



**BOOK**

## **Mbook 3.1 Manual**

© 2022 MESTRELAB RESEARCH  
Last Revision: 12-Sept-2022

# Mbook

---

by MESTRELAB RESEARCH

*This is the manual of Mbook*

# Mbook Manual

© 2022 Mestrelab Research S.L.

All rights reserved. No parts of this work may be reproduced in any form or by any means - graphic, electronic, or mechanical, including photocopying, recording, taping, or information storage and retrieval systems - without the written permission of the publisher.

Products that are referred to in this document may be either trademarks and/or registered trademarks of the respective owners. The publisher and the author make no claim to these trademarks.

While every precaution has been taken in the preparation of this document, the publisher and the author assume no responsibility for errors or omissions, or for damages resulting from the use of information contained in this document or from the use of programs and source code that may accompany it. In no event shall the publisher and the author be liable for any loss of profit or any other commercial damage caused or alleged to have been caused directly or indirectly by this document.

# Table of Contents

<b>Part I.</b>	<b>Introduction</b>	<b>6</b>
	1 Definitions.....	7
<b>Part II.</b>	<b>Starting with Mbook</b>	<b>9</b>
<b>Part III.</b>	<b>Users and Groups Configuration</b>	<b>11</b>
	1 User Roles.....	12
	2 Create Users and Groups.....	16
	3 Managing groups.....	22
<b>Part IV.</b>	<b>Creating Projects</b>	<b>26</b>
	1 Export Projects.....	29
	2 Report Projects.....	31
<b>Part V.</b>	<b>Creating Reactions and Experiments</b>	<b>33</b>
	1 Export Experiments.....	54
	2 Import experiments.....	55
	3 Column Configuration.....	57
	4 Searching.....	60
	5 Verification.....	61
	Running Verifications .....	62
	6 Generating Reports.....	64
	7 Report Footer.....	66
<b>Part VI.</b>	<b>Main Toolbar</b>	<b>71</b>
<b>Part VII.</b>	<b>Inventory</b>	<b>76</b>
	1 Stockroom.....	86
<b>Part VIII.</b>	<b>Experiment Witnessing, Approval and Structure Managers</b>	<b>92</b>
<b>Part IX.</b>	<b>COSHH</b>	<b>100</b>
<b>Part X.</b>	<b>Mbook Analytical</b>	<b>104</b>
	1 Create an analyst.....	105
	2 Create a client.....	108
	3 Create an instrument.....	112

---

4 Define your service offer.....	113
5 How to request a service.....	114
6 Search Requests.....	123
<b>Part XI. Further information</b>	<b>126</b>

**Part**



# 1 Introduction



## ABOUT MBOOK MANUAL

This manual describes the features included in Mbook. Mbook is an Electronic Notebook (ELN) that will help you to enter, archive, search and report your chemical experiments and reactions, including analytical, spectroscopic and other types of data.

- Different levels of users: Project Manager, Group Manager, Bench Chemist and more
- Input any type of information related to your chemistry: graphical representation of a reaction, stoichiometric calculations, experimental write-up, purification procedures, spectroscopic characterization, analytical data, physical, chemical, biological, and pharmacological properties, health and safety information, literature/bibliographical documents and more
- Chemical structures, numerical data, text, images, spectroscopic data, binary files, etc.
- Its own large editable database of typical chemical reagents, with relevant physical and chemical properties to facilitate the setup of your reactions or experiments
- Its own, optimized chemical structure drawing package
- Communications within your organization (user to user, user to groups, etc.)
- Powerful and fast structure and text-based searches
- Interfacing with external databases to search for relevant information and properties
- User-tailored reporting
- Cloning of experiments and easy modification of pre-existing structures/information

## 1.1 Definitions

- **Groups:** Set of users who will carry out a project.
- **Projects:** Tasks created by privileged roles that contain a set of reactions.
- **Reactions:** Set of experiments within a project.
- **Experiments:** Each of the tests, typically run by the Chemist, within a reaction containing a reaction scheme, a stoichiometry table and a reaction write-up section.
- **Desk:** Work area of the Group Manager, containing the list of Projects and a view of the experiments of interest. In the picture below, you can see the desk view with the list of projects (in blue), reactions (green) and experiments (black) with the applicable reaction scheme:

The screenshot displays the MBOOK software interface. At the top, there is a navigation bar with 'BOOK', 'Desk', 'People', 'Search', 'Inventory', and 'Message' options. The user 'Pablo Monje' is logged in. The main area is titled 'Desk' and contains a table of projects. A sidebar on the left lists 'Open Projects' under 'Enzyme Cat' and 'Main' categories, including 'Etz' and various project codes like PMF\_47, PMF\_45, etc. The table below shows project details:

Code	Status	User	Reaction	Project	Time	Yield	Experiment
PMF_92	Open	Pablo Monje	Etz	Main	2017-02-21 08:00 2017-02-22 11:30		
PMF_10091	Open	Pablo Monje	Etz	Main	2016-10-12 06:25 2017-02-22 12:05		
PMF_90	Closed	Pablo Monje	Etz	Main	2016-03-18 00:00		
PMF_89	Open	Pablo Monje	Etz	Main	2016-03-17 12:51		

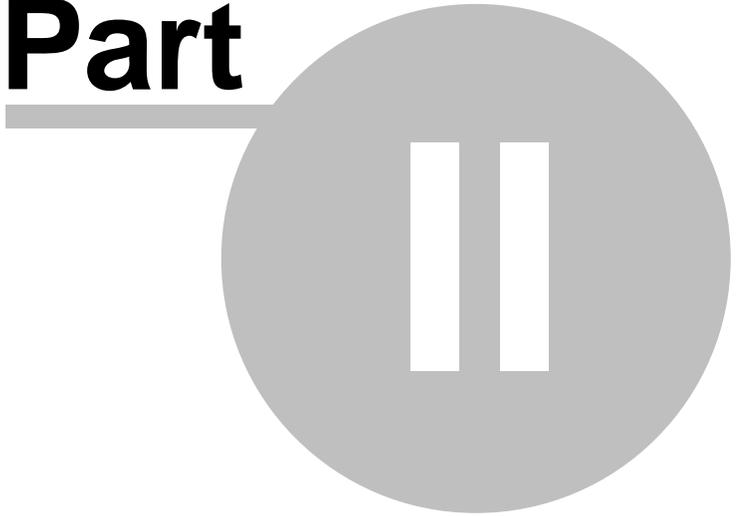
A detailed view of project 'pmbu15' is shown, featuring a chemical reaction scheme with two reactants and one product. The reactants are CC(=O)CC(=O)OCC and CC(=O)CC(=O)OC1=CC=C(OC)C=C1OC. The product is CC(=O)CC(=O)OC1=CC=C(OC)C=C1OC. Below the reaction, the following information is displayed:

**pmbu15**  
Status: Open  
User: Pablo Monje  
Start: 2014-06-20

At the bottom of the interface, there is a pagination bar showing 'Page: 1 of 1' and 'Results: 25'.

- **Inventory:** Set of compounds, stockrooms and suppliers.

**Part**

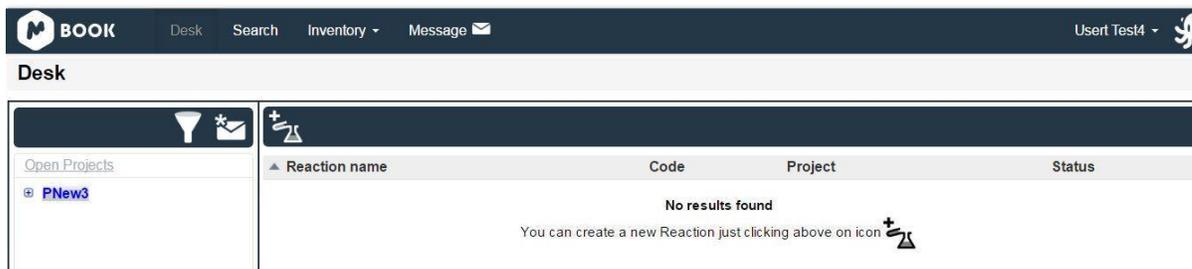


## 2 Starting with Mbook

You can use your Internet browser to connect to your server just by typing something like the address below into the search field:

[http://SERVER\\_IP\\_ADDRESS:PORT/ELN/](http://SERVER_IP_ADDRESS:PORT/ELN/)

After having entered the applicable username and password, you will be presented with the GUI:



The screenshot displays the MBOOK web interface. At the top, a dark navigation bar contains the 'MBOOK' logo, menu items for 'Desk', 'Search', 'Inventory', and 'Message', and a user profile for 'User1 Test4'. Below this, the 'Desk' section is visible. On the left, there is a sidebar with 'Open Projects' and a project named 'PNew3'. The main area features a table with columns for 'Reaction name', 'Code', 'Project', and 'Status'. The table is currently empty, displaying the message 'No results found' and a prompt: 'You can create a new Reaction just clicking above on icon' with a plus sign and a reaction icon.

**Part**



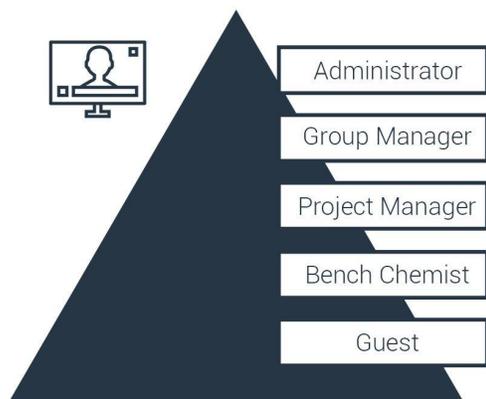
## 3 Users and Groups Configuration

Before you start creating users and groups, we strongly recommend you read the descriptions of the four types of users within Mbook ELN below.

Please note that understanding the differences between an Admin and a Group Manager is very important to this preliminary configuration step.

### 3.1 User Roles

Mbook provides several levels of access through user roles, limiting access depending on the privileges of the individual user (Administrator, Group Manager, Project Manager, Bench Chemist, or Guest).



The permissions according to role are as follows:

MBOOK	Group Manager	Project Manager	Bench Chemist	Administrator	Guest
Manage users	✓	✗	✗	✓	✗
Manage groups	✓	✗	✗	✓	✗
Assign structure, inventory & safety managers	✓	✗	✗	✗	✗
Assign witness power	✓	✗	✗	✗	✗
Manage projects	✓	✓	✗	✗	✗
Approve changes in structures	✓	✓	✗	✗	✗
Assign users to projects	✓	✓	✗	✗	✗
Approves experiments	✓	✓	✗	✗	✗
Manage reactions & experiments	✓	✓	✓	✗	✗
Witness experiments	✓	✓	✓	✗	✗
See projects, reactions & experiments	✓	<i>If part of the project</i>	<i>If part of the project</i>	✗	<i>If invited</i>

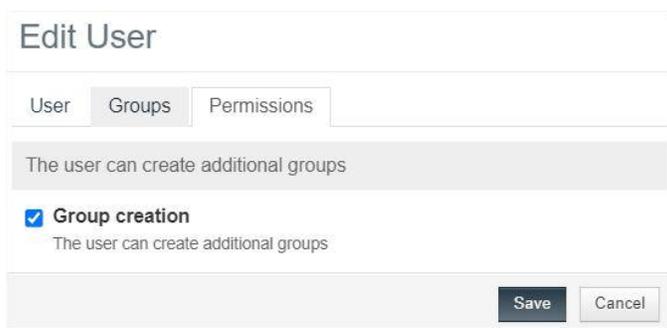
#### • Administrator:

This role is for authorized users in management roles and is key for the initial configuration of Mbook. A user with administrator rights is automatically created for new organizations when they start using Mbook (but we do not charge a license for it). The administrator has all the same permissions granted to Group Managers, except cannot create or work with [projects](#), [reactions or experiments](#). An administrator, however, can create groups that are completely independent from each other, which a Group Manager cannot do.



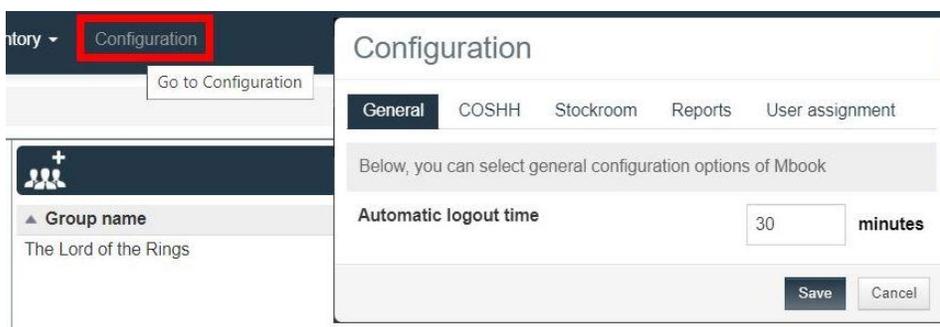
From the admin account you can also check the user activity or to activate/disable users.

Admins can also change permissions to Group Managers to allow them or not to create groups:



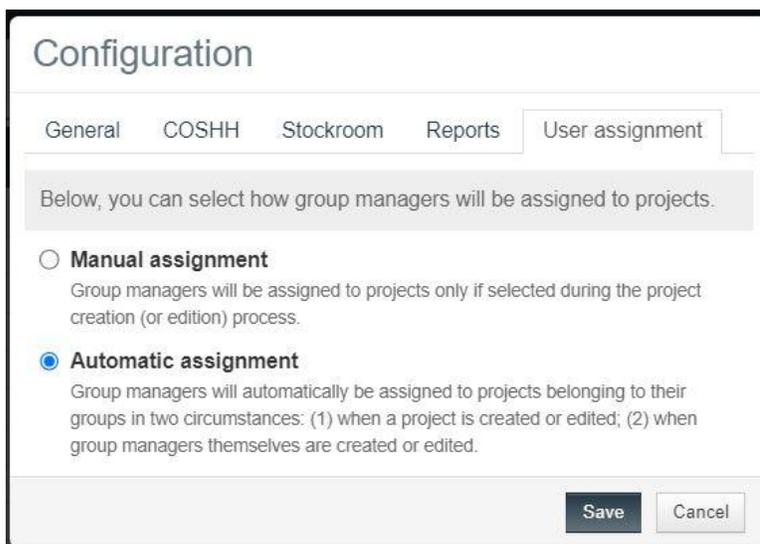
The screenshot shows the 'Edit User' interface with three tabs: 'User', 'Groups', and 'Permissions'. The 'Groups' tab is active. A message states 'The user can create additional groups'. Below this, there is a checked checkbox for 'Group creation' with the subtext 'The user can create additional groups'. At the bottom right, there are 'Save' and 'Cancel' buttons.

From the configuration tab, the admin can control the automatic logout time (Minimum value: 15 minutes; maximum: 12 hours)



The screenshot shows the 'Configuration' page with a sidebar on the left containing a 'Configuration' menu item (highlighted with a red box) and a 'Go to Configuration' button. The main content area has tabs for 'General', 'COSHH', 'Stockroom', 'Reports', and 'User assignment'. The 'General' tab is selected. A message says 'Below, you can select general configuration options of Mbook'. The 'Automatic logout time' is set to '30 minutes'. 'Save' and 'Cancel' buttons are at the bottom right.

From here, the admin can also select some settings for the COSHH, Stockroom, reports and user assignments (for group managers and projects):



The screenshot shows the 'Configuration' page with the 'User assignment' tab selected. A message states 'Below, you can select how group managers will be assigned to projects.' There are two radio button options: 'Manual assignment' (unselected) and 'Automatic assignment' (selected). The 'Automatic assignment' option has a description: 'Group managers will automatically be assigned to projects belonging to their groups in two circumstances: (1) when a project is created or edited; (2) when group managers themselves are created or edited.' 'Save' and 'Cancel' buttons are at the bottom right.

If your group is small, then this role is rarely needed. It is useful for organizations that have several sites or very distinct working groups within a lab, for example, separate groups for analytical and synthetic chemistry.

In the future, we expect the administrator role to become more important in Mbook as we add functionalities that will require an authorized user to supervise them.

- **Group Manager:**

The Group Manager role is intended for team leaders with management and lab responsibilities. The group manager can [create users, groups](#) (if the Admin allows), as well as [Projects, reactions and experiments](#). In addition, Group Managers can assign additional permissions to other users so they can be made responsible for inventory, safety, or structures.

A Group Manager can be removed from a group or project only by himself, other Group Manager or by an Admin user (and can remove others Project managers or Bench users from a project or group).

[Witness and approval of experiments](#) are also parts of the permissions granted to Group Managers by default, as well as being able to designate other users who can also witness and approve.

*When a compound has associated experiments, the user can modify the existing one which implies an approval request (by message) to all the structure managers (only one approval will be needed). If the modification is approved, a message will be sent to the users*

**NOTE:** *responsible of the experiments and to the associated project managers. In case of closed experiments (or equivalent), they will be opened again. There is no automatic modification of the experiment. These modifications (if any) are the responsibility of the owner of the experiment.*

- **Project Manager:**

This is a suitable role for staff members that own projects but are not in charge of teams and do not have management responsibilities. As such, Project Managers can create [projects, reactions and experiments](#), but not [users or groups](#); they can, however, assign an existing user to their projects. Project Managers can also [witness and approve experiments](#).

A Project manager can be removed from a project by himself, other Project Manager or by a Group Manager. However, a Project manager can't remove a Group Manager from a project but can remove others Bench users from a project.

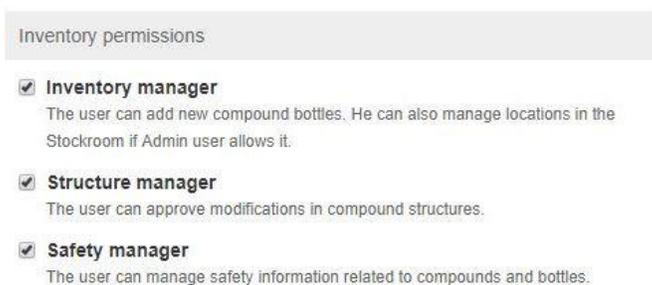
- **Bench Chemist:**

This role is designed to for chemists that have neither management responsibilities, nor ownership of projects. A Bench Chemist can create [reactions and experiments](#), but not [groups or users](#). They can also [witness experiments](#). By default, Bench Chemists will only see their own experiments in the Desk Panel navigation tree, but this can be modified if required.

- **Guest:**

This role was added to Mbook in version 2.1 following requests for such from various Contract Research Organizations (CROs). CROs wanted to be able to prove their expertise in certain processes to potential clients, or to show existing customers the progress on their projects via the CRO. With this in mind, Guests only have permission to see [projects](#) or [groups](#) that they have been granted access to.

In addition to these roles, Mbook offers the possibility of further customization of permissions by allowing Group Managers to designate [Safety, Inventory](#) or [Structure managers](#).

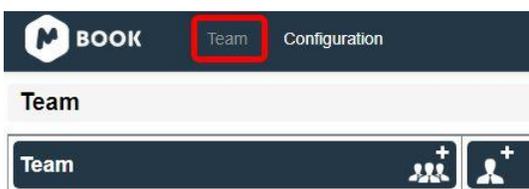


For further information about creating users and groups in Mbook, please follow this [link](#).

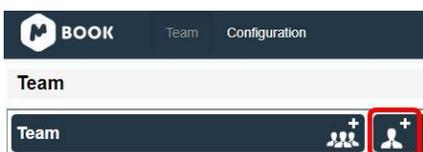
## 3.2 Create Users and Groups

### ADMIN -How to create a user?

As mentioned, an Administrator will only be able to see the 'Team' tab to create and organize users and groups as an initial stage.



The Admin must create the first user by clicking on the 'Add User' button.



From here, the Administrator needs to enter a username (with a valid email address), password, role, etc... The Administrator can select a group (if there are any existing ones) to which the new user can be assigned:

Add User

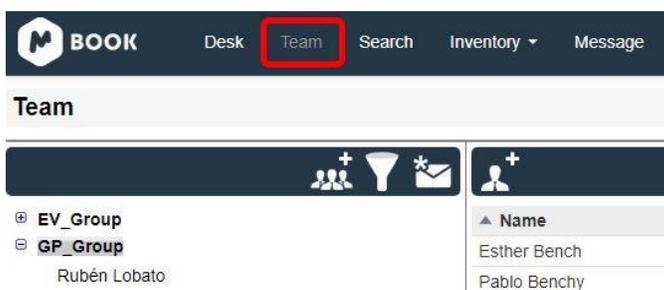
Username*	<input type="text" value="DMendelev"/>	<b>Groups</b> <table> <tr> <td>Demo GTRial Test People Trial_001 Trial_002</td> <td>&gt;</td> <td>Chem</td> </tr> <tr> <td></td> <td>&lt;</td> <td></td> </tr> </table>	Demo GTRial Test People Trial_001 Trial_002	>	Chem		<	
Demo GTRial Test People Trial_001 Trial_002	>		Chem					
	<							
Password*	<input type="password" value="....."/>							
Retype password*	<input type="password" value="....."/>							
Status	Active							
Role*	Group Manager							
First Name*	Dimitri							
Last Name*	Mendelev							
Phone	<input type="text"/>							
Experiment prefix*	DM							

Save Cancel

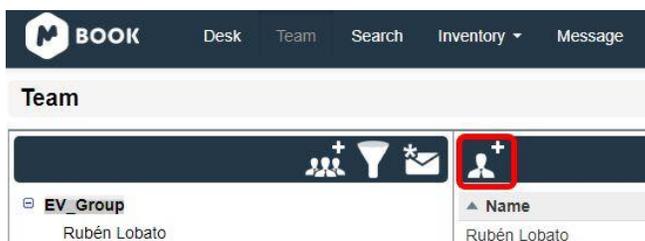
The Prefix field can be used to automatically generate experiment codes for experiments created by the user.

## GROUP MANAGER - How to create a user?

A Group Manager can also create users and groups (if the admin allows), among their other possible duties. As can be seen in the screenshot below, the Group Manager has more active tabs than an Administrator.



Then you can create users (as we described above for the admin role):



When the group manager is creating a new user, it is possible to assign him/her to any existing group and project by using the 'Groups and Projects tab':

### Add User

User **Groups and Projects** Permissions

Groups	Projects
AG <input checked="" type="checkbox"/>	<b>Open Projects</b>
New nn <input type="checkbox"/>	<input checked="" type="checkbox"/> <i>Analíticos_Pablo</i>
New Test2 <input type="checkbox"/>	<input checked="" type="checkbox"/> <i>NP_m</i>
Peibol <input type="checkbox"/>	<input checked="" type="checkbox"/> <i>FL2</i>
Testing <input type="checkbox"/>	<input checked="" type="checkbox"/> <i>NMR</i>
Group4 <input type="checkbox"/>	<input type="checkbox"/> <i>Pablo M</i>
Test_13478 <input type="checkbox"/>	<input type="checkbox"/> <i>PM</i>
TestStructure <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <i>PM141119</i>
Tut Group <input type="checkbox"/>	<input type="checkbox"/> <i>PMF</i>
Tutorial Group2 <input type="checkbox"/>	<input checked="" type="checkbox"/> <i>PM_test</i>
	<input type="checkbox"/> <i>COSHH</i>
	<input checked="" type="checkbox"/> <i>Project Test Eva</i>
	<b>Closed Projects</b>
	<i>No projects found</i>

Please note that a Group Manager can also assign individual privileges to any user, for instance, as an [Experiment Witness](#), an [Inventory Manager](#), or a [Structure Manager](#) (which an Administrator cannot do).

You can activate/inactivate several users at the same time by using the "Activate users" button:



Note that when a user is inactivated in this way, he/she will be removed from all groups/projects at once. When the user is activated again, you will have the capability to include him/her back in the groups/projects he/she belonged to before the inactivation.

### Activate Users

Below you can select users to set their status to *active*, or deselect them to set their status to *inactive*.

Include reactivated users in the groups and projects they belonged to before their inactivation

Name	Active
Bench Lab	<input type="checkbox"/>
Benchy User	<input checked="" type="checkbox"/>
Benchy2 User	<input checked="" type="checkbox"/>
Blabla Acurrar	<input checked="" type="checkbox"/>
blabla old	<input checked="" type="checkbox"/>
Charo Bench	<input checked="" type="checkbox"/>
Enrique User	<input checked="" type="checkbox"/>
Esther Bench	<input checked="" type="checkbox"/>
Esther Mestrelab	<input checked="" type="checkbox"/>
Eva Bench	<input checked="" type="checkbox"/>

**Filter**

**Group selection**

AG  
Group4  
Helsinn  
New Test2  
Peibol  
Select  
Test\_13478  
Testing  
TestStructure  
Tut Group

>  
<

Clear Apply

## ADMIN - How to create a Group?

The Administrator can create a group just by clicking on the appropriate button:

The screenshot shows the MBOOK administration interface. At the top, there is a navigation bar with 'M BOOK' logo and menu items: 'Team', 'Clients', 'Inventory', and 'Configur'. Below this, the 'Team' section is active. In the 'Team' sub-section, there is a row of icons: a home icon, a plus sign with a group of people icon (highlighted with a red box), a plus sign with a person icon, and a plus sign with a checkmark icon. Below the icons, there is a list of team members with names like '40kUsers' and '17078D'.

The Group can then be defined by filling in the form so invoked and can then add any existing managers and users as desired.

Add Group

Group name\*

Short name

Description

**Managers**

Antoine Lavoisier > Robert Boyle

**Users**

Robert Boyle, S Cannizzaro, Elias Corey, Antoine Lavoisier, D Mendeleev, Louis Pasteur, ... > Peter Atkins, Marie Curie

Once some groups have been created, you will find them listed on the left-hand side. You can click on any of them to list the users associated with a particular group.

**BOOK** Team

**Team**

**Team**

- GP\_Group
  - Rubén Lobato
  - Esther Mestrelab
  - Gustavo Tester
  - Esther Bench
  - Pablo Benchy

**New users** can be added to any existing group, just by highlighting the group (or any existing user in the group) and clicking on the 'Add User' button:

**Team**

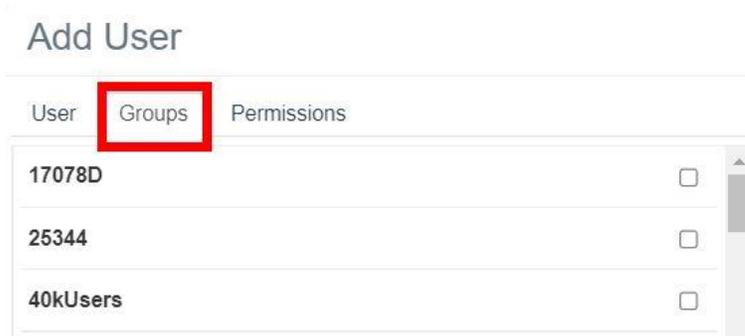
AG

- Rubén Lobato
- Esther Mestrelab
- Pablo Monje
- Eva Muñoz
- Gustavo Tester
- Pablo Benchy

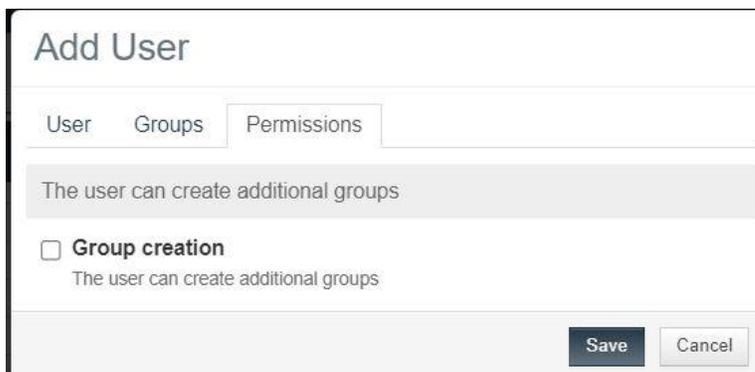
**Add User**

- Benchy User
- Benchy2 User
- Esther Mestrelab
- Eva Muñoz
- GuestUser Gues
- Gustavo Tester

When you are creating a new user, you can assign him/her to any existing group by using the 'Groups tab':



Use the permissions tab to allow the user to create groups.



Users can be linked to or disabled from groups and projects. If a user is disabled from an existing group (or project), the remaining users and groups will still be able to see the data created by that user (whose name will appear in italics under the navigation tree).

