IKA Werke GmbH & Co. KG

CalWin

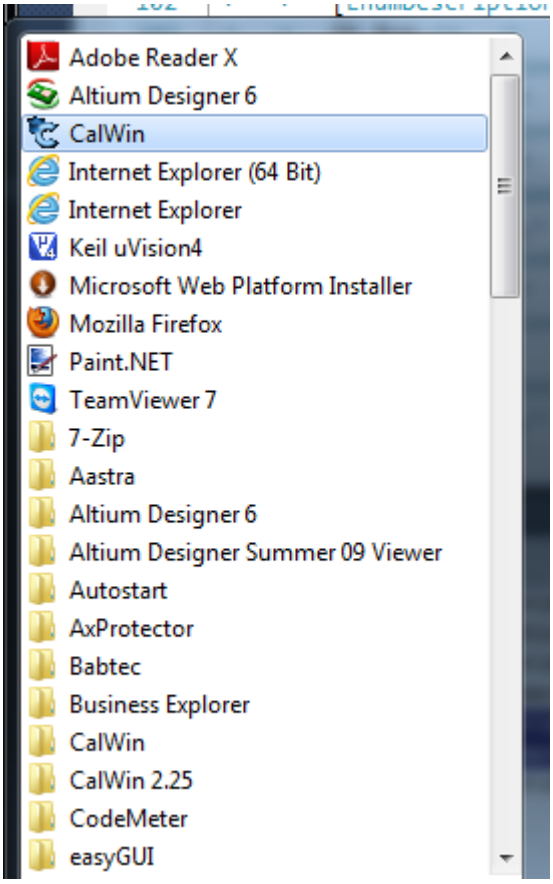
Overview

JKU
14.07.2014

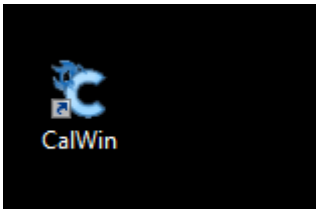
Content

1 Starting CalWin

After you have successfully installed CalWin on your PC, you can start it from the Windows Start Menu



Or from the desktop



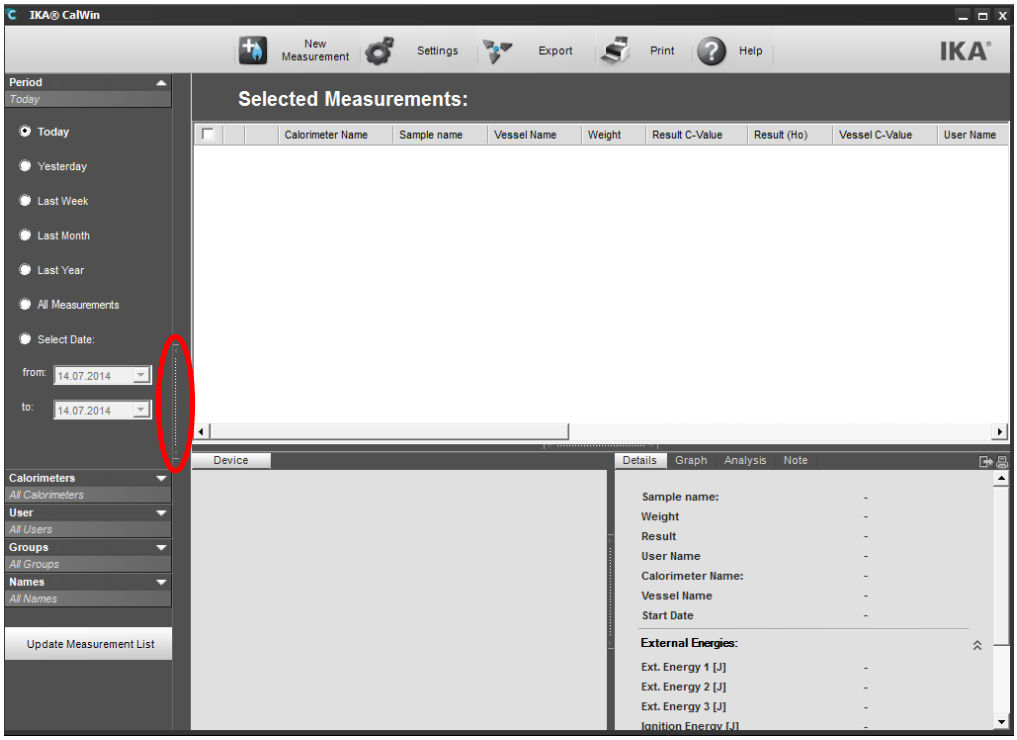
2 User interface – basics

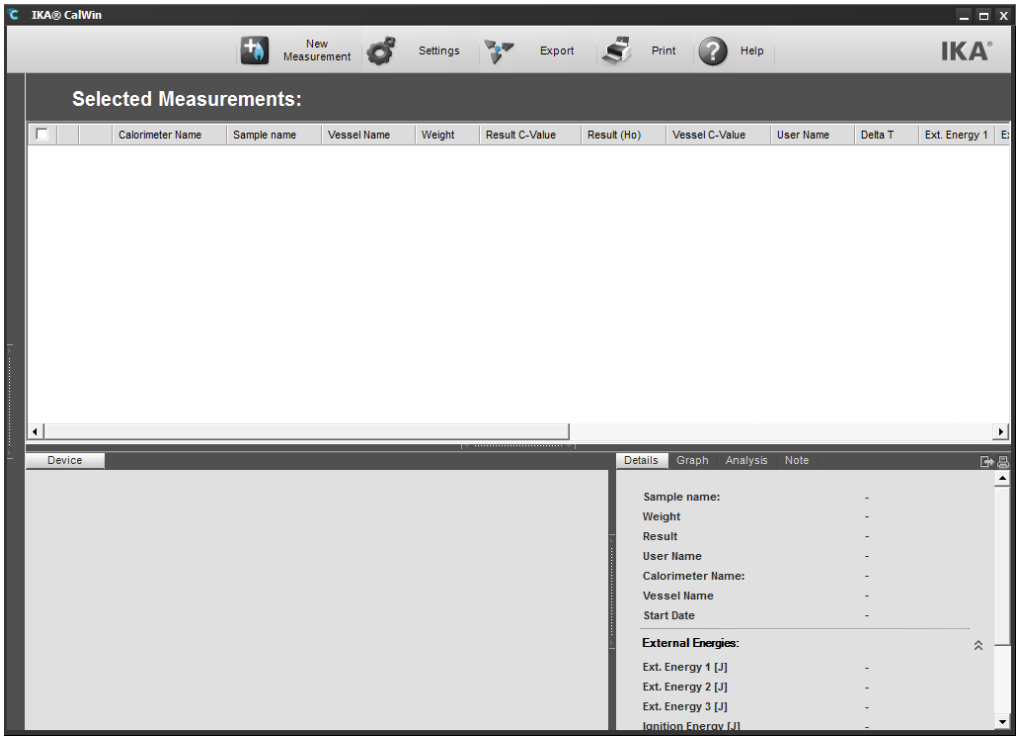
2.1 Hide and expand areas

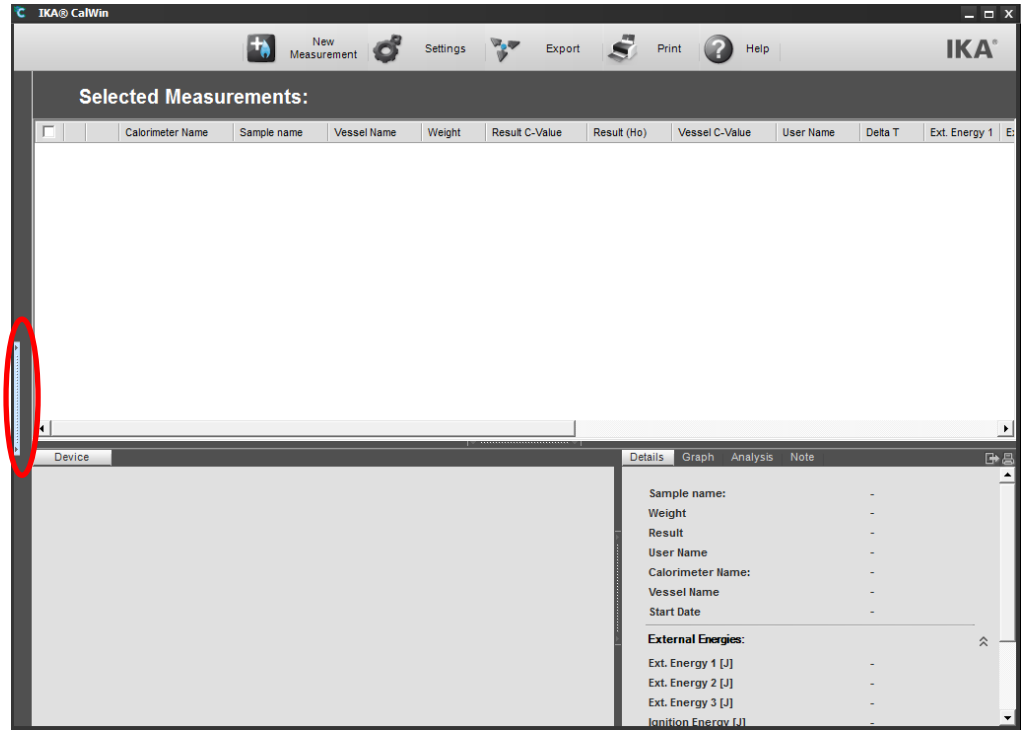
The areas of the main screen can be adjusted by the user.

2.1.1 Vertical splitters

You can press on the left splitter to hide the search area of the main screen

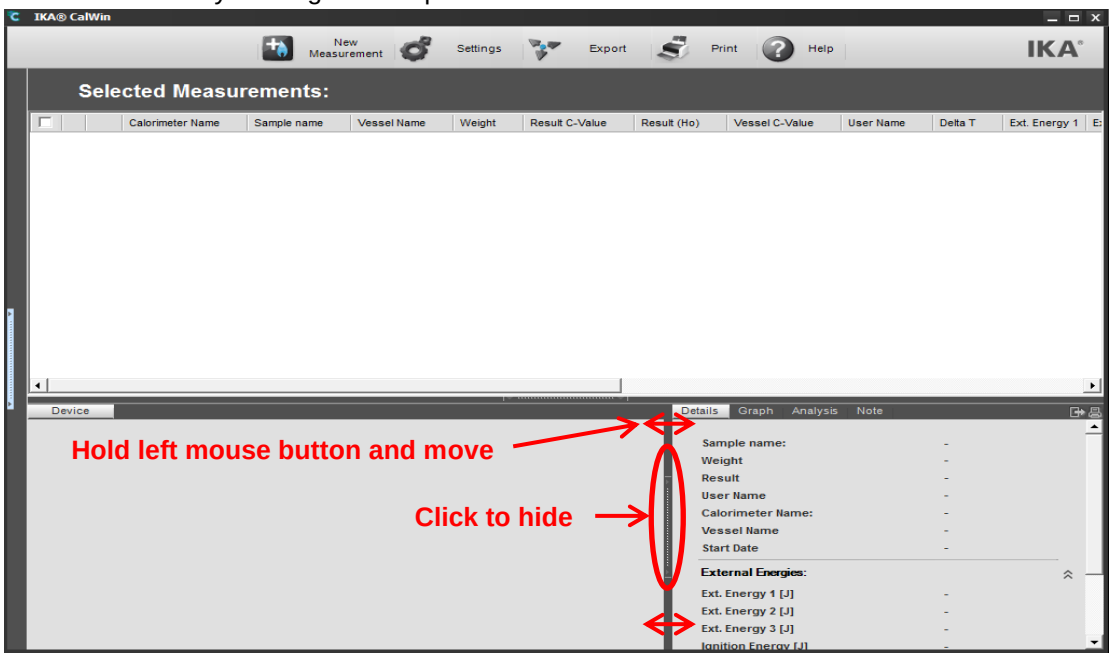


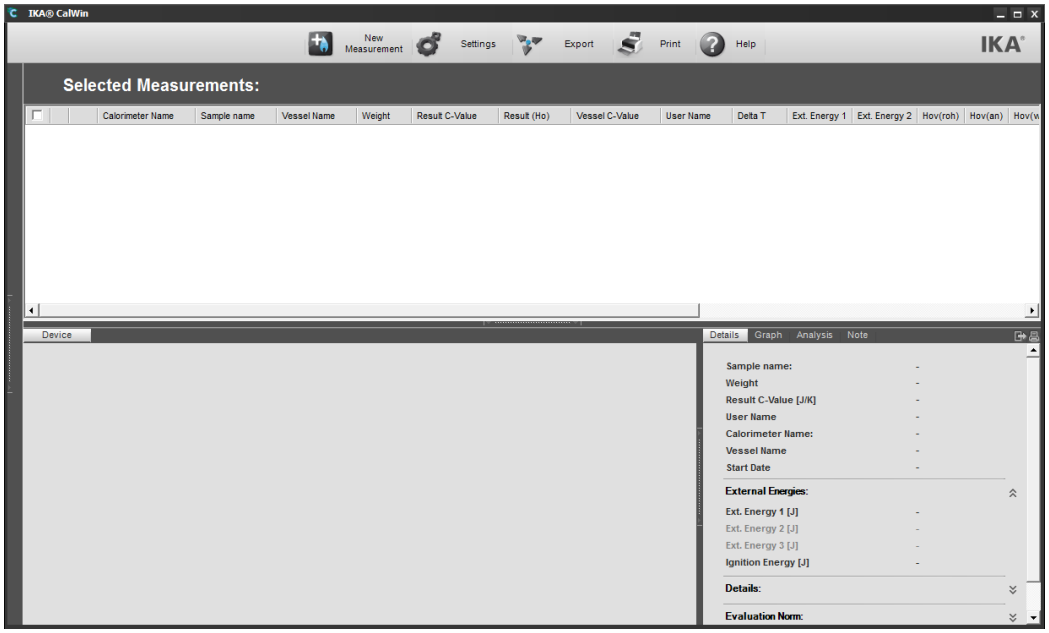


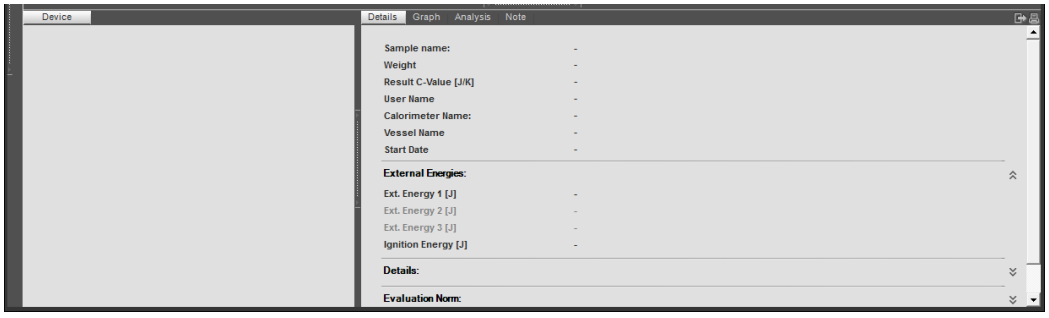


If you want to reshow the search area, press on the splitter to expand.

The width other vertical splitter can be adjusted by grapping the splitter (left mouse click) and move to the desired width or by clicking on the splitter to hide.

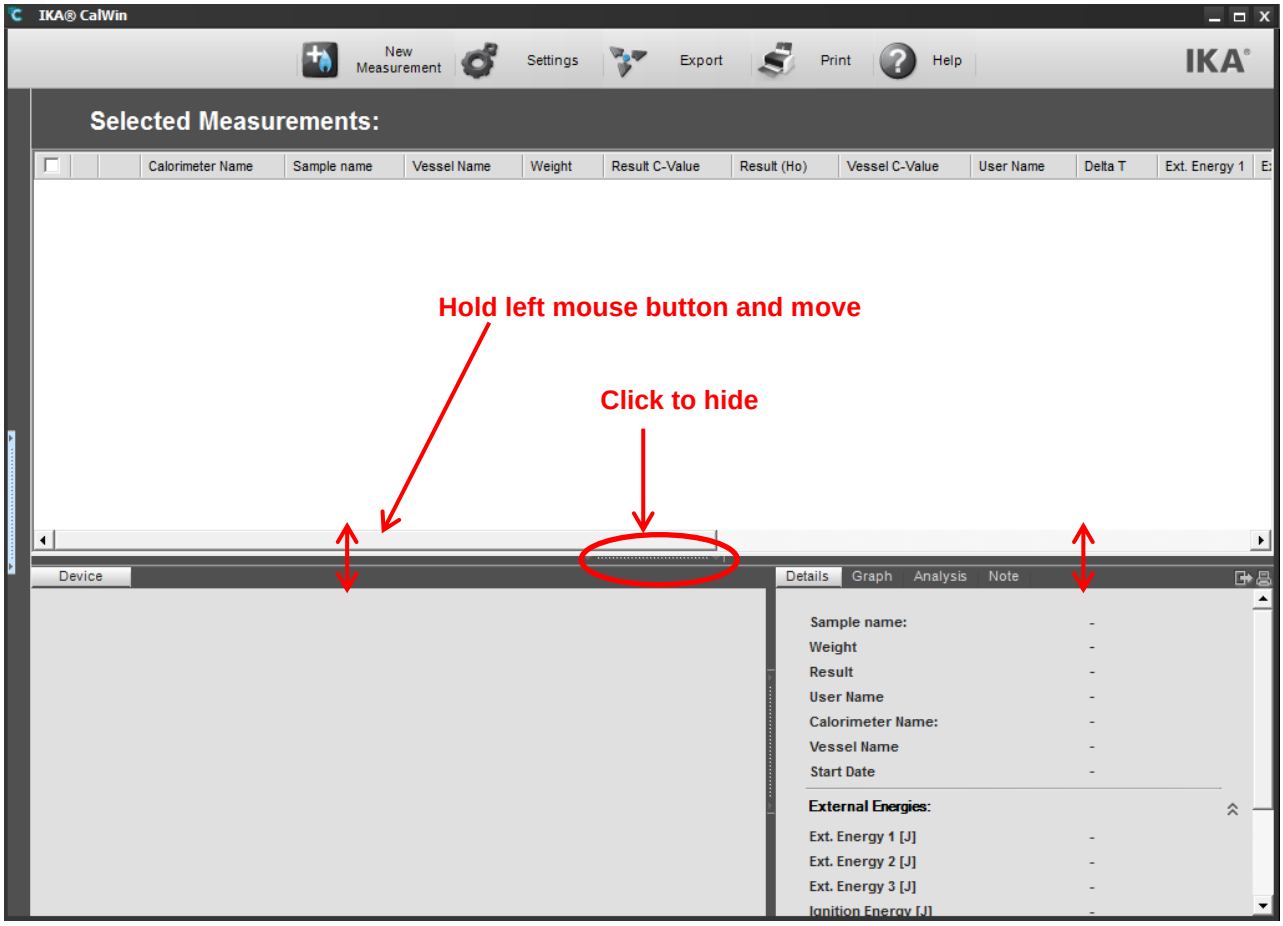


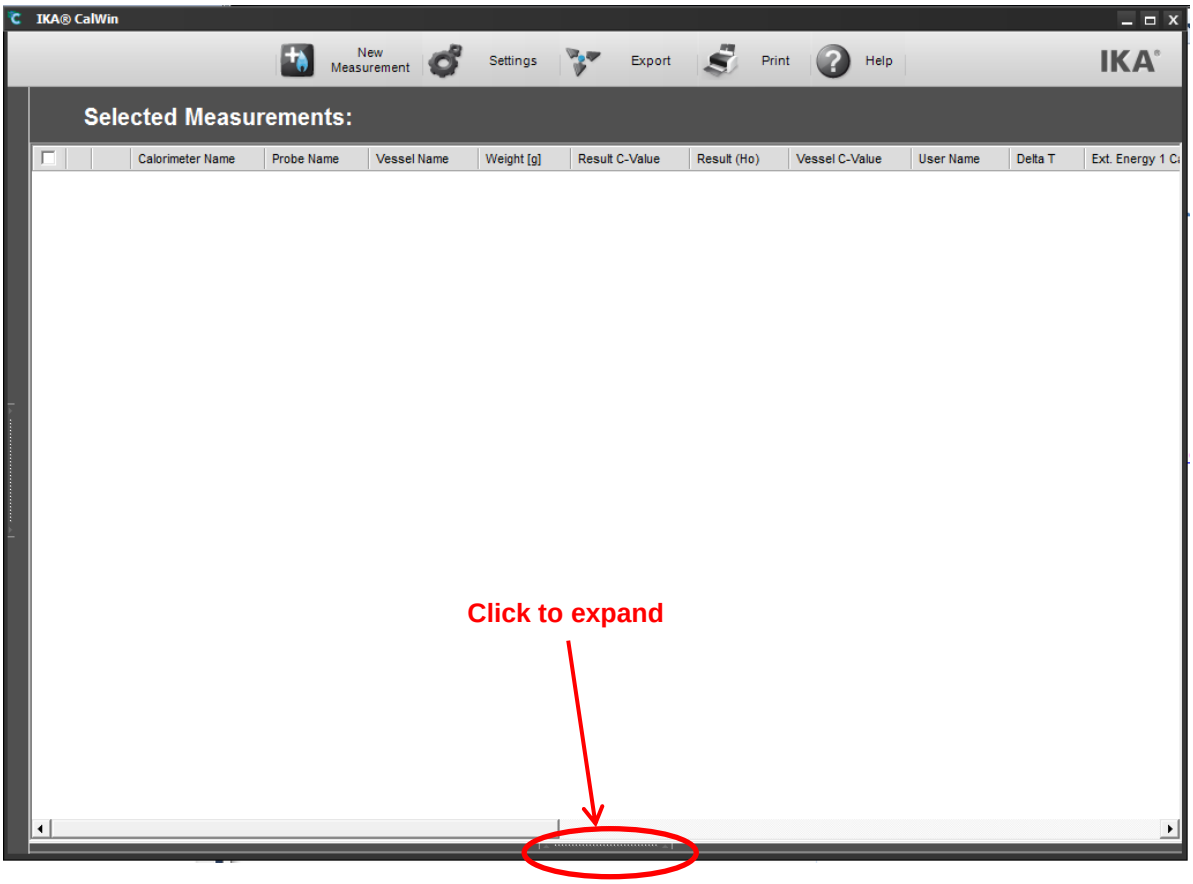

IKA® CalWin
New Measurement
Settings
Export
Print
Help
IKA
Selected Measurements:
Calorimeter Name
Sample name
Vessel Name
Weight
Result C-Value
Result (Ho)
Vessel C-Value
User Name
Delta T
Ext. Energy 1
Ext. Energy 2
Hov(roh)
Hov(an)
Device
Details
Graph
Analysis
Note
Sample name:
Weight
Result C-Value [J/K]
User Name
Calorimeter Name:
Vessel Name
Start Date
External Energies:
Ext. Energy 1 [J]
Ext. Energy 2 [J]
Ext. Energy 3 [J]
Ignition Energy [J]
Details:
Evaluation Norm:


Device
Details
Graph
Analysis
Note
Sample name:
Weight
Result C-Value [J/K]
User Name
Calorimeter Name:
Vessel Name
Start Date
External Energies:
Ext. Energy 1 [J]
Ext. Energy 2 [J]
Ext. Energy 3 [J]
Ignition Energy [J]
Details:
Evaluation Norm:


Device
Click to expand

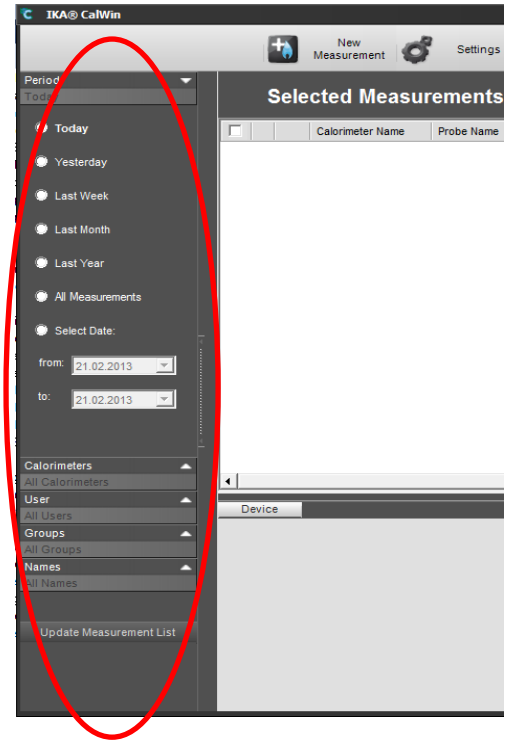
2.1.2 Horizontal splitter





2.2 Search filter

To restrict the shown measurements in the “Selected Measurements” area of the main list it is possible to define one or more search criteria for a desired search.

