in the top right corner and selecting "Users/Access points".
Under the "Users"tab click "New".
Enter the users name, their username (this is used for log-in), and their email address.
Select their role within the group (or groups).
Click "Save".
The new user will receive an email with their login details.

To delete a user, follow the steps above to get into the "Users" tab.
Select the user from this list.
Click "Remove".
User will be deleted.

Creating / Deleting locations

To create new storage locations, cabinets, shelves etc:
If the user has group admin or Write privilege, select "Sorter" from the top menu:

1. Click "Edit locations".
2. Click "New".
3. Name the new locations, and what laboratory it is in. The other fields can be filled out where the information is available.
4. Click "Save".

Registering the computer for fix/local access

To assign a laboratory computer as being fixed within a lab for *read access* (computer is always logged in without individual users needing to log-in):

The Group Admin can assign computers by clicking their profile name and selecting :Users/Access points":

1. Select the "Fix access points" tab.
2. Select "New".
3. Give the computer a name. Select which laboratory it is located in, and which groups have access to it.
4. Click "Save".

This computer will always be available to search the inventory on, without users having to log-in.