Click on the 'User Activity' button to check some relevant information about the users:

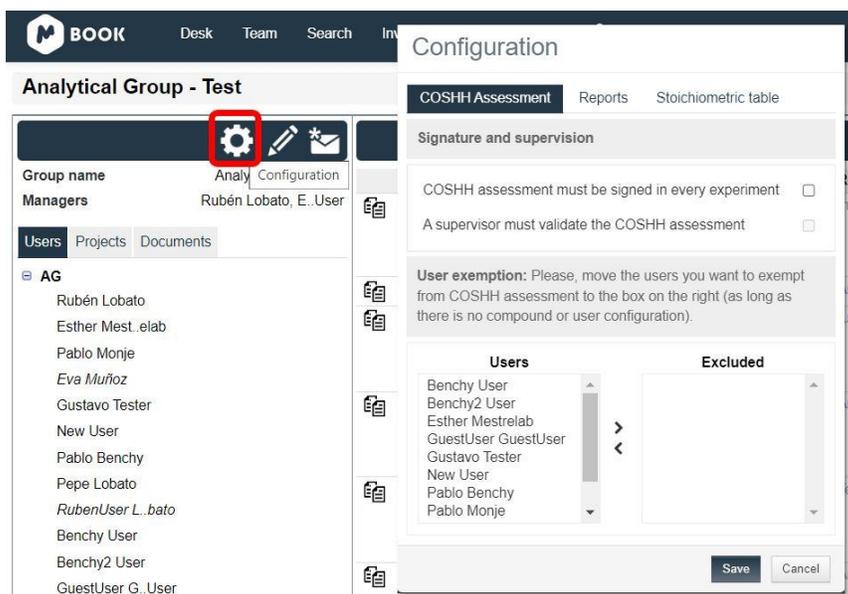


## GROUP MANAGER - How to create a Group?

If the admin allows, the Group Manager can also create a group (as we described above for the Administrator role):

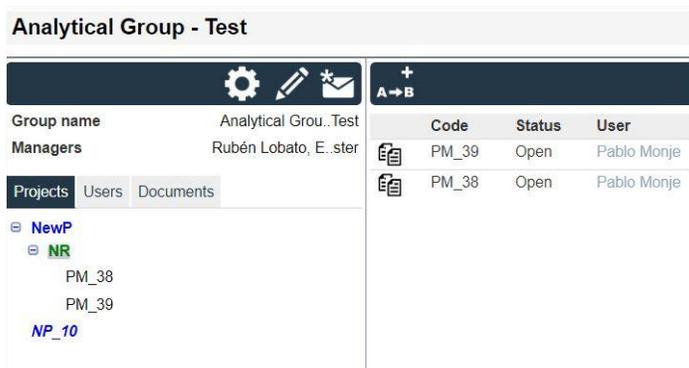


Double clicking on the group name will allow you to edit the group and configure some settings for the COSHH assessment, reports and stoichiometric table:

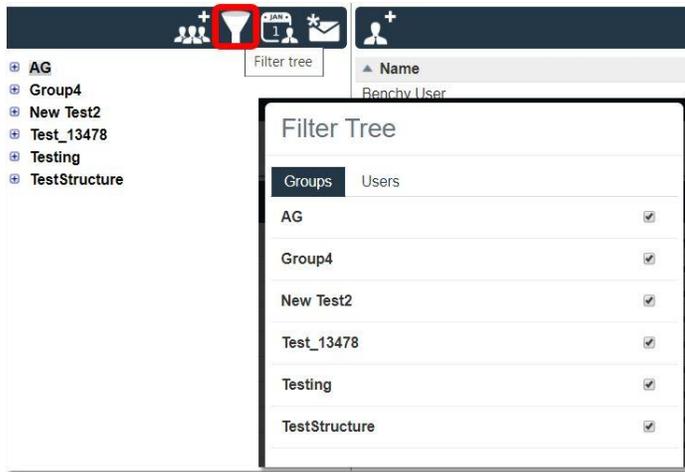


### 3.3 Managing groups

Double clicking on the group name will display the group’s reactions and will allow you to send messages to all users or edit the current group. From here, you can also check the group documents:



Going back to the 'Team' panel and clicking on the 'filter' button will allow you to filter the information by group and user, as shown in the panel:



Selecting the users tab, will allow you to filter users by role, permissions, and status:

### Filter Tree

Groups
Users

Role	<input checked="" type="checkbox"/>
Group Manager	<input checked="" type="checkbox"/>
Project Manager	<input checked="" type="checkbox"/>
Bench Chemist	<input checked="" type="checkbox"/>
Guest	<input checked="" type="checkbox"/>
Permissions	<input checked="" type="checkbox"/>
Experiment witness	<input checked="" type="checkbox"/>
Inventory manager	<input checked="" type="checkbox"/>
Structure manager	<input checked="" type="checkbox"/>
Safety manager	<input checked="" type="checkbox"/>
Request author	<input checked="" type="checkbox"/>
Requester supervisor	<input checked="" type="checkbox"/>
Users without any permissions	<input checked="" type="checkbox"/>
Status	<input type="checkbox"/>
Active	<input checked="" type="checkbox"/>
Former users from a group	<input type="checkbox"/>
Inactive	<input type="checkbox"/>

Apply
Clear
Cancel

Left clicking on any existing user will display all the applicable reactions and experiments. Clicking on the 'Edit User' icon will allow you to edit a given user's details (password, status, role, etc.):

Desk
People
Search
Invent

### Pablo Monje

**Name** Pablo Monje Edit User

**Username** pablo@mestrec.com

**Role** Group Manager

**Status** Active

Documents

No associated documents

Code	Statu
PMF_92	Open
PMF_10091	Open

Clicking on the user activity button will display information about each user's active days:

**Team**

- AG
  - Rubén Lobato
  - Esther Mest. elab
  - Pablo Monje
  - Eva Muñoz
  - Gustavo Tester
  - Pablo Benchy
  - Pepe Lobato
  - RubenUser L. bato
  - Benchy User
  - Benchy2 User
  - GuestUser G. User
- Group4
- New\_Test2
- Test\_13478
- Testing
- TestStructure

**User activity**

Name	From	Till	Active days
NewUser User	2020-04-01	2020-05-26	56
Enrique User	2020-04-01	2020-05-26	56
Benchy2 User	2020-04-01	2020-05-26	56
Benchy User	2020-04-01	2020-05-26	56
Gustavo Tester	2020-04-01	2020-05-26	56
Eva Muñoz	2020-04-01	2020-05-26	56
Pablo Monje	2020-04-01	2020-05-26	56
Gus Manager2	2020-04-01	2020-05-26	56
Ruben LobatoBench	2020-04-01	2020-05-26	56
Rubén Lobato	2020-04-01	2020-05-26	56
RubenUser Lobato	2020-04-01	2020-05-26	56
Pepe Lobato	2020-04-08	2020-05-26	49
GusPM GusPM	2020-04-01	2020-05-26	56
GuestUser GuestUser	2020-04-01	2020-05-26	56
Eva group manager 3	2020-04-01	2020-05-26	56
Maribel Garcia	2020-04-01	2020-05-26	56
Santi Dominguez	2020-04-01	2020-05-26	56
Pablo Benchy	2020-04-01	2020-05-26	56

Filter

Activity period

From: 2020-04-01

Till: 2020-05-26

Clear Apply

Page: 1 of 1 Results: 25

Cancel

**Part**

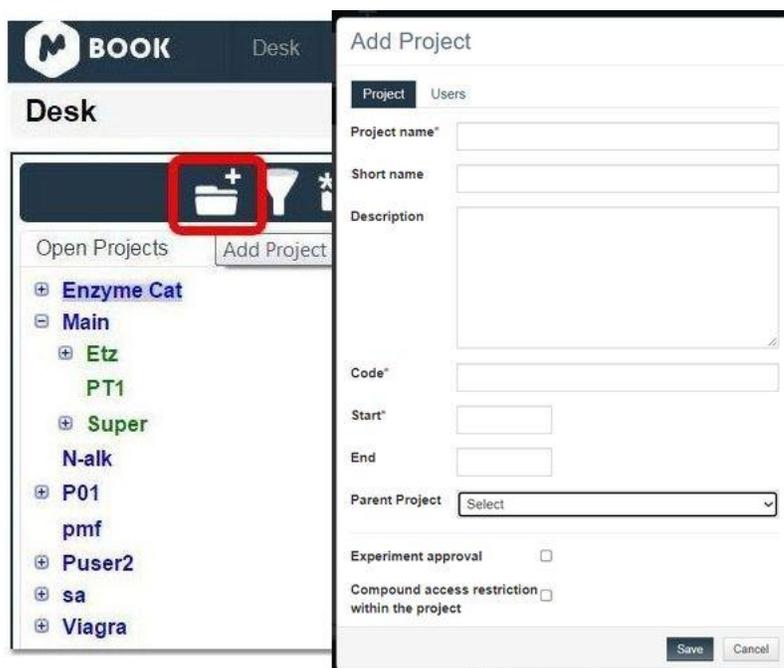


**IV**

## 4 Creating Projects

### How to create a Project?

Once a group has been created, a 'Group or a Project Manager' will be entitled to create a project, just by clicking on the 'Add Project' button from the [Desk](#):



A user only has access to view and search the projects in which he/she is involved; these projects will be displayed in the Projects tree.

To add a new Project, the group manager will need to type a 'Project Name' and 'Project Code', 'Start Date' and the Groups involved in the new Project.

Once you have created the desired projects, these will become listed in the left panel.

Double clicking on the Project Name will allow you to configure, edit, export, or report it:

For reasons of integrity, it is not possible to delete projects. However, double clicking on the project name will allow you to 'Edit the project' and change the status (from open to **closed**).

You will also find certain tabs that allow to check the reactions (and experiments), users, and attached documents.

Subprojects can be created just by selecting the applicable 'Parent Project' in the 'Add Project' dialog box:

Check the 'Experiment Approval' box if you want that the Group Manager must approve the project experiments.

If the "Compound access restriction within the project" option is selected, the new structures added to the project experiments will be only visible to their project members. If this option is not selected, all the members of the group to which the project belongs will have access to the structures, regardless of whether they belong to this project or not.

When the group manager is creating a new user, it is possible to assign him/her to any existing group and project by using the 'Groups and Projects tab':

Add User																							
User	Groups and Projects																						
	<table border="1"> <thead> <tr> <th>Groups</th> <th>Projects</th> </tr> </thead> <tbody> <tr> <td>AG <input checked="" type="checkbox"/></td> <td>Open Projects</td> </tr> <tr> <td>New nn <input type="checkbox"/></td> <td> <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Analiticos_Pablo               <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> NP_m</li> <li><input checked="" type="checkbox"/> FL2</li> <li><input checked="" type="checkbox"/> NMR</li> <li><input type="checkbox"/> Pablo M</li> <li><input type="checkbox"/> PM</li> </ul> </li> <li><input checked="" type="checkbox"/> PM141119               <ul style="list-style-type: none"> <li><input type="checkbox"/> PMF</li> </ul> </li> <li><input checked="" type="checkbox"/> PM_test               <ul style="list-style-type: none"> <li><input type="checkbox"/> COSHH</li> </ul> </li> <li><input checked="" type="checkbox"/> Project Test Eva</li> </ul> </td> </tr> <tr> <td>New Test2 <input type="checkbox"/></td> <td>Closed Projects</td> </tr> <tr> <td>Peibol <input type="checkbox"/></td> <td>No projects found</td> </tr> <tr> <td>Testing <input type="checkbox"/></td> <td></td> </tr> <tr> <td>Group4 <input type="checkbox"/></td> <td></td> </tr> <tr> <td>Test_13478 <input type="checkbox"/></td> <td></td> </tr> <tr> <td>TestStructure <input checked="" type="checkbox"/></td> <td></td> </tr> <tr> <td>Tut Group <input type="checkbox"/></td> <td></td> </tr> <tr> <td>Tutorial Group2 <input type="checkbox"/></td> <td></td> </tr> </tbody> </table>	Groups	Projects	AG <input checked="" type="checkbox"/>	Open Projects	New nn <input type="checkbox"/>	<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Analiticos_Pablo               <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> NP_m</li> <li><input checked="" type="checkbox"/> FL2</li> <li><input checked="" type="checkbox"/> NMR</li> <li><input type="checkbox"/> Pablo M</li> <li><input type="checkbox"/> PM</li> </ul> </li> <li><input checked="" type="checkbox"/> PM141119               <ul style="list-style-type: none"> <li><input type="checkbox"/> PMF</li> </ul> </li> <li><input checked="" type="checkbox"/> PM_test               <ul style="list-style-type: none"> <li><input type="checkbox"/> COSHH</li> </ul> </li> <li><input checked="" type="checkbox"/> Project Test Eva</li> </ul>	New Test2 <input type="checkbox"/>	Closed Projects	Peibol <input type="checkbox"/>	No projects found	Testing <input type="checkbox"/>		Group4 <input type="checkbox"/>		Test_13478 <input type="checkbox"/>		TestStructure <input checked="" type="checkbox"/>		Tut Group <input type="checkbox"/>		Tutorial Group2 <input type="checkbox"/>	
Groups	Projects																						
AG <input checked="" type="checkbox"/>	Open Projects																						
New nn <input type="checkbox"/>	<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Analiticos_Pablo               <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> NP_m</li> <li><input checked="" type="checkbox"/> FL2</li> <li><input checked="" type="checkbox"/> NMR</li> <li><input type="checkbox"/> Pablo M</li> <li><input type="checkbox"/> PM</li> </ul> </li> <li><input checked="" type="checkbox"/> PM141119               <ul style="list-style-type: none"> <li><input type="checkbox"/> PMF</li> </ul> </li> <li><input checked="" type="checkbox"/> PM_test               <ul style="list-style-type: none"> <li><input type="checkbox"/> COSHH</li> </ul> </li> <li><input checked="" type="checkbox"/> Project Test Eva</li> </ul>																						
New Test2 <input type="checkbox"/>	Closed Projects																						
Peibol <input type="checkbox"/>	No projects found																						
Testing <input type="checkbox"/>																							
Group4 <input type="checkbox"/>																							
Test_13478 <input type="checkbox"/>																							
TestStructure <input checked="" type="checkbox"/>																							
Tut Group <input type="checkbox"/>																							
Tutorial Group2 <input type="checkbox"/>																							

For further information about creating Projects in Mbook, please follow this [link](#).

## 4.1 Export Projects

You can export an entire Mbook project with its subprojects, reactions, experiments and documents, just by clicking on the "Export Project" button (only available for Group or Project Managers).

**Analiticos\_Pablo**

Project name: Pablo  
Status: Open  
Time: 2020-06-03 / ---

Reaction Users Documents

- Analiticos...ablo
  - NP\_m
  - Analiticos1
    - PM\_38
    - PM\_42

**Export Project**

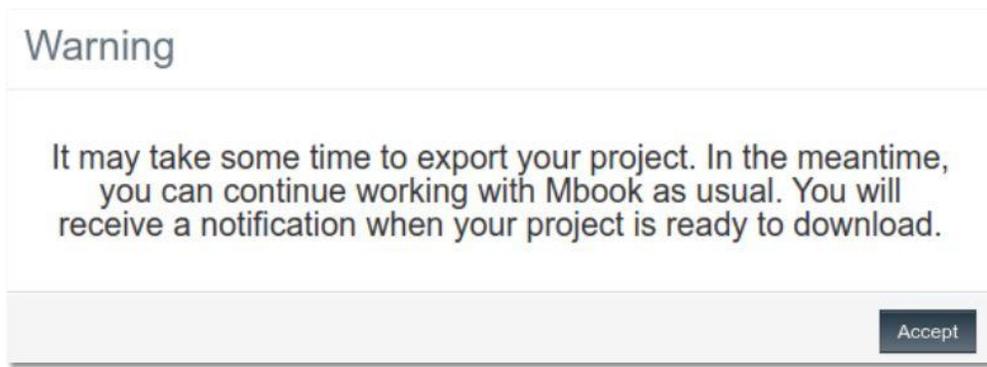
When you export a project, you are also exporting all its underlying entities (subprojects, reactions and experiments).  
**Important:** The settings of the project filter will also be applied to the export.

Attached documents

Documents from all entities (the project itself and all its subprojects, reactions and experiments)

Export Cancel

After clicking the "Export Project" button, a new pop-up dialog will be displayed that will allow you to include documents from the project's various entities (e.g., subprojects, reactions, and experiments). Once you have clicked on the 'Export button', you will be shown the dialog box below:



Once the export is complete, you will get a notification displayed on your screen that allows you to download it as a zip archive.



You will also receive an email with the notification.

The generated ZIP file will contain:

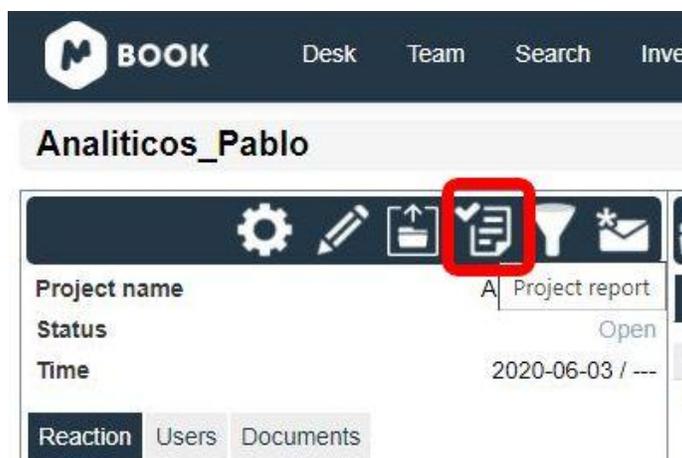
- an XML file for the project
- a folder for each reaction
- an XML file for the reaction
- a folder named "experiments" containing a ZIP file for each of the experiments in this reaction
- this ZIP file (experiment) contains two files: an XML file with the experiment, and a SDF file for the experiment
- a recursive list of the folder/subfolder structure mapping the same structure for the project (subprojects/reactions/experiments)

Each of the XML files contains a property, "buildNumber", that includes the version and release information for the Mbook Instance generating them.

You can import single experiments by following the instructions described in this [chapter](#).

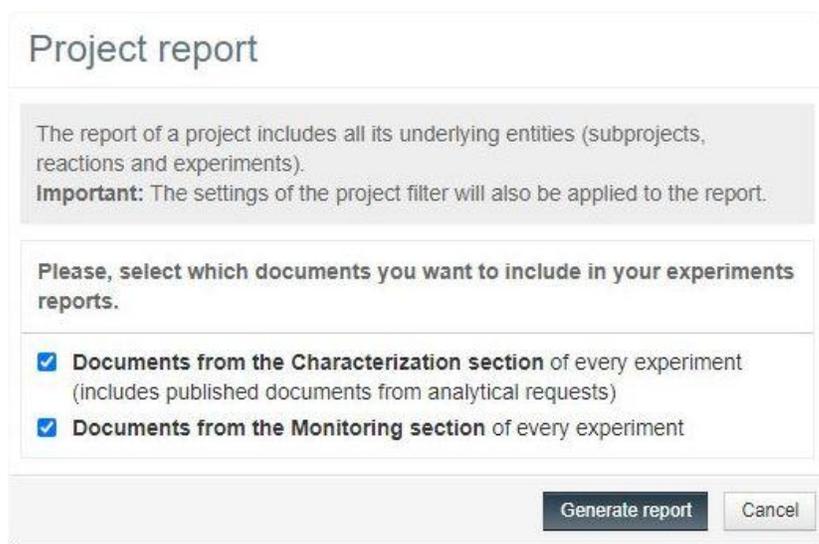
## 4.2 Report Projects

Group and Project Managers can generate PDF reports for an entire project (including subprojects, reactions, and experiments) just by clicking on the 'Project Report' button:



Clicking on the filter button will allow you to filter by "Users" and "Experiments". The selection chosen will be used to generate the project report (in an otherwise identical manner to the reaction project and its filter).

After clicking the "Project report" button, a new pop-up dialog will be displayed to allow you to select which documents included in the experiments within the project will be included in the PDF report.



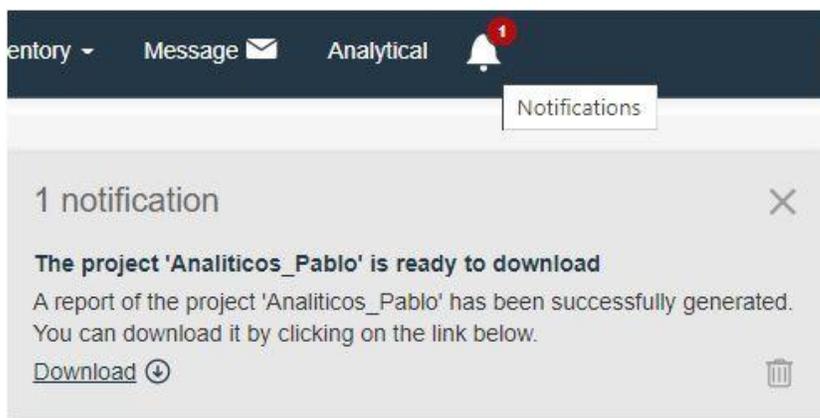
Clicking on the “Generate report” will display a summary window that includes the number of subprojects, reactions, and experiments:



Clicking on “Confirm report generation”, will display a warning message informing you that this operation can take some time. You will receive a notification once the report is complete and can continue working as usual with Mbook in the meantime.



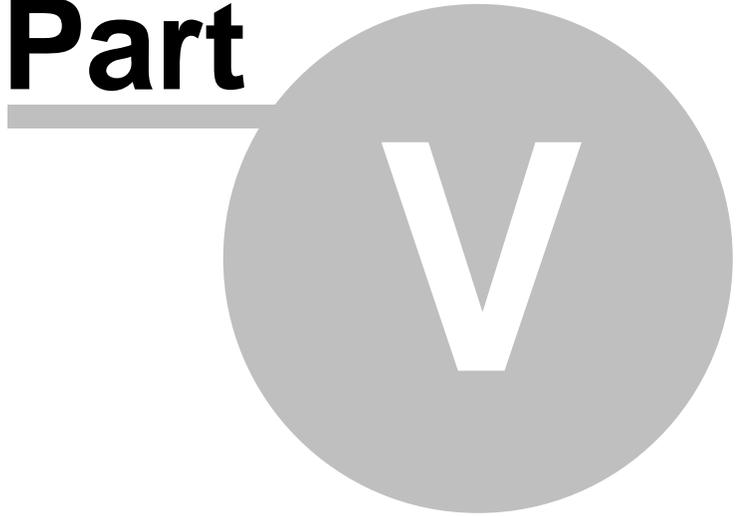
Once the project report has been created, a notification will be displayed on the window and you will be allowed to download or delete the report. The notification panel will then be cleared..



The project report is saved in the form of a zip archive (with the name of the project) containing a PDF file with a summary of the project and several folders (one per reaction).

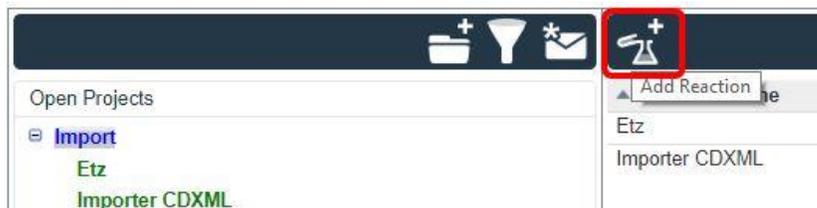
Inside each reaction folder, you will find a reaction PDF report and the experiments folder, containing the individual PDF reports.

**Part**



## 5 Creating Reactions and Experiments

Highlighting any of the available projects in the left panel and clicking on the appropriate button will allow you to add reactions:

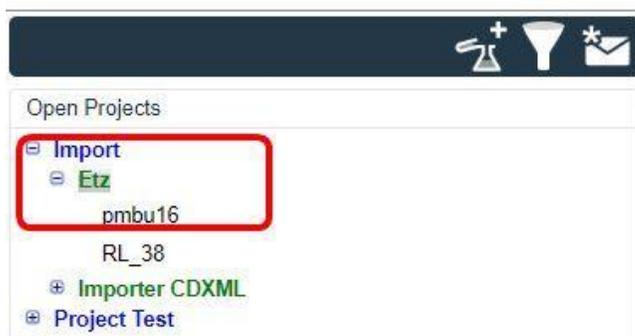


For reasons of integrity, it is not possible to delete reactions. However, double clicking on the reaction name will allow you to 'Edit the reaction' and change the status (from open to **closed**).

Once you have created the reaction, you will be able to add experiments just by highlighting the reaction and clicking on the appropriate button:

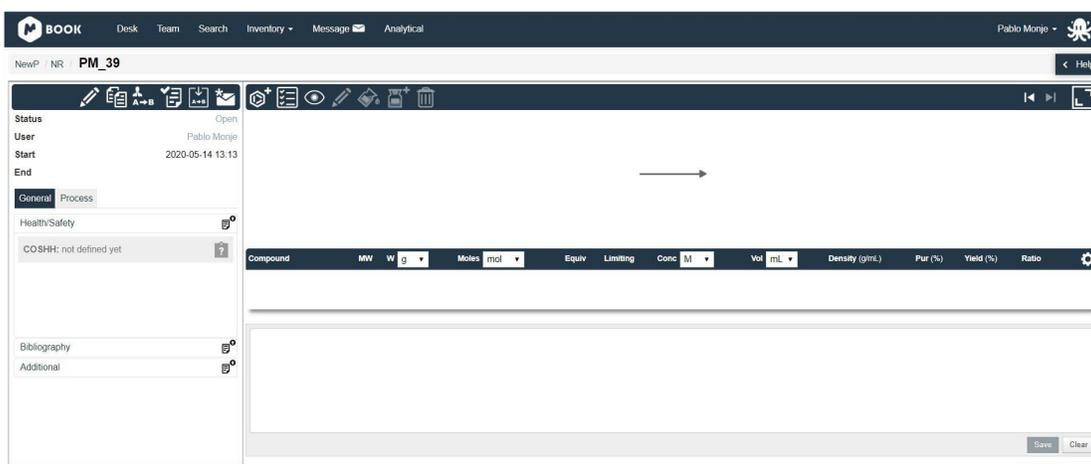


In the example below, we have created an experiment called 'pmbu16' in the 'Etz' reaction of the 'Import' project:



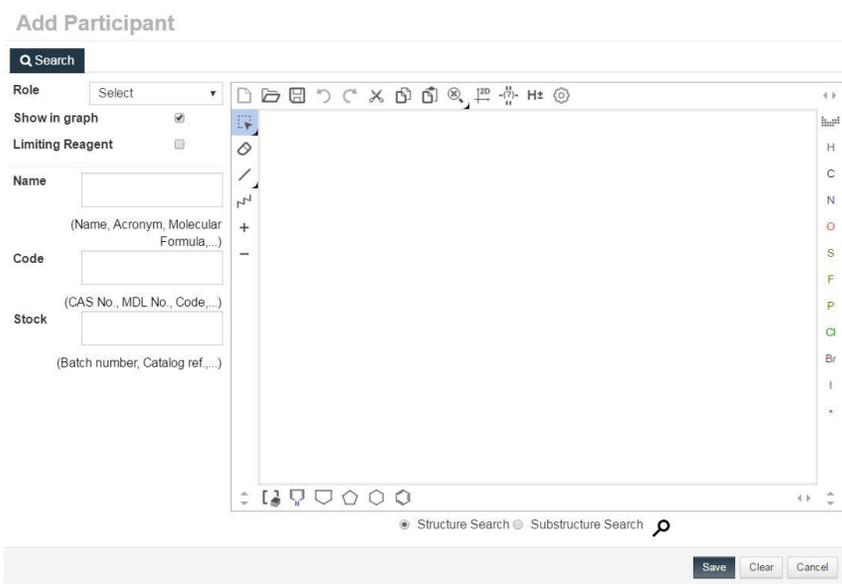
For further information about creating reactions and experiments in Mbook, please follow this [link](#).

The next step is to add information about the experiment (reagents, products, amounts of reactants, solvents and products, reaction description, etc.):



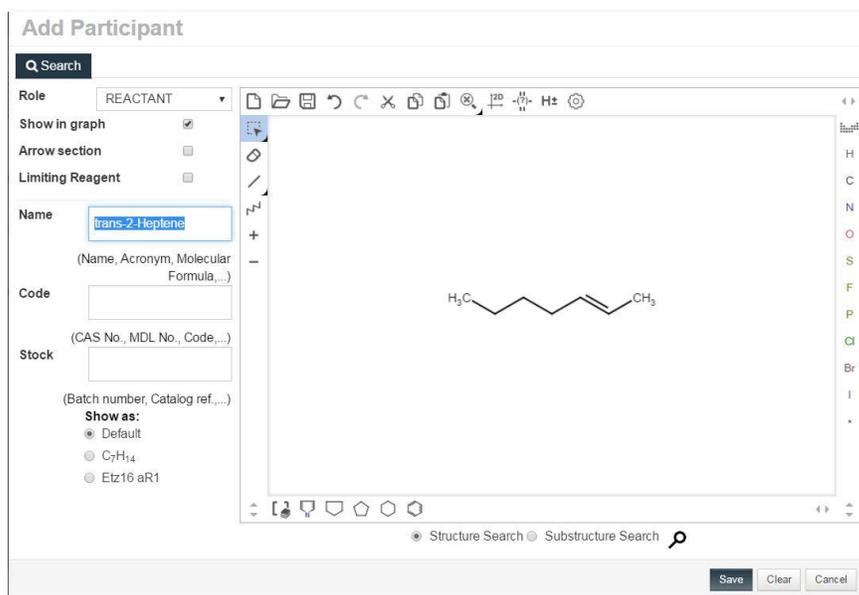
You will find a toolbar to Add , Edit , Show/Hide , or Delete Participants  (reactants, solvents, and/or products) from the experiment, create , or assign  sources, and to select the experimental conditions  (temperature, time, pressure, pH, etc.).

Clicking on the  button will allow you to add a participant to the experiment.

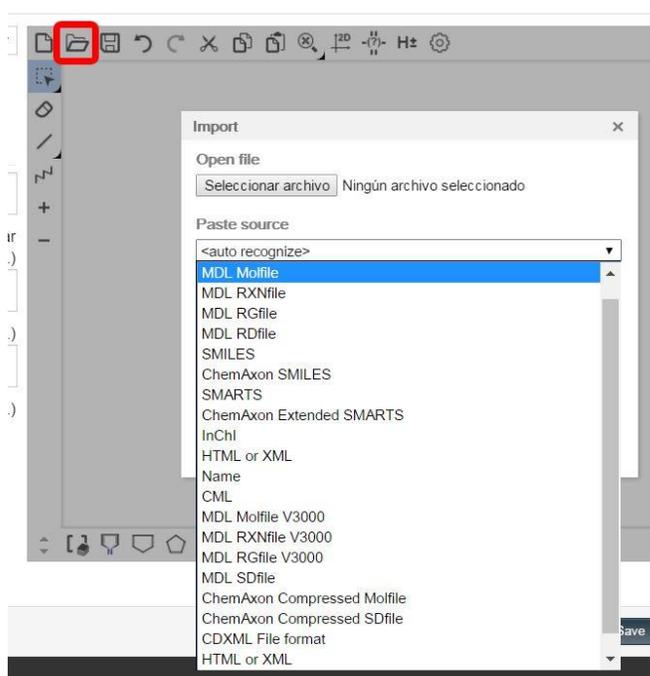


Clicking on the 'Role' scroll down menu will allow you to select the role of the new participant (reactant, solvent, or product). Check boxes will be available to include the new participant in the graphical reaction or in the arrow section and to select the 'Limiting Reagent'.