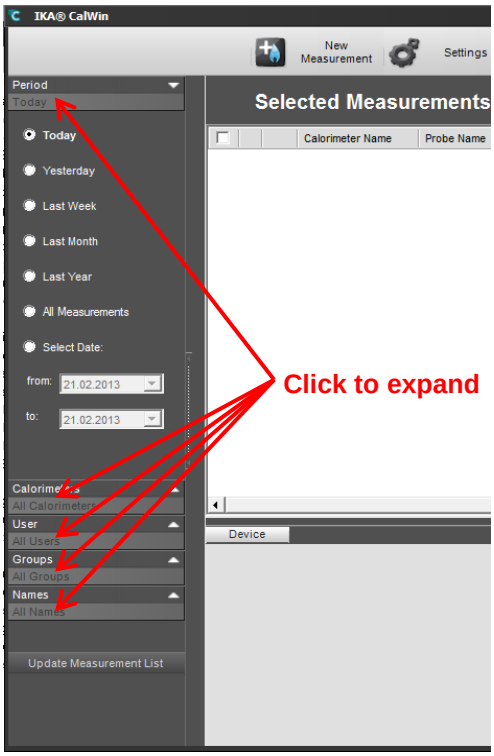


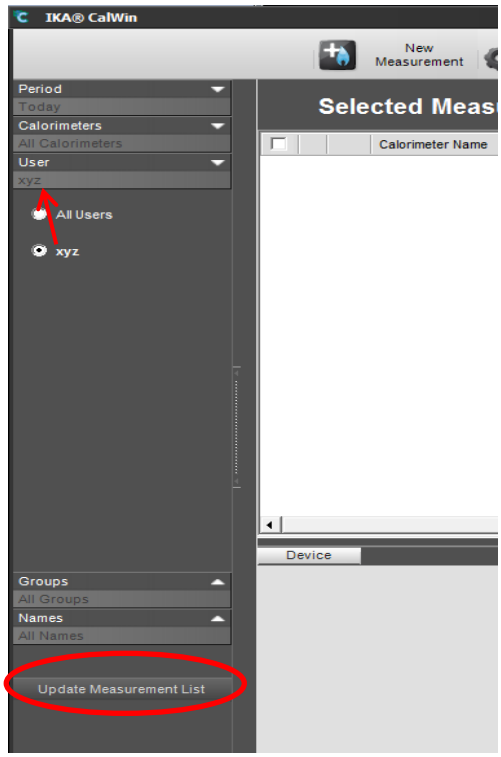
The following search example should show the possibility of a search:

- All measurements performed ***yesterday*** with ***calorimeter xxx*** from ***user xxx*** that are in the ***group xxx*** and have the substring ***calib*** in their sample name.

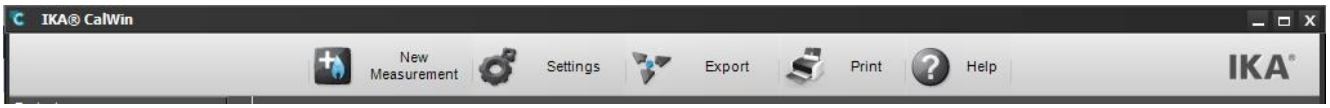
2.2.1 Selecting or defining a search criteria

Press on a button to expand the search tree and select the criteria by radio button. The selected value is shown in the button. To start the search, press on the “Update Measurement List” button.

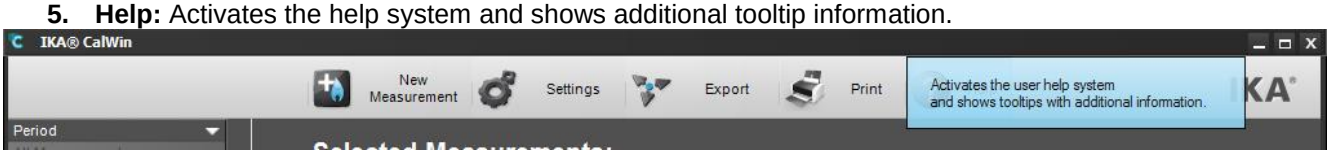




2.3 Main menu buttons



1. **New Measurement:** Opens the dialog for setting up a new measurement.
2. **Settings:** Opens the dialog for the system settings
3. **Export:** Performs an EXCEL export of the currently selected measurements with all the columns that are visible. To change the visible columns to get more information in the EXCEL file, read the chapter 5.4.1 about setting up the visible columns.
4. **Print:** Opens the printer setup dialog to print the currently selected measurements with their visible columns.
5. **Help:** Activates the help system and shows additional tooltip information.



Press the “Help” button again to deactivate this option.
INFORMATION: If a button is hidden by its tooltip, click on it and the tooltip closes.

The help system is currently not implemented for the whole application! At the moment it only includes the items on the main screen!

3 CalWin first steps

When opening CalWin for the first time the following screen appears to select the data storage process.

Here you can select between:

- Storing locally in a XML file. This method is recommended for most users!
- Using a SQL Database

3.1.1 XML

Stores the data (measurements, vessels, c-values, users,...) in a structured file in the user's documents folder.

3.1.2 SQL

Uses the Microsoft SQL Server to store the data. Therefore the Microsoft SQL Server 2008 R2 must be installed. The advantage of the SQL server is that it can be installed locally on your PC or on a network server. For a detailed installation description please read the following document:

SQL Server 2008 for CalWin.pdf

The setup process can be found in this document:

Setup Database.pdf

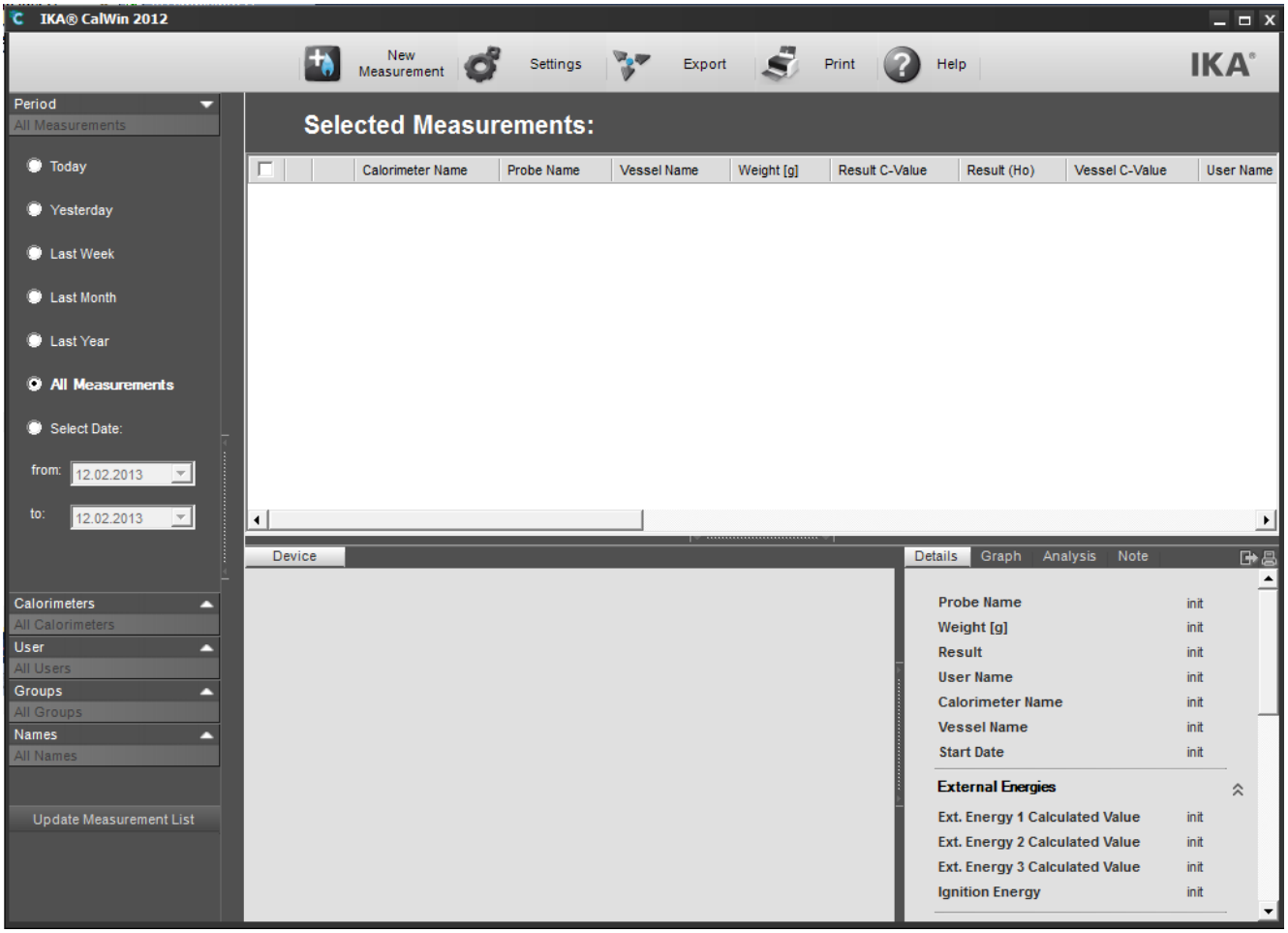
You can find these documents included on the DVD.

3.2 Splash Screen

The splash screen displays the software version and the loading process. As soon as all modules are fully loaded, CalWin's main screen is shown.

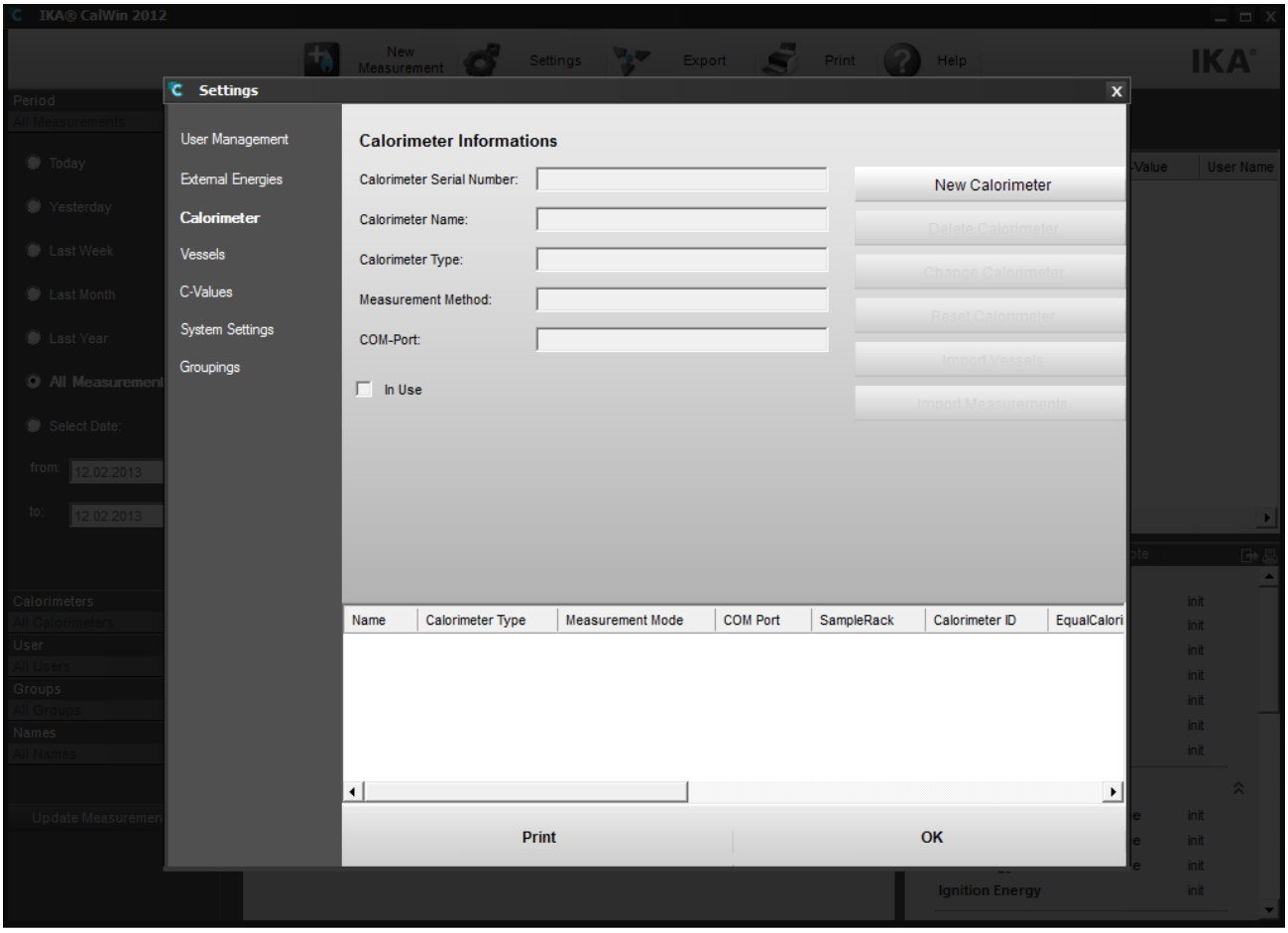
3.3 Initial Main Screen

The first step to start working with CalWin is to setup a new calorimeter and its vessel(s). Afterwards you can create a new measurement and let it run.

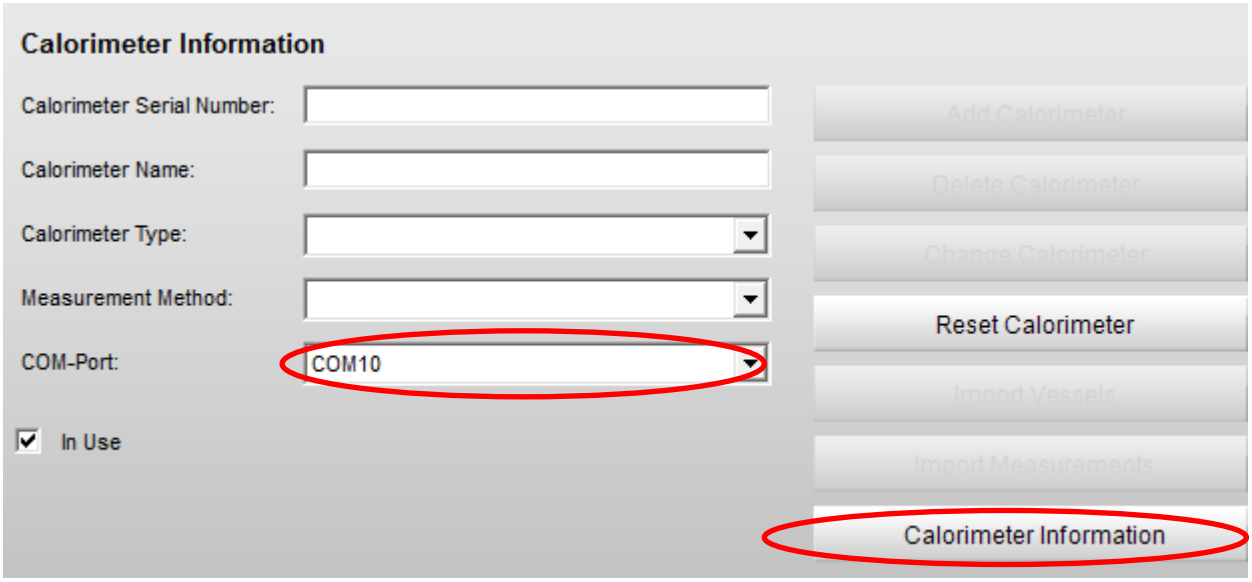


3.4 Setup a calorimeter (C1, C200, C6000 iso, C6000 gs)

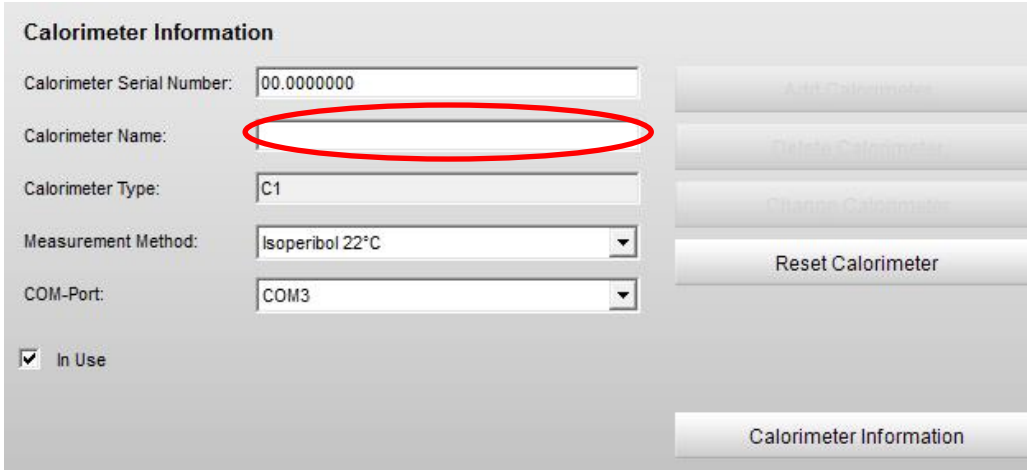
Click on „Settings“ in the main menu and select the Calorimeter button.



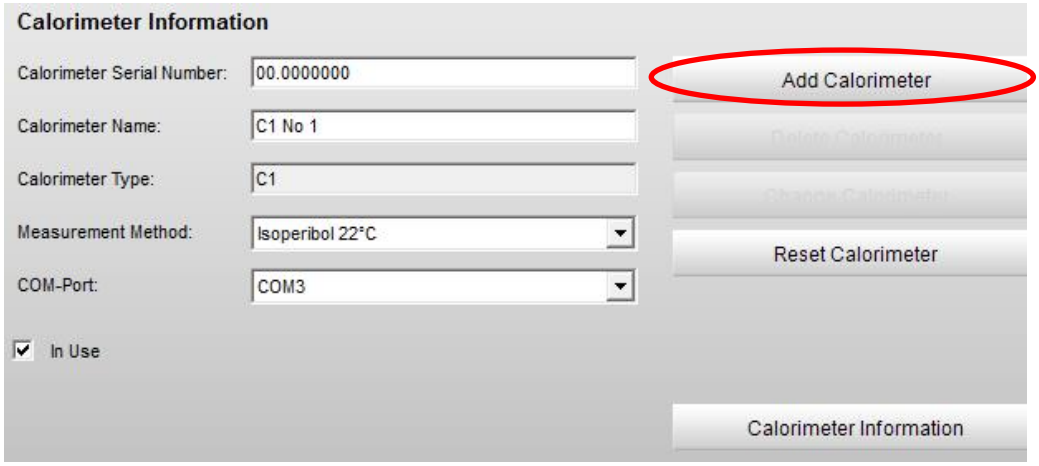
1. Start the calorimeter and select its main menu view.
2. Connect the calorimeter to a free PC COM-port.
3. Click on „New Calorimeter“
4. Select the COM-port, the calorimeter is connected to.