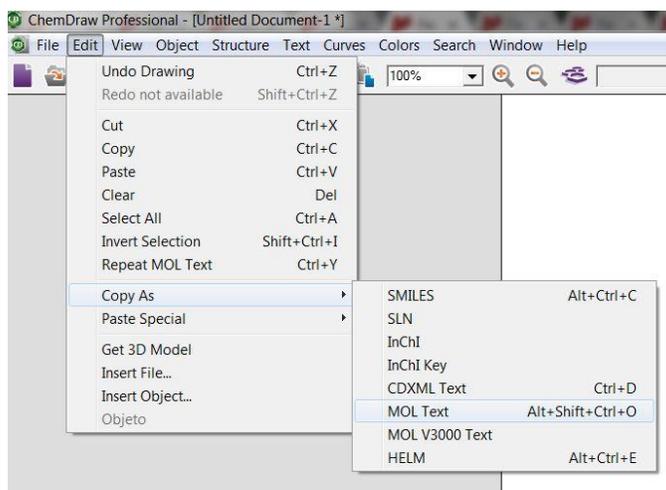
You can type the name of the desired compound (acronym, molecular formula, etc.) in order to search the database for that substance (this will be faster than drawing the molecule in the molecular sketcher, so we recommend you to attempt to find your reactants in the database in the first instance). Clicking on the Save button will add the participant to the experiment.



You can load molecules in the .mol, .cdx, smile, etc., formats by following the menu 'File/Import File (or even drag & drop .mol and .cdx files directly into the sketcher window):



You can also copy and paste structures directly from ChemDraw to Mbook using the "Copy As: MOL Text" (shortcut Alt+Shift+Ctrl+O) option.



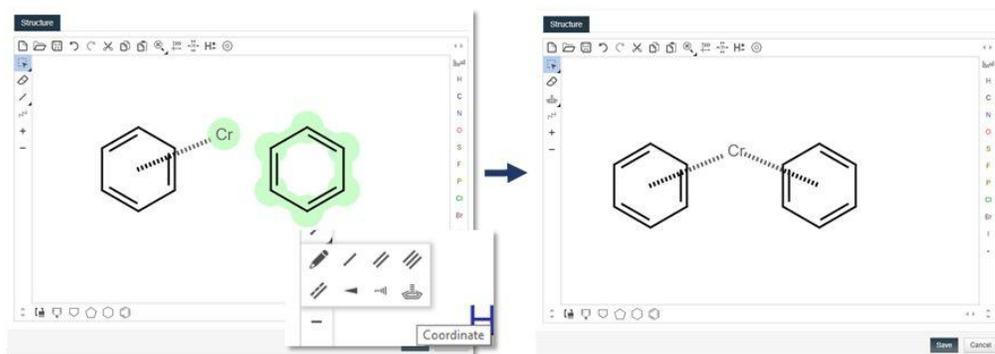
Of course, you can draw molecular structures using the sketcher itself (useful if your compound is not present in the database) or just drag and drop .mol files into the sketcher window.

The 'Move' mode will allow you to move an atom or a bond just by clicking and dragging.

The Drawing mode (shortcut: Ctrl+D) will allow you to draw a carbon on your spectral window just by clicking and dragging on any empty field. Clicking on any existing atom will add an additional carbon. If you click on a single bond, you will get a double bond (clicking on a double bond will convert to a triple bond).

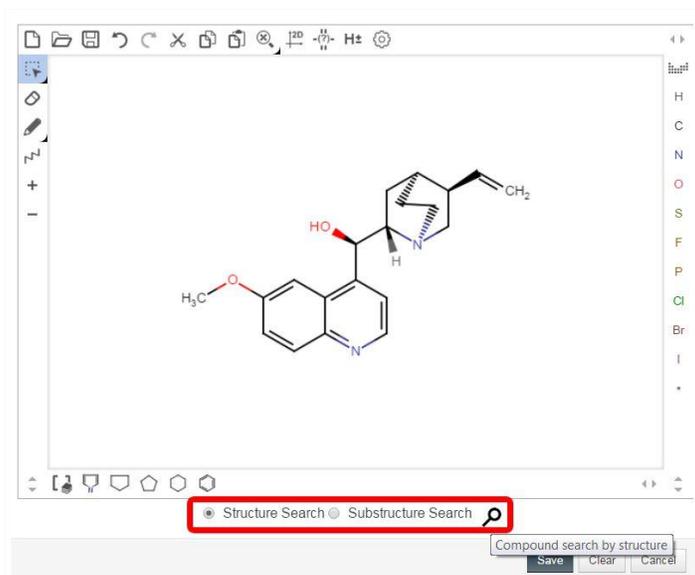


You can change the atom just by hovering the mouse over the atom and typing the applicable letter(s). You can also draw coordinate bonds for organometallic compounds. For further information in this regard, please follow this [link](#).

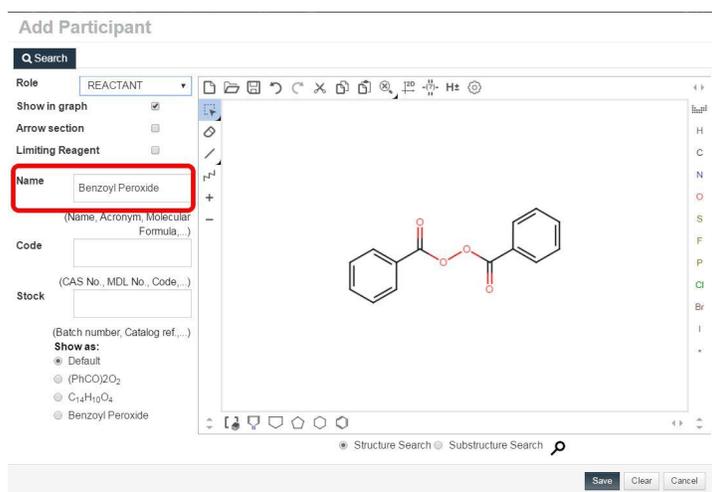


Mbook incorporates Marvin JS Sketcher. For further information about this program, please follow this [link](#).

Once you have drawn the molecule, you can click on the 'Save' button to add the structure to the experiment graphic. You can also click on the 'Search' button to look for the molecular structure (or substructure) in the database.

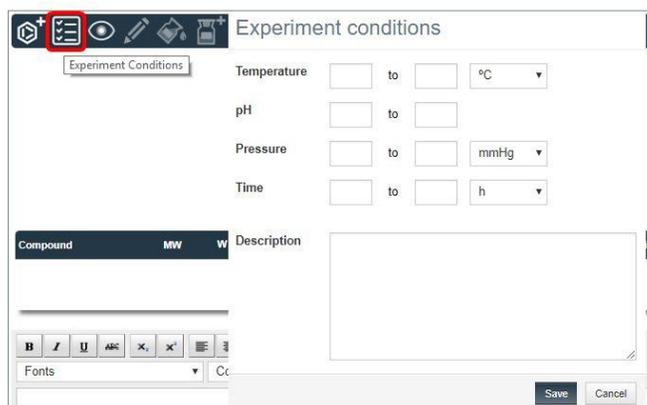


The next step is to add another reactant (benzoyl peroxide), just by typing its name in the edit box:



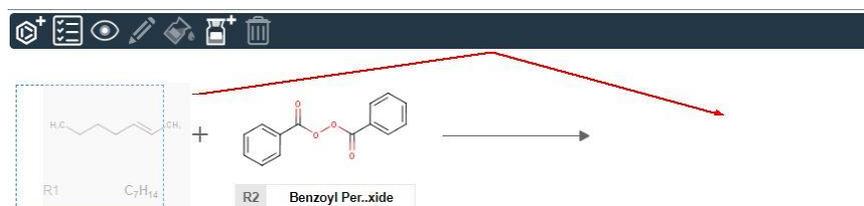
The solvent ( $\text{CCl}_4$ ) will be added in the same way.

Clicking on the 'Experiment Conditions' button , will allow you to add the experimental conditions (after clicking the 'Save' button):

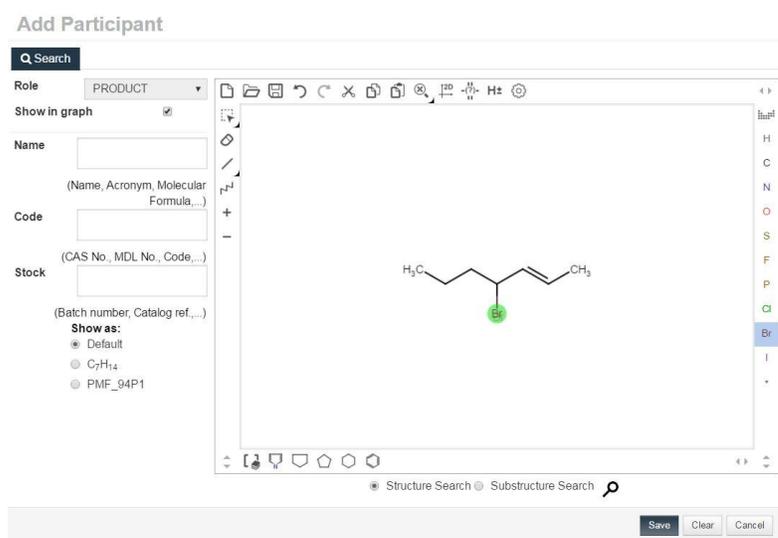


For further information about adding reaction participants and experimental conditions, please follow this [link](#).

The next step is to add the product. If the structure of the compound is similar to any of the reagents, you can just click and drag the structure of the reactant to the 'Product' place:



The sketcher will then be launched with the structure of your reagent (but as "Role=Product"), so you will only need to add the necessary changes (a bromine in this case) and click on the save button:



If the compound is not in the database, it will be added (including the IUPAC name) after having filled in the desired fields (internal code, description, acronym, etc.) and clicking on the 'Save button':

Clicking on the 'Properties' tab, will allow you to define different types of compounds (Resin, Enzyme, Solution and Supported reagent).

Add Compound

Compound Properties Structure

Density  g/mL

Boiling Point  °C

Melting Point  °C

Flash Point  °C

pK1

pK2

pK3

pK4

Solubility

Resin

Enzyme

Supported reagent

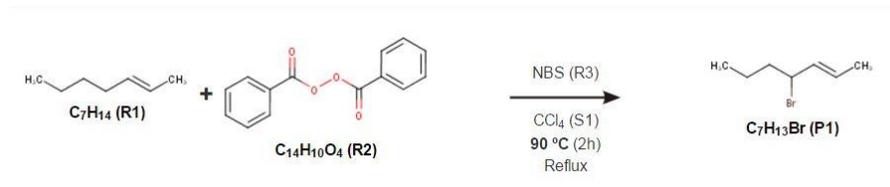
Solution

Warning You can add now the data for the new compound

Save Cancel

- Resin: If a compound checked as a Resin is added to an experiment, a column labelled 'Loading (mmol/g)' is added to the stoichiometric table.
- Enzyme: If a compound checked as an Enzyme is added to an experiment, a column labelled 'Activity (U/g)' is added to the stoichiometric table. No automatic calculations are performed for this participant (the amount used in the experiment must be manually added by the user).
- Supported reagent: If a compound checked as a Supported reagent is added to an experiment, a column labelled 'Loading (wt%)' is added to the stoichiometric table. No automatic calculations are performed for this participant (the amount used in the experiment must be added manually by the user).
- Solution: If a compound checked as a Solution is added to an experiment, the concentration column is automatically populated from the defined value in the compound.

The resulting structure will be added to the Products:



You can move the reactants from the arrow to the reaction section (and vice versa), just by dragging and dropping.

Once you have drawn the experiment reaction with all the relevant participants, you can select the applicable amounts of reagents and solvents in the stoichiometry table.

After inputting all the necessary information and formatting all the experimental procedures, click on the Save button:

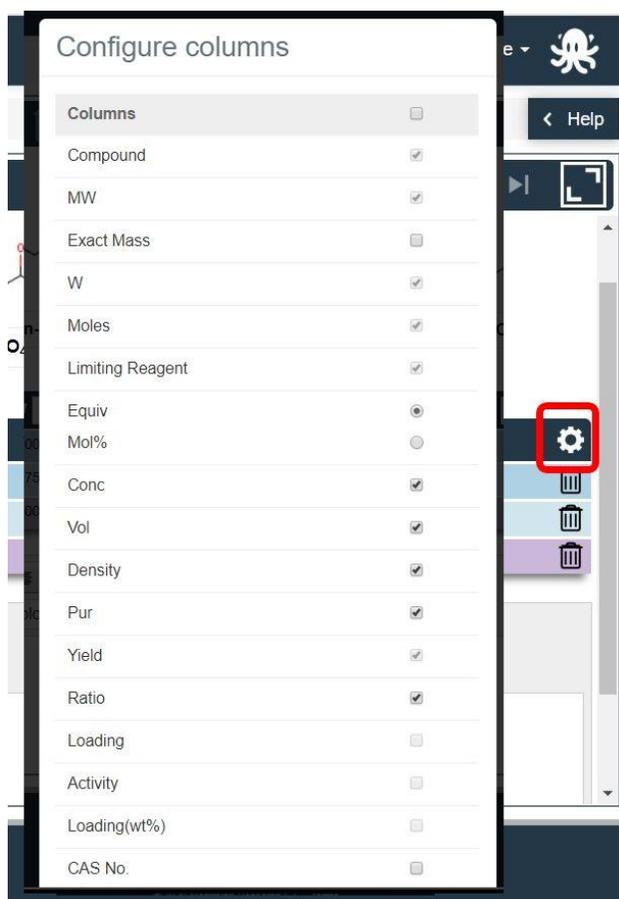
Compound	MW	W g	Moles mmol	Equiv	Conc (mol/L)	Vol mL	Density (g/mL)	Pur (%)	Yield (%)	Settings
C <sub>7</sub> H <sub>14</sub> (R1)	98.186	0.917	9.339	1.000		1.301	0.705	100.0		
C <sub>14</sub> H <sub>10</sub> O <sub>4</sub> (R2)	242.227	0.226	0.934	0.100				100.0		
NBS (R3)	177.984	1.995	11.207	1.200				100.0		
CCl <sub>4</sub> (S1)	153.822				0.311	30.000	1.594	100.0		
C <sub>7</sub> H <sub>13</sub> Br (P1)	177.082	1.400	7.906					100.0	84.7	

Standard conditions for using NBS in allylic bromination involves refluxing a solution of NBS (W: 1.995 g, Moles: 11.207 mmol) in anhydrous CCl<sub>4</sub> (Vol: 30.000 mL) with a radical initiator—benzoyl peroxide (W: 0.226 g, Moles: 0.934 mmol). The allylic and benzylic radical intermediates formed during this reaction are more stable than other carbon radicals and the major products are allylic and benzylic bromides. This is also called the Wohl-Ziegler reaction.

The compound names in the stoichiometric table include links to the inventory entries:

Compound	MW
C <sub>7</sub> H <sub>7</sub> BrO (R1)	187.036
n-BuLi (R2)	64.054
C <sub>5</sub> H <sub>9</sub> ClSn (R3)	199.267
THF (S1)	72.106
C <sub>10</sub> H <sub>18</sub> OSn (P1)	270.943

You can [configure the desired columns](#) that will be displayed in the stoichiometric table by clicking on the button highlighted in the figure below:

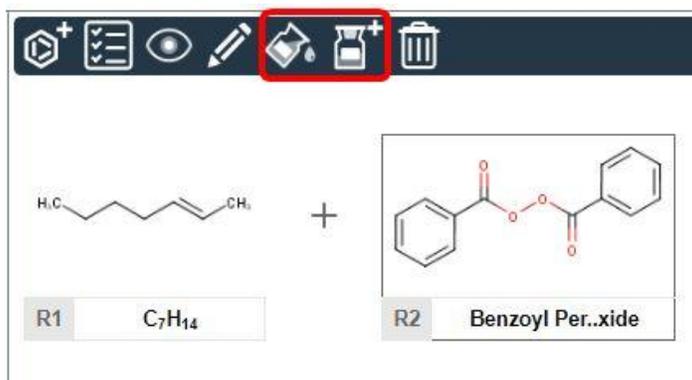


Clicking on the 'Show Participant' button , will allow you to show/hide the molecular structure in the graph experiment, and to display the participant as a structure, name, or both:



To edit or delete participants, highlight them and click on the applicable buttons  (from the toolbar or from the table).

To create and assign sources, highlight the participant and click on the applicable buttons .



You can also add a location in the [Stockroom](#) for the bottle created:

Add Bottle

Bottle **Stockroom**

Warning: Storage restrictions. [Click here for details.](#)

Order details

Ordered by: Select

Order date:

Arrival date:

Expiration date:

Save Cancel

- AdminBuilding
  - Fridge1
  - CIMUS
    - Floor\_1
      - Cabinet
        - Cabinet\_2
        - Cabinet\_3
        - Fridge\_1
      - CIQUS
        - First Floor
          - Stockroom1
            - Cabinet1lon...name
              - First
              - Second

You can create links in the experimental section to the participants just by highlighting the applicable text in the description and clicking on this button .

rd conditions for using **NBS** in allylic bromination involves refluxing a solution of  $\text{CCl}_4$  (Vol: 30.000 mL) with a radical initiator—benzoyl peroxide (W: 0.000 g). The intermediates formed during this reaction are more stable than other carbon radicals and are also called the Wohl-Ziegler reaction.

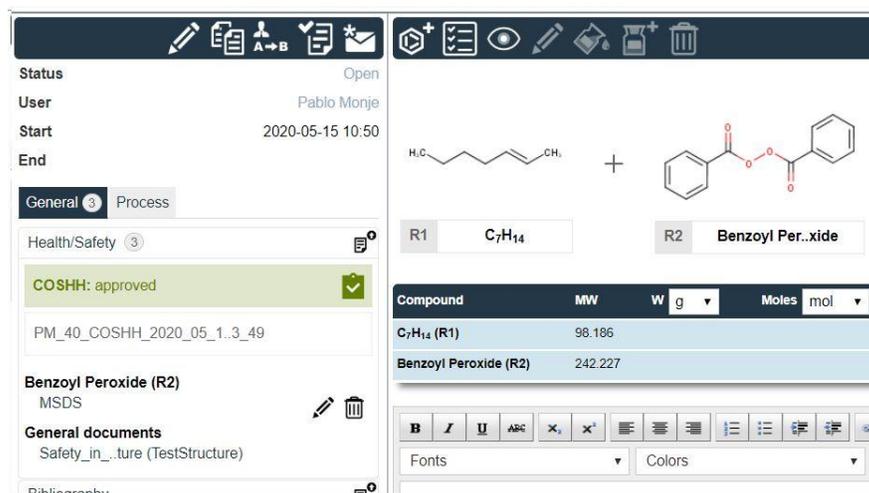
In the case of reactants, the amount and number of moles will be synchronized in both the table and the description. The same is true of the volume for solvents and for the amount, number of moles, and yield of the products:

Compound	MW	W g	Moles mmol	Equiv	Conc (mol/L)	Vol mL	Density (g/mL)	Pur (%)
C <sub>7</sub> H <sub>14</sub> (R1)	98.186	0.917	9.339	1.000		1.301	0.705	100.0
C <sub>14</sub> H <sub>10</sub> O <sub>4</sub> (R2)	242.227	0.226	0.934	0.100				100.0
NBS (R3)	177.984	1.995	11.207	1.200				100.0
CCl <sub>4</sub> (S1)	153.822				0.311	30.000	1.594	100.0
C <sub>7</sub> H <sub>13</sub> Br (P1)	177.082	1.400	7.906					100.0

Standard conditions for using NBS in allylic bromination involves refluxing a solution of NBS (W: 1.995 g, Moles: 11.207 mmol), anhydrous CCl<sub>4</sub> (Vol: 30.000 mL) with a radical initiator—benzoyl peroxide (W: 0.226 g, Moles: 0.934 mmol). The allylic and benzylic intermediates formed during this reaction are more stable than other carbon radicals and the major products are allylic and benzylic. This is also called the Wohl-Ziegler reaction.

To break a link, just highlight the word in the description and click on the appropriate button in the toolbar .

From the panel, you will be able to 'add/edit or download in PDF format' the 'Material Safety Data Sheet' of any of the participants:



Selecting the 'Process' tab, will allow you to add other relevant documentation such as Mnova documents, the raw NMR/MS spectra in zip format, images, etc.:

Status Open  
 User Pablo Monje  
 Start 2020-05-15 10:50  
 End

General (3) **Process**

Source   
 Monitoring   
 Characterization   
 Verification   
 Additional 

H3C(CH2)4CH=CH2 + C1=CC=C(C=C1)O2

R1

$C_7H_{14}$

R2

Compound	MW	W	g
Add Document	98.186		
Benzoyl Peroxide (R2)	242.227		

Once you have added the attachments, they will be listed in the appropriate panel.

NMR, MS, or ELiS datasets can be uploaded as Mnova documents or as raw data in zip files.

If you load a Mnova document, you will be able to see a small preview just by hovering the mouse over the name of the document. If the Mnova document contains more than one page (or the zip file contains more than one raw dataset), you will get the preview in tile mode.

References | Files

Characterization

**PMF\_10091**

1H

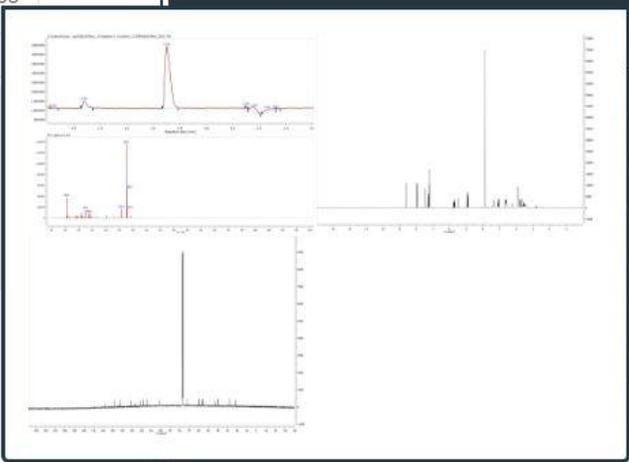
NM

tes1

te test

**$C_{20}H_{24}N_2O_2$  (P2)**

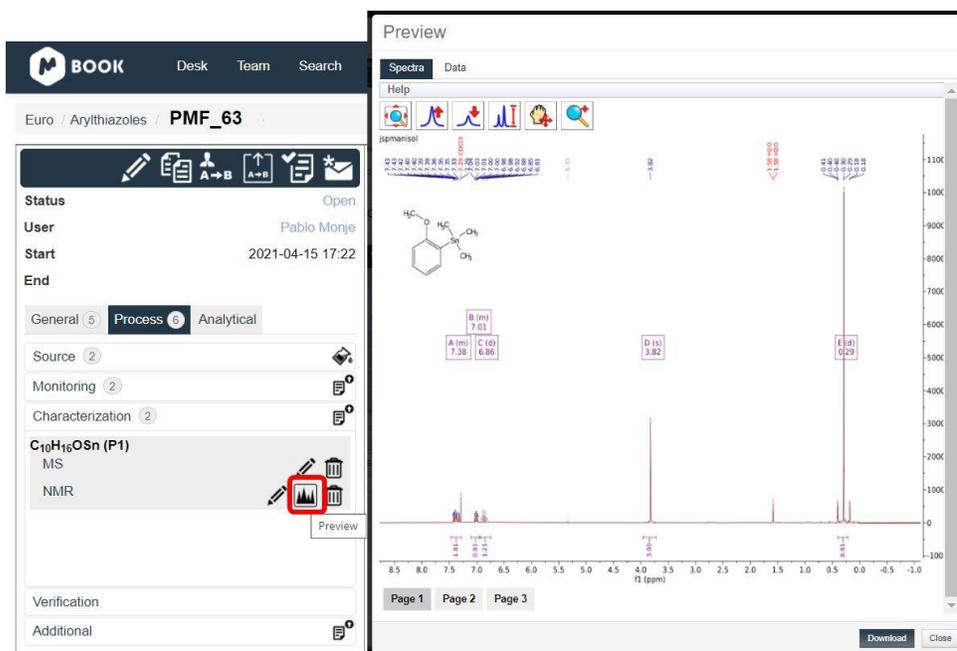
1H\_NMR



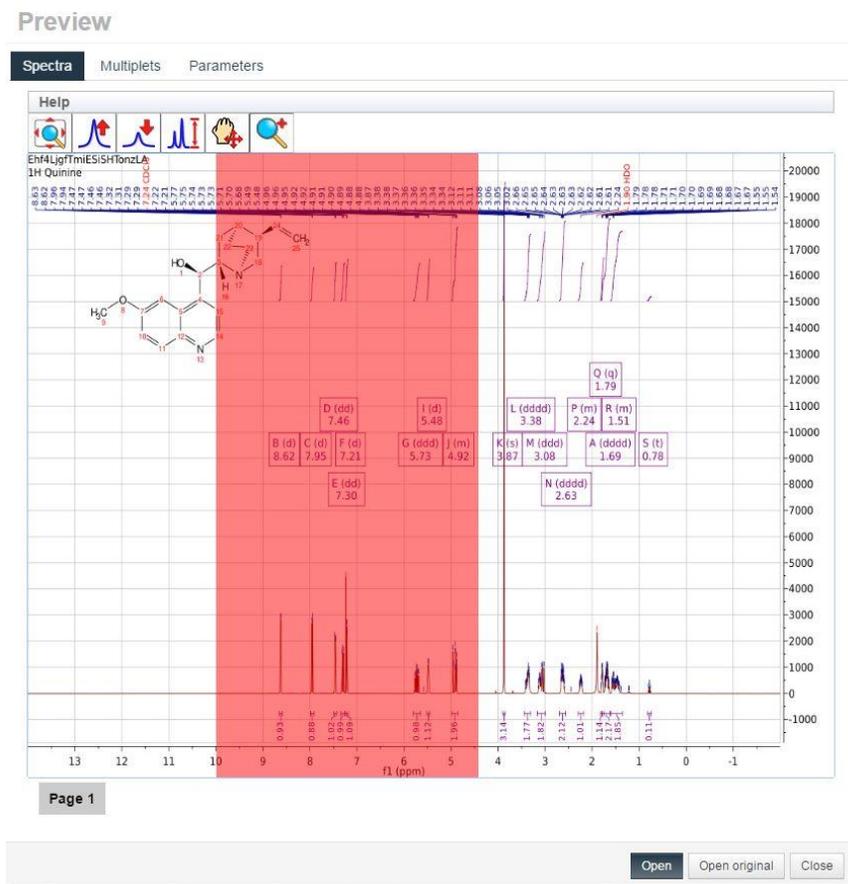
Activity  
(U/g)

120.00

If you have loaded raw data in a zip file, the spectrum (or spectra) will be automatically processed. A large preview of the processed spectrum will be obtained by clicking on the Preview button.



From the Preview, you can use the toolbar to 'pan', increase/decrease the peaks' intensity, or zoom into a region of interest:



You can also display the 'Multiplets Table' or generate a 'Mutiplet Report' in the journal format selected in the combobox (JACS, in the example below):

### Preview

Spectra **Multiplets** Parameters

Shift	Range	Hs	Integral	Class	Js
1.6870	1.7931..1.6173	2	209554.9375	dddd	2.6472, 4.5059, 8.2487
8.6225	8.6532..8.5919	1	89792.1250	d	4.5115
7.9524	7.9889..7.9159	1	84590.3828	d	9.1824
7.4634	7.4949..7.4319	1	98002.5391	dd	0.6874, 4.4955
7.3013	7.3412..7.2614	1	95862.1172	dd	2.7304, 9.1830
7.2133	7.2418..7.1849	1	105508.4297	d	2.7661
5.7268	5.7956..5.6580	1	94413.4688	ddd	7.6246, 10.2963, 17.1184
5.4819	5.5124..5.4514	1	108406.1172	d	4.3728
4.9173	4.9871..4.8529	2	189601.3906	m	
3.8736	3.8986..3.8486	3	302880.5313	s	
3.3778	3.4431..3.3124	2	170966.5625	dddd	2.6025, 5.5703, 10.4094
3.0831	3.1671..2.9977	2	176006.0000	ddd	9.3037, 13.5994, 23.9979
2.6256	2.6905..2.5649	2	204424.0000	dddd	2.0975, 5.0809, 6.3193
2.2420	2.2947..2.1869	1	97383.3047	m	

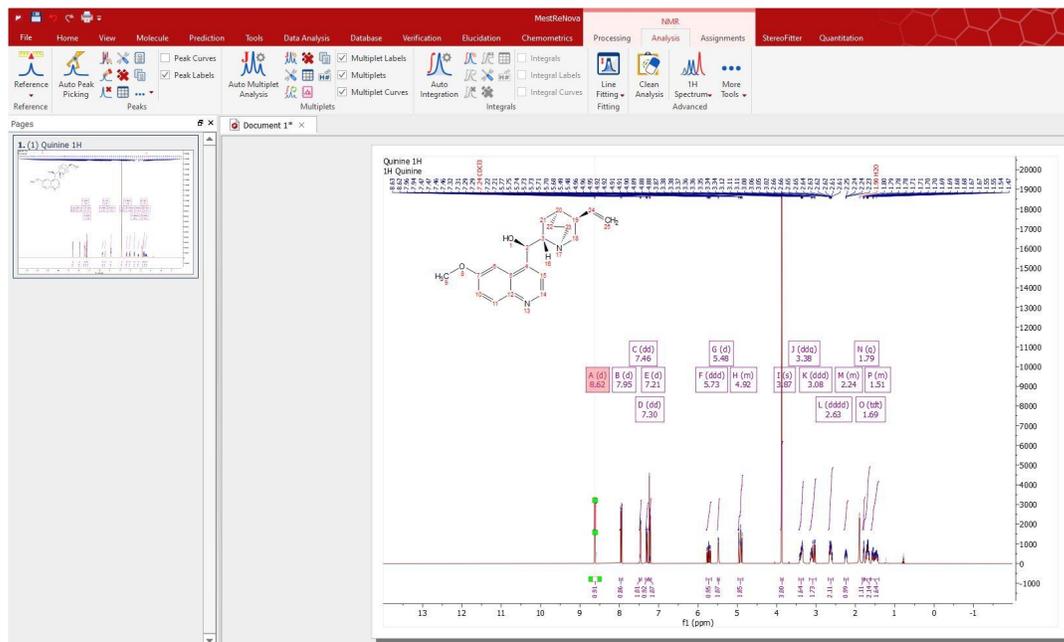
1-17 of 17 Page: 1 of 1 Results: 25

J. Am. Chem. Soc. Report Hide

<sup>1</sup>H NMR (400 MHz, Chloroform-*d*)  $\delta$  8.62 (d,  $J$  = 4.5 Hz, 1H), 7.95 (d,  $J$  = 9.2 Hz, 1H), 7.46 (dd,  $J$  = 4.5, 0.7 Hz, 1H), 7.30 (dd,  $J$  = 9.2, 2.7 Hz, 1H), 7.21 (d,  $J$  = 2.8 Hz, 1H), 5.73 (ddd,  $J$  = 17.1, 10.3, 7.6 Hz, 1H), 5.48 (d,  $J$  = 4.4 Hz, 1H), 4.99–4.85 (m, 2H), 3.87 (s, 3H), 3.38 (dddd,  $J$  = 13.3, 10.4, 5.6, 2.6 Hz, 2H), 3.08 (ddd,  $J$  = 24.0, 13.6, 9.3 Hz, 2H), 2.63 (dddd,  $J$  = 13.6, 6.3, 5.1, 2.1 Hz, 2H), 2.29–2.19 (m, 1H), 1.79 (q,  $J$  = 3.3 Hz, 1H), 1.69 (dddd,  $J$  = 14.0, 8.2, 4.5, 2.6 Hz, 2H), 1.61–1.36 (m, 2H), 0.78 (t,  $J$  = 7.3 Hz, 0H).

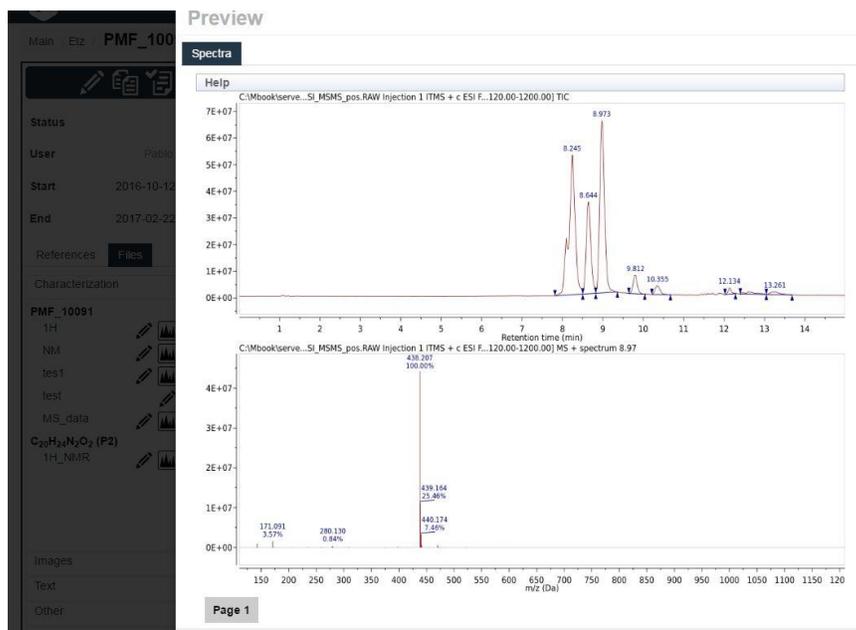
Open Open original Close

Clicking on the 'Open' button will load your Mnova document into Mnova (if you have valid licenses to do so), allowing you to reprocess the spectra or make any desired changes:



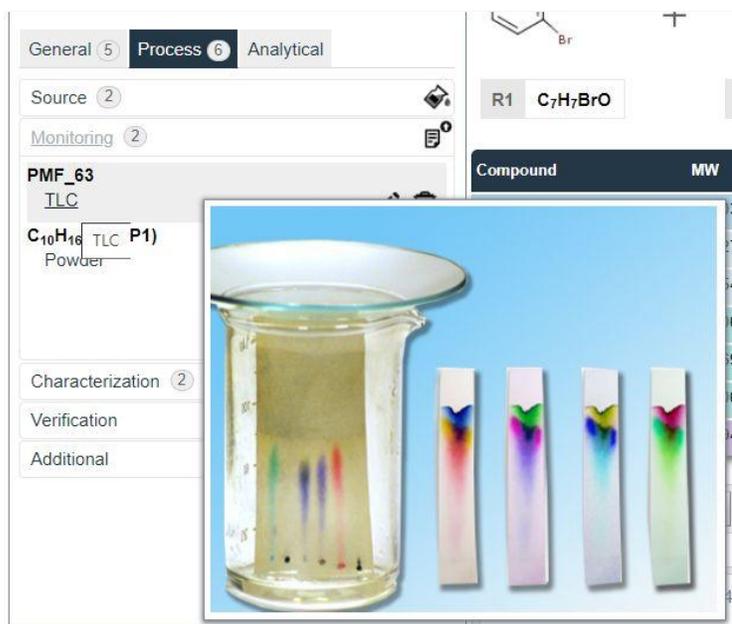
Both original raw files and Mnova documents are stored in the ELN. By default, when clicking on the link, the Mnova document will be opened; however, the original raw file can also be downloaded by clicking Edit and selecting the raw file from the same window.

Of course, you can also attach MS or EIViS spectra to your experiments:



If you have a verification license, you can check whether your datasets match your structures. See [this chapter](#) for further information.

You can also add images (very useful, for example, when adding TLCs) to your experiments. Hovering the mouse over the 'image name' will generate a preview. These images can be included at the end of the report (with the description added).



You can also add PDF files in the bibliography section. Hovering the mouse over the PDF link will display a preview of the first page of the document:



For further information about adding analytical documents to Mbook, please follow this [link](#).

From the experiment panel, you can edit the description of the experiment, clone, assign the experiment to another user, generate a report as a PDF, [import a reaction scheme from Chemdraw](#), and send a message with the report (to any member of the same group):

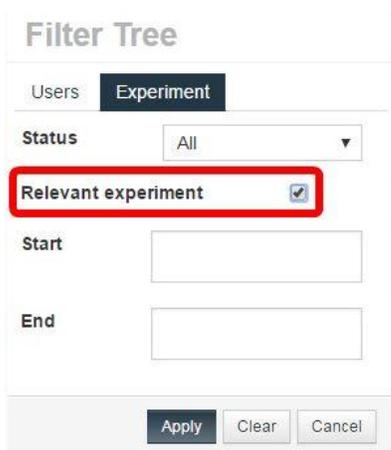


For reasons of integrity, it is not possible to delete experiments. However, clicking on the 'Edit Experiment' button will allow you change the status (from open to **closed** or **discarded**). From here, you can also rename the experiment code, modify the start and end dates, and type 'descriptions' and conclusions':

Edit Experiment

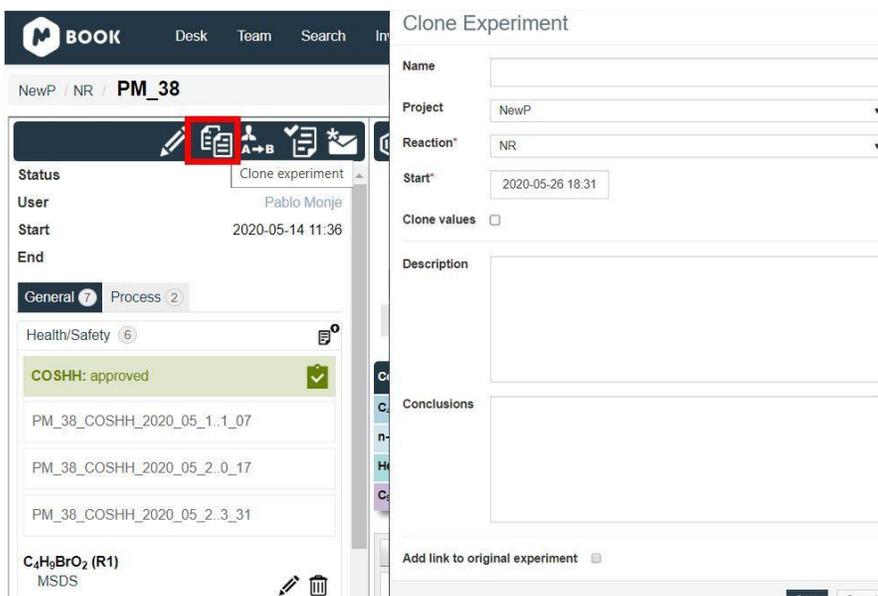
Code*	<input type="text" value="pmbu16"/>
Status	<input type="text" value="Open"/>
Relevant experiment	<input type="text" value="Closed"/>
Project	<input type="text" value="Pending signature"/>
Reaction*	<input type="text" value="Etz"/>
Start*	<input type="text" value="2018-08-28 17:54"/>
End	<input type="text"/>
Description	<input type="text"/>
Conclusions	<input type="text"/>

From the experiment tab, you can check the 'Relevant experiment' box. This type of experiment will be highlighted in blue in the desk, allowing the users to easily select the important experiments in a reaction (for cloning, reporting, etc.). You can also filter your searches using the relevant experiments:



The image shows a 'Filter Tree' dialog box with two tabs: 'Users' and 'Experiment'. The 'Experiment' tab is active. It contains a 'Status' dropdown menu set to 'All'. Below it, the 'Relevant experiment' checkbox is checked and highlighted with a red rectangle. There are also empty input fields for 'Start' and 'End' dates. At the bottom, there are 'Apply', 'Clear', and 'Cancel' buttons.

In the 'Experiment panel', you will also find a button that allows you to 'Clone' any experiment, a very useful feature for the creation of new experiments using existing ones as starting points (for instance, if you run the same experiment again under different conditions, or if you run a new experiment that is a modified version of an existing one).

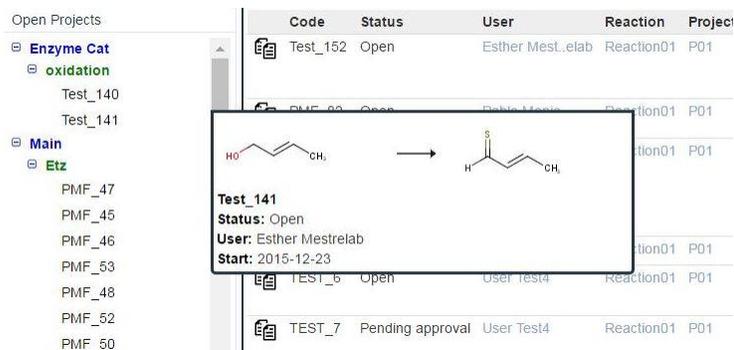


The image shows a 'Clone Experiment' dialog box. On the left, there is a sidebar with a 'Clone experiment' button highlighted in red. The main dialog box has fields for 'Name', 'Project' (set to 'NewP'), 'Reaction\*' (set to 'NR'), and 'Start\*' (set to '2020-05-26 18:31'). There is a 'Clone values' checkbox which is currently unchecked. Below these are 'Description' and 'Conclusions' text areas. At the bottom, there is an 'Add link to original experiment' checkbox.

When the "Clone values" box is checked, the weight, volume, and number of moles will be automatically completed in the table for the cloned experiment. Please bear in mind that when you modify the amount of the limiting reagent, all the amounts of the remaining reactants will be automatically calculated according to the number of equivalents. The same button will appear in the list of existing experiments:

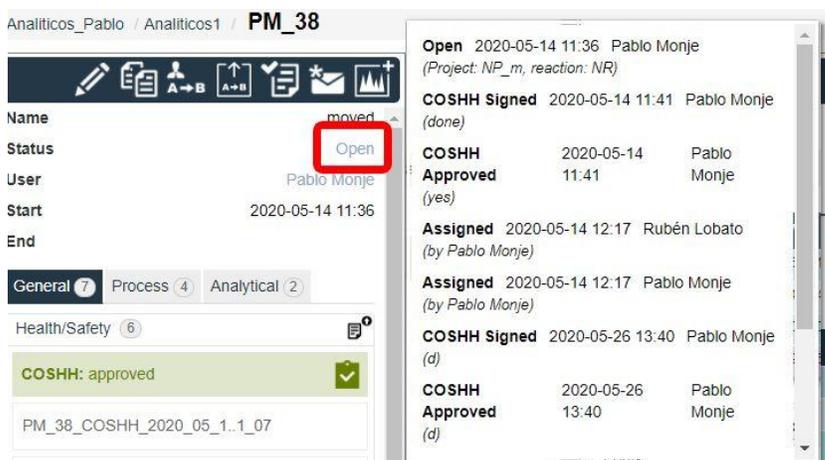


Once you have added your experiments, you will be able to navigate via the left panel using the expandable trees (hovering the mouse over any experiment will display a reaction preview):

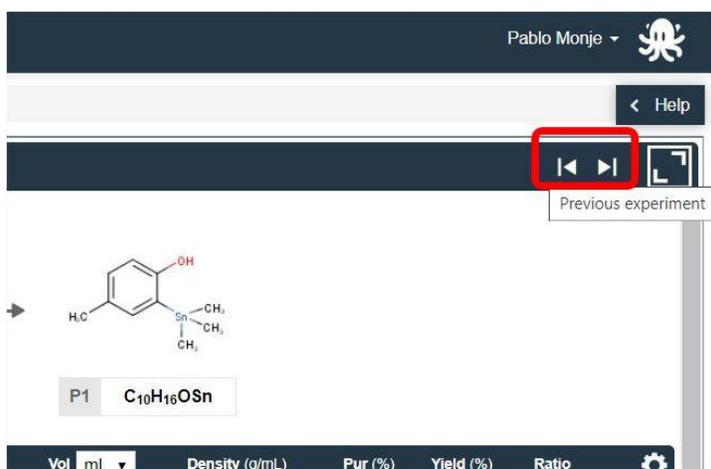


Clicking on any of the experiments on the left panel will show all the relevant information.

Clicking on the Status field will display the history:



You can also navigate through the experiments using the arrow buttons in the reaction scheme header:



You can assign experiments to other group members by clicking on the applicable button:

The screenshot shows the Mbook interface with a red box highlighting the 'Assign Experiment' button in the top toolbar. A dialog box titled 'Assign Experiment' is open, showing the 'Experiment' field set to 'PM\_38' and the 'Users' field set to 'Rubén Lobato'. The dialog has 'Save' and 'Cancel' buttons. In the background, a table is visible with columns 'R1', 'R2', and 'P1', and rows containing chemical formulas like 'C<sub>4</sub>H<sub>9</sub>BrO<sub>2</sub>' and 'n-BuLi'.

**See also:**

[Resources](#) about creating Reactions and Experiments

[Resources](#) about drawing Structures with Coordinate Bonds.

Watch a miniclip about creating an experiment in Mbook by following this [link](#)

## 5.1 Export Experiments

You can export any existing experiment just by clicking on the "Export Experiment" button and selecting the desired attachment boxes:

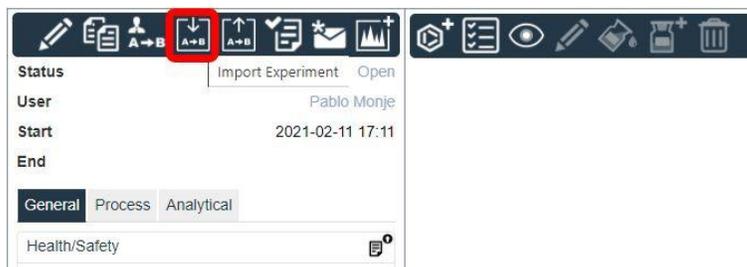
The screenshot shows the Mbook interface with a red box highlighting the 'Export Experiment' button in the top toolbar. A dialog box titled 'Export Experiment' is open, showing the message 'Your experiment will be exported in XML format.' Below this, there is a section 'Attached data' with several checkboxes: 'Stoichiometric table' (checked), 'Documents from the following sections: General and Process (including verifications)' (checked), 'Consumed sources' (checked), and 'Created sources' (unchecked). The dialog has 'Export' and 'Cancel' buttons. In the background, a table is visible with columns 'R1', 'R2', and 'P1', and rows containing chemical formulas like '2-Brom', 'n-BuLi (R2)', and 'Trimethyltin chloride (R3)'.

After clicking the "Export" button, a zip file with the name of the experiment code will be created. The zip file will contain several folders and files depending on the options checked in the export dialog:

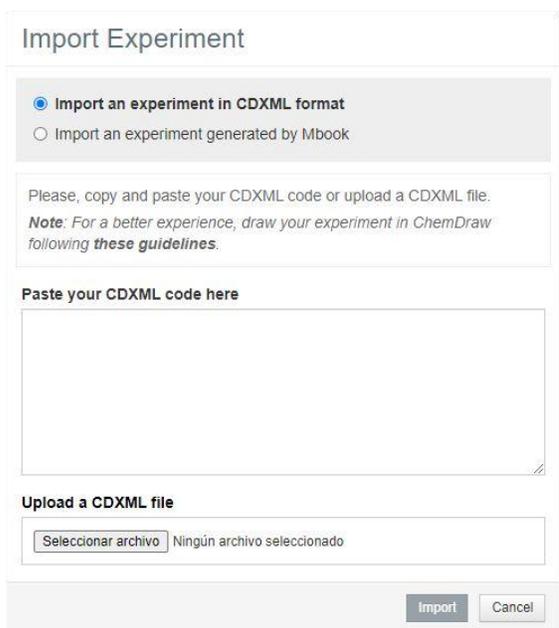
- a) It will always contain an .sdf file containing the structures of all the participants (reactants, solvents, and products).
- b) An .xml file will be always present with the description, history of the experiment (project, reaction, and owner) and consumed/created sources if the applicable options were checked.
- c) If the option to include documents was checked, you will get one folder per General and process sections:
  - c.1) If you uploaded a raw spectrum file, the folder will contain the original file, the Mnova document automatically generated when uploading the file to Mbook.
  - c.2) If you uploaded an Mnova document, the folder will contain the original Mnova document.
  - c.3) If the user uploaded a PDF, image, or indeed a file any other format, the folder will only contain the original document attached to the experiment in its native format.

## 5.2 Import experiments

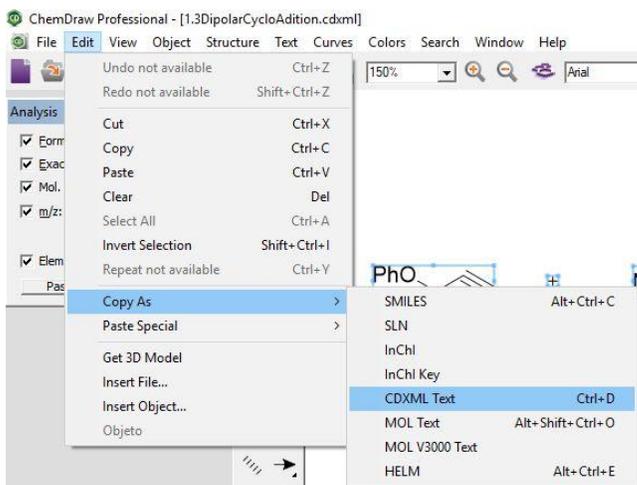
You can import experiments from [Mbook](#) (as zip archives) or from ChemDraw (in CDXML format) just by clicking on the applicable button (highlighted in red in the screenshot below):



After clicking on this button, the user will be able to load the reaction scheme as a CDMXL file or to import a zip file containing an Mbook experiment:



Another option would be to copy and paste the experiment from ChemDraw using the "Edit/Copy As: CDMXL Text" (Ctrl+D) command.



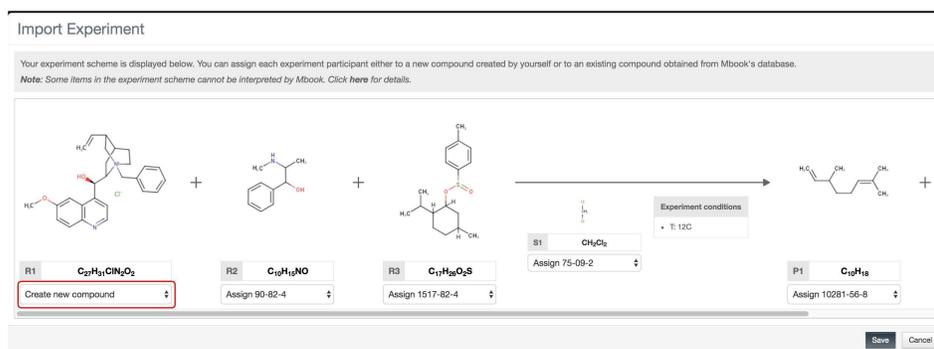
If the file is in another format or it does not have a reaction or a recognizable structure, a warning will be shown.

#### Warning

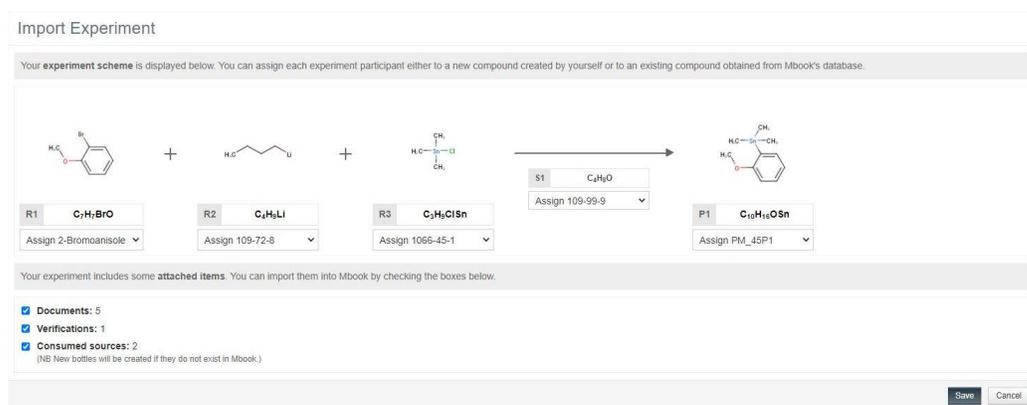
Failed to import: Arrow not found

Accept

The compounds detected will be searchable in the compound database. If they do not exist, the user can make the decision to create them.



If you are loading a zip file containing an experiment created with Mbook, you will get a dialog box like the one below (also with the ability to import attached documents and consumed sources):



## 5.3 Column Configuration

Mbook includes important column configuration capabilities in the stoichiometric table. The user can:

- Choose between equivalents and mol% (default value: equivalents) for relevant columns.
- Display a column to select the Limiting Reagent.
- Remove the Concentration, Volume, Density, and Purity columns.
- Show the CAS Number of each compound.
- Add customized text columns.

The Compound, Molecular Weight, Weight, Moles, and Yield columns will always be shown in the stoichiometric table. If no configuration is performed, the column structure will be the identical to those in previous Mbook versions.

Column configuration can be completed via the Group Manager, each Project Manager, or each experiment's owner:

- If the Group Manager defines the column setup in the stoichiometric table for the entire Group; this configuration will apply to all the Group's projects.

- If a Project Manager defines the column setup of the stoichiometric table for a project, this configuration will apply to every subproject and experiment.
- If no column configuration has been completed by the Group Manager or the Project Manager, chemists can define the column setup of the stoichiometric table for their own experiments.

Column configuration will also apply to experiment reports.

## Column configuration by the Experiment owner

Users can define the column setup of the stoichiometric table in their own experiments just by clicking on the Configuration icon, as shown below.



This will invoke the “Configure columns” pop-up window:

### Configure columns

Columns	<input type="checkbox"/>
Compound	<input checked="" type="checkbox"/>
MW	<input checked="" type="checkbox"/>
Exact Mass	<input type="checkbox"/>
W	<input checked="" type="checkbox"/>
Moles	<input checked="" type="checkbox"/>
Equiv	<input checked="" type="radio"/>
Mol%	<input type="radio"/>
Limiting Reagent	<input checked="" type="checkbox"/>
Conc	<input type="checkbox"/>
Vol	<input type="checkbox"/>
Density	<input type="checkbox"/>
Pur	<input type="checkbox"/>
Yield	<input checked="" type="checkbox"/>
Ratio	<input type="checkbox"/>
Loading	<input type="checkbox"/>
Activity	<input type="checkbox"/>
Loading(wt%)	<input type="checkbox"/>
CAS No.	<input type="checkbox"/>
Code	<input type="text"/>

There are three types of available columns:

- Fixed columns that cannot be removed from the stoichiometric table (Compound, Molecular Weight, Weight, Moles, Limiting Reagent and Yield).
- Default columns that will initially be shown in the stoichiometric table but that can be removed by the user at any time (Equiv, Concentration, Volume, Density, and Purity).
- New columns that are not shown in the stoichiometric table by default but can be displayed by the user at any time (Exact Mass and CAS Number).

Users can also add their own custom columns to the stoichiometric table by clicking on the Plus icon (see picture above), specifying a name for each column header and ticking each column's checkbox. Custom columns can be removed at any time by clicking on the Delete (X) icon (see picture above). Finally, the column setup that a user defines for a particular experiment can be extended to every user's experiment in the current reaction or project or even to all the experiments owned by the user.

### Column configuration by the Group Manager or the Project Manager

To open the column configuration section, the Group Manager and the Project Manager should navigate, respectively, to the Group's management panel or to the project's management panel, and then click on the icon below.



The following window will show up.

## Configuration

Reports **Stoichiometric table**

Fixed set of columns  Customizable set of columns

*Below, you can define a fixed set of columns that will be applied to all experiments.*

Columns	
Compound	<input checked="" type="checkbox"/>
MW	<input checked="" type="checkbox"/>
W	<input checked="" type="checkbox"/>
Moles	<input checked="" type="checkbox"/>
Equiv	<input checked="" type="radio"/>
Mol%	<input type="radio"/>
Limiting Reagent	<input checked="" type="checkbox"/>
Conc	<input checked="" type="checkbox"/>
Vol	<input checked="" type="checkbox"/>
Density	<input checked="" type="checkbox"/>
Pur	<input checked="" type="checkbox"/>
Yield	<input checked="" type="checkbox"/>
CAS No.	<input type="checkbox"/>

+

Save Clear Cancel

By clicking on the "Stoichiometric table" tab, the Group Manager and the Project Manager are able to define the column setup of the stoichiometric table for all the Group's or all the project's experiments, respectively. This column configuration section behaves the same way as the "Configure columns" window (see, above, "Column configuration by the experiment owner").

## 5.4 Searching

You can search for any existing experiment just by clicking on the 'Search' button and drawing the desired molecular structures of the participants:

BOOK Desk People **Search** Inventory Message Pablo Monje

Search

Keywords

Graphical search  Search Clear

Experiment Search

CCCCCCCCCCCCO → C<sub>12</sub>H<sub>26</sub>O (R1)

Search Clear Cancel

You can also type any free text as keywords (experiment code, username, etc.) in the search field box. Use the filter button to restrict your results by project, user, or experiment.

## 5.5 Verification

*This feature is included in the Enterprise package (it is not included in the Mbook Chemistry or Pro packages).*

Mbook Verify is a new developing approach to structure verification via NMR and MS.

The pharmaceutical and biotechnology industries are currently facing very significant challenges that are resulting in major organizational and operational changes. The current trend is for pharmaceutical companies to outsource many of their Research and Development operations to third parties with specific specialties and areas of expertise in order to focus their own resources on areas where they are in a position to maximize value.

As a result, where many operations such as data mining, information sharing, and decisions about the chemical entities used to have to be carried out at an internal company level, these same functions now need to encompass the entirety of the supply chain and all partners involved in the company's R&D efforts. In addition, it is desirable to standardize data formats and data handling to the greatest extent possible to keep tight control over quality, particularly when compounds are being transferred between organizations and to optimize the sharing of information to maximize productivity.

A further challenge that affects, among others, the analytical data domain, is the reduction in the resourcing of internal support teams. In the case of analytical data, this means that whilst progress in hardware capabilities and huge steps forward in automation allow us to generate vast amounts of analytical data with high throughputs, a bottleneck is being created by the ability of Analytical Departments to get eyes on data. In this situation, overseeing the data and proposed chemical structures proposed by partners outside the organization, and typically received in large numbers, is also becoming more difficult, and indeed in most cases has been abandoned as an achievable objective.

Mbook Verify evaluates a series of elements (GSD, solvent recognition, novel similarity measure, multiplets, and chemical shift predictions) and applies a scoring system to return a Yes/No/I don't know answer. This makes it a very powerful screening system that is useful to chemists who need to validate decisions regarding the structure corresponding to their experiments, either in single or batch mode.



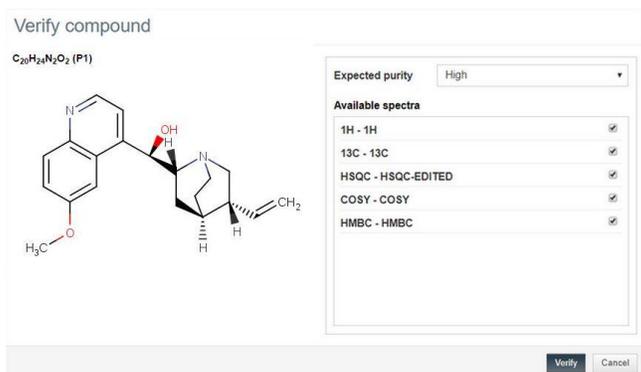
### 5.5.1 Running Verifications

To run a verification, you only need to have a  $^1\text{H}$ ,  $^{13}\text{C}$ , HSQC, COSY, HMBC or MS associated with a molecular structure in your reaction scheme. You can upload the associated spectrum to the characterization section (under the 'Process' tab), raw datasets (in a zip file), or Mnova documents.