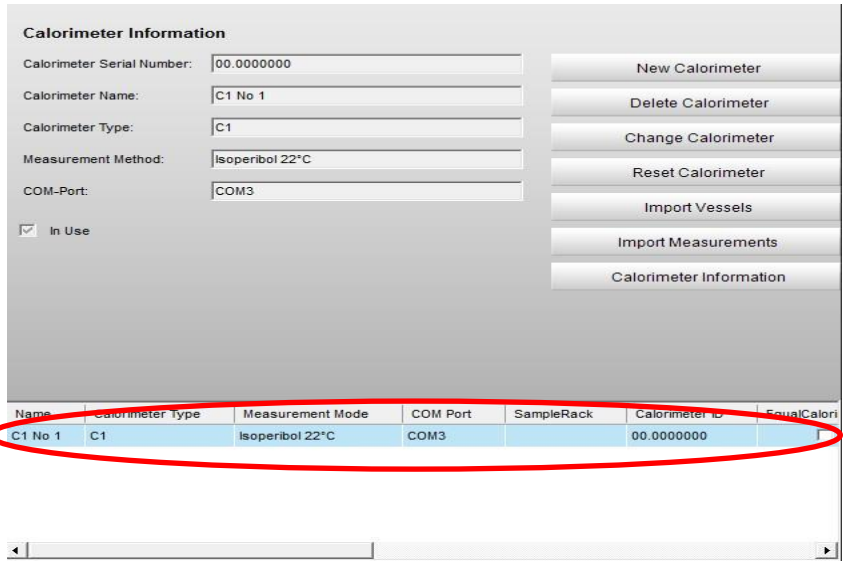
5. Click on „Calorimeter Information“ to receive the serial number and calorimeter type automatically from the device.



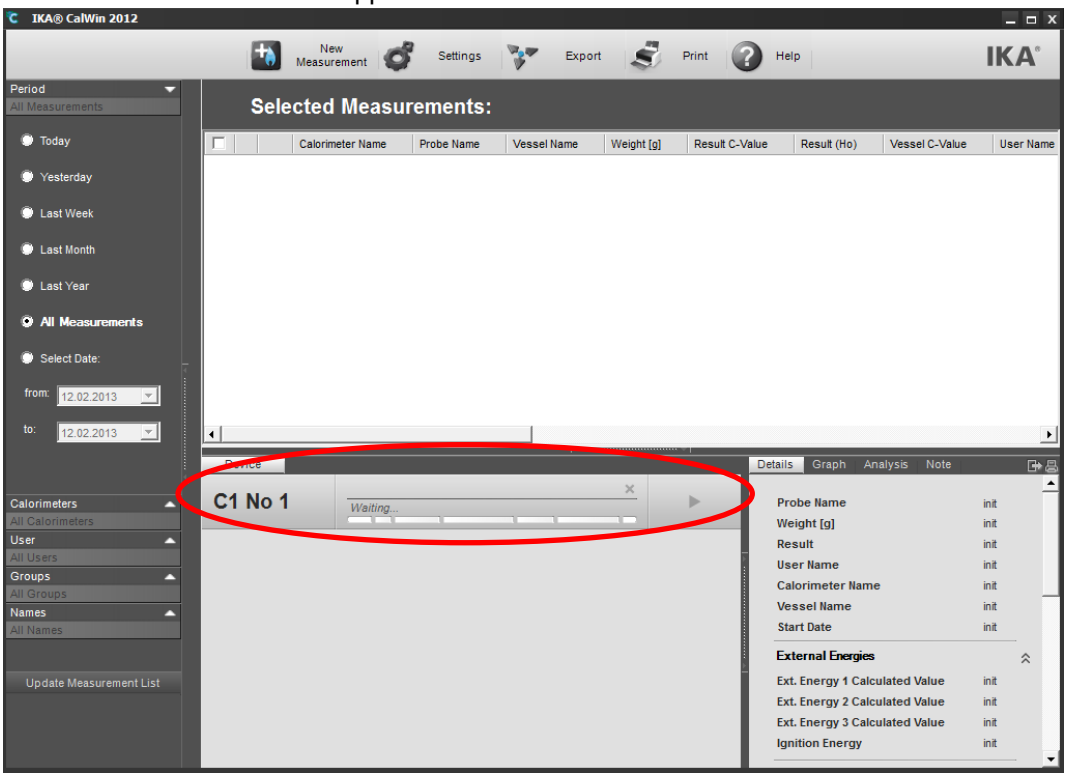
6. Enter a calorimeter name and click on “Add Calorimeter”.



7. Now the calorimeter appears in the overview list below.



8. Now the calorimeter appears in the main view of CalWin



3.4.1 Setup a calorimeter (C5000, C2000)

Here it is not possible to receive the calorimeter information automatically. All inputs have to be done manually:

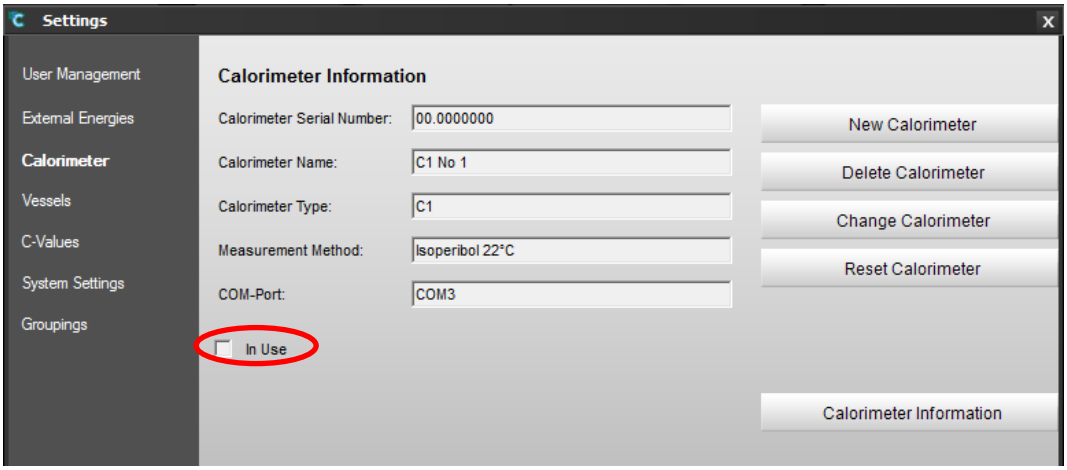
1. ***Calorimeter Serial Number:*** This can be found on a label at the backside of the device.
2. ***Calorimeter Name:*** The name of the device (e.g. “C5000 No.1”)
3. ***Calorimeter Type:*** The type of the device (C5000, C2000)
4. ***Measurement Method:*** The calorimeter working mode.
5. ***The COM-Port:*** The port your calorimeter is connected to.

If all settings are done, press on the “Add Calorimeter”-button to add the calorimeter.

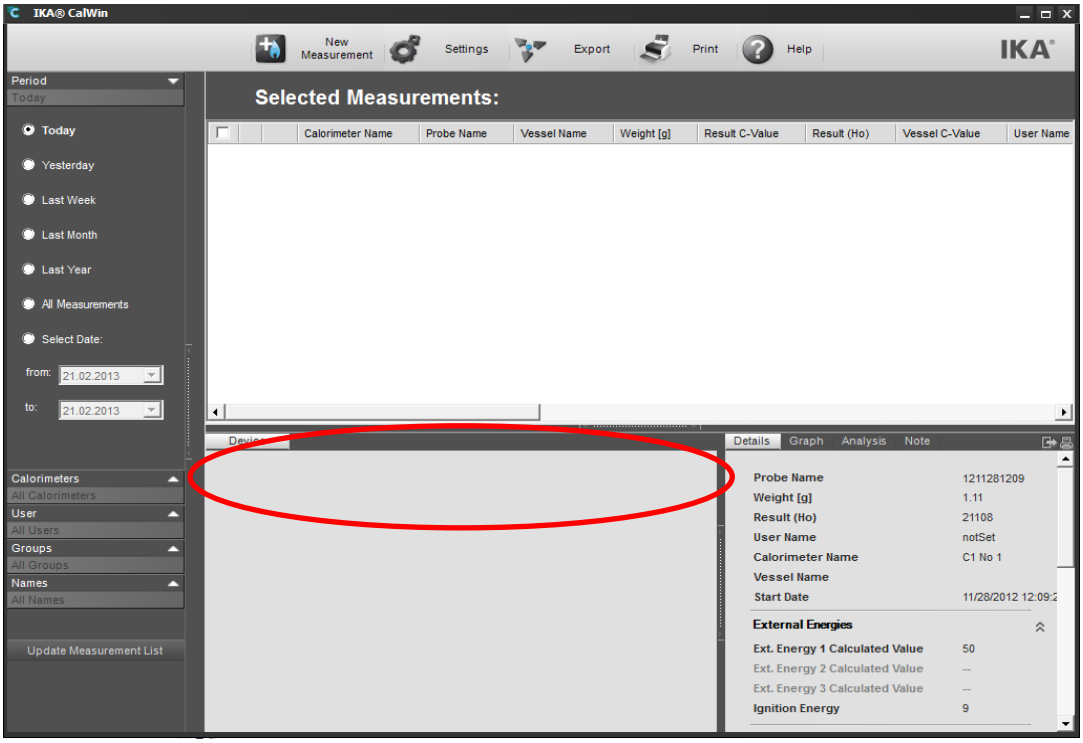
3.4.2 Deactivate a calorimeter

When a calorimeter is currently out of use, you can deactivate it by unchecking the “In Use” box located under “Settings” > “Calorimeter”.

To access the „In Use“ checkbox, click on “Change Calorimeter” and then check or uncheck the checkbox. Finally click “Save Changes” to adopt the new value.

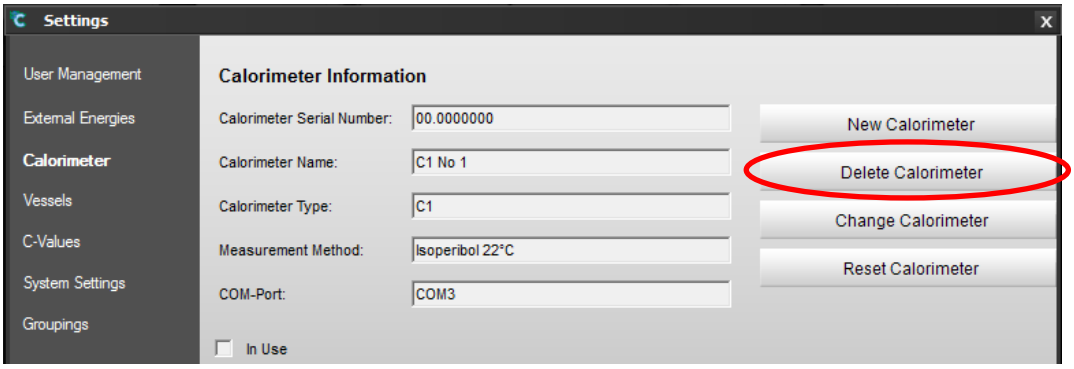


After unchecking „In Use“, the calorimeter disappears from the main screen and the COM port is free to be used with a different calorimeter or device.
Use this option, if you just want to temporarily work without this calorimeter.



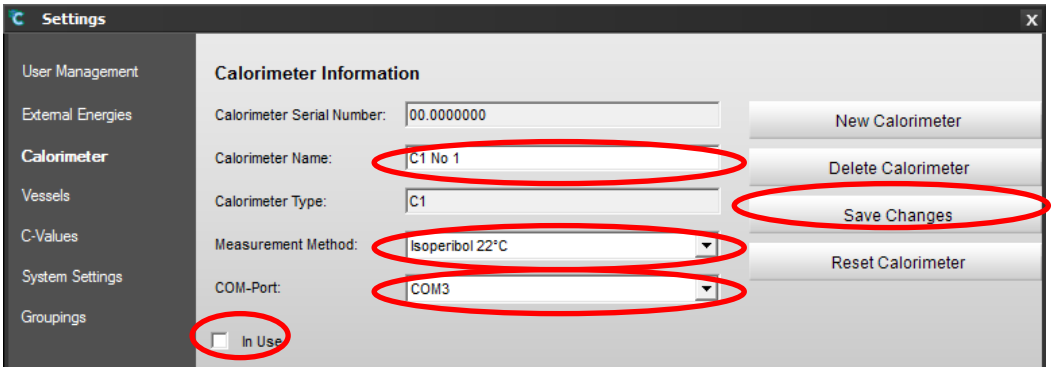
3.4.3 Delete a calorimeter

If you want to remove a calorimeter from your CalWin software, you can do so by clicking „Delete Calorimeter“, while accessing the calorimeter settings.



3.4.4 Change calorimeter settings

If you want to change the name, the measurement method or the COM port of a calorimeter, you can do so by clicking „Change Calorimeter“. The parameters that are subject to change get activated. After finishing your changes, click “Save Changes”.

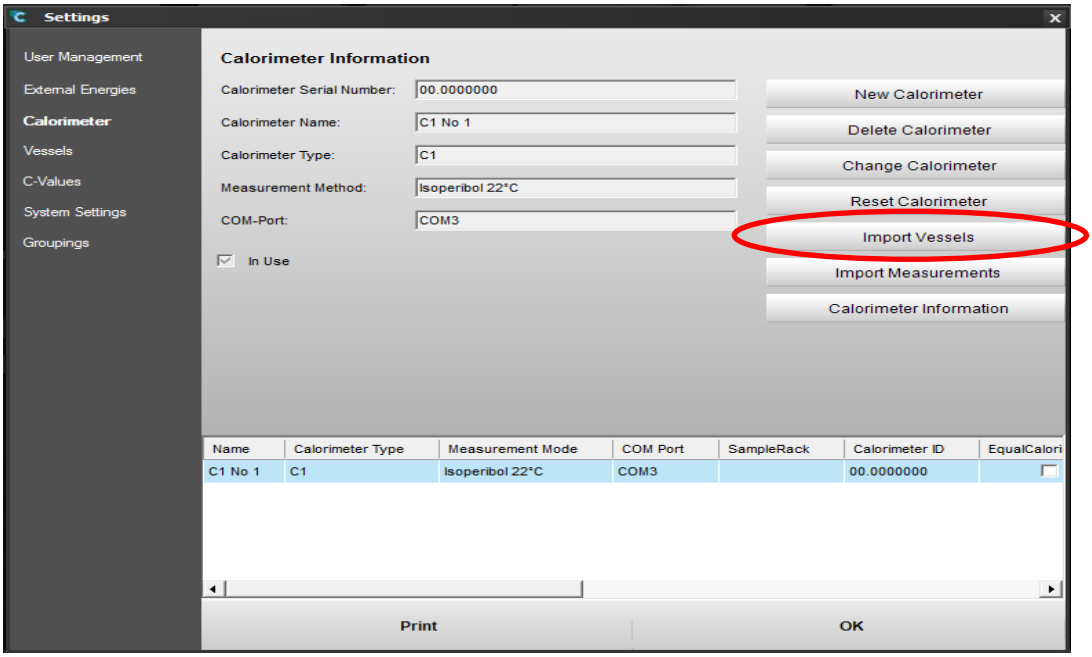


3.5 Setup the calorimeter vessels

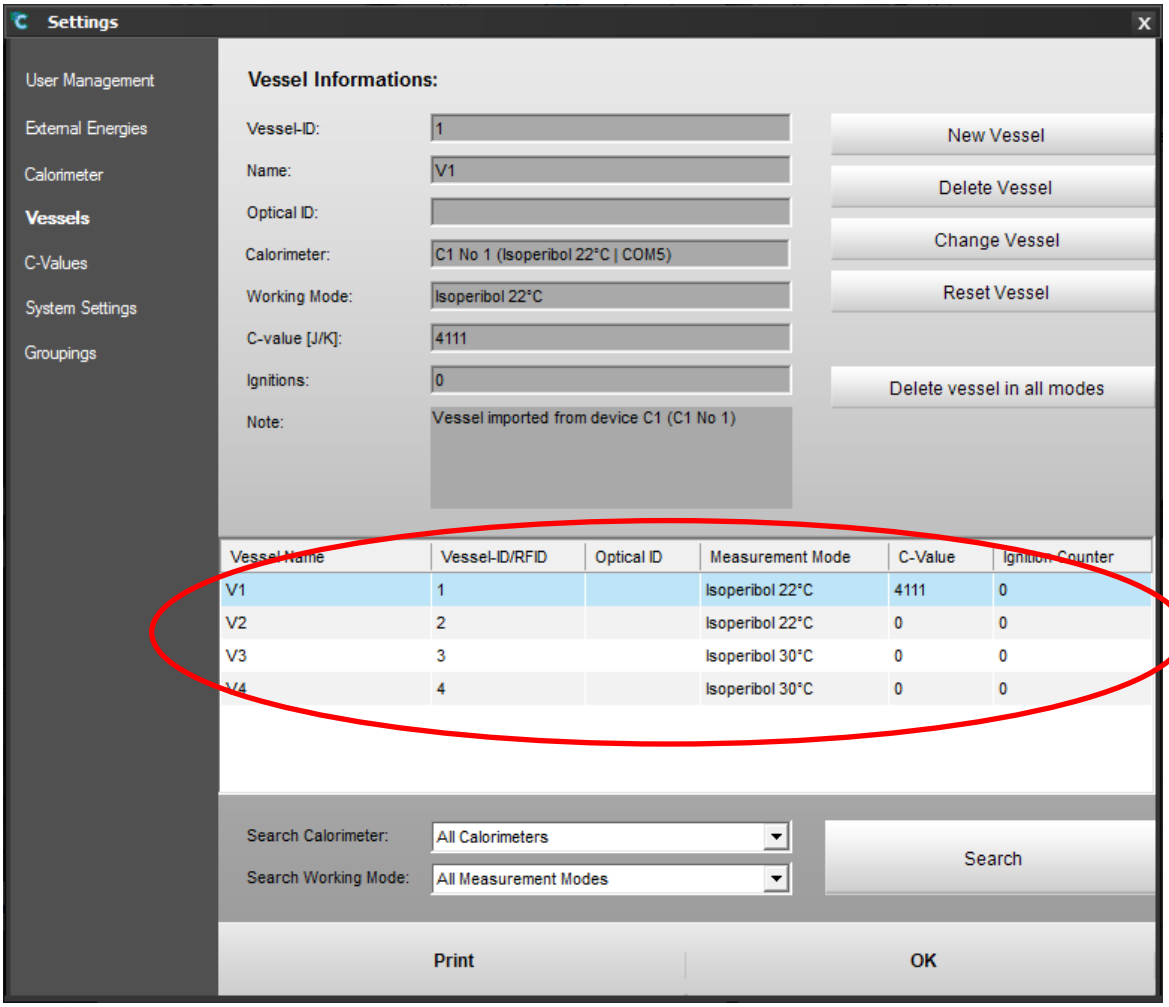
3.5.1 Automatic vessel import

It is possible to import the vessels including their c-values directly from the device. This works for the C1 and C6000 calorimeter. You find the option to import the vessel under „Settings“ > „Calorimeters“. As soon as connection to a calorimeter is established on the main form, the option “Import Vessels” is activated. The c-values are imported from the calorimeter device.

***This is the recommended procedure for the C6000iso and C6000gs* Calorimeter, because the vessel’s serial number must also be the RFID-tag and can be read automatically by the device.**

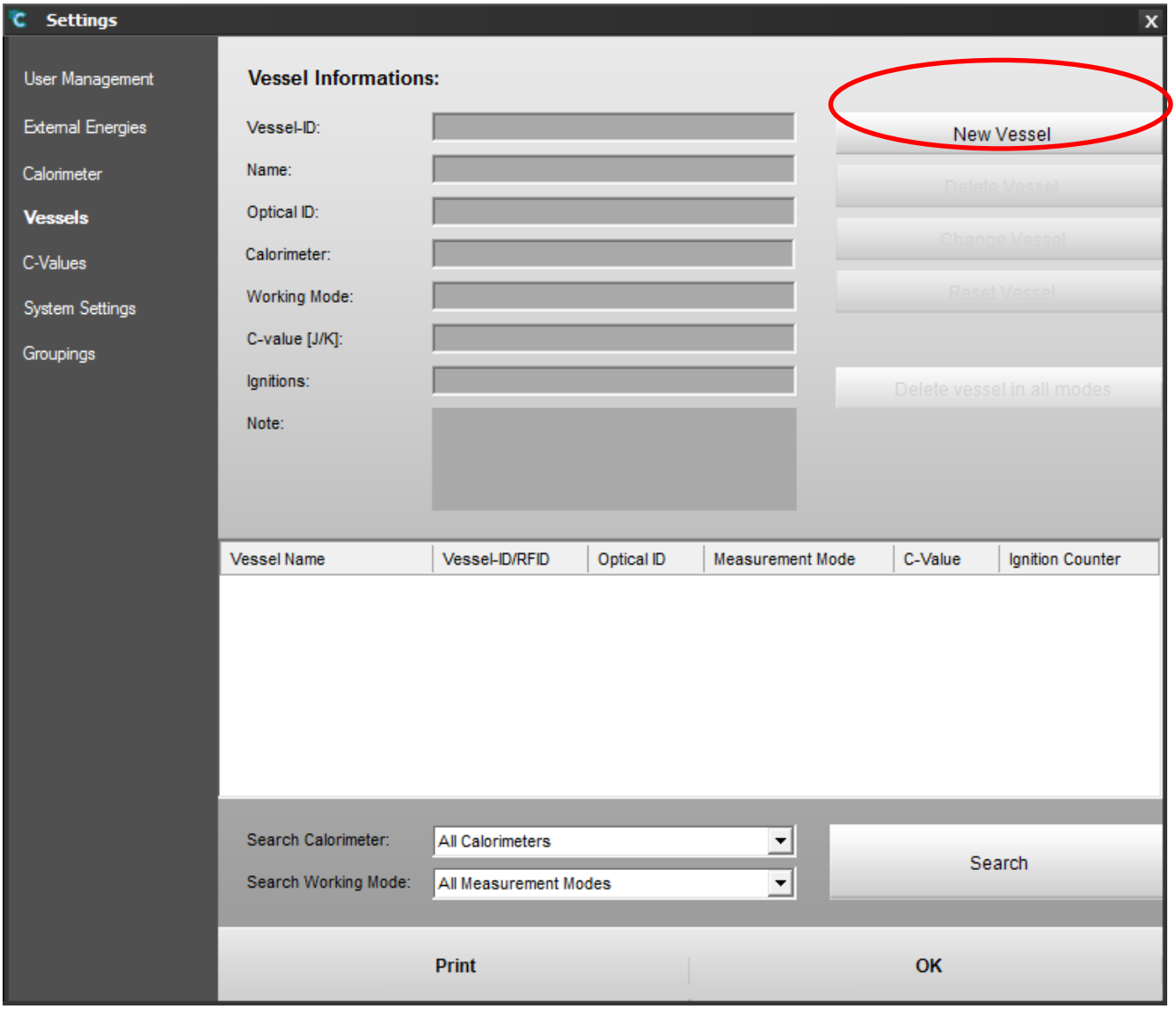


The imported vessels can now be found under „Vessels“.