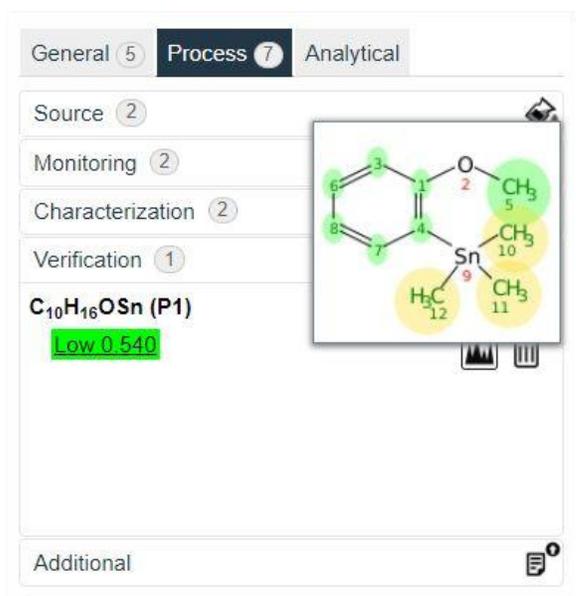
In the example below, we have uploaded  $^1\text{H}$ ,  $^{13}\text{C}$ , HSQC, COSY and HMBC spectra associated with the Product (P1):



Clicking on the 'Verify' button (highlighted in red in the picture above) will display a dialog which will allow you to select the spectra involved in the verification (and the expected purity):



After having clicked on the 'Verify' button, you will get the result:



Clicking the 'Preview' button  will display a window with a molecule on the first page and the spectra on the remaining pages. Clicking on the 'Open PDF' button will display the results in a PDF file whilst clicking on the 'Open' button will load the document into Mnova.



### See also:

Further information about [Structure verification](#) tools.

## 5.6 Generating Reports

You can generate experiments or reaction reports just by clicking on the applicable button 



You can include the spectra used for the characterization and the images (with the description) in the report:

**Experiment report**

Please, select which **documents** you want to include in your report.

**Process**

MONITORING

- PMF\_63
- C<sub>10</sub>H<sub>16</sub>OSn (P1)
- Powder

CHARACTERIZATION

- C<sub>10</sub>H<sub>16</sub>OSn (P1)
- NMR

Which report type do you want to generate? J. Am. Chem. Soc

Report Cancel

By clicking on the 'Report' button, a PDF will be generated for the current experiment:

**PMF\_10091** Pablo Monje

Reaction: 82 Project: Main  
 Start Date: 2016-10-10 06:25 End Date: 2017-02-22 12:05 Status: Open  
 Description: This experiment was derived from PMF\_87  
 Description: See 3 associated papers.

**Compound** MW Activity Wt Moles Equiv Conc. Vol. Dens:K Pur Yield

Compound	MW	Activity Wt	Moles Equiv	Conc.	Vol.	Dens:K	Pur	Yield
C <sub>10</sub> H <sub>16</sub> O(P1)	164.17							100.0
C <sub>10</sub> H <sub>16</sub> O(S2)	164.17							100.0
in-H <sub>2</sub> O	18.015	0.19	0.002	1.000	1.281	0.999		100.0
in-H <sub>2</sub> O	18.015							100.0
in-H <sub>2</sub> O	18.015							100.0
C <sub>10</sub> H <sub>16</sub> O(P1)	164.17							100.0
C <sub>10</sub> H <sub>16</sub> O(S2)	164.17							100.0

**Description:**  
 The reaction was carried out in a 100 mL round-bottomed flask equipped with a magnetic stirrer and a reflux condenser. The reaction mixture was stirred at 60 °C for 24 hours. The reaction mixture was cooled to room temperature and the solvent was removed under reduced pressure. The residue was purified by column chromatography on silica gel using a gradient of 0 to 100% ethyl acetate in hexanes. The pure product was obtained as a colorless oil.

**Parameters:**  
 Experiment: 10  
 Spectrometer: 500.13  
 Solvent: CDCl<sub>3</sub>  
 Acquisition Date: 2017-02-22 12:05

**1H NMR (400 MHz, Chloroform-d):** δ 7.81 (s, 1H), 7.53 (s, 1H), 7.46 (s, 1H), 7.40 (s, 1H), 7.30 (s, 1H), 7.27 (s, 1H), 7.24 (s, 1H), 7.21 (s, 1H), 7.18 (s, 1H), 7.15 (s, 1H), 7.12 (s, 1H), 7.09 (s, 1H), 7.06 (s, 1H), 7.03 (s, 1H), 7.00 (s, 1H), 6.97 (s, 1H), 6.94 (s, 1H), 6.91 (s, 1H), 6.88 (s, 1H), 6.85 (s, 1H), 6.82 (s, 1H), 6.79 (s, 1H), 6.76 (s, 1H), 6.73 (s, 1H), 6.70 (s, 1H), 6.67 (s, 1H), 6.64 (s, 1H), 6.61 (s, 1H), 6.58 (s, 1H), 6.55 (s, 1H), 6.52 (s, 1H), 6.49 (s, 1H), 6.46 (s, 1H), 6.43 (s, 1H), 6.40 (s, 1H), 6.37 (s, 1H), 6.34 (s, 1H), 6.31 (s, 1H), 6.28 (s, 1H), 6.25 (s, 1H), 6.22 (s, 1H), 6.19 (s, 1H), 6.16 (s, 1H), 6.13 (s, 1H), 6.10 (s, 1H), 6.07 (s, 1H), 6.04 (s, 1H), 6.01 (s, 1H), 5.98 (s, 1H), 5.95 (s, 1H), 5.92 (s, 1H), 5.89 (s, 1H), 5.86 (s, 1H), 5.83 (s, 1H), 5.80 (s, 1H), 5.77 (s, 1H), 5.74 (s, 1H), 5.71 (s, 1H), 5.68 (s, 1H), 5.65 (s, 1H), 5.62 (s, 1H), 5.59 (s, 1H), 5.56 (s, 1H), 5.53 (s, 1H), 5.50 (s, 1H), 5.47 (s, 1H), 5.44 (s, 1H), 5.41 (s, 1H), 5.38 (s, 1H), 5.35 (s, 1H), 5.32 (s, 1H), 5.29 (s, 1H), 5.26 (s, 1H), 5.23 (s, 1H), 5.20 (s, 1H), 5.17 (s, 1H), 5.14 (s, 1H), 5.11 (s, 1H), 5.08 (s, 1H), 5.05 (s, 1H), 5.02 (s, 1H), 4.99 (s, 1H), 4.96 (s, 1H), 4.93 (s, 1H), 4.90 (s, 1H), 4.87 (s, 1H), 4.84 (s, 1H), 4.81 (s, 1H), 4.78 (s, 1H), 4.75 (s, 1H), 4.72 (s, 1H), 4.69 (s, 1H), 4.66 (s, 1H), 4.63 (s, 1H), 4.60 (s, 1H), 4.57 (s, 1H), 4.54 (s, 1H), 4.51 (s, 1H), 4.48 (s, 1H), 4.45 (s, 1H), 4.42 (s, 1H), 4.39 (s, 1H), 4.36 (s, 1H), 4.33 (s, 1H), 4.30 (s, 1H), 4.27 (s, 1H), 4.24 (s, 1H), 4.21 (s, 1H), 4.18 (s, 1H), 4.15 (s, 1H), 4.12 (s, 1H), 4.09 (s, 1H), 4.06 (s, 1H), 4.03 (s, 1H), 4.00 (s, 1H), 3.97 (s, 1H), 3.94 (s, 1H), 3.91 (s, 1H), 3.88 (s, 1H), 3.85 (s, 1H), 3.82 (s, 1H), 3.79 (s, 1H), 3.76 (s, 1H), 3.73 (s, 1H), 3.70 (s, 1H), 3.67 (s, 1H), 3.64 (s, 1H), 3.61 (s, 1H), 3.58 (s, 1H), 3.55 (s, 1H), 3.52 (s, 1H), 3.49 (s, 1H), 3.46 (s, 1H), 3.43 (s, 1H), 3.40 (s, 1H), 3.37 (s, 1H), 3.34 (s, 1H), 3.31 (s, 1H), 3.28 (s, 1H), 3.25 (s, 1H), 3.22 (s, 1H), 3.19 (s, 1H), 3.16 (s, 1H), 3.13 (s, 1H), 3.10 (s, 1H), 3.07 (s, 1H), 3.04 (s, 1H), 3.01 (s, 1H), 2.98 (s, 1H), 2.95 (s, 1H), 2.92 (s, 1H), 2.89 (s, 1H), 2.86 (s, 1H), 2.83 (s, 1H), 2.80 (s, 1H), 2.77 (s, 1H), 2.74 (s, 1H), 2.71 (s, 1H), 2.68 (s, 1H), 2.65 (s, 1H), 2.62 (s, 1H), 2.59 (s, 1H), 2.56 (s, 1H), 2.53 (s, 1H), 2.50 (s, 1H), 2.47 (s, 1H), 2.44 (s, 1H), 2.41 (s, 1H), 2.38 (s, 1H), 2.35 (s, 1H), 2.32 (s, 1H), 2.29 (s, 1H), 2.26 (s, 1H), 2.23 (s, 1H), 2.20 (s, 1H), 2.17 (s, 1H), 2.14 (s, 1H), 2.11 (s, 1H), 2.08 (s, 1H), 2.05 (s, 1H), 2.02 (s, 1H), 1.99 (s, 1H), 1.96 (s, 1H), 1.93 (s, 1H), 1.90 (s, 1H), 1.87 (s, 1H), 1.84 (s, 1H), 1.81 (s, 1H), 1.78 (s, 1H), 1.75 (s, 1H), 1.72 (s, 1H), 1.69 (s, 1H), 1.66 (s, 1H), 1.63 (s, 1H), 1.60 (s, 1H), 1.57 (s, 1H), 1.54 (s, 1H), 1.51 (s, 1H), 1.48 (s, 1H), 1.45 (s, 1H), 1.42 (s, 1H), 1.39 (s, 1H), 1.36 (s, 1H), 1.33 (s, 1H), 1.30 (s, 1H), 1.27 (s, 1H), 1.24 (s, 1H), 1.21 (s, 1H), 1.18 (s, 1H), 1.15 (s, 1H), 1.12 (s, 1H), 1.09 (s, 1H), 1.06 (s, 1H), 1.03 (s, 1H), 1.00 (s, 1H), 0.97 (s, 1H), 0.94 (s, 1H), 0.91 (s, 1H), 0.88 (s, 1H), 0.85 (s, 1H), 0.82 (s, 1H), 0.79 (s, 1H), 0.76 (s, 1H), 0.73 (s, 1H), 0.70 (s, 1H), 0.67 (s, 1H), 0.64 (s, 1H), 0.61 (s, 1H), 0.58 (s, 1H), 0.55 (s, 1H), 0.52 (s, 1H), 0.49 (s, 1H), 0.46 (s, 1H), 0.43 (s, 1H), 0.40 (s, 1H), 0.37 (s, 1H), 0.34 (s, 1H), 0.31 (s, 1H), 0.28 (s, 1H), 0.25 (s, 1H), 0.22 (s, 1H), 0.19 (s, 1H), 0.16 (s, 1H), 0.13 (s, 1H), 0.10 (s, 1H), 0.07 (s, 1H), 0.04 (s, 1H), 0.01 (s, 1H).

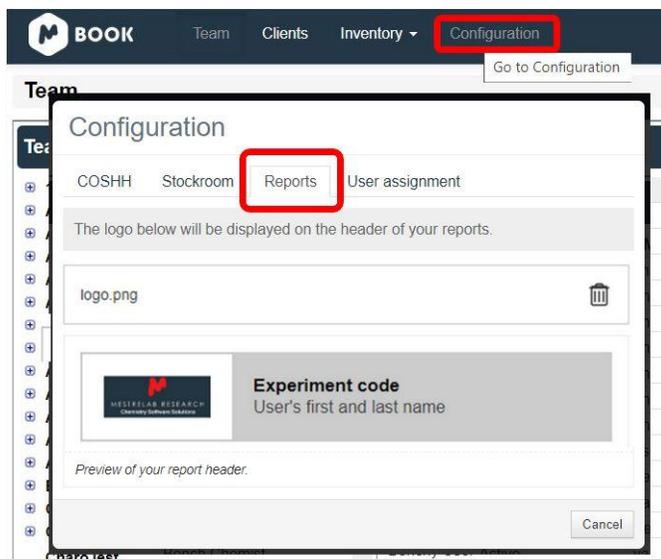
**MS**

**Parameters:**  
 Experiment: 10  
 Spectrometer: 500.13  
 Solvent: CDCl<sub>3</sub>  
 Acquisition Date: 2017-02-22 12:05

**Images**  
 PMF\_10091

**History**  
 Created: 2017-02-22 12:11 Pablo Monje  
 Open: 2017-02-22 12:16 Pablo Monje

From the 'Configuration panel', the administrator can upload a corporate logo that will be displayed on the header of all Mbook reports:



## 5.7 Report Footer

Footers can be added to the PDF reports generated for each experiment. Footers may contain one or two signature sections, as well as a text area where warnings or informative messages are displayed. Mbook provides each Group with five configurable footer templates. The Group Manager can customize each template, and then select which of those customized templates are available to the Groups' Project Managers. Each Project Manager can select the specific footer that will be added to all the project's experiment reports (and its eventual subprojects) from the customized templates made available by the Group Manager. Finally, each experiment owner can decide whether to include a report footer when generating a PDF report.

### Report footer Templates

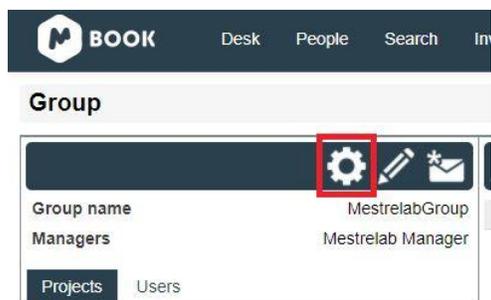
Report footers in Mbook contain one or two signature sections, as well as a text area where warning or informative messages are displayed. The picture below shows the five footer templates available in Mbook.

Date/Chemist signature:	
Date/Chemist signature:	CONFIDENTIAL
Date/Witness signature:	Date/Chemist signature:
Date/Witness signature:	Date/Chemist signature:
Date/Witness signature:	CONFIDENTIAL
Date/Witness signature:	CONFIDENTIAL

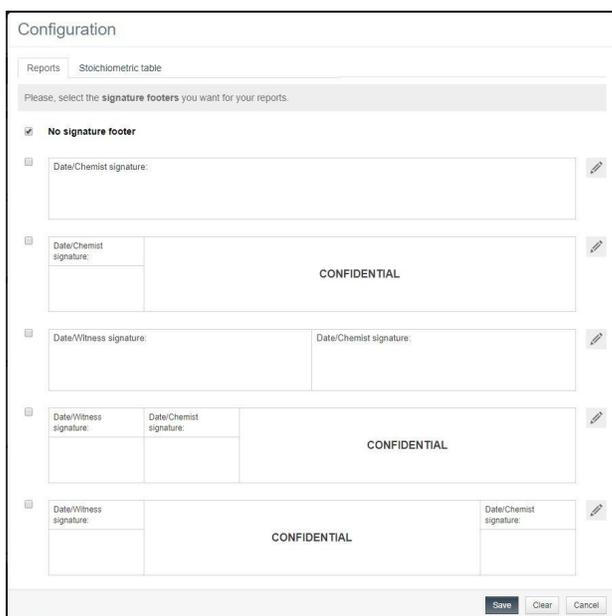
## Group Manager

The Group Manager can customize each report footer template, and then select which of those customized templates are available to the Group's Project Managers.

To open the report configuration window, the Group Manager should navigate to the Group's management panel and click on the setup icon highlighted below.



The report configuration window will pop up:



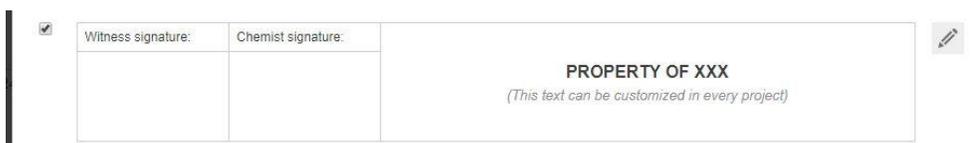
The Group Manager can select which footer templates are available to the Group's Project Managers by clicking on each template's checkbox (see picture below).



To customize a footer template, the Group Manager should click on the Edit (pencil) icon shown in the picture above, after which the footer template will become editable (see picture below). Once the footer template has been customized, the Group Manager should save the changes by clicking on the Tick button.



During the customization of a footer template, the Group Manager can check the **“This text can be customized in every project”** option (see picture above). In this way, the Group Manager allows the Project Manager to customize the content of the text area on a per-project basis. In the report footer below, the Group Manager has defined the message **“PROPERTY of XXX”** so that each Project Manager can modify the **“XXX”** part at some later point.

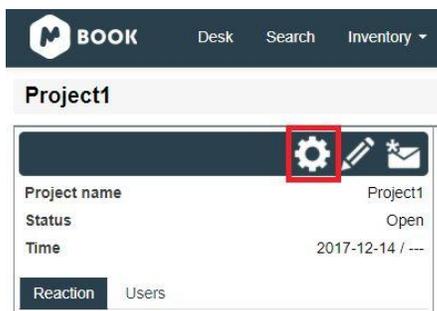


The image below shows an example where the Group Manager has customized and made two report footer templates available to the Group's Project Managers.

If no footer is needed for the Group's experiment reports, the Group Manager should check the **"No signature footer"** option.

## Project Manager

Each Project Manager can select the specific footer that will be added to all the project's experiment reports (and its eventual subprojects) from the customized templates made available by the Group Manager. To open the report configuration window, the Project Manager should navigate to the project's management panel and click on the icon below.



The report configuration window will open. Only the report footers previously selected by the Group Manager will be available to the Project Manager, who can then decide which one, if any, will be included in the project's experiment reports.

Configuration

Reports Stoichiometric table

Please, select a signature footer for your reports.

No signature footer

Date/Chemist signature:	CONFIDENTIAL	
-------------------------	--------------	--

Witness signature:	Chemist signature:	PROPERTY OF Client1
--------------------	--------------------	---------------------

Save Cancel

In the picture above, the text area in the last footer contains a message that was previously defined by the Group Manager as "Property of XXX" and has now been modified by the Project Manager with the text, "PROPERTY OF CLIENT1".

**Part**

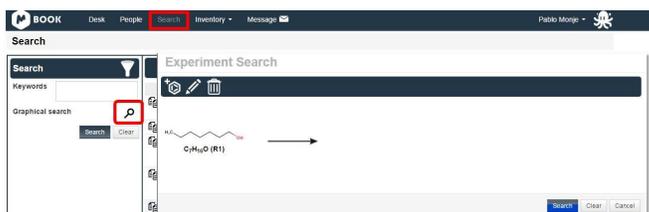


## 6 Main Toolbar

The user will find a toolbar on the upper left corner to go to the desk, to work with the database of compounds and suppliers, and to send messages to other members of the same group. Group managers will also find a button (Team) to manage the groups and the users.

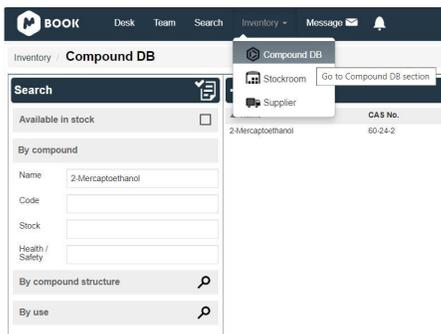


From the desk, you can search for experiments by molecular structure or by typing any free text just by selecting the 'Search' option:

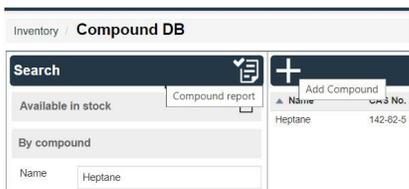


## Inventory

Selecting the 'Compound DB' from the Inventory scroll down menu will display the compound list:



New compounds can be added to the database just by clicking on the appropriate button:



From the left panel, you will be able to search by name, code, batch number, or structure. When the "available in stock" option is checked, the search will only take into account those compounds currently listed as in the inventory:

Search

Available in stock

---

By compound

Name

Code

Batch No.

---

By compound structure

Left clicking on any existing record will display a dialog to add or edit the existing information (Name, Acronym, Molecular Formula, Melting and Boiling Points, Density, etc.):

(-)-(1R)-Menthyl (S)-p-toluenesulfinate

Compound
Stock
Health/Safety
Experiment

Name (-)-(1R)-Menthyl.nate

Acronym

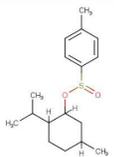
MF C<sub>17</sub>H<sub>25</sub>O<sub>2</sub>S

EBBibliography

Characterization

Verification

Structure



1517-82-4 mol

Properties

Molecular Weight 294.452

Density

Boiling Point

Melting Point 102-104 °C

Flash Point

pH1

pH2

pH3

pH4

Solubility

Nomenclature

Name (-)-(1R)-Menthyl (S)-p-toluenesulfinate

Acronym

IUPAC 5-methyl-2-(propan-2-yl)cyclohexyl 4-methylbenzene-1-sulfinate

Alt. Names (S)-(-)-Menthyl p-toluenesulfinate  
(1R,2S,5R)-(-)-Menthyl (S)-p-toluenesulfinate

From here, you can get the MSDS document and download the .mol file of the applicable structure.

Clicking on the 'Stock' tab will display the location and the number of available bottles of the compound:

Compound									
Stock									
Supplier	Status	Batch number	Remaining (Initial)	Solvent	Concentration	Expiration date	Location		
	Available	Modificado	89.999 g (100.000 g)			2023-11-08	CIQUS > First Floor > Stockroom1		
	Available	12345	14.990 mg (100.000 mg)						
	Available		50.000 g (50.000 g)			2018-09-13	CIQUS > Third floor > Mr Freeze room		
	Available		100.000 g (100.000 g)			2018-08-06			
	Available	159tr	1.000 kg (1.000 kg)	DCM		2019-02-21			
	Available		635.000 g (685.000 g)						
	Available		9.751 g (10.000 g)				AdminBuilding > Fridge1		
	Available	f1	1000.000 µg (1000.000 µg)			2023-11-08	CIQUS > First Floor > Stockroom1		
	Available	f1	100.000 g (100.000 g)			2023-11-08	CIQUS > First Floor > Stockroom1		
	Finished		60.000 g (100.000 g)			2018-07-07			

The 'Health/Safety' panel will allow you to check and modify the hazards and precautions assigned to the compound:

Compound Stock **Health/Safety** Experiment

**Hazards identification**

Signal word Danger

Hazards H301 H303 H315 H319 H335

Precautions P261 P264 P270 P271 P280

P301+P310 P302+P352 P304+P340 P305+P351+P338 P312 P321 P330 P332+P313 P337+P313 P362+P364

P403+P233 P405

P501

Pictograms  

**Specific precautions**

Please, complete the specific precautions below.

P264 - Wash ... thoroughly after handling -

P301+P310 - IF SWALLOWED: Immediately call a POISON CENTER/doctor/... -

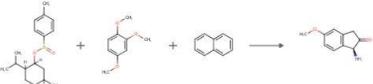
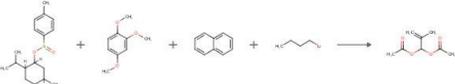
P302+P352 - IF ON SKIN: Wash with plenty of water/... -

P312 - Call a POISON CENTER/doctor/... if you feel unwell. -

P321 - Specific treatment (see ... on this label) -

P501 - Dispose of contents/container to ... -

Clicking on the 'Experiment' button will display the list of experiments where the compound has previously been used:

Code	Status	User	Reaction	Project	Time	Yield	Experiment
RL_29	Open	Rubén Lobato	Test1	Project Test	2018-07-11 17:28		
GB_9	Open	Gus Bench	Test1	test1	2018-06-20 14:19		
GT_169	Open	Gustavo Tester	Test1	Project Test	2018-06-20 13:10		

The new [Stockroom](#) section is available by selecting the 'Stockroom' icon from the Inventory scroll down menu:

**M BOOK** Desk Team Search **Inventory** Message

**Pablo Monje**

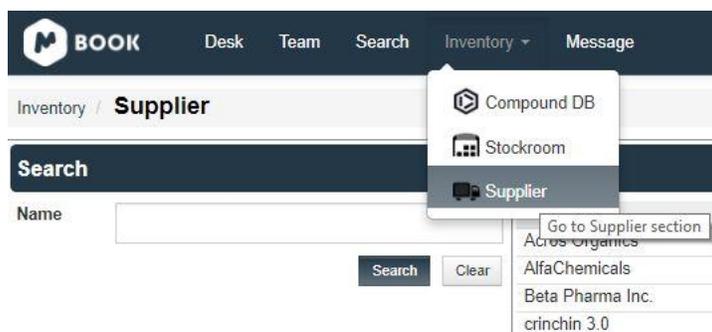
Name Pablo Monje

Compound DB

Stockroom

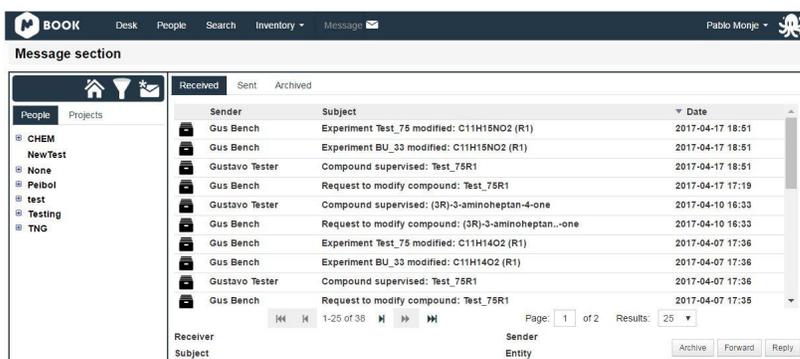
Go to Stockroom section

The Supplier option in the toolbar will allow you to search/edit/add suppliers to your database:



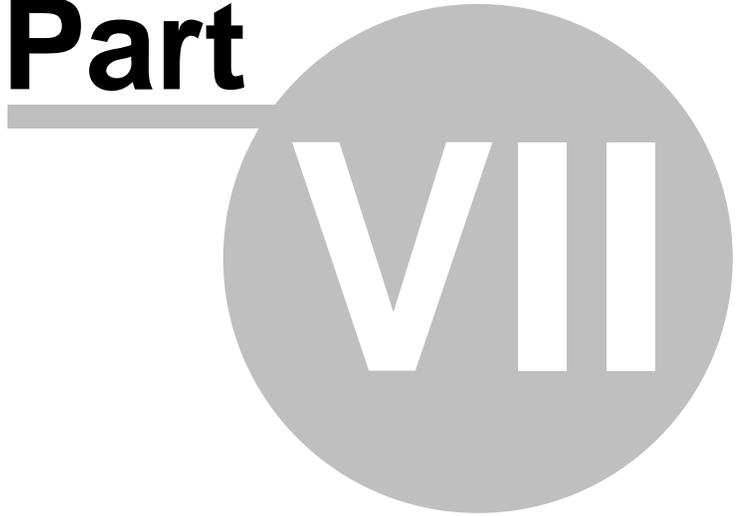
## Message

The message button will display all the messages (sent, received, or archived) associated with your inbox:



The Message panel shows a complete list of experiments open and the list of messages related to a given user by default. Clicking on the 'Home' button  will restore this original view after navigating the trees.

**Part**



## 7 Inventory

This feature is included in the Mbook PRO, Mbook Analytical and Enterprise packages (it is not included in the Mbook Chemistry package)

Many organizations choose an ELN, deploy it, get it adopted, train their users in it, etc., and at the end of this effort they start again with an inventory solution. Mbook comes with inventory integrated, so you deploy and adopt a single application that fulfils both functions with no additional effort and no integration concerns. This tool has been automatically updated on your Cloud version; for in-house installations, you will have to update to Mbook 1.1.

### Preliminary step: Become an inventory manager!

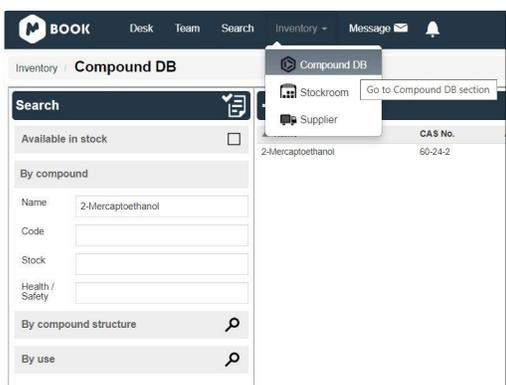
Any user in your group can read the information available in the inventory section. In order to add or edit entries, you will need access as an inventory manager. For this, a user assigned as a group manager can go to the user options at the top right corner of the screen and select "edit user". Here you can enable or disable the inventory manager privileges for any of the other users.

The screenshot shows the 'Edit User' interface. On the left, there is a user profile for 'ruben@mestrelab.com' with the role 'Group Manager' and status 'Active'. Below this is a 'Documents' section with 'No associated documents'. On the right, there is a table of users with their roles and permissions. The 'Inventory manager' role is highlighted with a red box. The 'Edit User' button is also highlighted with a red box.

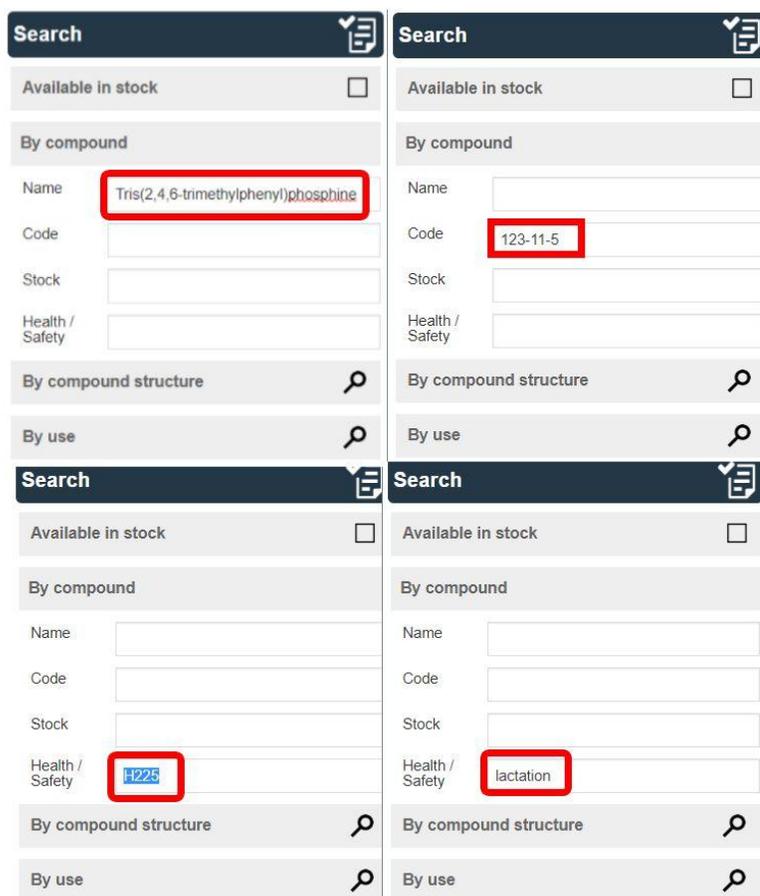
Code	User	Permissions	Time
RL_39			018-08-28 18:38
RL_38		Experiment permissions	018-08-28 17:56
pmbu16		<input checked="" type="checkbox"/> Experiment witness The user can be a witness of other experiments within his/her group.	018-08-28 17:54
RL_36		Inventory permissions	018-08-28 16:49
RL_35		<input checked="" type="checkbox"/> Inventory manager The user can add new compound bottles. He can also manage locations in the Stockroom if Admin user allows it.	018-08-28 13:56
RL_34			018-08-28 13:19
RL_33		<input checked="" type="checkbox"/> Structure manager The user can approve modifications in compound structures.	018-07-30 17:33
RL_32			018-07-30 17:06
RL_31		<input checked="" type="checkbox"/> Safety manager The user can manage safety information related to compounds and bottles.	018-07-30 17:02
RL_30			018-07-11 17:30

### The inventory menu

The inventory tool can be found on the top bar menu and is linked to the compound database entries. You can enter or edit new suppliers as well as searching for any compound in your Mbook database.



You can search by name, code, stock or Health/Safety: by the H phrases or CMR categories, or even by searching by keywords as Lactancy, Lactation, Carcinogens, Mutagens, Reprotoxics is available using this field.



You can search by compounds available in stock, just by checking the applicable box:

Inventory / Compound DB

Search

Available in stock

By compound

Name: nBuLi

Code:

Stock:

Health / Safety:

By compound structure

By use

Name	CAS No.	Acronym	Molecular Formula	Characteristics	Compound	Stock
n-Butyllithium Solution	109-72-8		$C_4H_9Li$			<ul style="list-style-type: none"> <li>No location assigned: 76.700 mL, 94.564 mL, 100.000 mL</li> <li>PabloBuild &gt; PabloFloor2 &gt; PabloStock: 200.000 mL</li> <li>PabloBuild &gt; PabloFloor2 &gt; PabloStock: 200.000 mL</li> <li>PabloCabinet &gt; PabloTray: 250.000 mL</li> <li>PabloBuild &gt; PabloFloor2 &gt; Pablo_tridge: 500.000 mL</li> </ul>

Use the option to search by compound Structure to load or draw a molecule and search for it. The search mode "By Use" allows you to search by compounds used by a group, project and/or user:

Inventory / Compound DB

Search

Available in stock

By compound

Name: nBuLi

Code:

Stock:

Health / Safety:

By compound structure

By use

Search compounds by use

Groups Projects Users Dates

AG	<input type="checkbox"/>
Group4	<input type="checkbox"/>
New nn	<input type="checkbox"/>
New Test2	<input type="checkbox"/>
Peibol	<input type="checkbox"/>
Test_13478	<input type="checkbox"/>
Testing	<input type="checkbox"/>
TestStructure	<input type="checkbox"/>
Tut Group	<input type="checkbox"/>
Tutorial Group2	<input type="checkbox"/>

Apply Clear Cancel

Once you run the search with the 'By Use' option, you will get a new "Used quantity" column, showing the amount used for each compound.

Inventory / Compound DB

Search

Available in stock

By compound

Name: nBuLi

Code:

Stock:

Health / Safety:

By compound structure

By use

- Groups: AG, Peibol, Group4...

Name	CAS No.	Acronym	Molecular Formula	Characteristics	Compound	Used quantity	Stock
n-Butyllithium Solution	109-72-9		C <sub>4</sub> H <sub>9</sub> Li			1042.435 mL	<ul style="list-style-type: none"> <li>No location assigned: 100.000 mL, 76.700 mL, 94.564 mL.</li> <li>PabloBuild &gt; PabloFloor2 &gt; PabloStockroom: 200.000 mL</li> <li>PabloBuild &gt; PabloFloor2 &gt; PabloStockroom &gt; PabloCabinet &gt; PabloTray: 250.000 mL</li> <li>PabloBuild &gt; PabloFloor2 &gt; Pablo_fridge2: 500.000 mL</li> </ul>

The [safety manager](#) will be able to add hazards and the applicable pictograms to any existing compound from the 'Health/Safety' tab:

(-)-(1R)-Menthyl (S)-p-toluenesulfinate

Compound Stock Health/Safety Experiment

Name: (-)-(1R)-Menthyl...  
 Acronym:   
 MF: C<sub>11</sub>H<sub>18</sub>O<sub>2</sub>S  
 Bibliography:   
 Characterization:   
 Verification:

**Hazards identification**

Signal word: Danger

Hazards: EUIH066, H300+H330, H301

Precautions: P260, P264, P270, P271, P284, P301+P310, P304+P340, P310, P320, P321, P330, P403+P233, P405, P501

Pictograms:

**Specific precautions**

Please, complete the specific precautions below.

P264 - Wash ... thoroughly after handling	-
P301+P310 - IF SWALLOWED: Immediately call a POISON CENTER/doctor/...	-
P310 - Immediately call a POISON CENTER/doctor/...	-
P320 - Specific treatment is urgent (see ... on this label)	-
P321 - Specific treatment (see ... on this label)	-
P501 - Dispose of contents/container to ...	-

You can categorize compounds using the CMR (carcinogenic, mutagenic or reprotoxic) categories. The CMR categories are related with the H phrases according to the table below:

Table 2: Hazard statements for CMR categories

Hazard statements	Category 1A or 1B	Category 2	Effects on or via lactation
Carcinogens	H350: May cause cancer	H351: Suspected of causing cancer	
Mutagens	H340: May cause genetic defects	H341: Suspected of causing genetic defects	
Reprotoxics	H360: May damage fertility or the unborn child	H361: Suspected of damaging fertility or the unborn child	H362: May cause harm to breast-fed children.

Source: Regulation (EC) No 1272/2008<sup>[2]</sup>

The CMR categories are automatically added to the compounds when the corresponding H phrases are added, after having clicked on the 'Edit Hazards' button:

## A practical example

Let's go to the main menu and select Inventory/Compound DB and search "heptane" as an example:

Inventory / **Compound DB**

**Search**

Available in stock

**By compound**

Name:

Code:

Stock:

Health / Safety:

**By compound structure** 🔍

**By use** 🔍

Name	CAS No.
Heptane	142-82-5

(You can also search by code, stock or Health/Safety: by the H phrases or CMR categories, or even by searching by keywords as Lactancy, Lactation, Carcinogens, Mutagens, Reprotoxics is available using this field.)

Click on "Heptane" in the list and go to the "Stock" tab for this compound. Here you can see we have two different entries for two different suppliers. This window also displays details such as status, batch number, and remaining number for each of the bottles.

Supplier	Status	Batch number	Remaining (Initial)
AlfaChemicals	Available	H33987	979.000 mL (1000.000 mL)
BetaPharma	Available	B5769	5.000 mL (100.000 mL)

As an inventory manager you can add a new entry or edit the information relating to any of these bottles, such as the description, quantity, purity, order date, who ordered it, etc., and then just save any changes made.

Edit Bottle

Bottle Stockroom

Supplier: Sigma-Aldrich

Experiment: Select

Description:

Keywords:

Catalog ref.:

Batch number:

Bar code:

Label:

Internal code:

Status: Available

Storage conditions:

Quantity: 500.000 g (Available: 500.000 g)

Solvent:

Conc: M

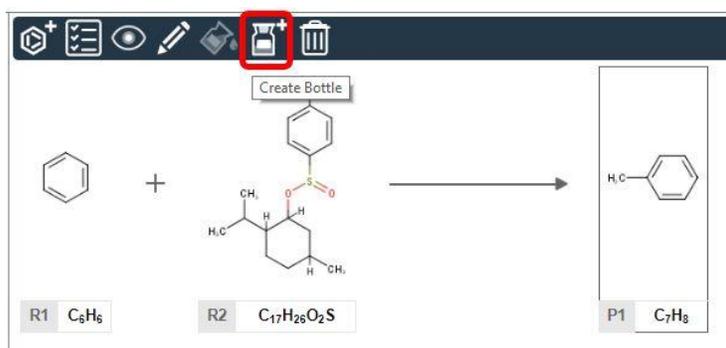
Purity: %

Comment:

Save Cancel

Clicking on the 'Compound Report' button will export to PDF the compound list. You can add new compounds to the inventory just by clicking on the appropriate button (from the compound DB):

You can also add bottles to the inventory from the reaction scheme just by highlighting the appropriate product and clicking on the 'Create bottle' button:



Any user can go to Mbook's desk panel and use the inventory entries to link to an experiment. Let's click on a recorded experiment and check the entries for heptane (or your preferred reaction participant) by clicking on the "Assign Source" icon.

You can now set the amount you have used of each chemical for any of the source entries.

## Select Source

Participant

Select

- Select
- 1-Phenylindene (R1)
- p-Tolualdehyde (R2)
- n-BuLi (R3)
- 2-Methyltetrahydrofuran (S1)
- Heptane (S2)

Besides the available number of each of the source bottles, it also displays the “quantity deficit”. This shows you the amount of participant required for the reaction as per the stoichiometric table.

You can register a value on the “quantity consumed” box to keep track of your chemicals as shown below.

**Select Source**

Participant:

Supplier	Status	Batch number	Remaining (Initial)
Aldrich	Available	87249t	250.000 mL (500.000 mL)
Acros	Available	AC93587	5.000 mL (100.000 mL)
Alpha Chemicals	Available	Q95300	0.986 L (1.000 L)

1-3 of 3 Page: 1 of 1 Results: 25

Participant	Heptane (S2)	Quantity consumed	<input type="text" value="200"/> mL
Supplier	Aldrich	Available	250.000 mL (500.000 mL)
Batch number	87249t	Quantity deficit	5.961 mL (98%)

*Note: If you use a bottle with a different purity than the one recorded in the experiment table, then this new purity value will be automatically updated. In this way, you can keep track of your chemicals in the lab in a straightforward manner with everything you require integrated into your electronic laboratory notebook.*

When selecting a compound from the Inventory/Compound DB, the experiment tab displays the list of experiments where this compound has been used:

**n-Butyllithium Solution**

		Compound	Stock	Health/Safety	Experiment	Analytical requests			
Name	n-Butyllithium Solution	Code	Status	User	Reaction	Project	Time	Yield	Experiment
CAS No.	109-72-8	PM_38	Open	Pablo Monje	NR	NewP	2020-05-14 11:36	44.0	
Acronym		PM_37	Open	Pablo Monje	coshh	COSHH	2020-05-13 14:01		
MF	C <sub>4</sub> H <sub>9</sub> Li	PM_36	Open	Pablo Monje	coshh	COSHH	2020-05-13 13:26	89.7	
Bibliography									
Characterization									
Verification									

## Warning messages

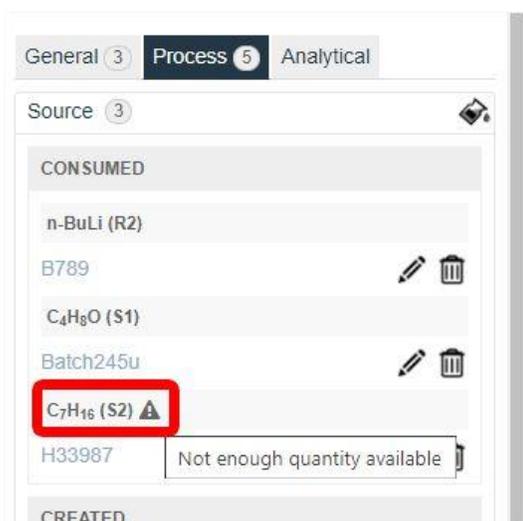
The inventory tool will also try to help you avoid mistakes when recording your entries.

- If the value of the quantity consumed is greater than the number of bottles you have available, you will see the following error message:

Participant	Heptane (S2)	Quantity	260	mL
Supplier	Aldrich	consumed		
Batch number	87249t	Available	248.000 mL (500.000 mL)	
		Quantity deficit	5.818 mL (99.8%)	

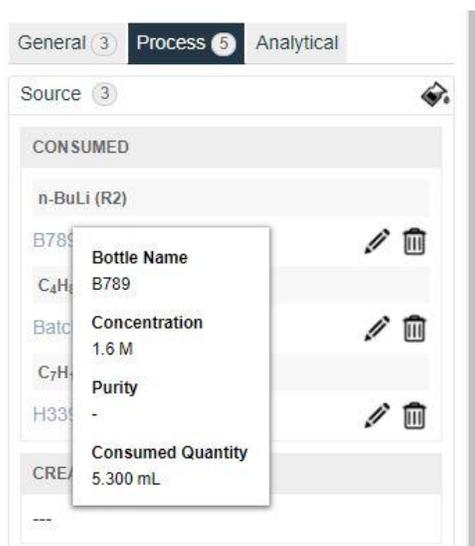
**Error**  
Quantity consumed - Not enough quantity available

- If the quantity consumed is less than that required according to the stoichiometric table, the warning message below will be displayed on your source panel with an exclamation mark symbol.



If this is the case, you will just need to edit the value to a suitable one and the warning message will disappear.

Hovering the mouse over the source entry will display information about it:



**See also:**

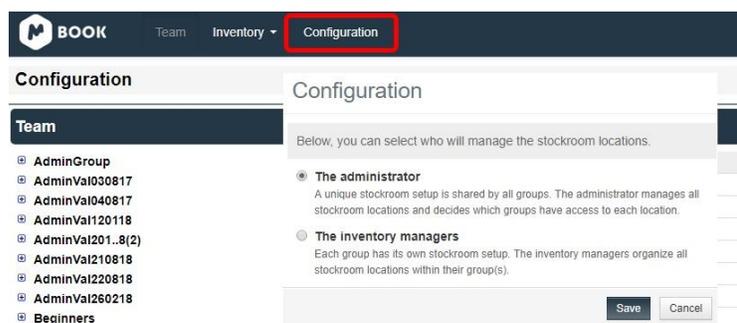
[Resources](#) about Inventory tool.

[Resources](#) about drawing Structures with Coordinate Bonds.

## 7.1 Stockroom

### Preliminary step: Become an inventory manager!

In order to add or edit any entries in the stockroom, you will need administrator privileges (or the administrator's permission if you are an inventory manager). To do this, the administrator will need to go to 'configuration' to select the desired privileges.



'The Administrator' option is the default configuration.

A unique stockroom setup is shared by all groups. The administrator manages all stockroom locations and decides which groups have access to each location.

The administrator is allowed to add locations, as explained below.

In this mode, the administrator can only see the locations and the safety summary for each of the locations, but not the information about the assigned bottles.

This mode will typically be used in organizations where the stores department manages all locations.



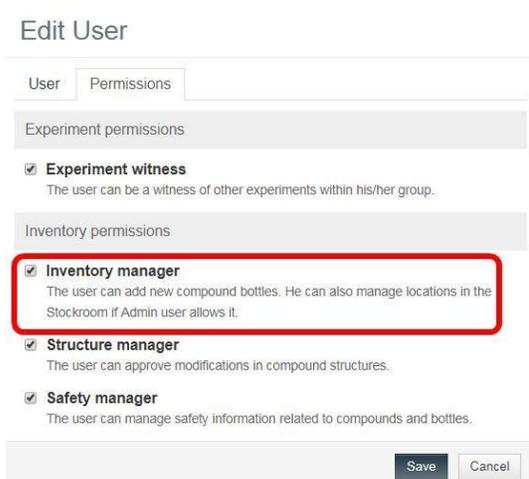
Inventory managers can assign bottles to the existing locations created by the administrator but cannot create new locations.

When **the Inventory manager** option is selected, each group has its own stockroom setup. The inventory managers organize all stockroom locations within their group(s).

The administrator cannot change locations in this mode and the menu bar will not display the Inventory/Stockroom tool.

This stockroom mode will typically suit environments where chemists prefer to handle bottle locations around the lab and building(s) themselves.

The group managers will be able to give 'inventory manager' permissions to any existing user:



**Edit User**

User Permissions

Experiment permissions

- Experiment witness**  
The user can be a witness of other experiments within his/her group.

Inventory permissions

- Inventory manager**  
The user can add new compound bottles. He can also manage locations in the Stockroom if Admin user allows it.
- Structure manager**  
The user can approve modifications in compound structures.
- Safety manager**  
The user can manage safety information related to compounds and bottles.

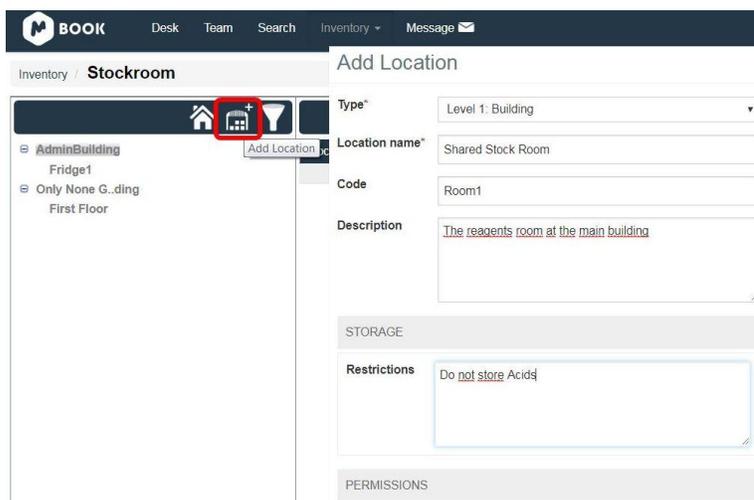
Save Cancel

### The stockroom menu

The stockroom tool can be found under the 'Inventory' scroll down menu:



The first step is to 'Add a location':



BOOK Desk Team Search Inventory Message

Inventory / Stockroom

Add Location

Type\* Level 1: Building

Location name\* Shared Stock Room

Code Room1

Description The reagents room at the main building

STORAGE

Restrictions Do not store Acids

PERMISSIONS

From here, you can enter the type (Level 1 in this example), location name, description, storage conditions (see above), and manage permissions (Group owner, visibility, and allowed groups) for the new location:

PERMISSIONS

Owner: RL\_Group

Visibility: Visible

Accessible to: Visible

PM\_Group

GP\_Group

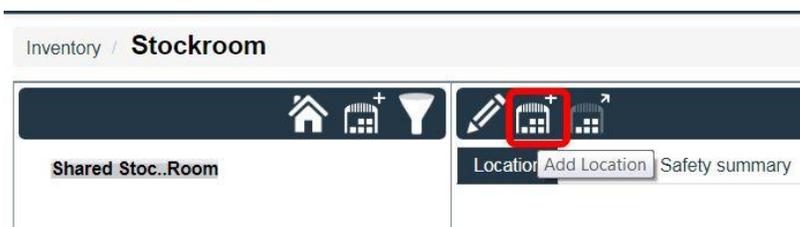
JS\_Group

EV\_Group

SF\_Group

Save Cancel

Once you have created the location in the first level, you can continue adding further levels by clicking on the 'add location' button:



You can also edit a location by clicking on the appropriate button:



In this case, we will create a location in level 3 (coldroom). You can define further restrictions and permissions for this level:

## Edit location

**Warning:** Storage restrictions. Click [here](#) for details.

**Type\*** Level 3: Coldroom

**Location name\*** Coldroom1

**Code** Cold1

**Description** The room with the main fridges

**STORAGE**

**Capabilities**  Acids  Bases  Flammable  Radioactive  
 Explosive  Corrosive  Compressed gas

**Restrictions** Below 4°C

Save Cancel

You can delete any empty locations by selecting 'Home/Location' and clicking on the 'Delete' button:

Inventory / Stockroom

Home Location Filter

AdminBuilding

- Floor 1
  - Room 1
- Floor 2
  - Storage Bench
- Chemistry
  - Organic Che..stry
    - C13
      - Mark's Fridge
      - Mark's Fume..Hood
      - Mark's Shelf

Stock Location Safety summary

Location name

- AdminBuilding
- Chemistry
- Gus\_Building
- Test\_Admin
- StockroomCharo
- Pablo\_Fridge
- Temp

The next step would be to add an existing [inventory](#) entry to one of those locations:

Hexamethyldistannane

Compound Stock Health/Safety Experiment

Name Hexamethyldistannane

Acronym

MF  $C_6H_{18}Sn_2$

Bibliography

Characterization

Verification

Move Bottle

The current location of the bottle 'Acros' is highlighted below. You can change it by clicking on another location in the tree.

Supplier Acros

Move to another location

**Warning:** Storage restrictions. Click [here](#) for details.

- Shared Stoc..Room
  - Coldroom1

Save Cancel

NOTE: If the bottle is not already in the [inventory](#), you will need to add it.

After having clicked on the 'Save' button, the location will be updated:

Location		Stock	Safety summary						
Supplier	Status	Batch number	Remaining (Initial)	Solvent	Concentration	Expiration date	Location	Compound	
Acros	Available		5,000 g (5,000 g)			2018-08-30	Shared Stock Room > Coldroom1	Hexamethyldistannane	

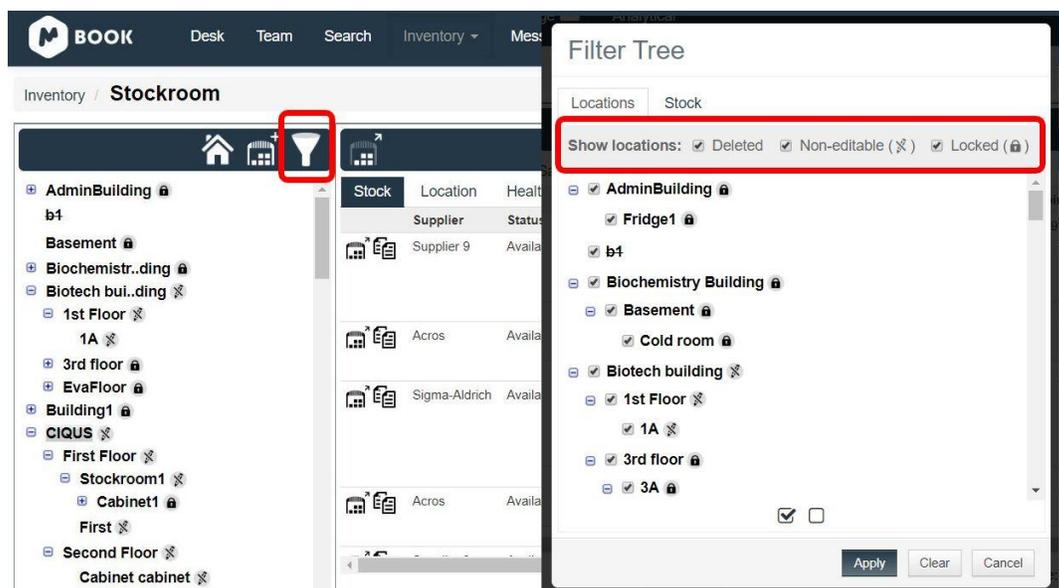
If you have several bottles of the same compound, you could move all of them together to the same location just by clicking this button

Compound		Stock	Health/Safety	Experiment	Analytical requests				
Supplier	Status	Reference	Remaining (Initial)	Solvent	Concentration	Purity	Expiration date	Location	
Supplier 9	Available	356xs98	494,500 mL (500,000 mL)	THF	2,600	99.0	2039-07-12	CIQUS > TestingLongNameLocations > VeryVeryLongNameLocation > More&More&MoreVeryVeryLongNames > Longnameslocationsinreports	
Sigma-Aldrich	Available		249,850 mL (250,000 mL)					TerrorTree > Basement > CoolCabinet	
Sigma-Aldrich	Finished		0,000 mL (100,000 mL)		1,600			TerrorTree > Basement > CoolCabinet	
West Supplier	Available		250,000 g (250,000 g)					TerrorTree > Basement > CoolCabinet > First	
Acros	Available		500,000 mL (500,000 mL)		1,600			TerrorTree > Basement > CoolCabinet > First	
crinchin 3.0	Available	jspmBuLi	100,000 mL (300,000 mL)	hexane	1,600	100.0			
Sigma-Aldrich	Available	B789	100,000 mL (100,000 mL)	Hexane	1,600				
Acros	Available		86,150 mL (100,000 mL)	hexane	1,600	100.0			
Sigma-Aldrich	Available	B789	94,564 mL (100,000 mL)	Hexane	2,300				

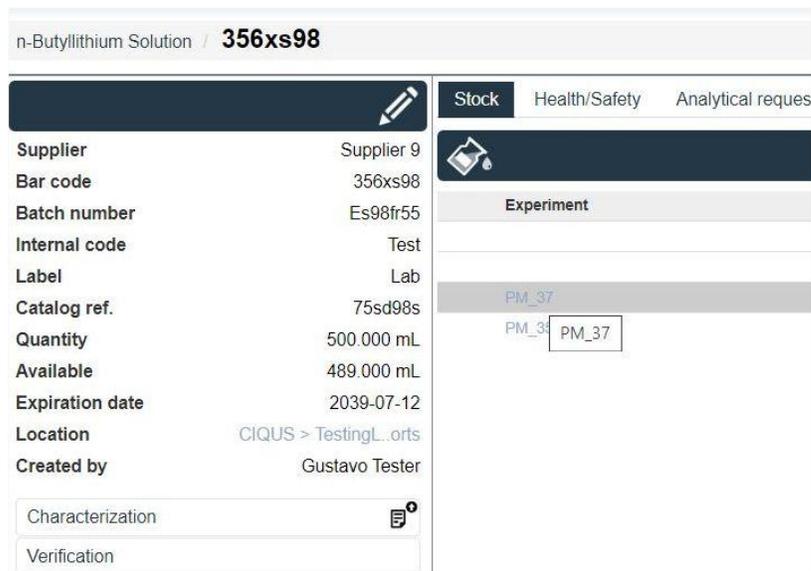
You can create bottles for products from the experiment panel:



Use the filter to display 'deleted', 'non editable', and/or 'locked' locations:



When reaching a compound from Inventory/Compound DB, the stock tab displays the list of bottles corresponding to that compound. When clicking on a specific bottle, the list of experiments where this bottle has been used is displayed. Clicking on the experiment code, that specific experiment where the bottle was used will be opened:



**See also:**

[Resources](#) about the Inventory tool.

Watch a miniclip about this functionality by following this [link](#)

**Part**



## 8 Experiment Witnessing, Approval and Structure Managers

### Experiment Witness

Mbook includes the ability to sign experiments as a witness. The Group Manager has the ability to create and edit users with witness power just by checking the appropriate box:

User **Permissions**

Experiment permissions

**Experiment witness**  
The user can be a witness of other experiments within his/her group.

Inventory permissions

**Inventory manager**  
The user can add new compound bottles. He can also manage locations in the Stockroom if Admin user allows it.

**Structure manager**  
The user can approve modifications in compound structures.

**Safety manager**  
The user can manage safety information related to compounds and bottles.

**Save** **Cancel**

The group manager can allow any given user to be a witness to other user's experiments if those experiments are accessible by that particular user.

Once the chemist has finished the experiment, he/she will need to select 'Pending signature' from the 'Edit Experiment' dialog.

**Edit Experiment**

Code\* BU\_34

Status Pending signature ▼

Relevant experiment Open  
Closed

Project Pending signature  
Discarded

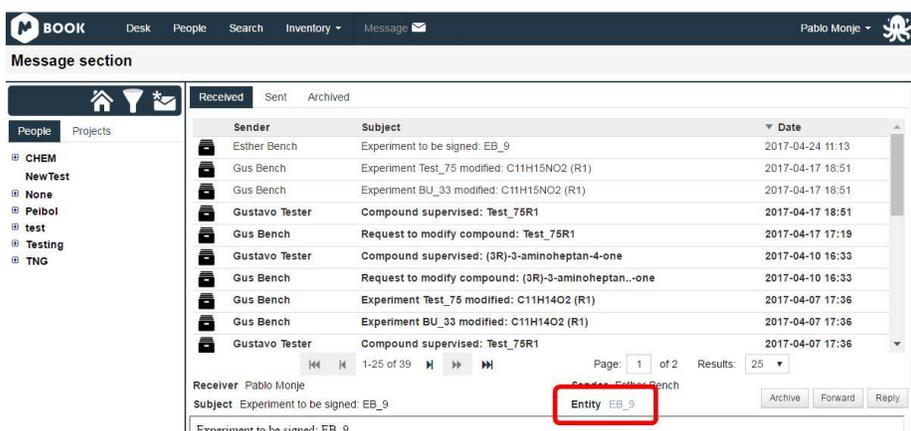
Reaction\* ROH Bromination ▼

Start\* 2017-04-24 13:12

End

After clicking the 'Save button' and selecting the 'End Date', the user will be allowed to select the desired witness (if there is more than one).

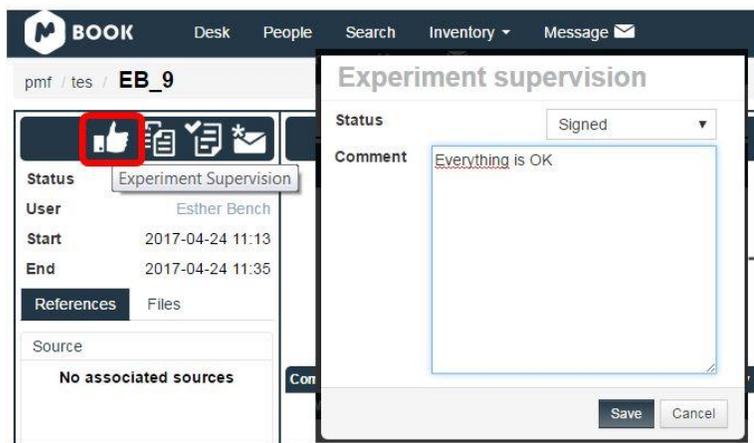
The witness will receive a notification in his/her inbox (displaying an envelope in the toolbar):



Once in the message, the witness will be allowed to display the experiment by clicking on the 'Entity' link (highlighted in red in the screenshot above).