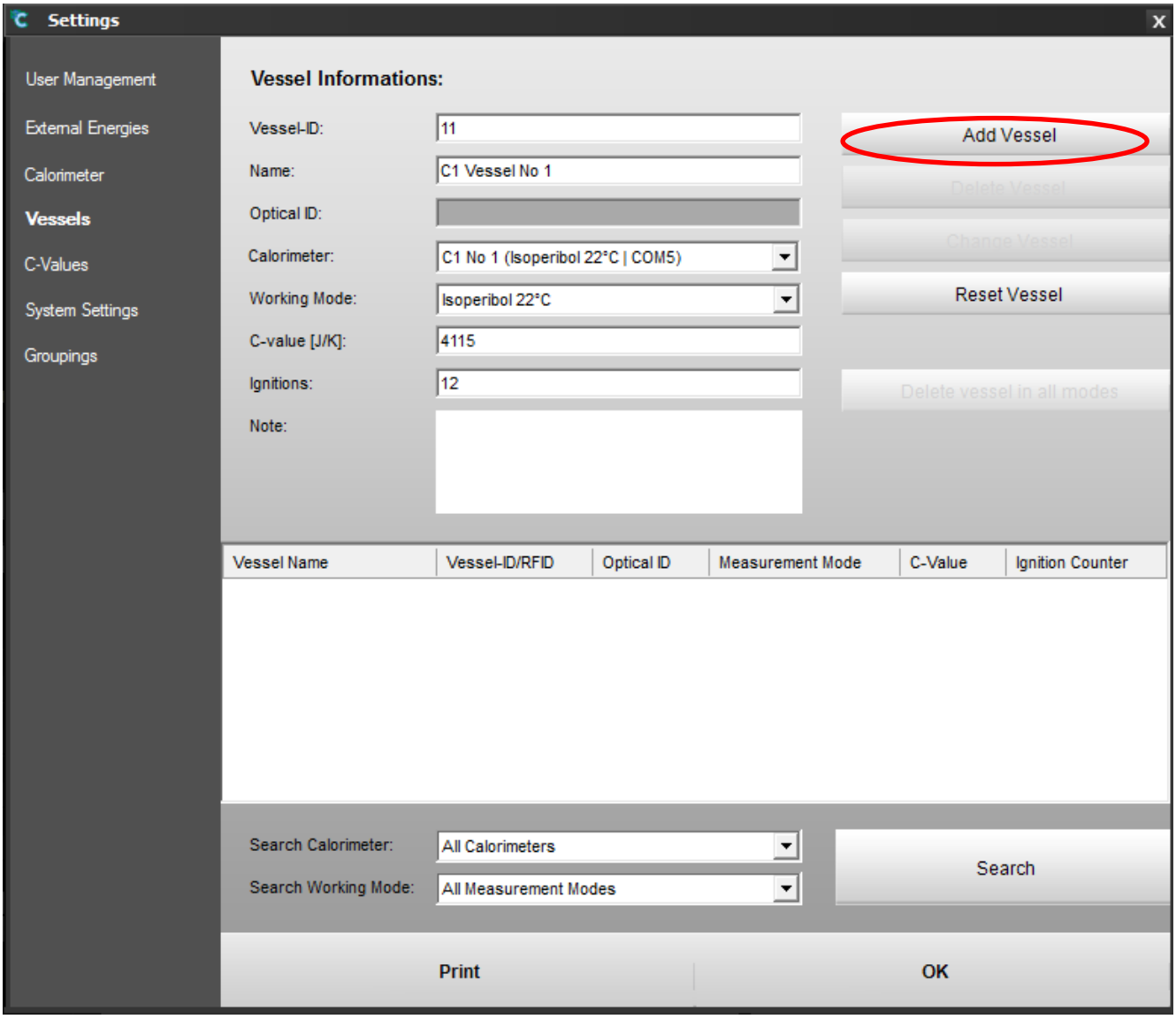

Settings
User Management
External Energies
Calorimeter
Vessels
C-Values
System Settings
Groupings
Vessel Informations:
Vessel-ID: 1
Name: V1
Optical ID:
Calorimeter: C1 No 1 (Isoperibol 22°C | COM5)
Working Mode: Isoperibol 22°C
C-value [J/K]: 4111
Ignitions: 0
Note: Vessel imported from device C1 (C1 No 1)
New Vessel
Delete Vessel
Change Vessel
Reset Vessel
Delete vessel in all modes
Vessel Name | Vessel-ID/RFID | Optical ID | Measurement Mode | C-Value | Ignition Counter
V1 | 1 | | Isoperibol 22°C | 4111 | 0
V2 | 2 | | Isoperibol 22°C | 0 | 0
V3 | 3 | | Isoperibol 30°C | 0 | 0
V4 | 4 | | Isoperibol 30°C | 0 | 0
Search Calorimeter: All Calorimeters
Search Working Mode: All Measurement Modes
Search
Print
OK

3.5.2 Manual vessel input

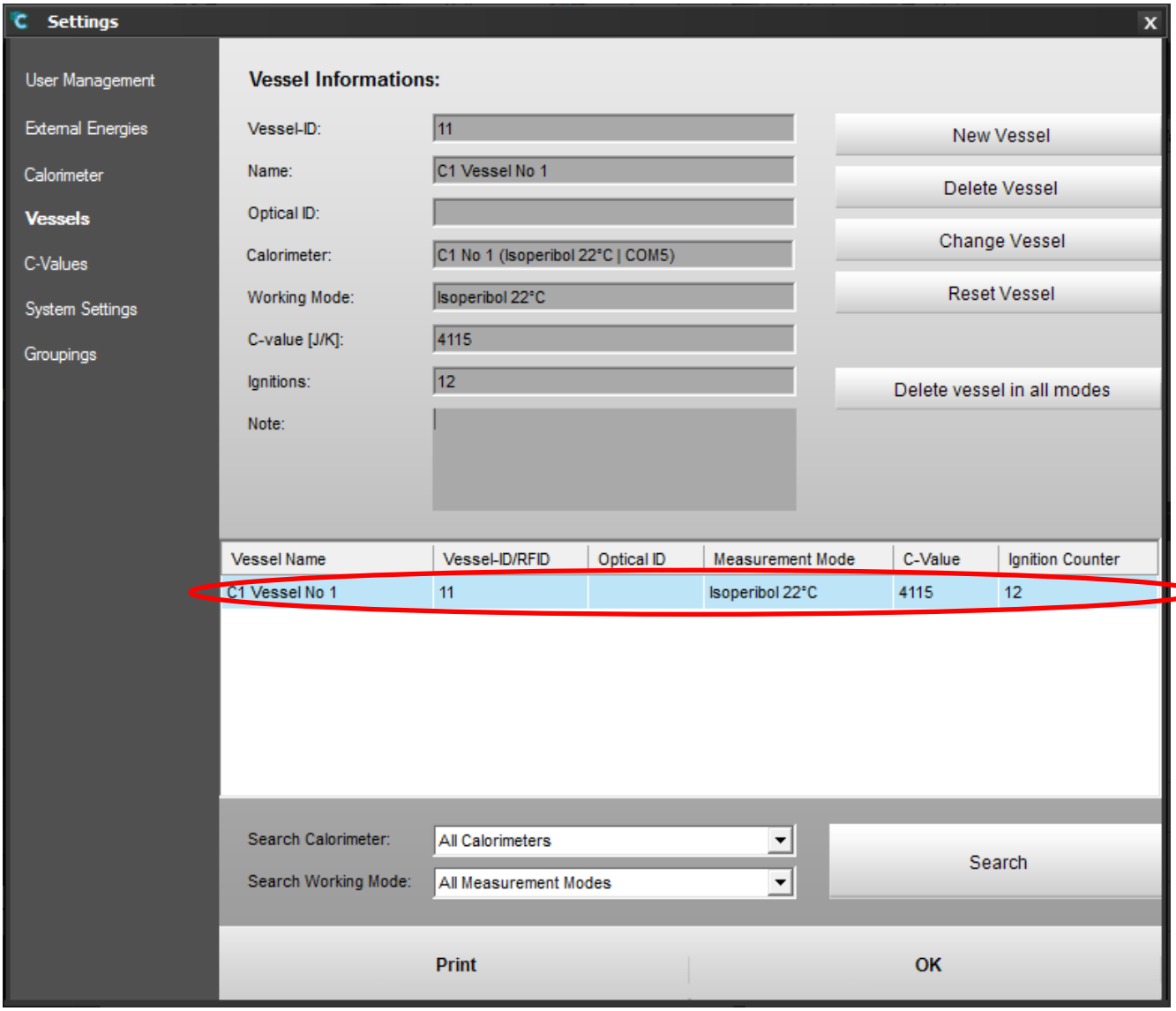
The other option to enter the vessel information is to use the Vessel settings.



1. Press the “New Vessel” button.
2. Enter the Vessel-ID/RFID. This number can be found on the C6000gs/iso display.
   This value must be unique!
   Use the RFID number for the C6000gs/iso vessels and the engraved vessel serial number for other devices. The automatic vessel detection of the C6000 device only works with a correct RFID number.
3. Enter a vessel name
4. The optical ID can be set for the C5000/C2000 if the vessel detection is activated
5. Select a calorimeter from the calorimeter combo box.
6. Select the working mode of the calorimeter
7. Select a c-value (if already known) or leave initial value.
8. Enter the number of ignitions that have already been performed with this vessel.
9. **Optional**: It’s possible to enter an additional note to the vessel, e.g., “in use since 01.01.2013”)
10. Click on „Add Vessel“ to complete the adding process.



11. Now the vessel appears in the overview list.


Settings
User Management
External Energies
Calorimeter
Vessels
C-Values
System Settings
Groupings
Vessel Informations:
Vessel-ID:
11
Name:
C1 Vessel No 1
Optical ID:
Calorimeter:
C1 No 1 (Isoperibol 22°C | COM5)
Working Mode:
Isoperibol 22°C
C-value [J/K]:
4115
Ignitions:
12
Note:
New Vessel
Delete Vessel
Change Vessel
Reset Vessel
Delete vessel in all modes
Vessel Name
Vessel-ID/RFID
Optical ID
Measurement Mode
C-Value
Ignition Counter
C1 Vessel No 1
11
Isoperibol 22°C
4115
12
Search Calorimeter:
All Calorimeters
Search Working Mode:
All Measurement Modes
Search
Print
OK

3.5.3 Filtering Vessels

In case you have a lot of vessels added and stored, it is possible to search for:

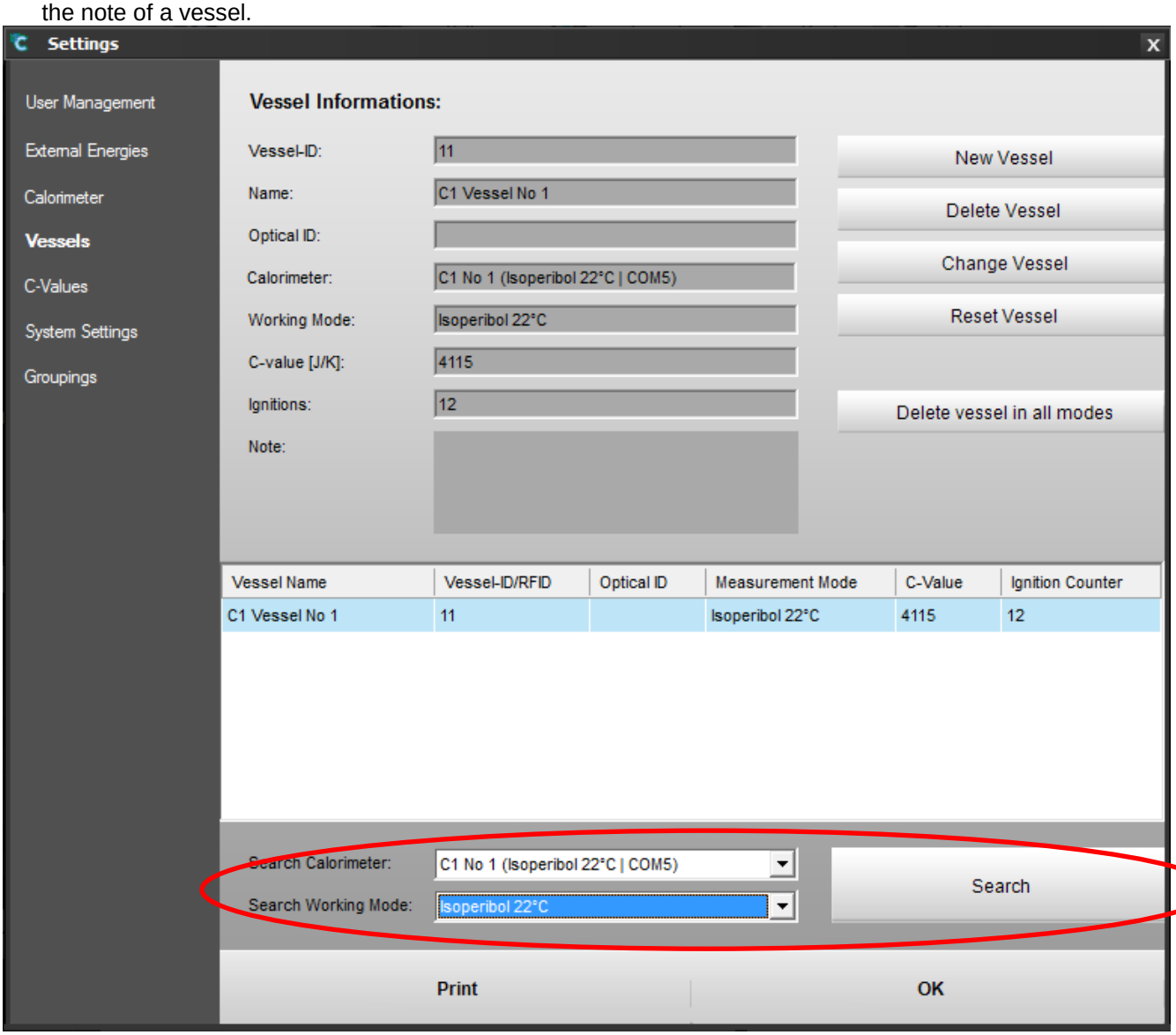
- All vessels of a specific calorimeter
- All vessels in a specific measurement mode
- All vessels of a calorimeter in a certain measuring mode

1. Select the calorimeter (optional)
2. Select the working mode (optional)
3. Press the “Search” button to start the search and update the vessel list.

3.5.4 Delete or change a vessel

By pressing the “Delete Vessel” or “Change Vessel” button, the user can delete or change an existing vessel.

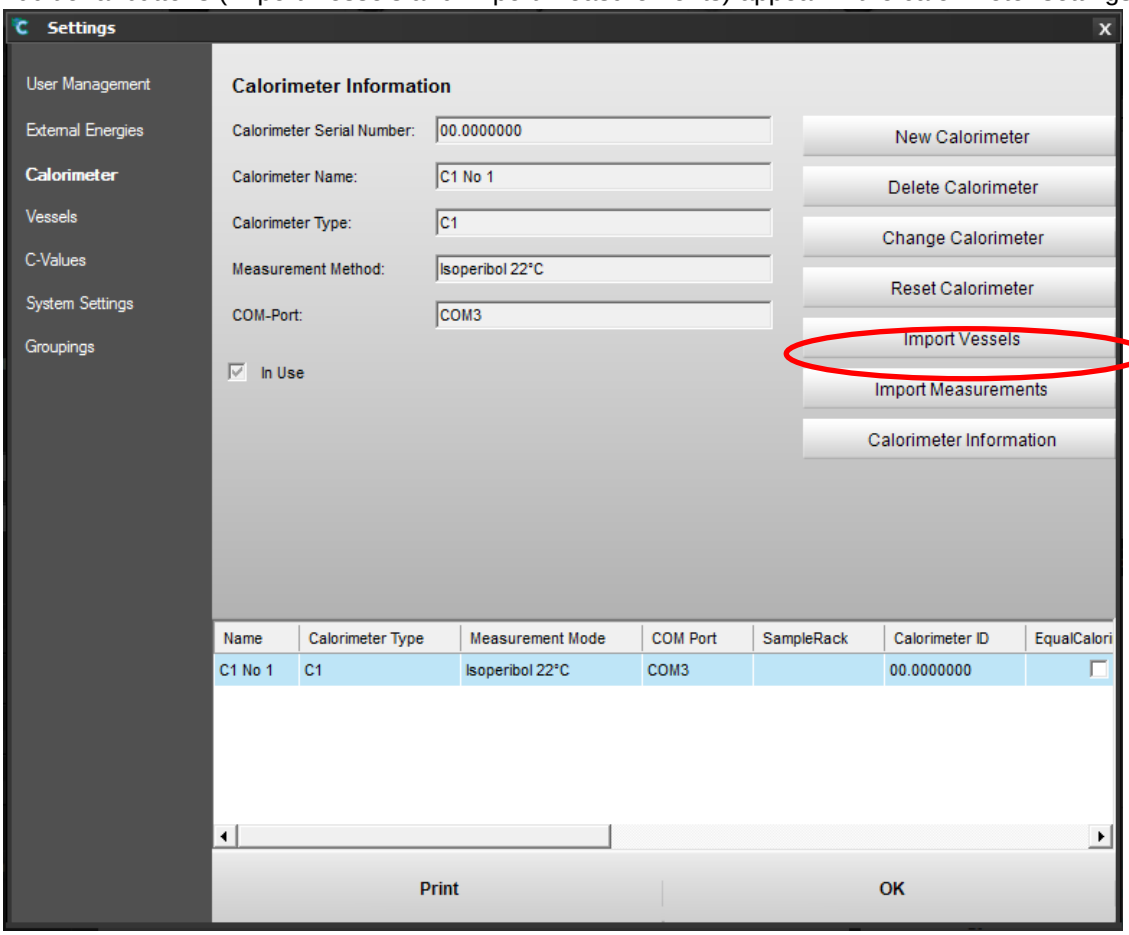
- **Delete:** The vessel is no longer in use.
- **Change:** possible to change the name, optical ID (used for C5000, C2000), c-value, ignition counter or the note of a vessel.



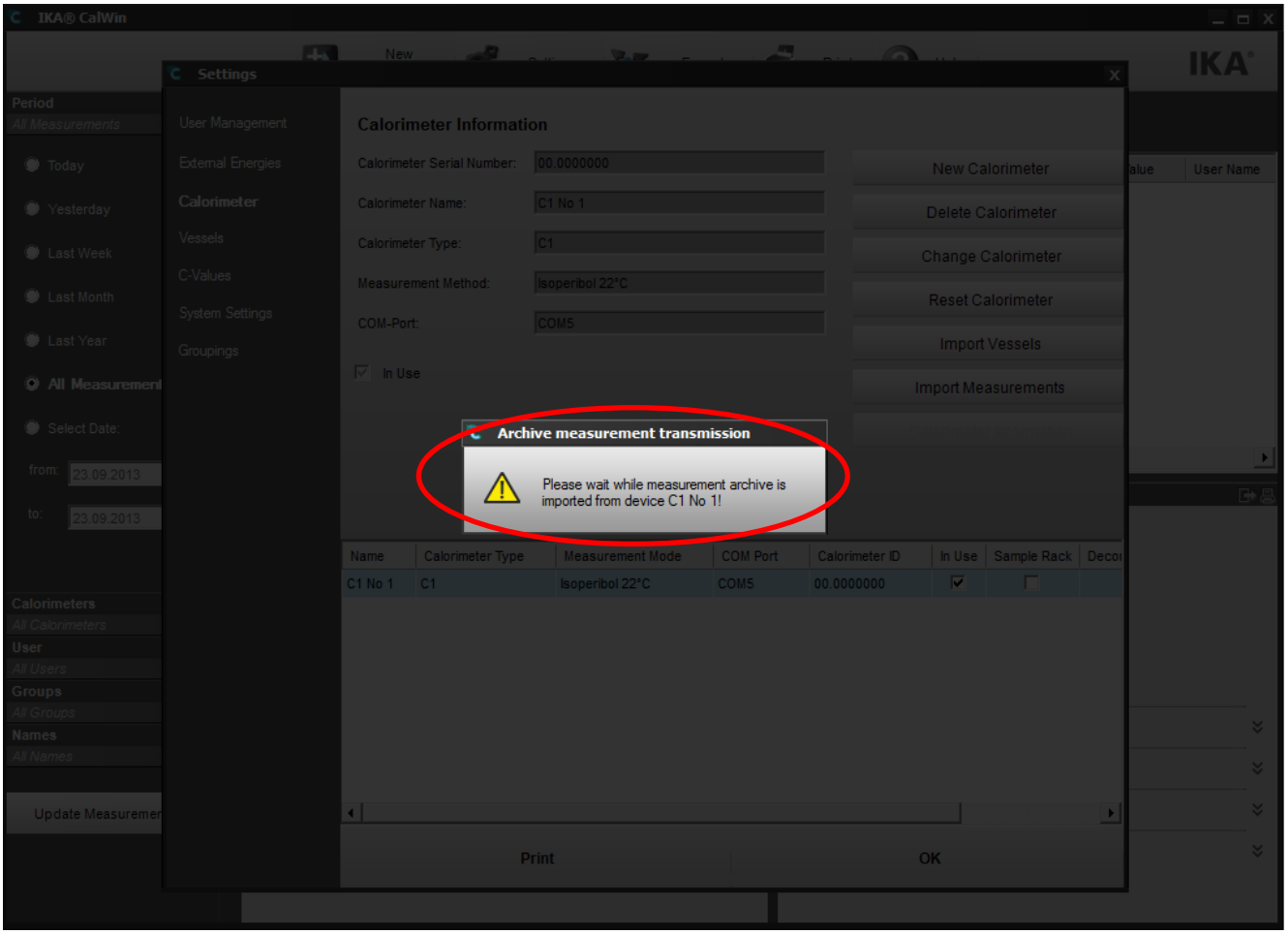
3.6 Import Measurements

It is possible to import measurements from the calorimeter device C6000gs/iso and C1 to CalWin. To perform this task, ensure that the calorimeter is connected and listed in the main menu (calorimeter must be in **WAIT** state).

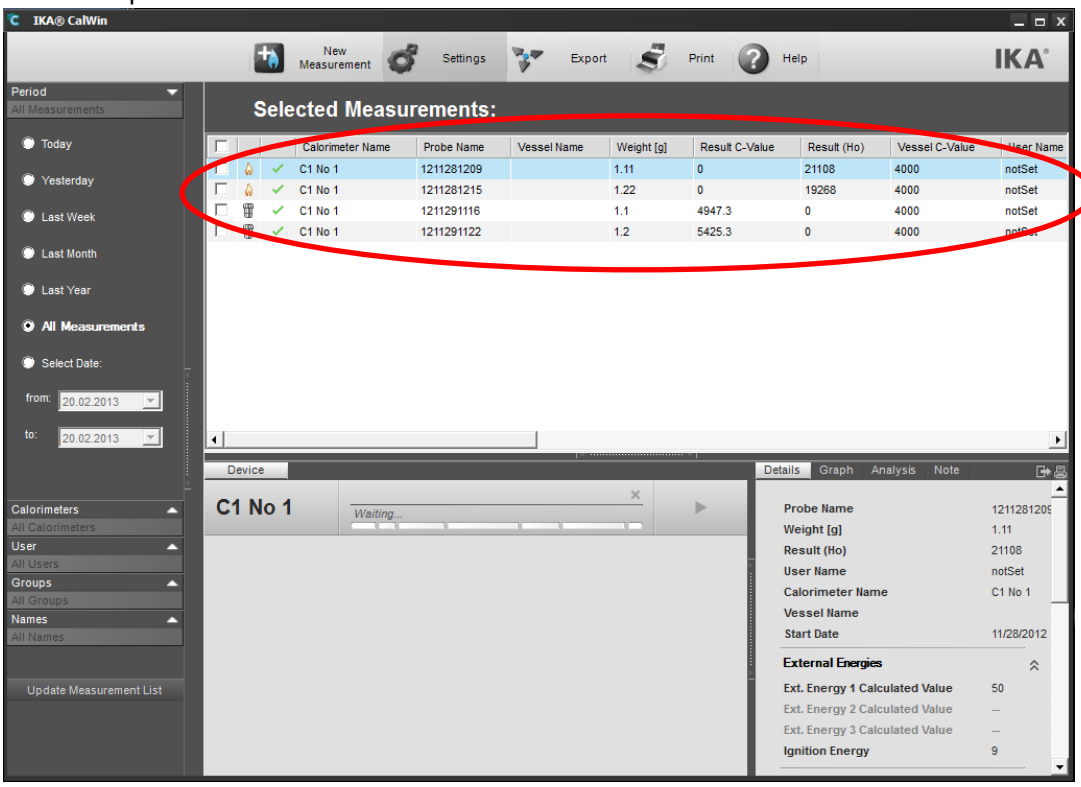
Additional buttons (Import Vessels and Import Measurements) appear in the calorimeter settings menu.



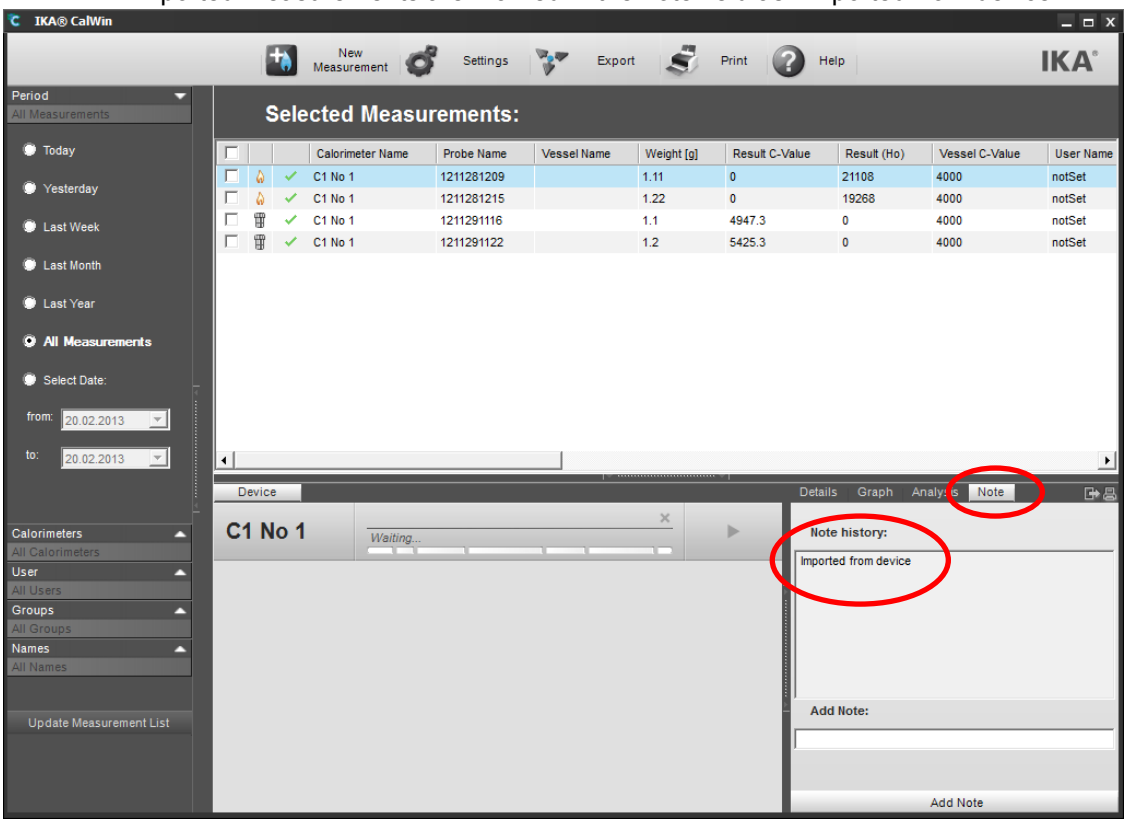
1. Press the “Import Measurements” button
2. Wait until the user message disappears.


IKA® CalWin
Settings
User Management
External Energies
Calorimeter
Vessels
C-Values
System Settings
Groupings
Calorimeter Information
Calorimeter Serial Number: 00.0000000
Calorimeter Name: C1 No 1
Calorimeter Type: C1
Measurement Method: Isoperibol 22°C
COM-Port: COM5
In Use
New Calorimeter
Delete Calorimeter
Change Calorimeter
Reset Calorimeter
Import Vessels
Import Measurements
Archive measurement transmission
Please wait while measurement archive is imported from device C1 No 1!
Name
Calorimeter Type
Measurement Mode
COM Port
Calorimeter ID
In Use
Sample Rack
C1 No 1
C1
Isoperibol 22°C
COM5
00.0000000
Print
OK
Period
Today
Yesterday
Last Week
Last Month
Last Year
Select Date:
from:
to:
Calorimeters
User
Groups
Names
User Name

3. The imported measurements and calibrations are now visible on the main screen.

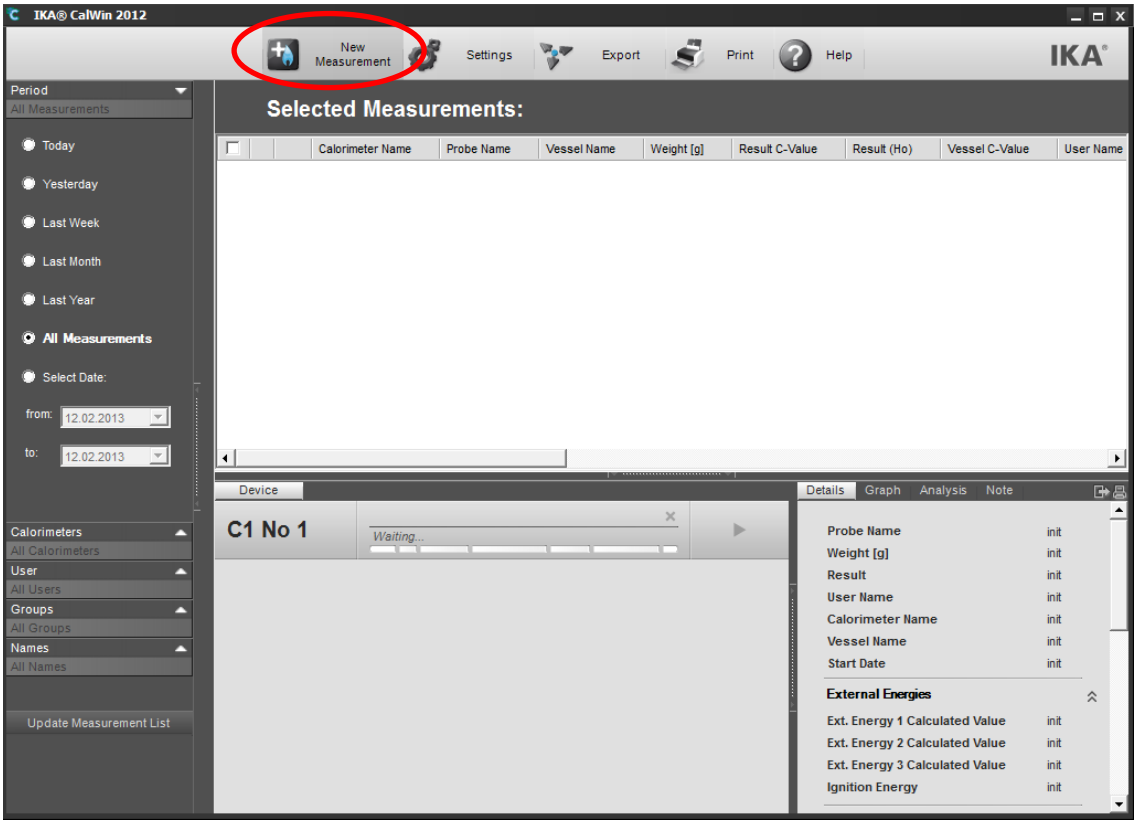


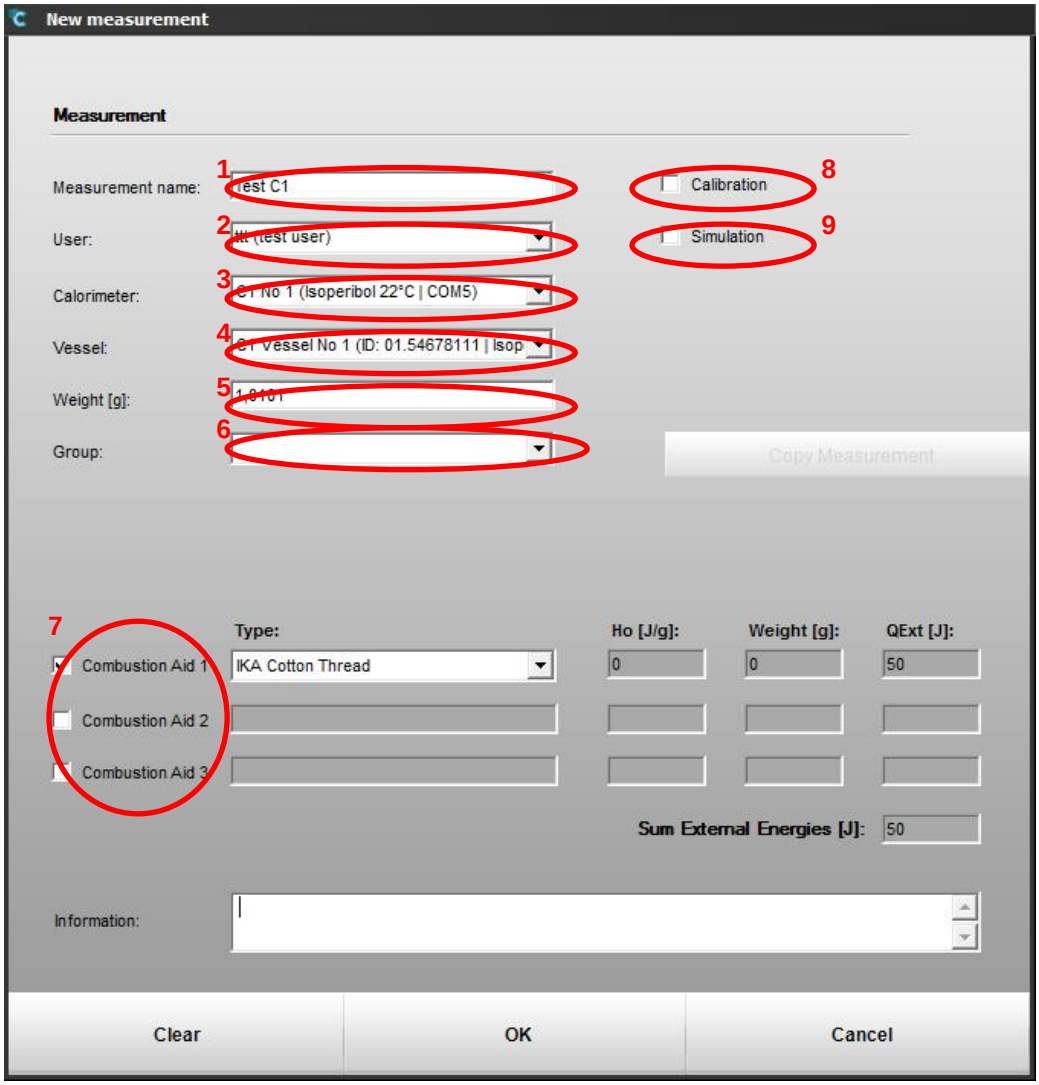
4. All imported measurements are marked in the note field as “Imported from device”



5. It is not possible to see the graph of an imported measurement/calibration! The temperature values are not available if the measurement was not controlled by CalWin.

4 Prepare a new measurement





1. **Measurement name**

Can be filled in by the user or left blank. If left blank, the system automatically fills in the current date and time as measurement name.

2. **User**

Users can be managed under „Settings“ > „User Management“. Users already created can be selected from the drop down list. It is also possible to enter a user name directly.

3. **Calorimeter**

Choose an available calorimeter from the drop down menu.

4. **Vessel**

The assigned vessels of the selected calorimeter are listed in this drop down menu.

5. **Weight**

The weight can either be entered manually or be transmitted by a connected balance.

6. **Group**

Groups can be managed in the settings under “Groupings”. It is possible to assign the measurement to a specific group to make it easier to find later on. The group can also be assigned if the measurement is finished.

7. **Combustion Aids**

Combustion Aids can be managed under „Settings“ > „External Energies“. These values can be selected from the drop down menu.

8. Calibration

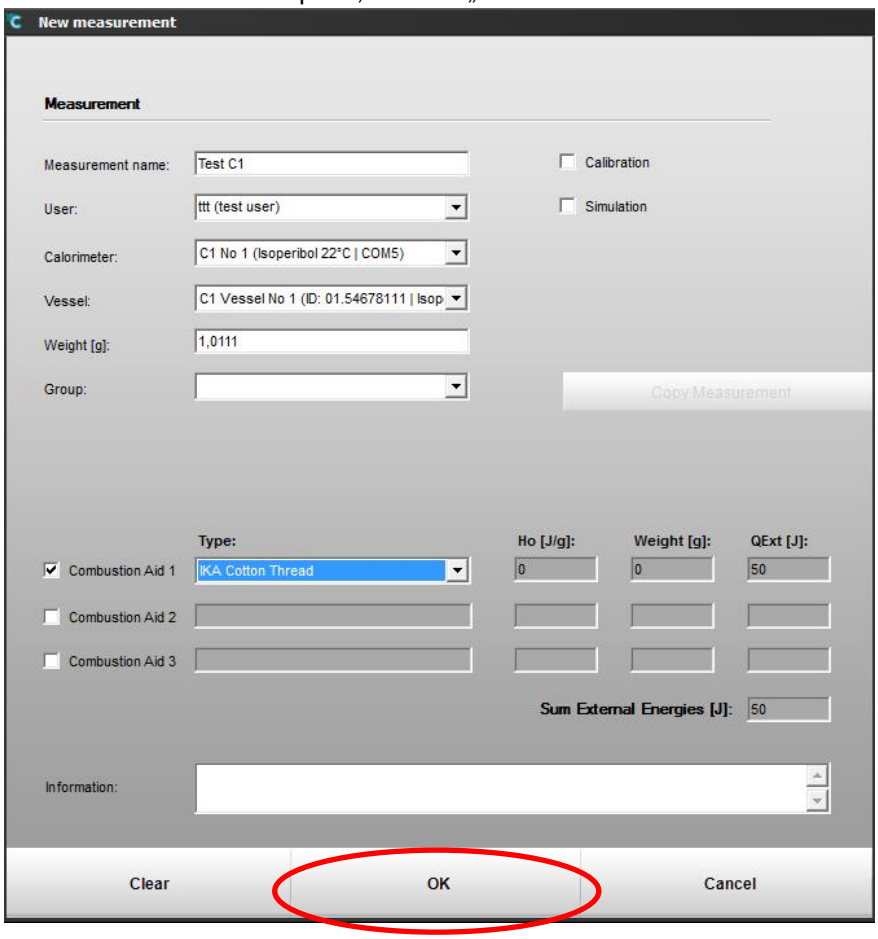
Check this option to perform a calibration.

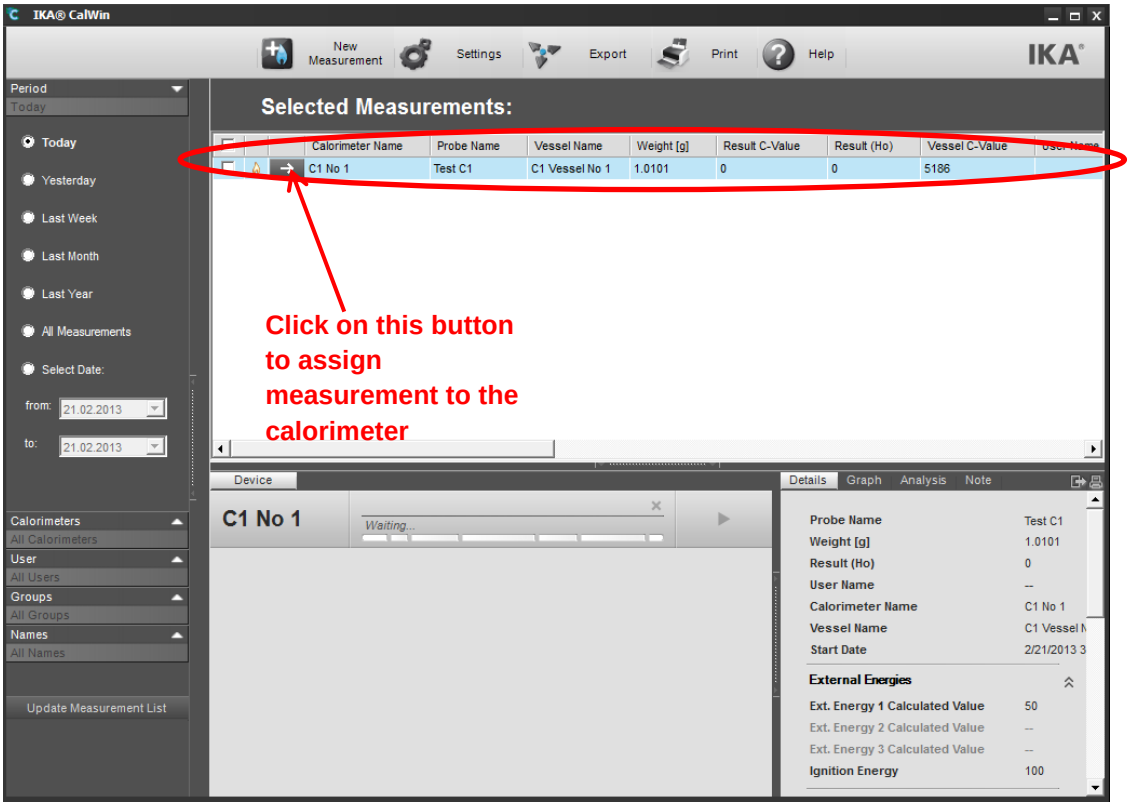
9. Simulation

Set this option to simulate the measurement/calibration. The user has to enter a ΔT value and the ignition energy.