After setting the status of an experiment as Pending Signature (or Pending Approval), the icon for Experiment Supervision  will be displayed (both for the experiment owner and witness).

The witness can type any required commentary before signing the experiment (the comment is mandatory if the experiment has not been signed):



After clicking the Save button, the supervision icon  will disappear and the status of the experiment will turn to 'signed'. Once the experiment has been signed, it can no longer be edited by the owner (unless the owner of the experiment is the project manager).

## Experiment Approval

In certain companies/groups, experiments, once finished, must be **approved** by authorized users.

The group managers and project managers can be assigned privileges to approve experiments and to give approval privileges to other users.

The Project Manager has the ability to create projects with 'experiment approvals' just by checking the appropriate box in the 'Edit Project' window:

**Edit Project**

Project name\* Main

Short name Main

Description

Code\* project

Status Open

Start\* 2013-02-28

End 2018-02-15

Parent Project Select

**Experiment approval**

The Project Manager must approve the project experiments

Groups

CHEM  
NewTest  
Peibol  
test  
Testing  
TNG

None

Users

Save Cancel

When the status of an experiment is switched to "Pending approval", a message is sent to the group manager(s) of the project to inform them that there is an experiment that needs to be approved:

**Edit Experiment**

Code\* PMF\_94

Status Open

Relevant experiment Open  
Closed

Project Pending approval  
Discarded

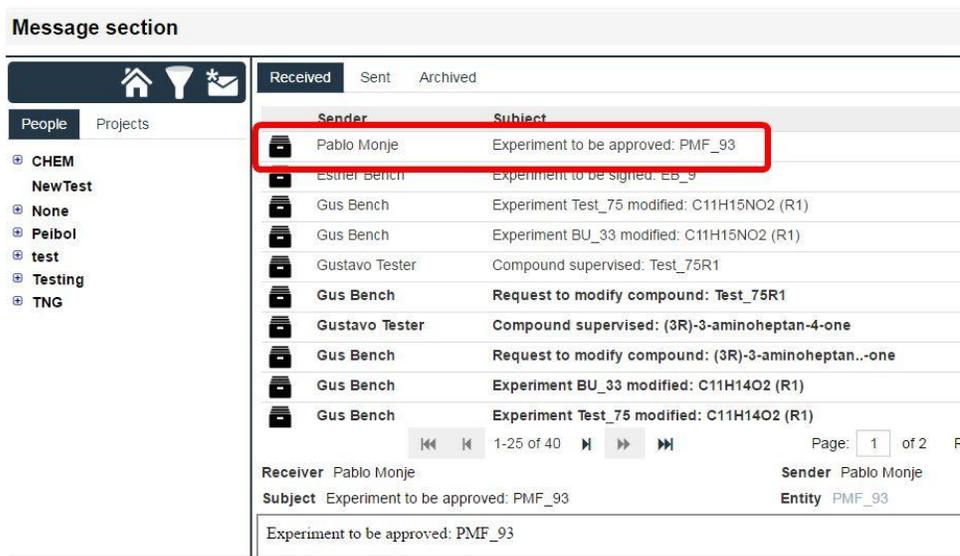
Reaction\* Etz

Start\* 2017-04-21 12:11

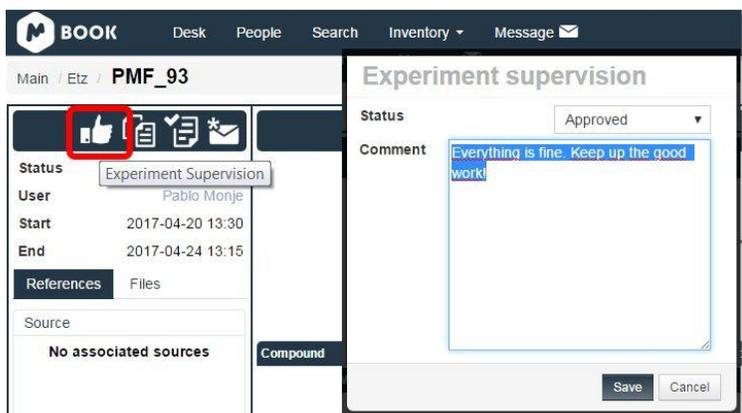
End

*NOTE: If both witness and approval process are active, once an experiment is signed, the approval process will be launched automatically (the experiment owner does not need to trigger this action manually).*

The privileged user can load the experiment using the 'Entity' link:



The supervisor is allowed to type any comment before approving the experiment (the comment is mandatory if the experiment has not been approved):



After approval, the experiment state will change to "Approved", and the experiment owner will receive a notification of such. After the experiment is approved, it cannot be edited by the owner:



If the experiment is not approved, its state changes automatically to "Open".

For a given experiment, you can have several associated privileged users. The experiment will be approved for the first user to check the experiment.

## Structure Managers

By default, Group and Project Managers will have "Structure manager" permissions.

The screenshot shows a 'Permissions' configuration window. It has two tabs: 'User' and 'Permissions'. Under 'Experiment permissions', the 'Experiment witness' checkbox is checked, with the description 'The user can be a witness of other experiments within his/her group.' Under 'Inventory permissions', the 'Inventory manager' checkbox is unchecked, with the description 'The user can add new compound bottles. He can also manage locations in the Stockroom if Admin user allows it.' The 'Structure manager' checkbox is checked and highlighted with a red rectangular box, with the description 'The user can approve modifications in compound structures.' The 'Safety manager' checkbox is unchecked, with the description 'The user can manage safety information related to compounds and bottles.' At the bottom right, there are 'Save' and 'Cancel' buttons.

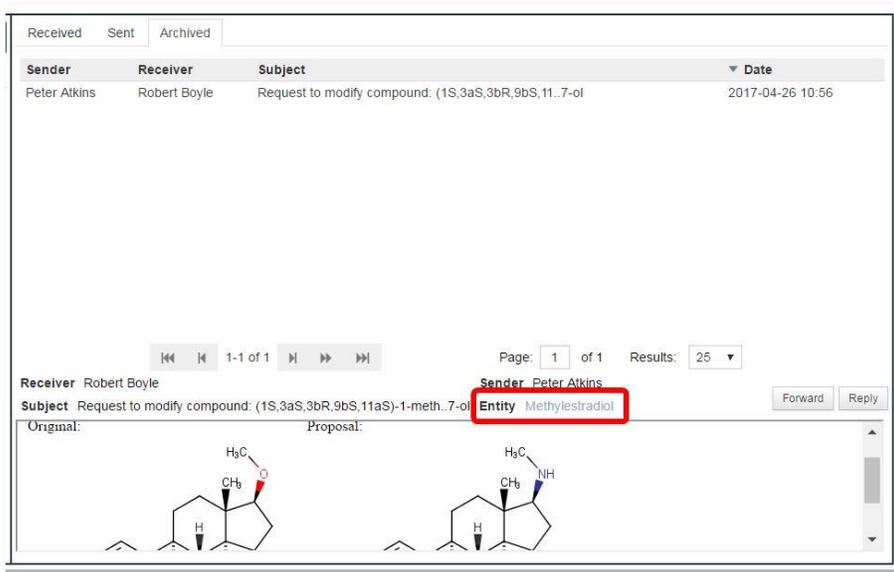
Any user can modify a compound that they have created (compounds created by other users, however, cannot be changed) that are only used in their experiments. A message informing about that change will be displayed to them:

A warning dialog box with a black border. The title is 'Warning'. The main text reads: 'Compound has associated experiments. Structure modification will be applied to all the experiments'. At the bottom right, there are 'Accept' and 'Cancel' buttons.

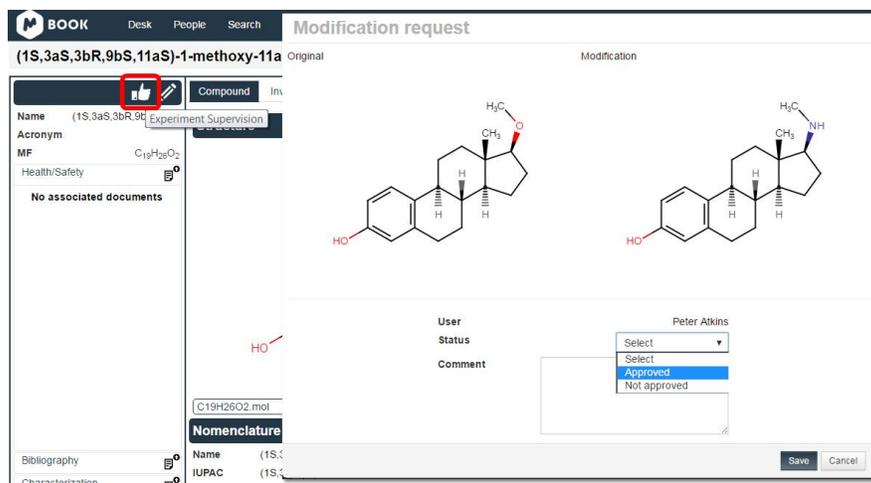
However, if the compound is present in experiments belonging to different users, the user will need approval from the structure manager to modify it. When a user attempts to edit a compound, an approval request will be sent to all the structure managers by message. Only one approval is needed to allow the requested changes to be made:



During this step, the edition of the structure is blocked. The structure manager will see both molecules (the original and the modified):



Clicking on the 'entity' link will allow the manager to validate the changes:



If the modifications are approved, the changes will be applied immediately and a message will be sent to the users associated with the experiments and to the applicable project managers (informing them about the approval).

Closed experiments will be opened automatically but no modifications will be applied in the stoichiometric table.

## Safety Managers

This user can manage safety information related to compounds and bottles. The group manager can assign these permissions to any existing user (except guests):

User **Permissions**

Experiment permissions

- Experiment witness**  
The user can be a witness of other experiments within his/her group.

Inventory permissions

- Inventory manager**  
The user can add new compound bottles. He can also manage locations in the Stockroom if Admin user allows it.
- Structure manager**  
The user can approve modifications in compound structures.
- Safety manager**  
The user can manage safety information related to compounds and bottles.

**Save** Cancel

## Inventory Managers

This user can manage locations in the stockroom (If the administrator allows it) and add or edit compounds bottles in the [Stockroom](#) section:

User **Permissions**

Experiment permissions

- Experiment witness**  
The user can be a witness of other experiments within his/her group.

Inventory permissions

- Inventory manager**  
The user can add new compound bottles. He can also manage locations in the Stockroom if Admin user allows it.
- Structure manager**  
The user can approve modifications in compound structures.
- Safety manager**  
The user can manage safety information related to compounds and bottles.

**Save** Cancel

**Part**

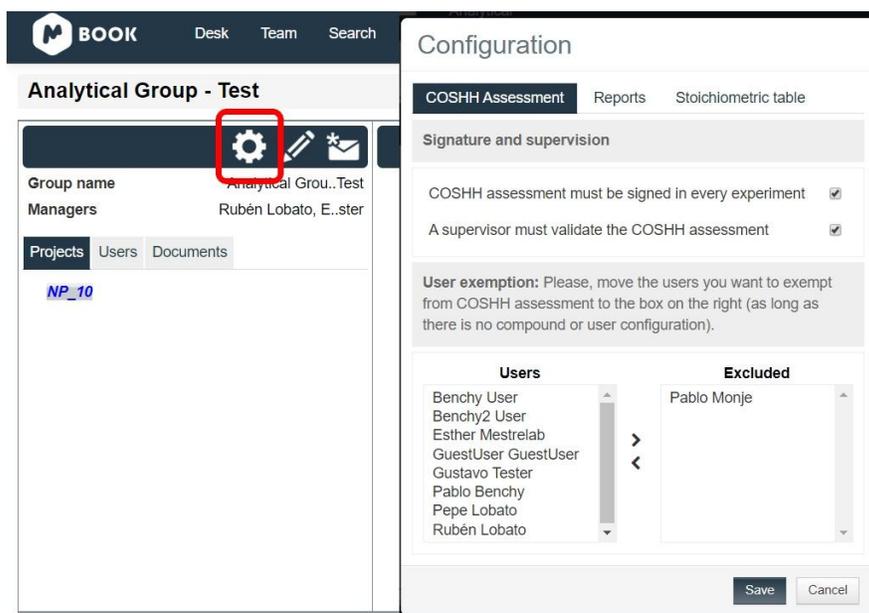


## 9 COSHH

This feature is included in the Mbook PRO and Enterprise packages (it is not included in the Mbook Chemistry package)

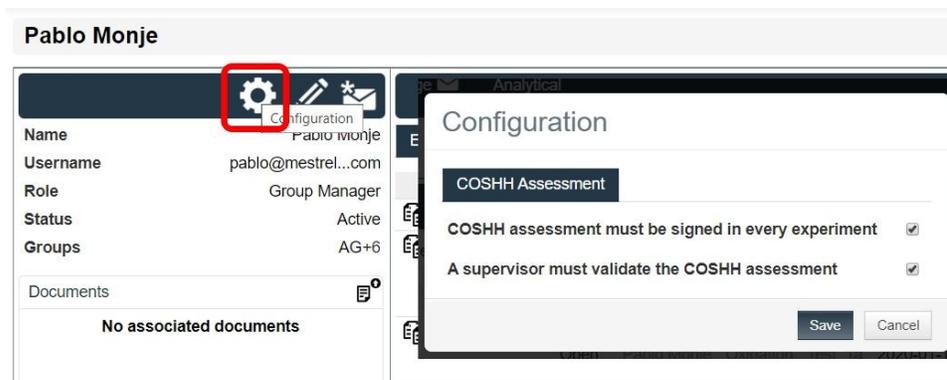
You can include COSHH assessments for groups, projects, users, and compounds.

For a project or a group, you need to click the 'Configuration' button which will allow you to select the option to always require a signature for every experiment and also for a supervisor validation. You can also add user exemptions from the same panel:



Note: parent COSHH project configurations take precedence over child project configurations.

For user and compound configurations, the setup is somewhat similar:



If the option to sign the COSHH assessment in every experiment is checked, a notification in red will appear after having added a compound to the experiment indicating that the assessment will need to be signed:

The screenshot shows a web interface for a COSHH assessment. On the left, a sidebar contains a 'Health/Safety' section with a red notification: 'COSHH: assessment pending'. The main form area includes fields for 'Spillage/Uncontrolled Release' (Safety Officer, Evacuate Area, Wash Down Area), 'Other instructions', and 'Emergency Treatment in Case of Contamination or Exposure'. The emergency treatment section lists procedures for Mouth, Eyes, Skin Exposure; Lungs; If swallowed; and If casualty unconscious. A 'Read and Understood' checkbox is checked. At the bottom, there are 'Save', 'Generate PDF', and 'Cancel' buttons.

Fill the form with the relevant information, check the "Read and Understood" box and click on the Save button.

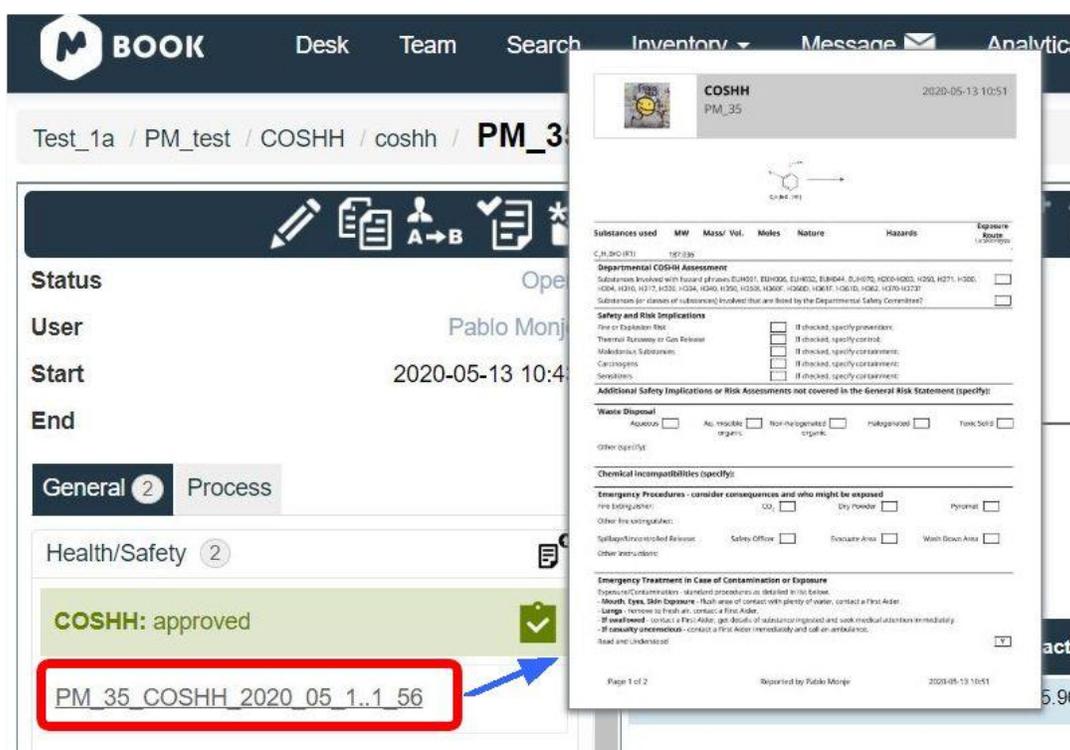
If supervision is necessary, a message and an email will be sent to the supervisor requesting that the COSHH should be checked.

This screenshot shows the same COSHH assessment form as above, but with a modal dialog box titled 'Experiment supervision' overlaid. The dialog has a 'Status' dropdown menu set to 'Signed' and a 'Comment' text area containing 'OK'. There are 'Save' and 'Cancel' buttons at the bottom of the dialog. In the background, the sidebar notification has changed to 'COSHH: pending supervisor's approval' in yellow. A red box highlights the notification icon in the sidebar.

During this process, the experiment will remain blocked (the user, however, will be able to continue adding reactants, solvents, and products, but will not be able to edit the products in the stoichiometric table or to write the experimental section). If the user attempts to edit the product, a warning message will appear:



Once the supervisor has approved the COSHH assessment, the user will be able to continue with the experiment. The COSHH assessment can be downloaded in PDF format by clicking on the appropriate hyperlink:



**Part**



## 10 Mbook Analytical

*This feature is included in the Mbook Analytical and Enterprise packages (it is not included in the Mbook Chemistry or Pro packages)*

Mbook Analytical is an Electronic Laboratory Notebook (ELN) specially designed for analytical chemists.

As an analytical chemist, you can manage your entire workflow digitally with Mbook Analytical, including:

- Setting up your laboratory.
- Organizing your team.
- Scheduling and processing your analytical experiments.
- Recording and reporting the results of your analytical experiments.
- Developing an end-to-end customer experience by allowing your customers to request your analytical services and get real-time feedback via Mbook Analytical.

This guide will show you how to get started with Mbook Analytical, which is achieved in three main steps:

- First, you will divide users in two categories: those who request your analytical services, or clients, and those who provide your analytical services, or analysts.
- You will then set up your laboratory by defining which analytical instruments are available to your analysts and which analytical services are available for your clients to request.
- Finally, you will understand the complete lifecycle of a request of analytical services, namely how analytical services are requested by a client, how they are processed by an analyst, and how their results are reported in Mbook Analytical.

### 10.1 Create an analyst

Open the Team panel with the administrator account by clicking on the Team button. There are two categories of users in Mbook Analytical: those who request analytical services, the clients, and those who provide analytical services, the analysts.

Name	Role
Analysis Manager	Analysis Manager
Analysis Manager2	Analysis Manager
Analyst1 Analyst1	Analyst
analyst10 analyst10	Analyst
Analyst2 Analyst2	Analyst
Analyst3 Analyst3	Analyst
Analyst4 Analyst4	Analyst
asda sadfas	Bench Chemist
Benc Test	Bench Chemist
Bench Chemist	Bench Chemist
Bench Lab	Bench Chemist

Analysts are organized into groups. You will find a list of groups on the left-hand side of the Team panel. Clicking on any group in the list will display a list of the analysts belonging to that group.

*Tip:* You can edit a group by double-clicking on it. You can configure analysis result visualization by clicking on the configuration button.

When creating new analysts in Mbook Analytical, you should consider two particular points:

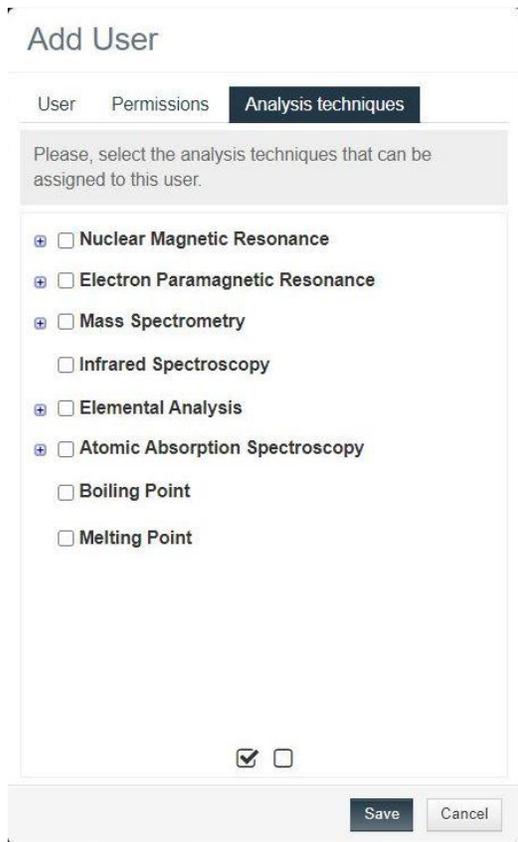
First, you should assign your new analyst a role. Roles provide analysts with different levels of access to data.

The main analyst roles in Mbook Analytical are listed below (from the highest to the lowest levels of access):

- Analysis managers, who can create users (both analysts and clients), set up the analytical laboratory (by defining the instruments and services available to analysts and clients, respectively), and manage the complete lifecycle of a request for analytical services.
- Basic analysts, who can only process analytical services requested by clients.

Second, the **analysis manager** needs to authorize the new analyst to process a limited set of analytical services. Each analytical service requested by a client (e.g., NMR-1H) belongs to a particular type (1H), which is categorized under a technique (NMR). Analysts can only process those analytical services that belong to a type they have been authorized to deal with.

On the left-hand side of the Team panel, click on the 'Add user' button to create a new analyst and given them a basic analyst role and authorization to process any kind of analytical service from the 'Analysis techniques' tab:

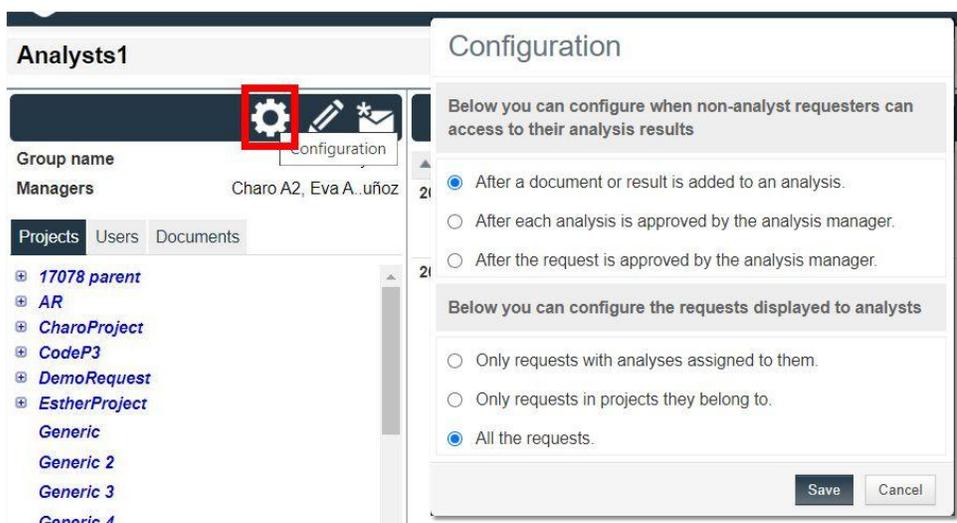


The screenshot shows a dialog box titled "Add User" with three tabs: "User", "Permissions", and "Analysis techniques". The "Analysis techniques" tab is active. Below the tabs, there is a grey instruction box: "Please, select the analysis techniques that can be assigned to this user." Below this, there is a list of analysis techniques, each with a plus icon in a circle and a checkbox:

- Nuclear Magnetic Resonance
- Electron Paramagnetic Resonance
- Mass Spectrometry
  - Infrared Spectroscopy
- Elemental Analysis
- Atomic Absorption Spectroscopy
  - Boiling Point
  - Melting Point

At the bottom of the list, there are two checkboxes: the first is checked, and the second is unchecked. At the bottom right of the dialog box, there are "Save" and "Cancel" buttons.

The Analysis Manager can configure the requests that can be seen by the analysts (by double-clicking on the group name and selecting the configuration button):

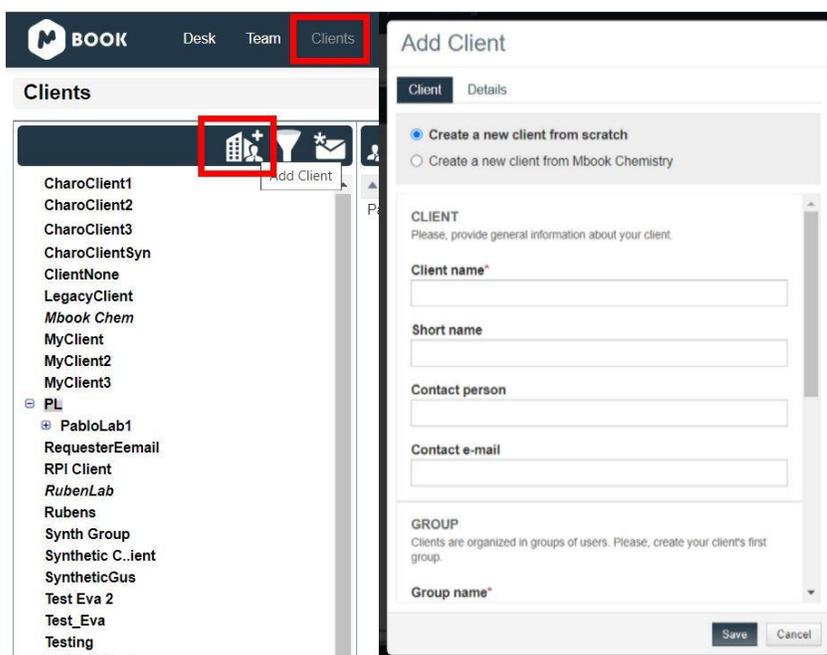


## 10.2 Create a client

Every organization (company or institution) that requests the analytical services you provide is considered to be client in Mbook Analytical.

You can divide a client into groups (which can be created by the administrator) and include a set of users, also known as analysis requesters, in each group.

Open the Clients panel (from an Analysis Manager account) and click on the 'Add client button' to create a new client. Then, include a group, and then add a user (a.k.a. Analysis Requester) to that group:



An Analysis Manager can create clients from synthetic groups with the check "Use Analytical Services" previously activated by a Group Manager. Only users within groups with "Request Author" permissions (also given by a Group Manager) will have access to the Analytical tab.

**Add Client**

**Client** Details

Create a new client from scratch

Create a new client from Mbook Chemistry

**GROUP**  
Clients are organized in groups of users. Please, select a group of users from Mbook Chemistry. This will be your client's first group.

Analytical

**LINKED GROUPS**  
The following groups share some users with the one you have selected above. You can add them to your client by checking their names on the list.

Analyst Group-2

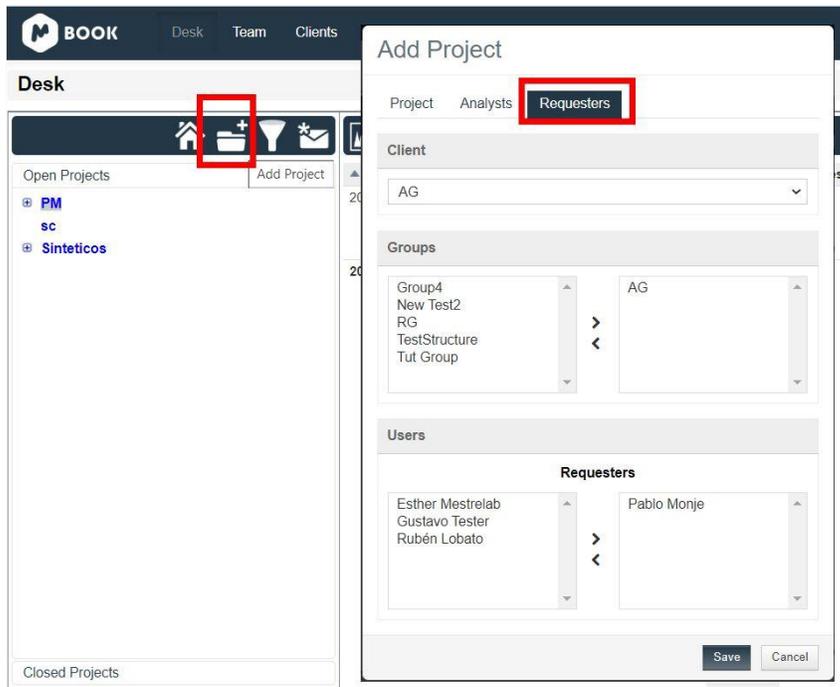
**CLIENT**  
Please, provide general information about your client.