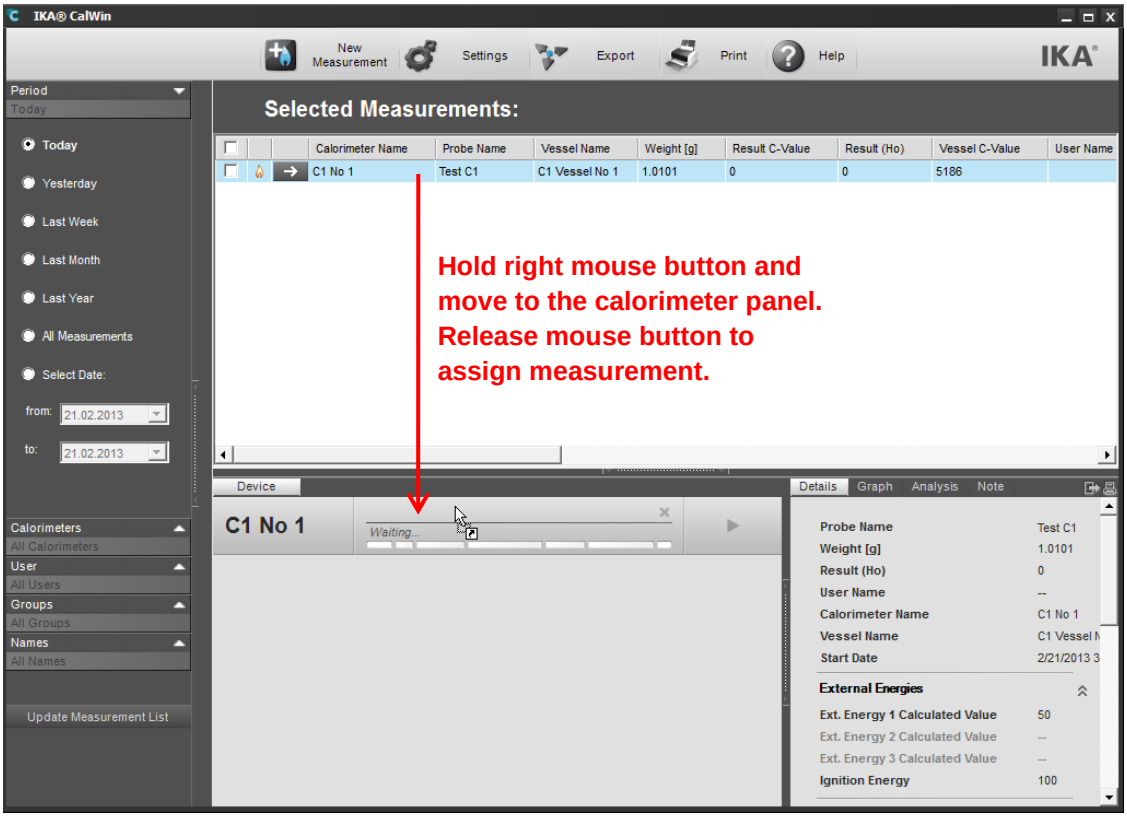
4.1 Run a measurement

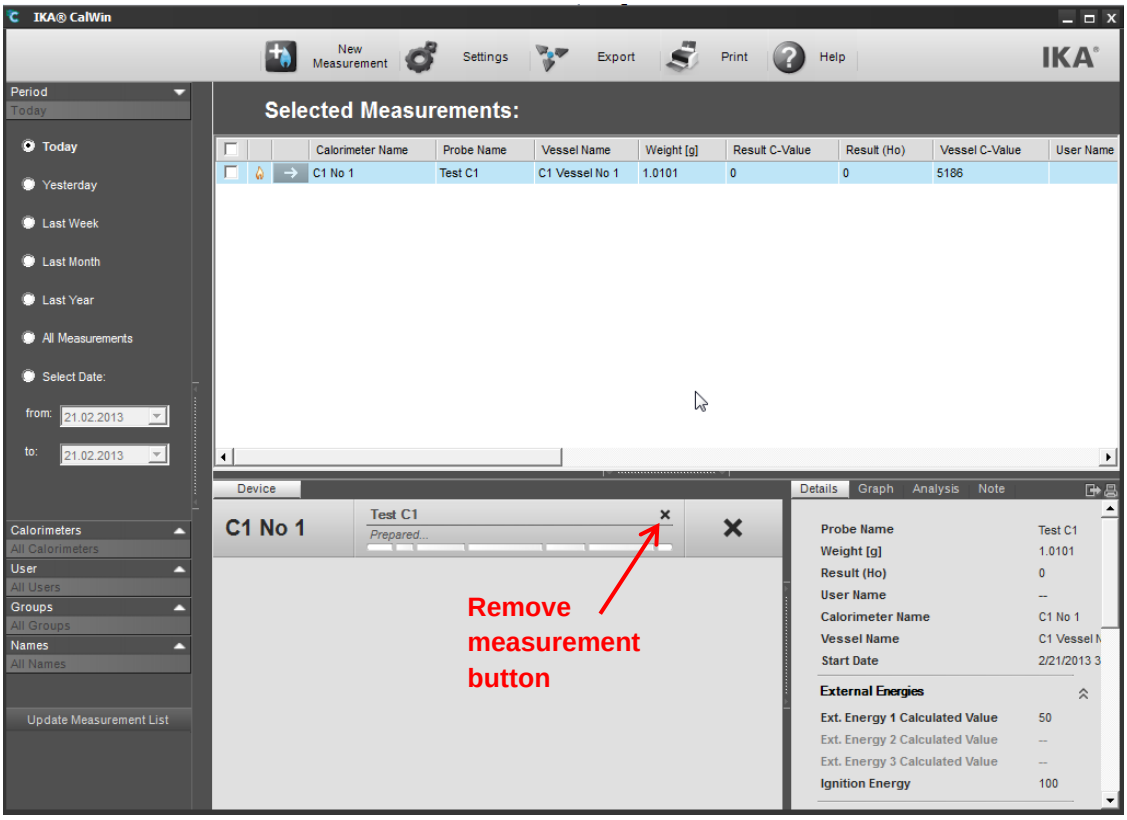
When all entries are complete, click on „OK“ to add the measurement to the main list.





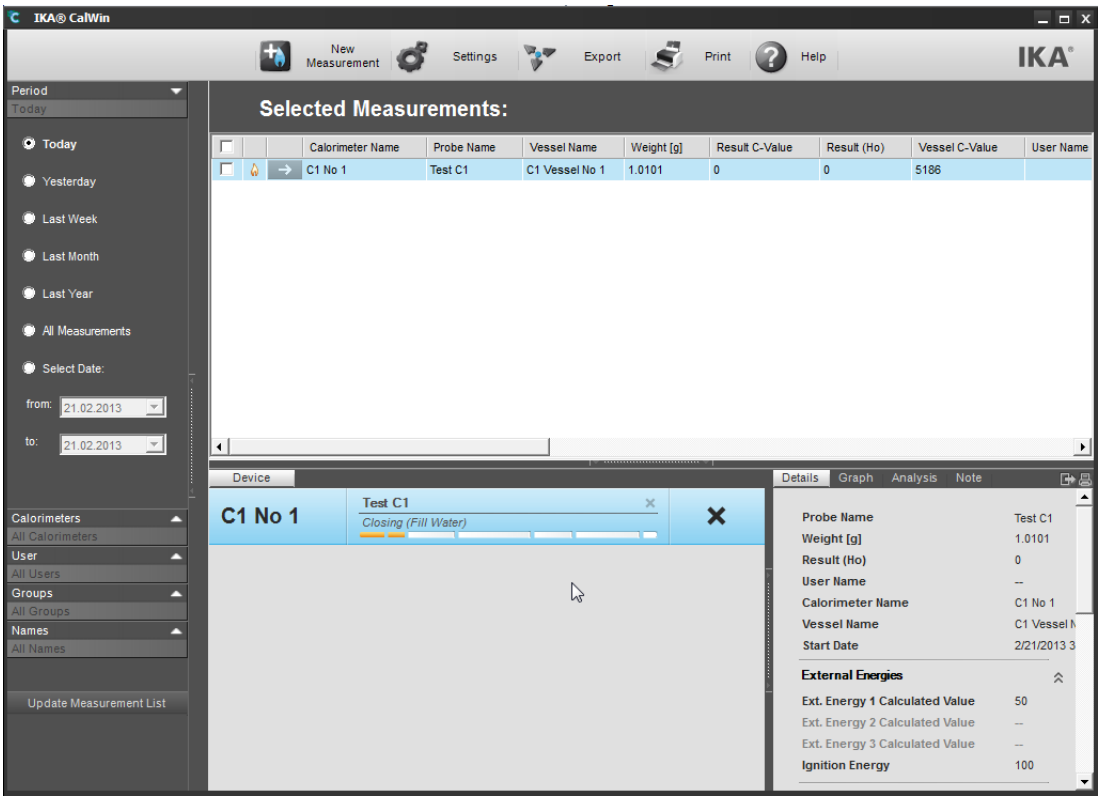
If the calorimeter is in the Waiting state, it is possible to assign the measurement to the calorimeter by clicking on the assign button of the measurement or by holding down the right mouse button and dragging the measurement to the device panel before releasing the button.



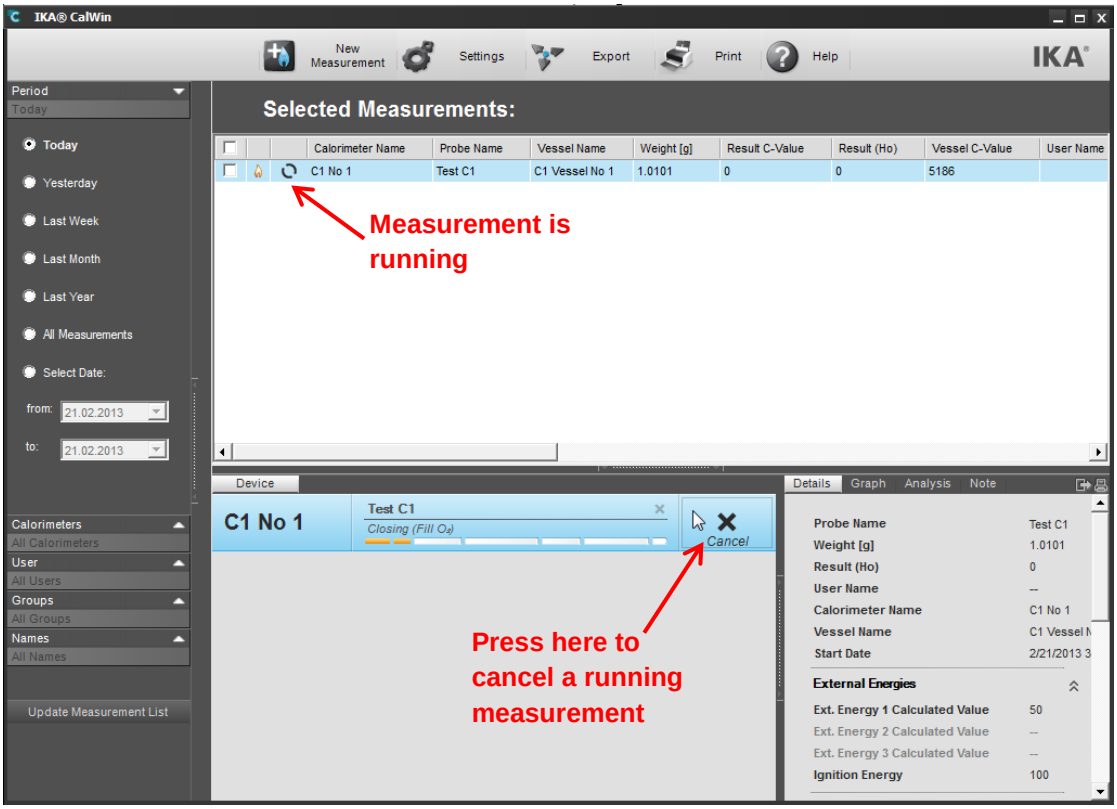


When the measurement is assigned, the calorimeter changes its status from ***Waiting*** to ***Prepared***.
A prepared measurement can also be removed by clicking on the remove button.

If the calorimeter doesn't start automatically like the C1 calorimeter, you have to press the "start" button on the device or in CalWin



4.2 Cancel running measurement

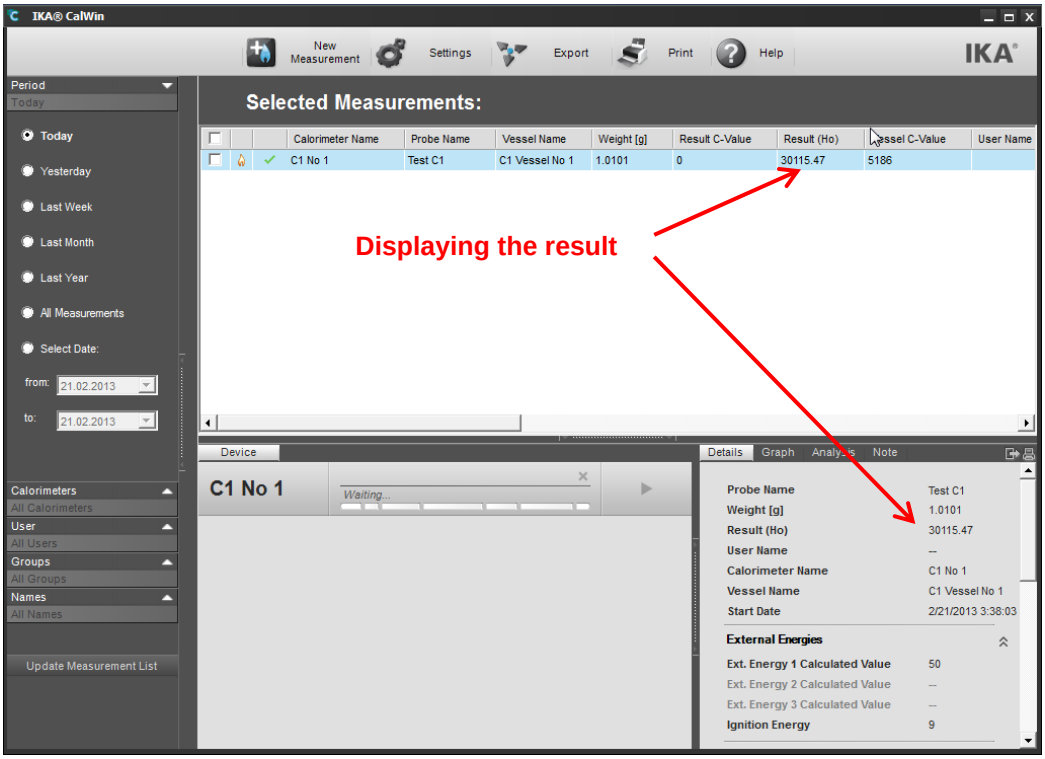


There are two different possibilities when canceling a measurement:

- If the measurement is cancelled before the ignition takes place, it is possible to reassign and restart it.
- If cancelled after the ignition, the measurement is marked as cancelled and cannot be reassigned.

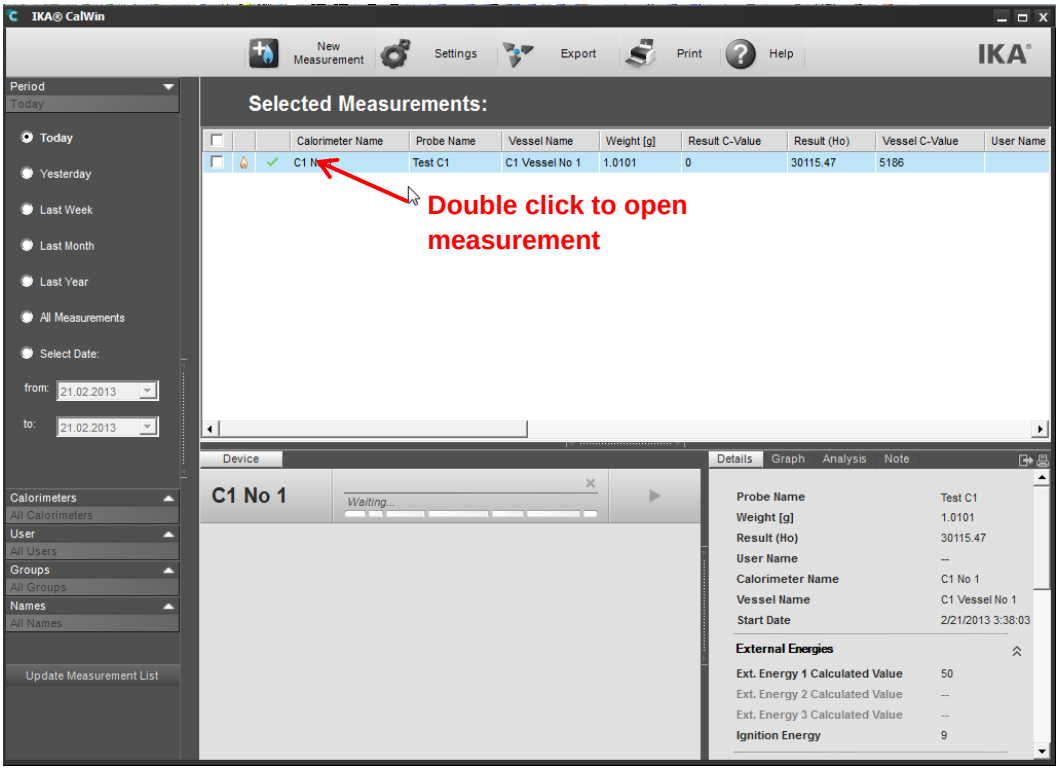
4.3 Measurement finished

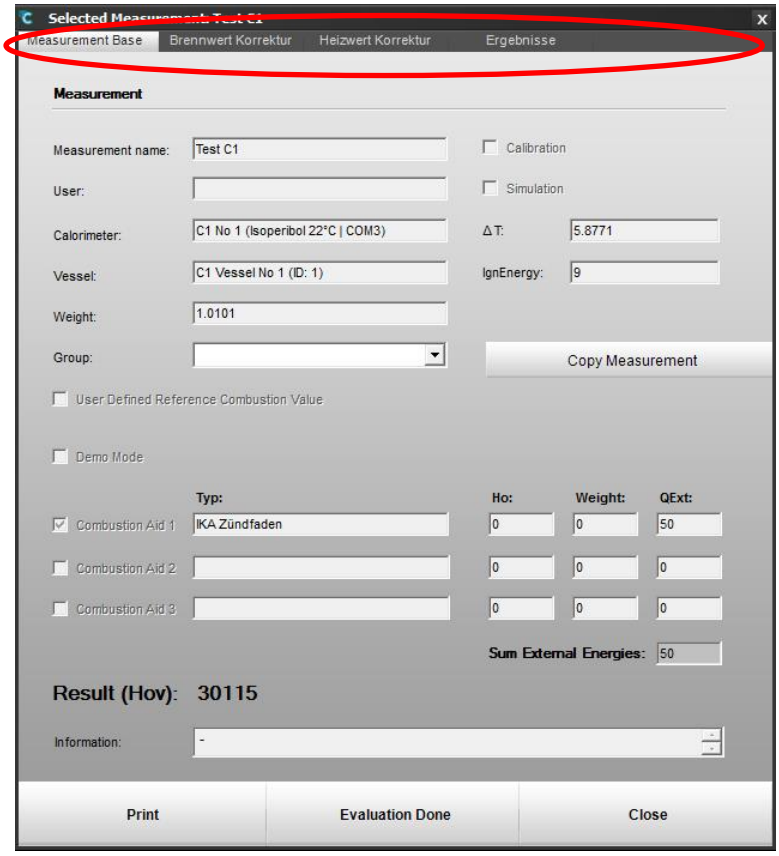
When the measurement is finished, the result is displayed and the calorimeter changes back to the ***Waiting*** state.



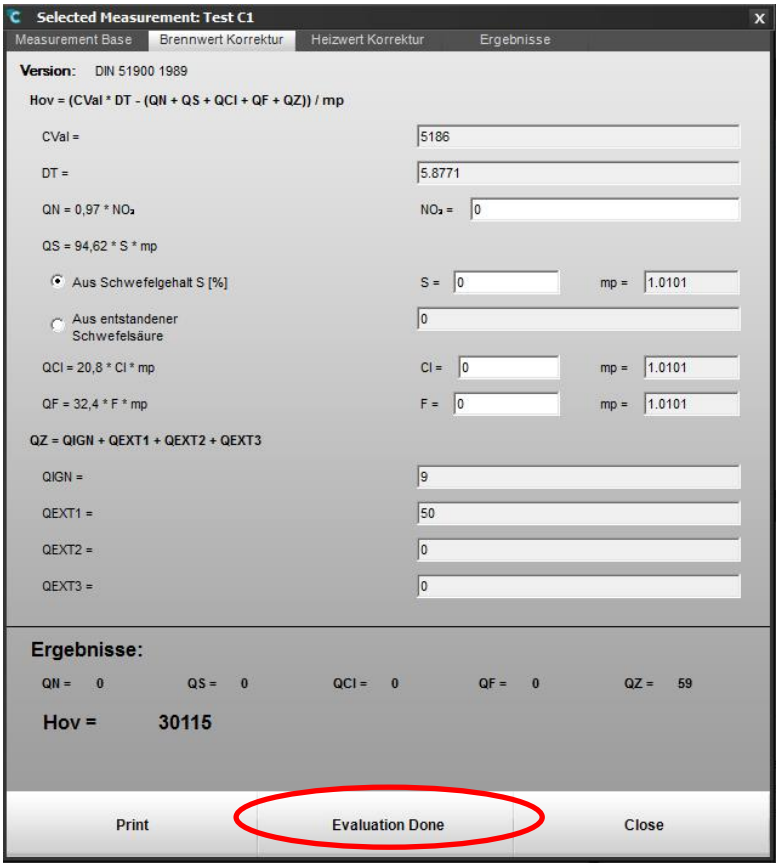
4.4 Evaluating the measurement

When a measurement is finished, it can be accessed by double clicking to enter additional values needed for the selected report.

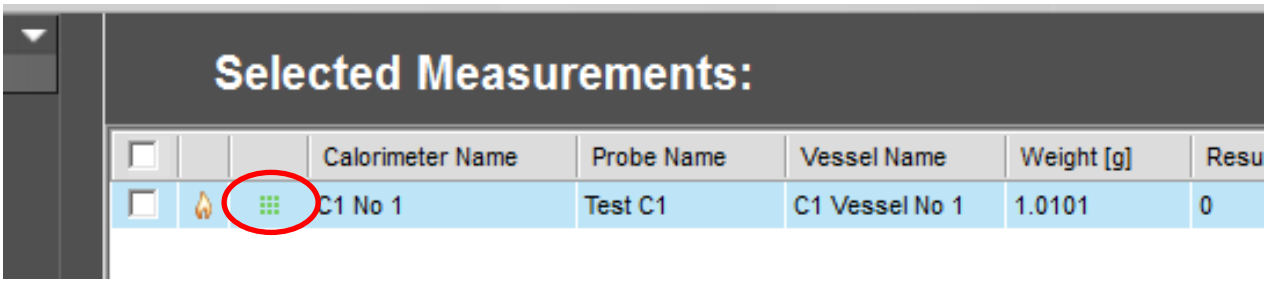




Now the measurement menu displays additional tabs needed for the report.

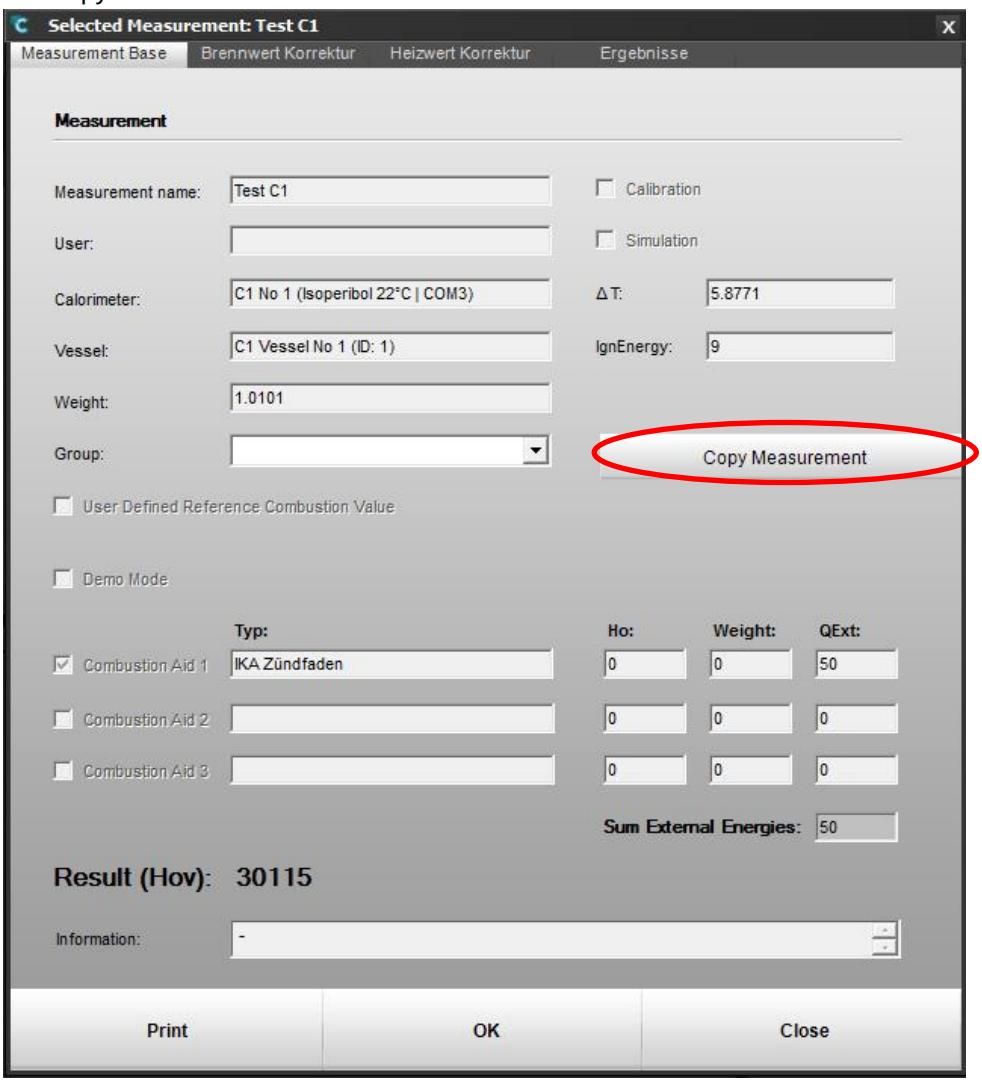


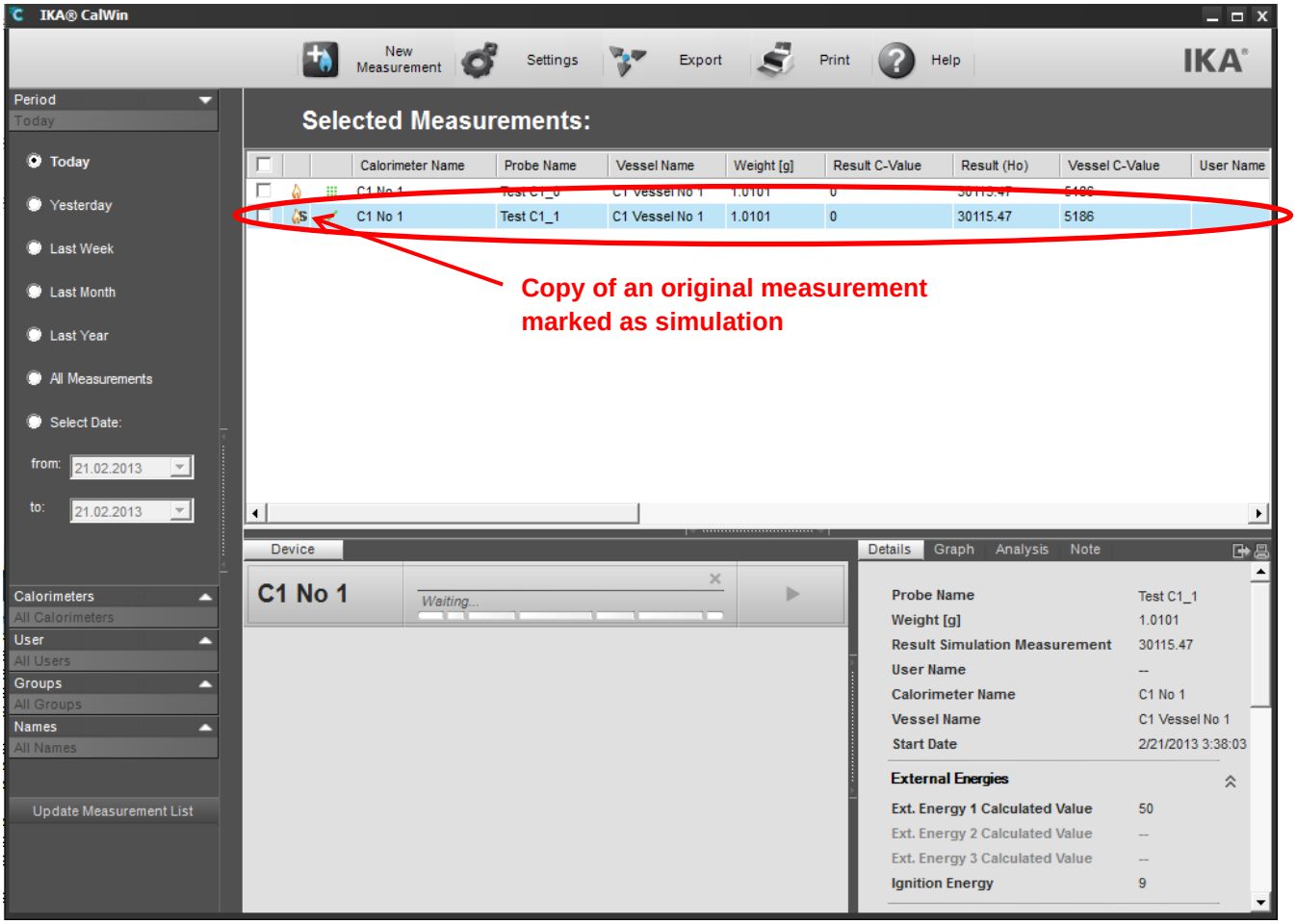
When you are done click on „Evaluation Done“ to lock the data into place and save them from further manipulation. With „Print“ you are able to print out the form.
Now the measurement is marked as „evaluated“ in the main list.



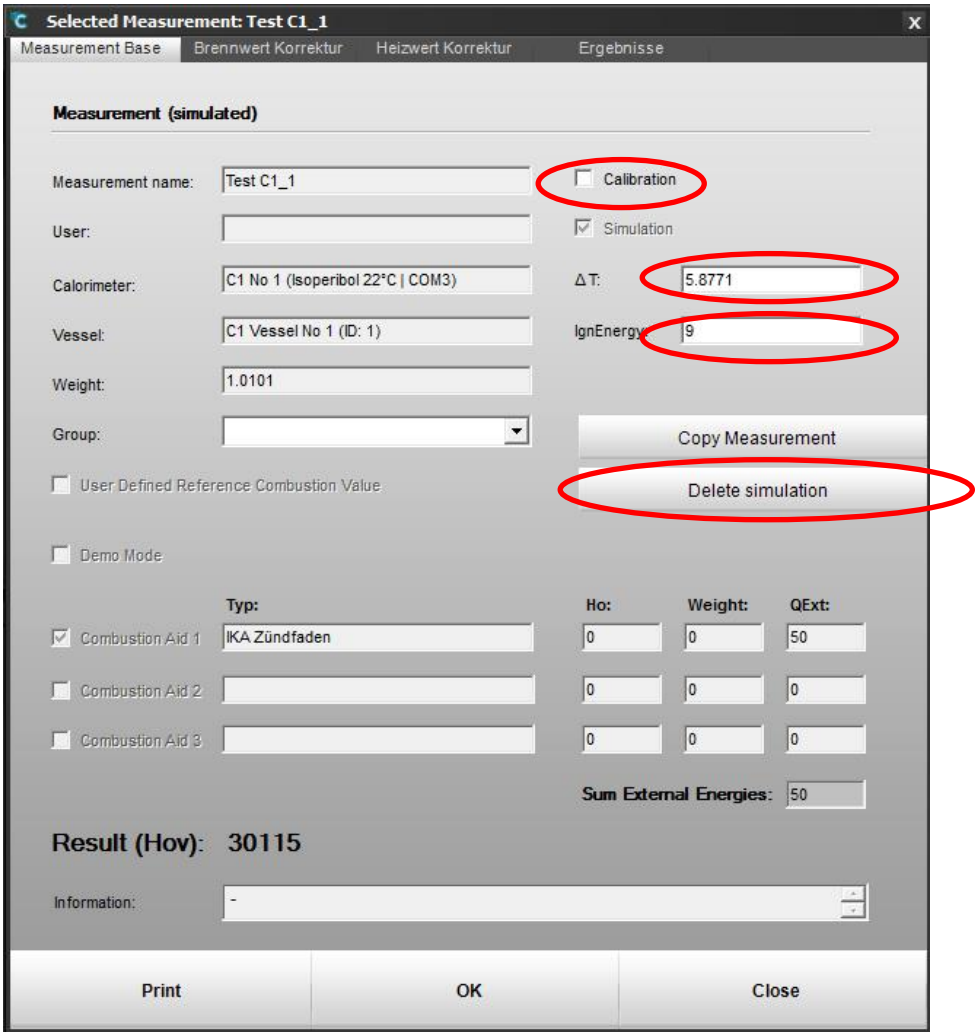
4.5 Make modifications to an existing measurement

If you want to do some changes to an existing measurement, you first have to make a copy of this measurement as it is not allowed to edit the original data.
To do so, access to the original data and click on “Copy Measurement”.
The copy can now be found in the main list and is marked as a simulation.





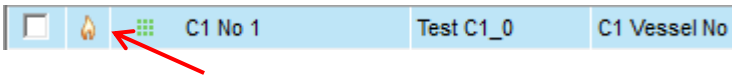
If you open the simulated measurement, it is possible to change the values of ΔT, ignition energy and you can change a calibration into a measurement and vice versa.



It is also possible to delete a simulated measurement. A regular measurement cannot be deleted.

4.6 States of a measurement

In the main list the measurements, calibrations and simulations are marked as such.

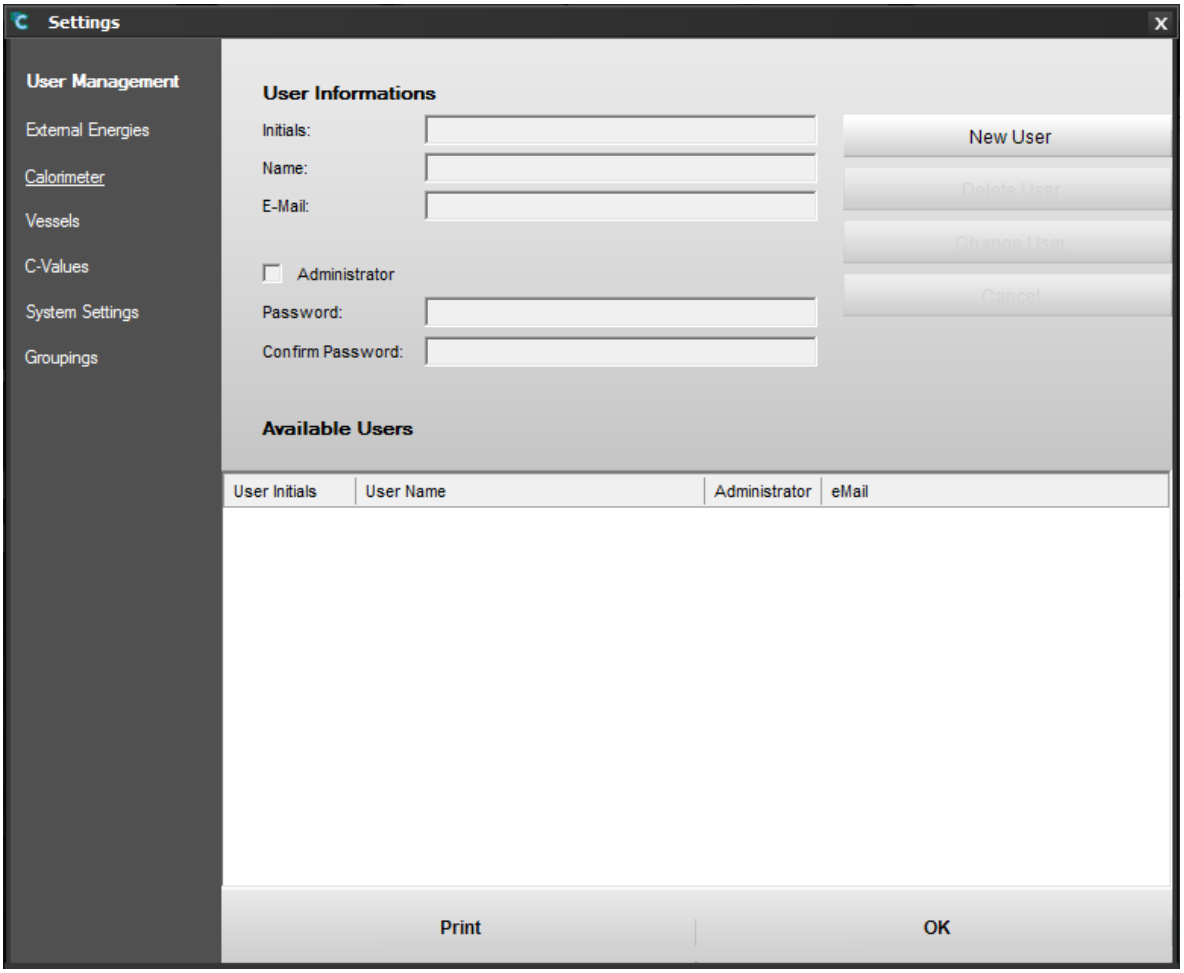


The meaning of the icons:

- calibration
- simulated calibration
- measurement
- simulated measurement

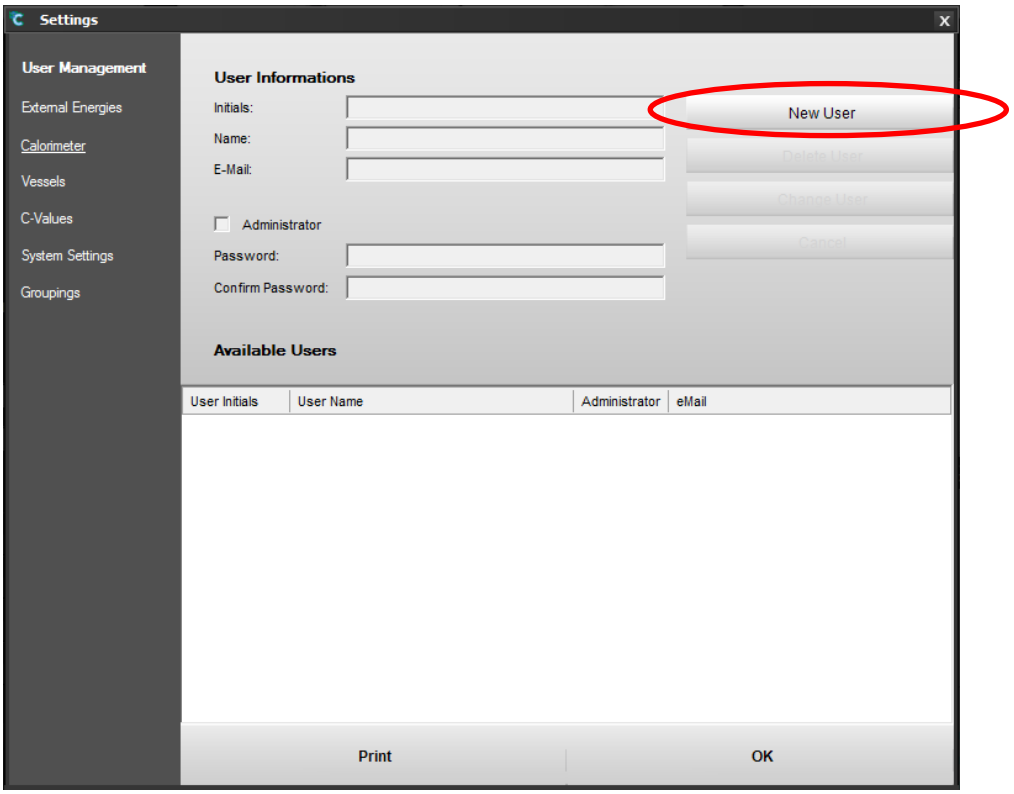
5 Settings

5.1 User Management

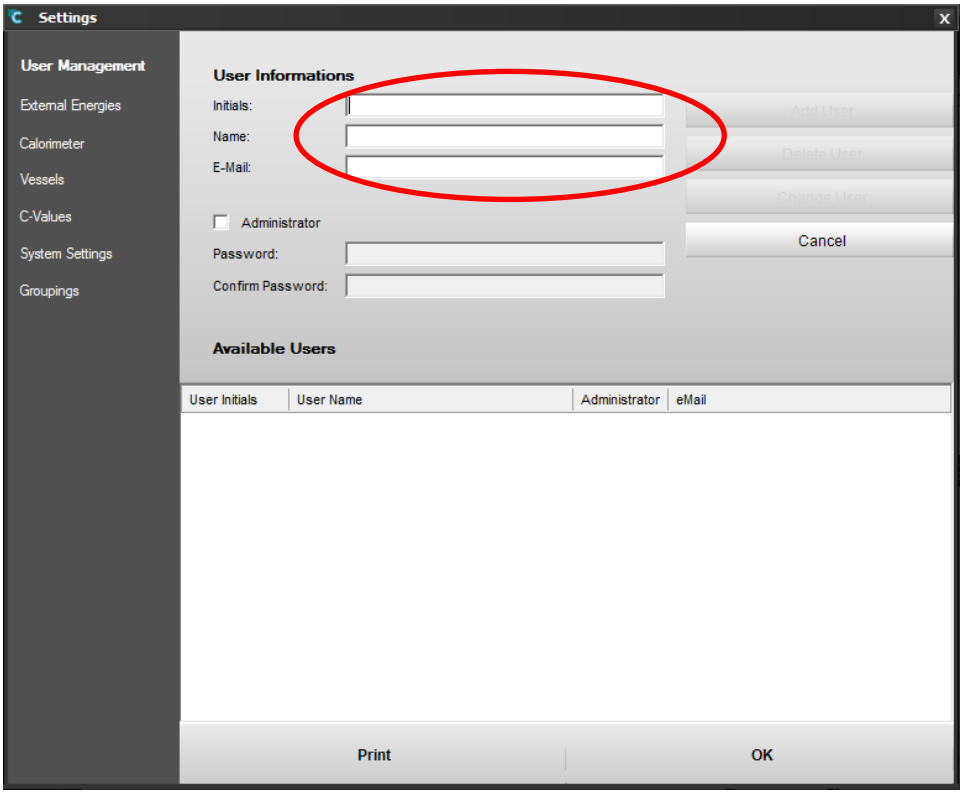


5.1.1 Create a new user

CalWin can create and save various users. Measurements can be assigned to specific users.