**Client name\***  
Analytical Group Eva

**Short name**  
Analytical

Save Cancel

You will now need to create a new project (from the Desk panel) for the newly created client:



Ensure that the example user you created above belongs to a group with permissions to use 'Mbook Analytical':

### Edit Group

**Group name\***

**Short name**

**Description**

**Managers**

Eva group manager 3	>	Rubén Lobato
Pepe Carvalho	<	Esther Mestrelab
Santi Dominguez		Pablo Monje
Jean Grey		Gustavo Tester
Helsinn Manager		
Tutorial Group Manager		
Helsinn Manager2		

**Users**

Blabla Acurrar	>	Pablo Benchy
Helsinn Bench	<	GuestUser GuestUser
User2 Bench		Pepe Lobato
Charo Bench		Benchy User
Esther Bench		Benchy2 User
Tutorial Bench		
Rubén Bench		

Use Mbook Analytical

The group manager will also need to give "requester author permissions" to each user within that group:

**Edit User**

User Permissions

Experiment witness

**Experiment witness**  
The user can be a witness of other experiments within his/her group.

Inventory permissions

**Inventory manager**  
The user can add new compound bottles. He can also manage locations in the Stockroom if Admin user allows it.

**Structure manager**  
The user can approve modifications in compound structures and properties.

**Safety manager**  
The user can manage safety information related to compounds and bottles.

Analytical request permissions

**Request author**  
The user can make analytical requests.

Save Cancel

Once you are done, you will find your new client and the group it contains on the left-hand side of the Clients panel. Click on the plus button next to the group name to see a list of associated users: the user you have just created should be in this list.

### 10.3 Create an instrument

You can use the Instruments panel to define which analytical instruments are available for use by your analysts. In Mbook Analytical, each instrument (e.g., a 200 MHz NMR Spectrometer) belongs to a particular type (NMR Spectrometer), which is categorized according to its associated technique (NMR).

You will find a list of analytical techniques on the left-hand side of the Instruments panel:

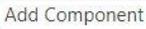
**MBOOK** Desk Team Clients Search Inventory Laboratory Message

Laboratory / **Instruments**

Instruments Components

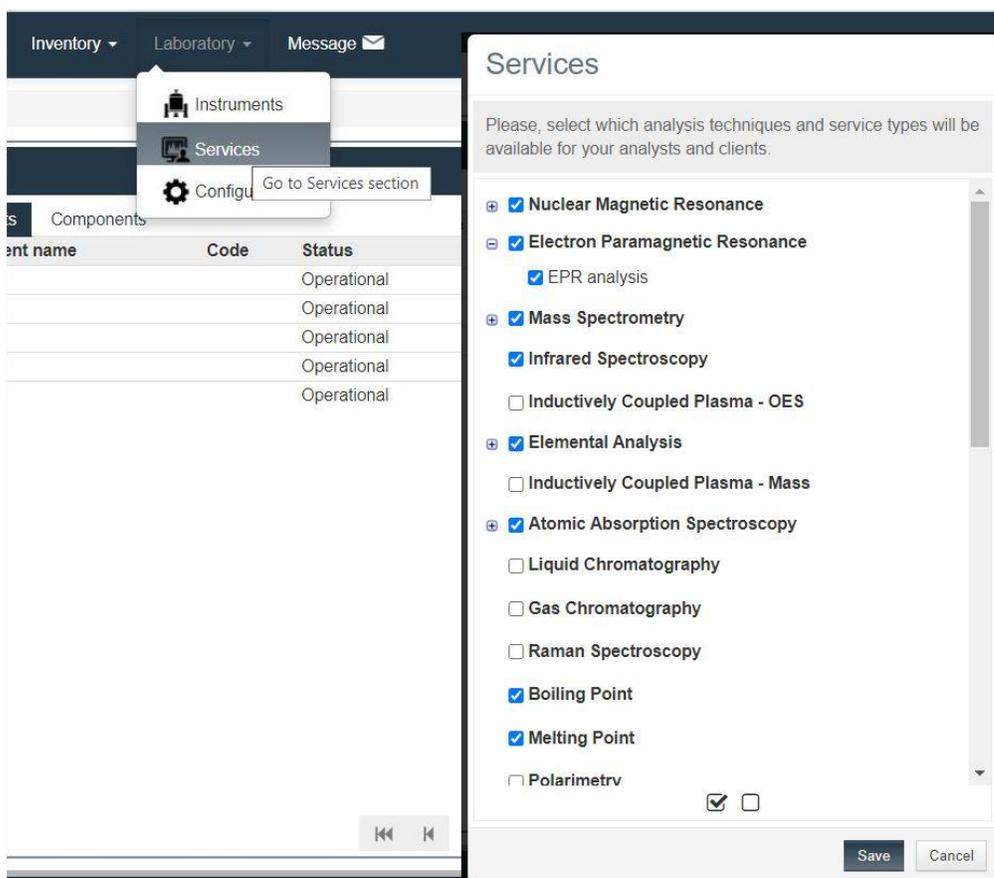
Instrument name	Code	Status	Technique
1050 MHz		Operational	NMR
255 MHz		Operational	NMR
500MHz		Operational	NMR
600MHz		Operational	NMR
750MHz		Operational	NMR

Clicking on any instrument will allow you to change its status and add components:

1050 MHz	
	
Name	1050 M
Code	
Status	Operational
Type	NMR Spectro..eter
Vendor	
Model	

## 10.4 Define your service offer

Select Services from the Laboratory scroll down menu:



The screenshot shows the 'Services' dialog box. The dialog title is 'Services'. Below the title, there is a message: 'Please, select which analysis techniques and service types will be available for your analysts and clients.' The dialog contains a list of service types, each with a checkbox:

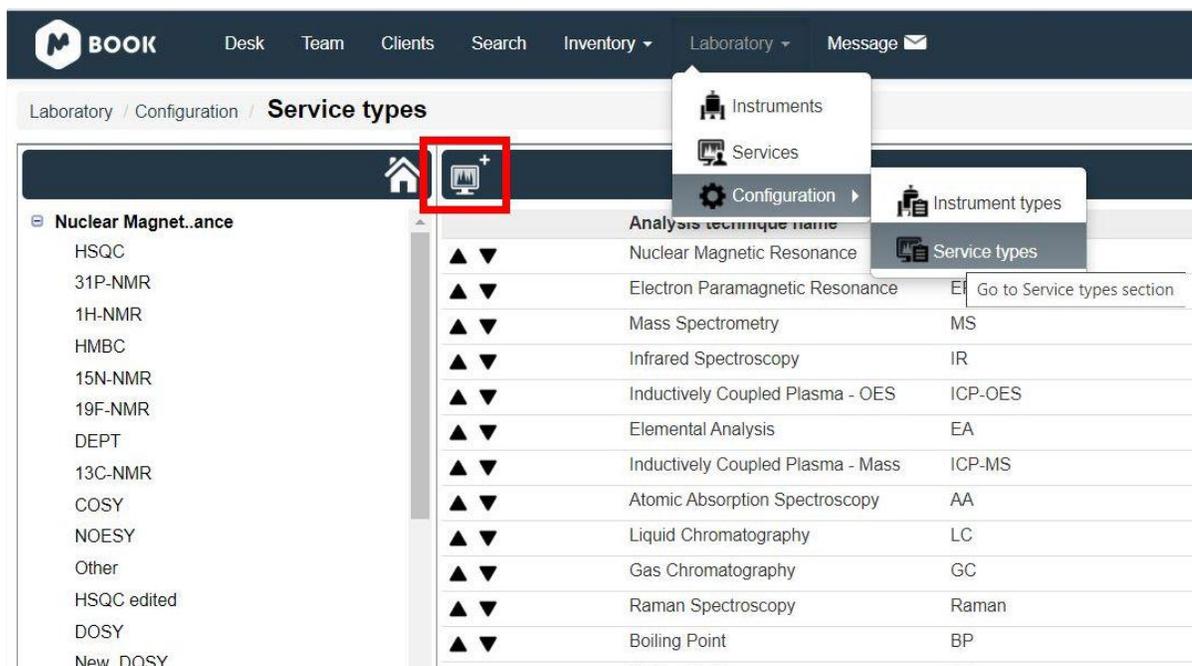
- Nuclear Magnetic Resonance
- Electron Paramagnetic Resonance
  - EPR analysis
- Mass Spectrometry
  - Infrared Spectroscopy
  - Inductively Coupled Plasma - OES
- Elemental Analysis
  - Inductively Coupled Plasma - Mass
- Atomic Absorption Spectroscopy
  - Liquid Chromatography
  - Gas Chromatography
  - Raman Spectroscopy
  - Boiling Point
  - Melting Point
  - Polarimetr

At the bottom right of the dialog, there are 'Save' and 'Cancel' buttons.

You can use the Services dialog to define the range of analytical services that your clients can request from your laboratory. In this dialog, you will find a list of service types organized by analytical technique. As you may remember, each analytical service that can be requested by a client (e.g., NMR - 1H) belongs to a particular type (1H), which is categorized according to technique (NMR).

In the Services dialog, select the service types that your laboratory can provide. Your clients will only be able to request analytical services belonging to one of those selected types.

You can add new analysis techniques by selecting 'Configuration/Service Types' (from the Laboratory scroll down menu) and clicking on the 'Add Analysis technique' button:



The screenshot shows the MBOOK interface with the 'Service types' configuration page. The 'Add Analysis technique' button is highlighted with a red box. A dropdown menu is open, showing options like 'Instruments', 'Services', 'Configuration', 'Instrument types', and 'Service types'. The 'Service types' option is selected, and a 'Go to Service types section' link is visible.

Analysis technique name	
Nuclear Magnetic Resonance	
Electron Paramagnetic Resonance	EPR
Mass Spectrometry	MS
Infrared Spectroscopy	IR
Inductively Coupled Plasma - OES	ICP-OES
Elemental Analysis	EA
Inductively Coupled Plasma - Mass	ICP-MS
Atomic Absorption Spectroscopy	AA
Liquid Chromatography	LC
Gas Chromatography	GC
Raman Spectroscopy	Raman
Boiling Point	BP

## 10.5 How to request a service

The Analysis Manager user can easily request a service from the Desk panel by clicking on the 'create analytical request' button:

The screenshot shows the 'Analytical request' form in the MBOOK interface. The 'Create Analytical request' button is highlighted with a red box in the top navigation bar. The form includes sections for General Information, Health/Safety information, Specific precautions, Waste disposal, and Request information.

Any synthetic client with an "Analysis requester" role will be able to request a service from the experiment panel or from the stoichiometric table header:

The screenshot shows the 'Create Analytical request' form in the MBOOK interface. The 'Create Analytical request' button is highlighted with a red box in the top navigation bar. The form includes sections for General Information, Health/Safety information, Specific precautions, Waste disposal, and Request information.

Below the reaction scheme, a table lists the compounds and their properties:

Compound	MW	W g	Moles mol	Limiting	Equiv	Conc M	Vol mL	Density (g/mL)	Pur (%)	Yield (%)
$C_4H_9BrO_2$ (R1)	169.017	1.000	0.006	<input checked="" type="checkbox"/>			0.699	1.430	100.0	
n-BuLi (R2)	64.054	0.758	0.012	<input type="checkbox"/>	1.600		7.4		100.0	
Heptane (S1)	100.202				0.237		25.3	0.684	99.0	
$C_9H_{20}O_4$ (P1)	192.255	2.000	0.010						100.0	87.9

It will also be possible to request a service from the 'Inventory/Compound DB/Analytical Request' menu (after having selected the desired compound):

The screenshot shows the MBOOK interface for the compound (-)-(1R)-Menthyl (S)-p-toluenesulfinate. The 'Inventory' menu is highlighted in red. The 'Analytical requests' tab is selected, and the 'Create Analytical request' button is also highlighted in red. The table below shows the details of the requests.

Code	Status	Completeness
2020-01-02 17:59	New	0 / 3
2019-12-12 17:45	New	0 / 2

Any analytical client with an "Analysis requester" role will be also able to request a service from the Desk panel by clicking on the 'create analytical request' button:

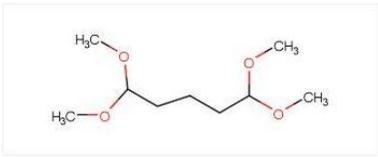
The screenshot shows the MBOOK interface for the 'Desk' panel. The 'Create Analytical request' button is highlighted with a red box. The table below shows the details of the request.

Code	Status	Completeness	Reference	Project	User
2021-07-13 11:03	New	0 / 3	New_Test	Hammen	Hammen Corp

By clicking on the appropriate button, the 'Analytical Request' form will be displayed to allow you to include information about the sample:

### Analytical request

Sample **Analyses**

General information		Health/Safety information		
		Yes	No	Unknown
<b>Reference*</b>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Bar code</b>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Quantity</b>	<input type="text"/> g	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Label</b>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Description</b>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Molecular formula</b>	<input type="text"/> C <sub>9</sub> H <sub>20</sub> O <sub>4</sub>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<i>Mol. weight</i>	<input type="text"/> 192.255	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		<b>Specific precautions</b>		
		<input type="text"/>		
		<b>Waste disposal</b>		
		<input type="text"/> Select		
Request information				
<b>Project*</b>				
<input type="text"/> NewP				
<b>Comment</b>				
<input type="text"/>				

and to select the analysis that you want to request:

Analytical request

Sample **Analyses**

Techniques	Experiments
NMR <b>4</b>	HSQC <b>1</b> +
EPR	31P +
MS <b>1</b>	1H <b>1</b> +
IR +	HMBC <b>1</b> +
EA	15N +
AA	19F +
BP +	DEPT +
MP +	13C <b>1</b> +
	COSY +
	NOESY +
	Other +
	HSQC edited +
	DOSY +

1H (1) X

Solvents

CDCl3 X

Add solvent...

Further information

Save Cancel

When adding one or more solvents to an analysis, the "Propagate" button will be displayed. By clicking on this (and accepting the warning dialog that appears), the solvent (or solvents) will be automatically propagated when adding a new analysis that uses the same technique.

### Analytical request

Sample **Analyses**

Techniques	Experiments
NMR <b>9</b>	HSQC <b>1</b> +
EPR	31P <b>1</b> +
MS	1H <b>1</b> +
IR +	HMBC <b>1</b> +
EA	15N <b>1</b> +
AA	19F <b>1</b> +
BP +	DEPT <b>1</b> +
MP +	13C <b>1</b> +
NMR	COSY <b>1</b> +

1H (1) X

Solvents

CDCl3 X

Do you want to use these solvents in all 'NMR' analyses? (Important: Solvents in existing analyses will be overwritten.)

ACCEPT CANCEL

Add solvent... **Propagate...**

Further information

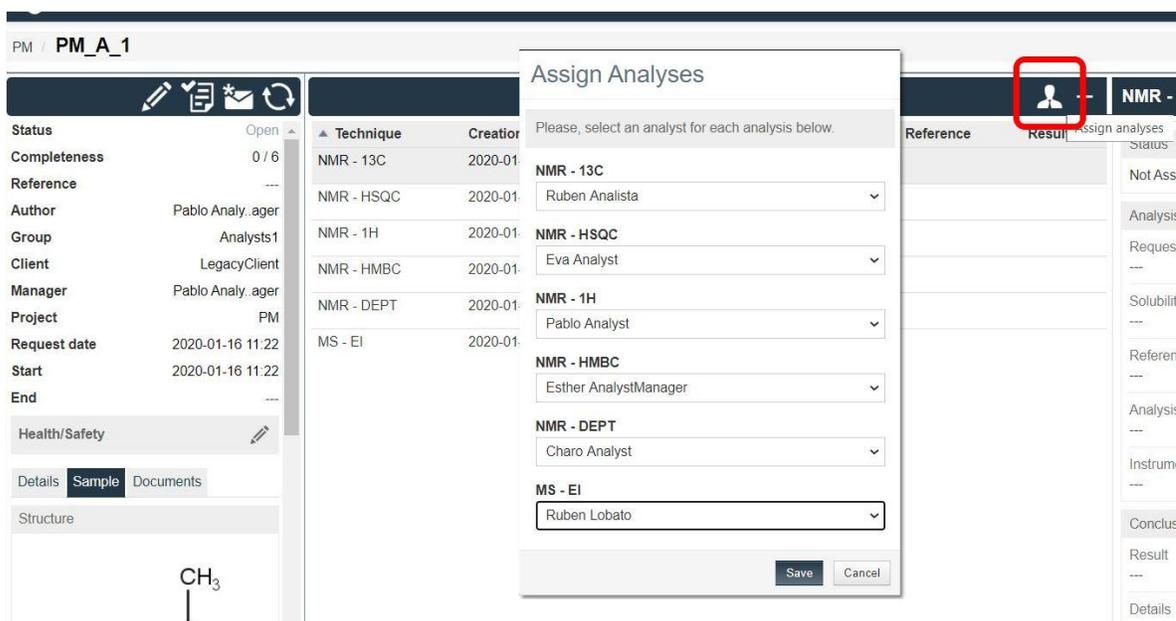
The request will appear under the Analytical menu. From this dialog box, you will also be able to search by request, sample, experiment, or compound:

Date	Code	Status	Completeness	Sample Ref.	Project	Author	Structure
2020-05-29 16:20		New	0 / 6	Bla	NewP	Pablo Monje	<chem>CC1=CC=C(C=C1)C(=O)O</chem>
2020-05-29 16:18		New	0 / 5	Sample1	NewP	Pablo Monje	<chem>CC1=CC=C(C=C1)C(=O)O</chem>
2020-02-11 10:50		New	0 / 2	EastBottle		Gustavo Tester	<chem>C1=CC=C(C=C1)C(=O)O</chem>
2020-02-11 10:47		New	0 / 2	WithoutBottle		Gustavo Tester	<chem>C1=CC=C(C=C1)C(=O)O</chem>
2020-01-29 16:57	p-17078 C_6	Completed	1 / 1	Test 17081		Eva Muñoz	<chem>C1=CC=C(C=C1)C(=O)O</chem>
2020-01-22 12:20		New	0 / 1	Test 17408		Eva Muñoz	<chem>C1=CC=C(C=C1)C(=O)O</chem>
2020-01-20 14:20		New	0 / 4	r		Eva Muñoz	<chem>C1=CC=C(C=C1)C(=O)O</chem>

The Analysis Manager can create requests from the 'Inventory/Compound DB' tab, and from 'Desk'.

When an Analysis Manager receives a request, they will need to assign the request to a project and change the status to 'open' by clicking on the edit button:

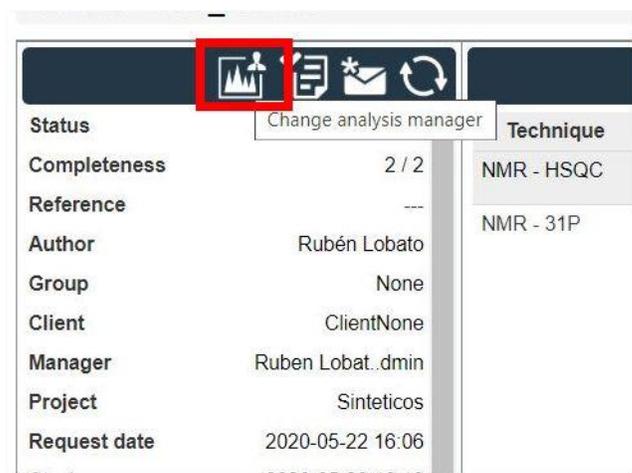
The Analysis Manager will also be able to assign each of the tests to other analysts:



Clicking on the plus button will allow you to add additional analyses to the existing request:



The Analysis Manager associated with a particular request can be changed by using this button from the 'request panel':

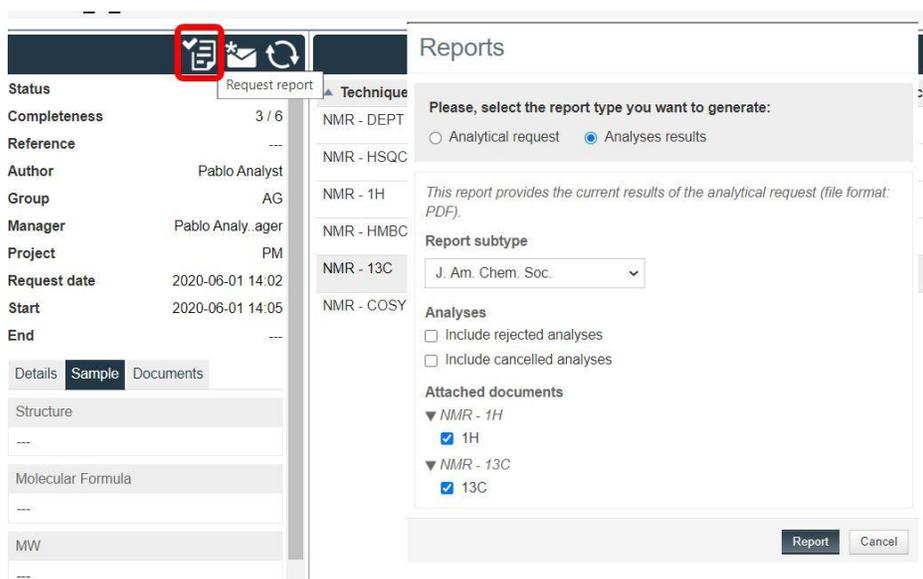


The analyst could edit the status of the request by clicking on the 'Edit request' button (clicking on the bin icon will cancel the request):

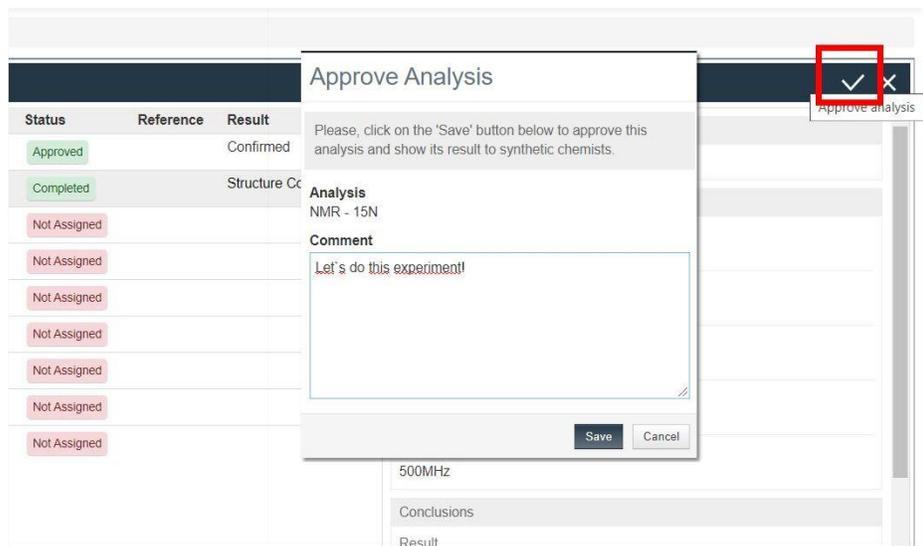
Technique	Creation date	Analyst	Status	Reference
NMR - HSQC	2020-06-01 14:10	Pablo Analyst	Assigned	
NMR - 1H	2020-06-01 14:10	Pablo Analyst	Assigned	
NMR - 13C	2020-06-01 14:10	Pablo Analyst	Assigned	
NMR - HMBC	2020-06-01 14:10	Pablo Analyst	Assigned	
NMR - DEPT	2020-06-01 14:10	Pablo Analyst	Assigned	
NMR - COSY	2020-06-01 14:10	Pablo Analyst	Assigned	

Scrolling down the panel will allow you to attach documents to the results:

Clicking on the 'request report' button will generate a PDF with the 'analytical request' or 'analyses results':



The Analysis Manager can approve or reject an analysis and include a comment after clicking the appropriate button:



Once the request is approved by the Analysis Manager, a confirmation email will be sent to the request originator.

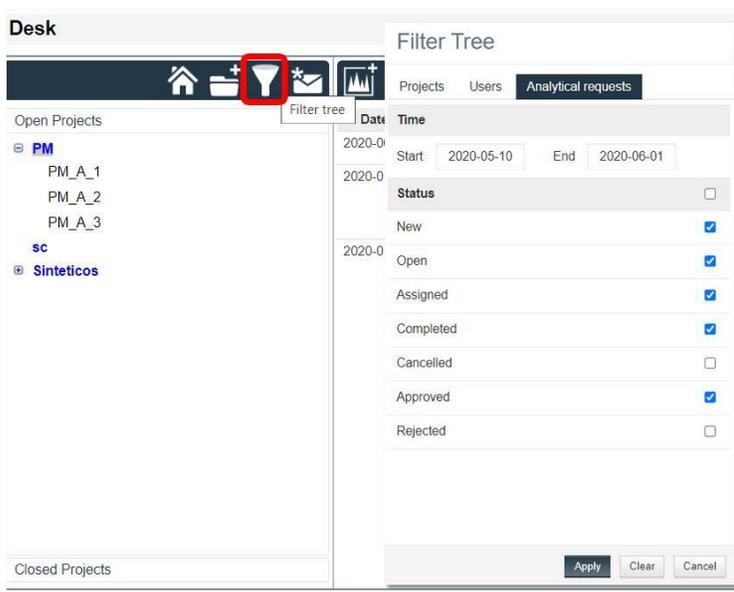
A chemistry user can decide to publish (or not) their analytical results under the process tab of their experiments by clicking on the button to Publish their analytical documents (Option available under experiment or request tabs):

## 10.6 Search Requests

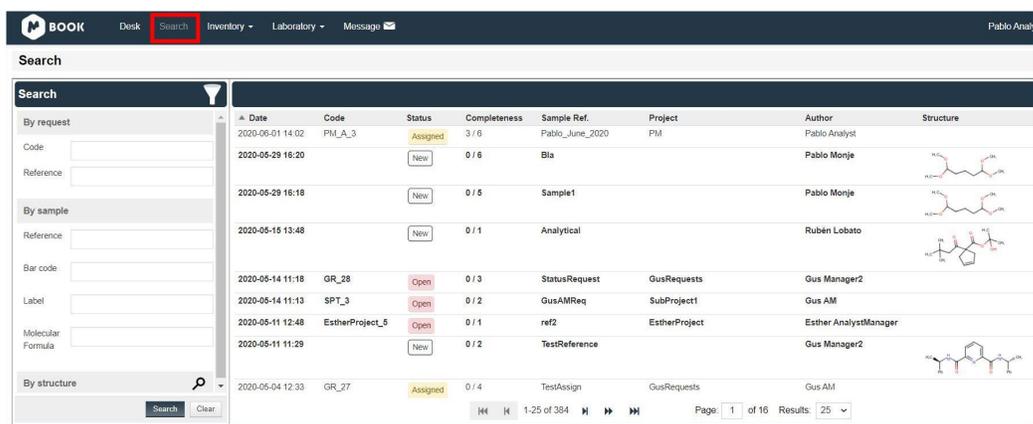
The Analysis Manager can use the Desk panel to display the requests for each project. Clicking on any of the projects will display the requests belonging to that particular project:

Date	Code	Status	Completeness	Sample Ref.	Project	Experiment	Author	Structure
2020-06-01 14:02	PM_A_3	Assigned	3 / 6	Pablo_June_2020	PM		Pablo Analyst	
2020-01-16 11:23	PM_A_2	Assigned	0 / 4	PM2	PM		Pablo Analyst/Manager	<chem>CC(=O)c1ccc(O)cc1</chem>
2020-01-16 11:22	PM_A_1	Assigned	0 / 6	PM1	PM		Pablo Analyst/Manager	<chem>CC(=O)c1ccc(O)cc1</chem>

You can use the filter tree from the Desk panel to filter your analytical requests by time period or by status:



You can also use the Search tab to search the requests according to different fields:



You can configure the analysis result visualization by double clicking on the group name and selecting the configuration button:

**Analysts1**

Group name: [Redacted]

Managers: Charo A2, Eva A. Muñoz

Projects | Users | Documents

- 17078 parent
- AR
- CharoProject
- CodeP3
- DemoRequest
- EstherProject
- Generic
- Generic 2
- Generic 3
- Generic 4

**Configuration**

Below you can configure when non-analyst requesters can access to their analysis results

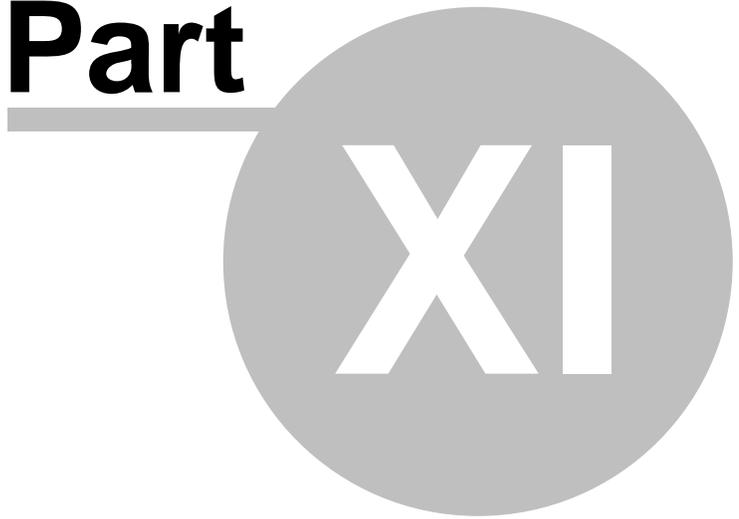
- After a document or result is added to an analysis.
- After each analysis is approved by the analysis manager.
- After the request is approved by the analysis manager.

Below you can configure the requests displayed to analysts

- Only requests with analyses assigned to them.
- Only requests in projects they belong to.
- All the requests.

Save Cancel

**Part**



## 11 Further information

More information: <http://resources.mestrelab.com/category/resources-by-product/resources-mbook-resources-by-product/>

Support: <http://mestrelab.com/learn-support/>

FAQs: <https://resources.mestrelab.com/mbook-faqs/>

Download this manual in pdf: <https://mestrelab.com/pdf/manuals/mbook/Mbook-3-0-Manual.pdf>

Thank you!

Thank you for reading this manual, and for purchasing this release version of Mbook. We will be very keen to read your feedback on the application, to hear about any bugs you may find and to also listen to any additional ideas or suggestions you may have.

Please remember that you can send all those, and any queries about the software, or requests for help, to:

[support@mestrelab.com](mailto:support@mestrelab.com)

Keep checking our web site ([www.mestrelab.com](http://www.mestrelab.com)) for additional information on our range of software packages, and for news on our company.