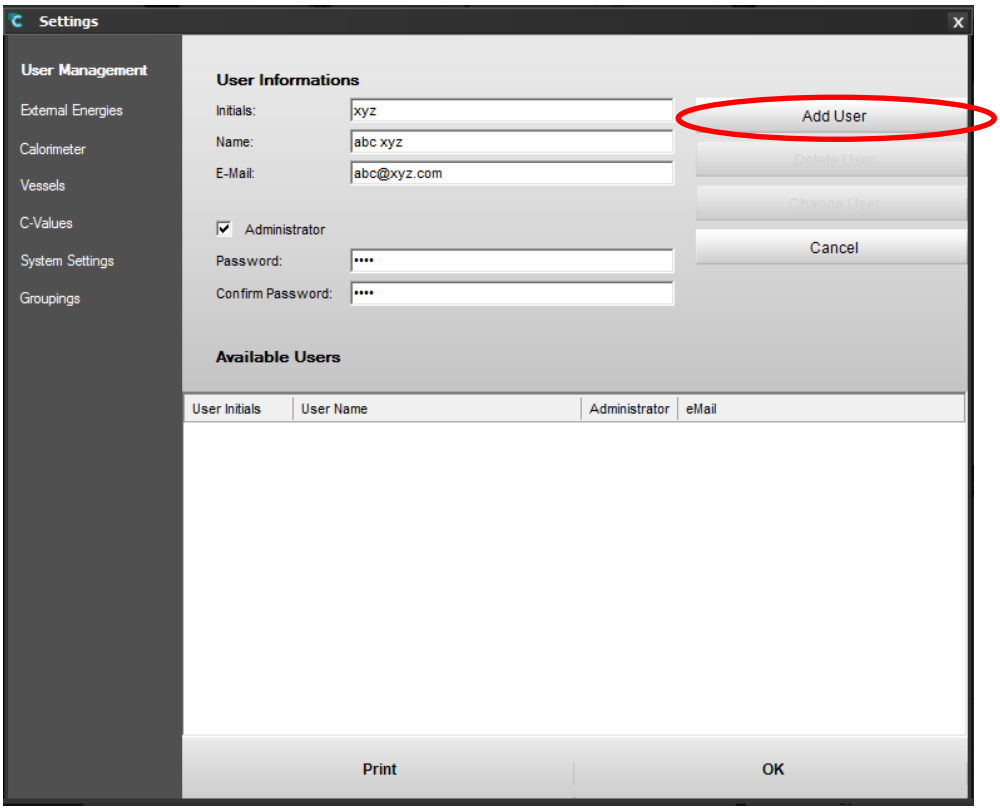


1. Press “New User” button

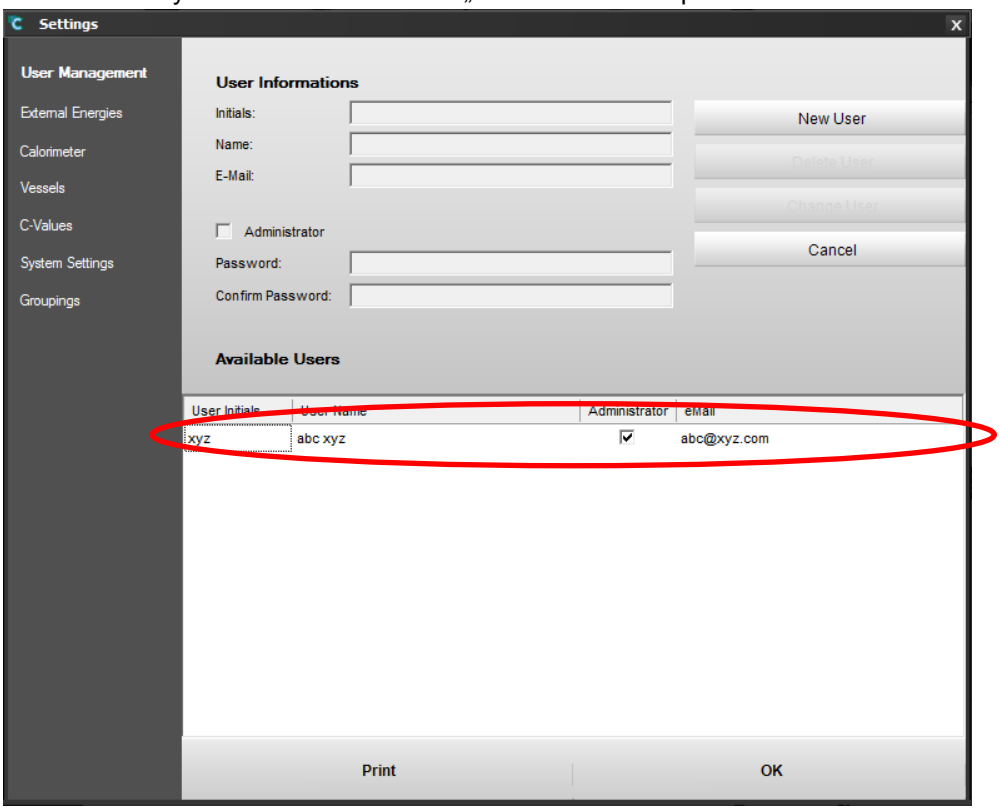


2. Enter user initials, full name and/or e-mail address.
   INFO: e-mail addresses are currently not in use. Later on it will be possible to send a lost password to an user!
3. Activate the administrator checkbox for the password entry fields.

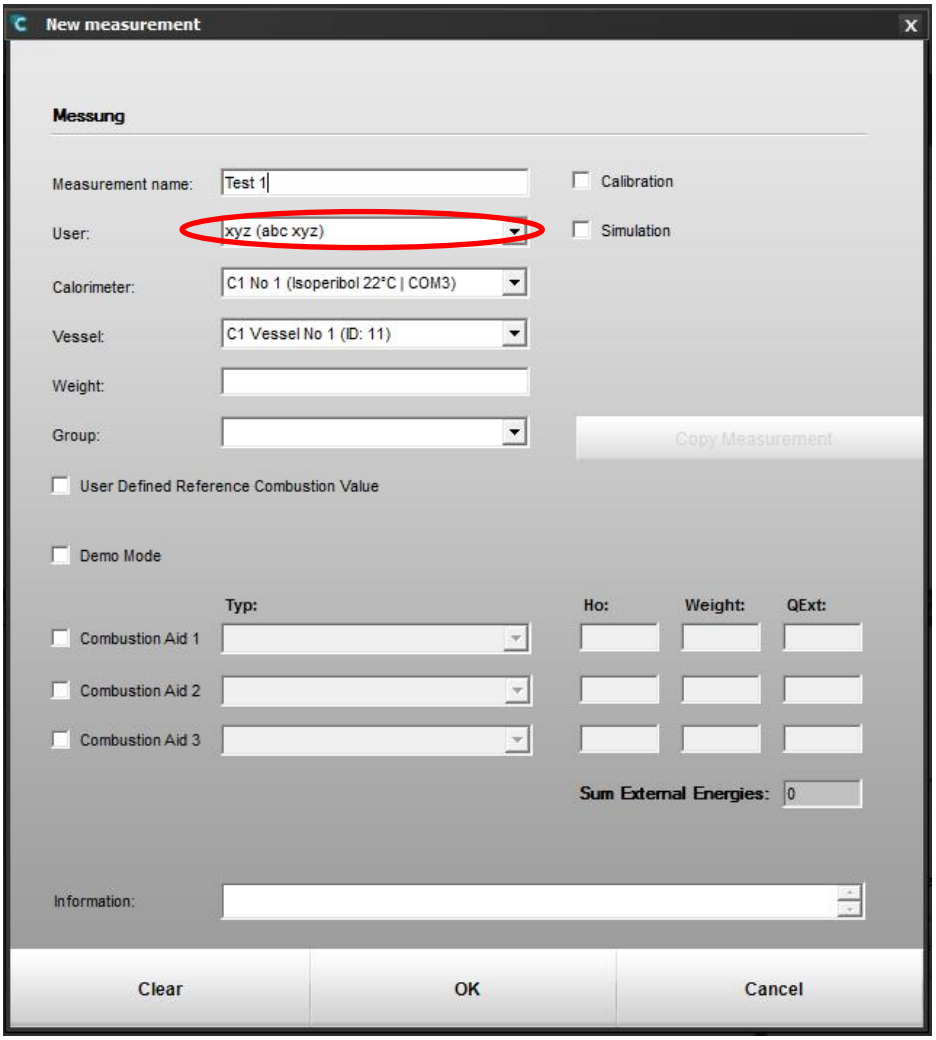
INFO: administrator password is currently not in use! Later on, the Settings menu can be locked by password, so that a „normal“ user can only perform measurements without access to the settings.



4. When you are finished click on „Add User“ to complete the task.

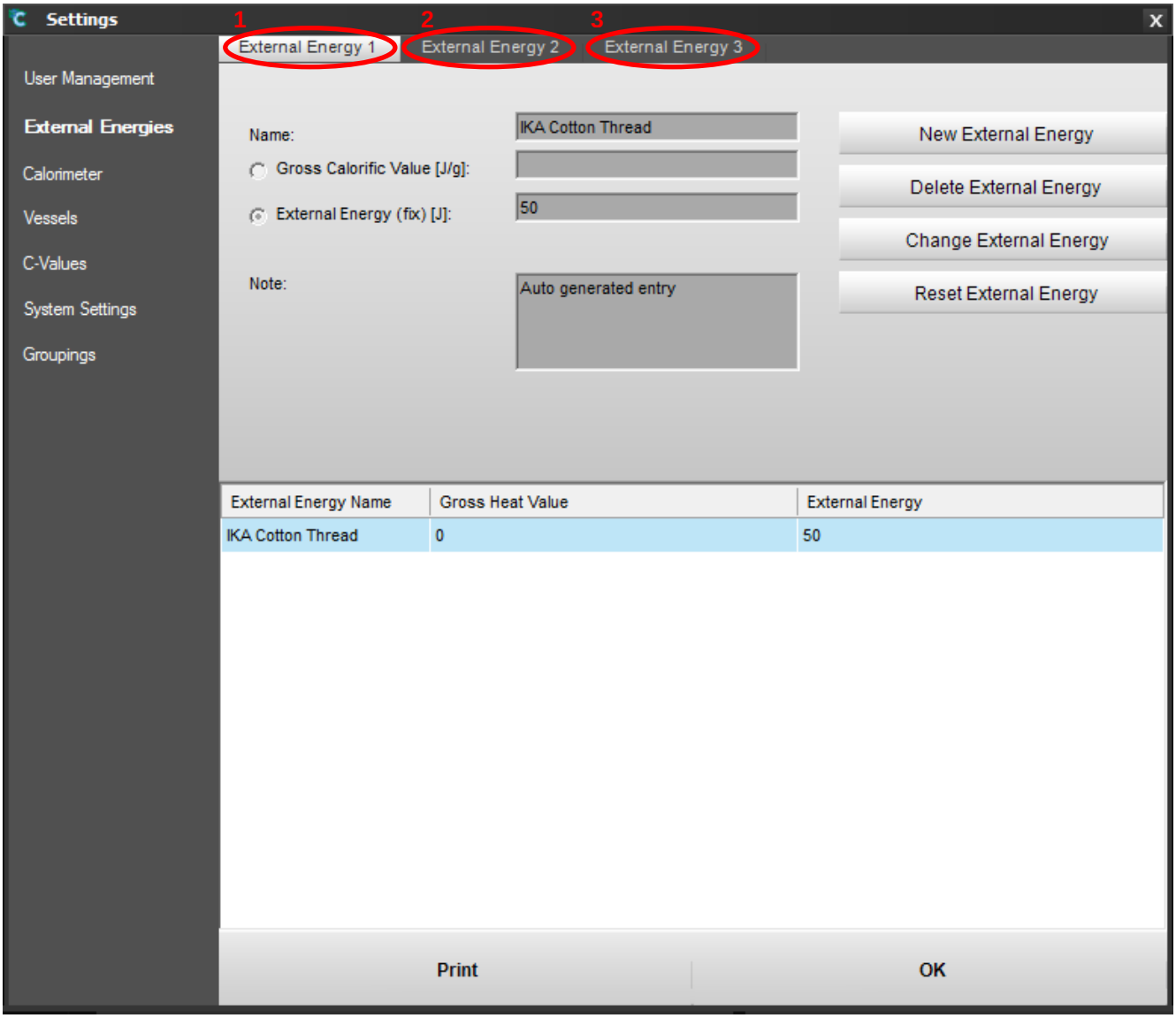


5. From now on, this user will be available for selection when setting up a new measurement.

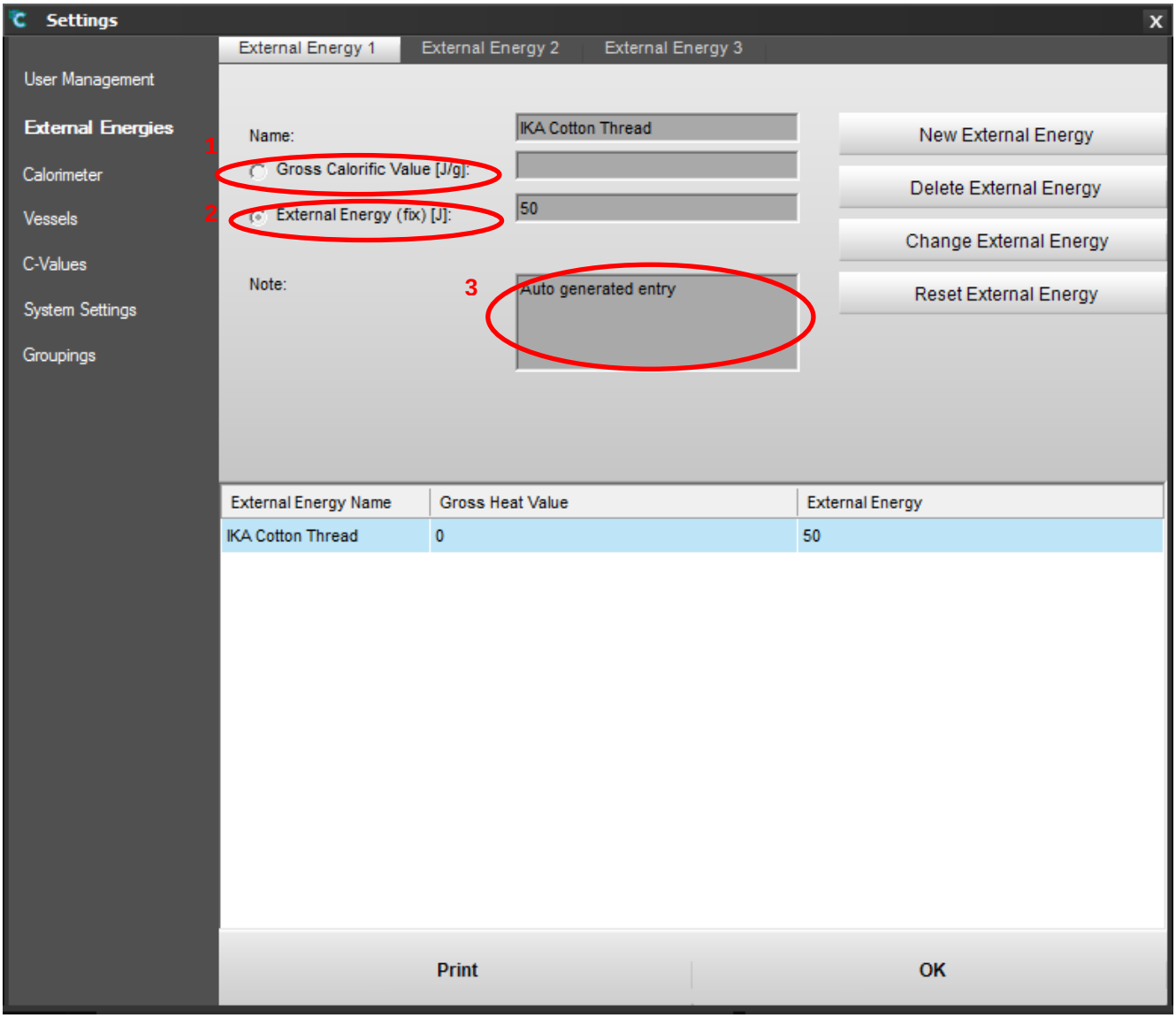

New measurement
Messung
Measurement name:
Test 1
Calibration
User:
xyz (abc xyz)
Simulation
Calorimeter:
C1 No 1 (Isoperibol 22°C | COM3)
Vessel:
C1 Vessel No 1 (ID: 11)
Weight:
Group:
Copy Measurement
User Defined Reference Combustion Value
Demo Mode
Typ:
Ho:
Weight:
QExt:
Combustion Aid 1
Combustion Aid 2
Combustion Aid 3
Sum External Energies:
0
Information:
Clear
OK
Cancel

5.2 External Energies

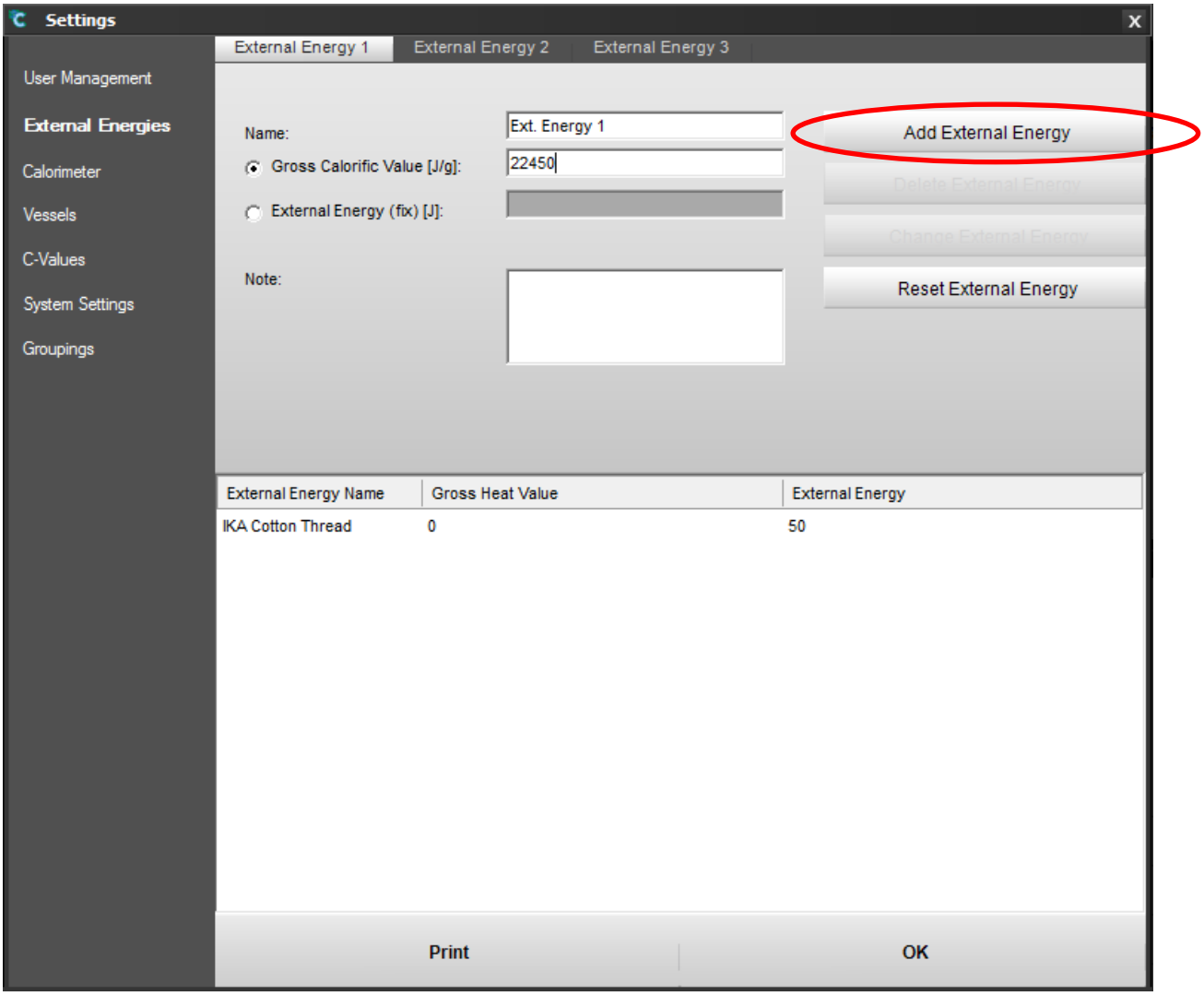
It's possible to manage 3 different external energies. These energies can later be selected when setting up a new measurement. They can either have fixed energy or have a gross calorific value, which needs an additional weight indication.



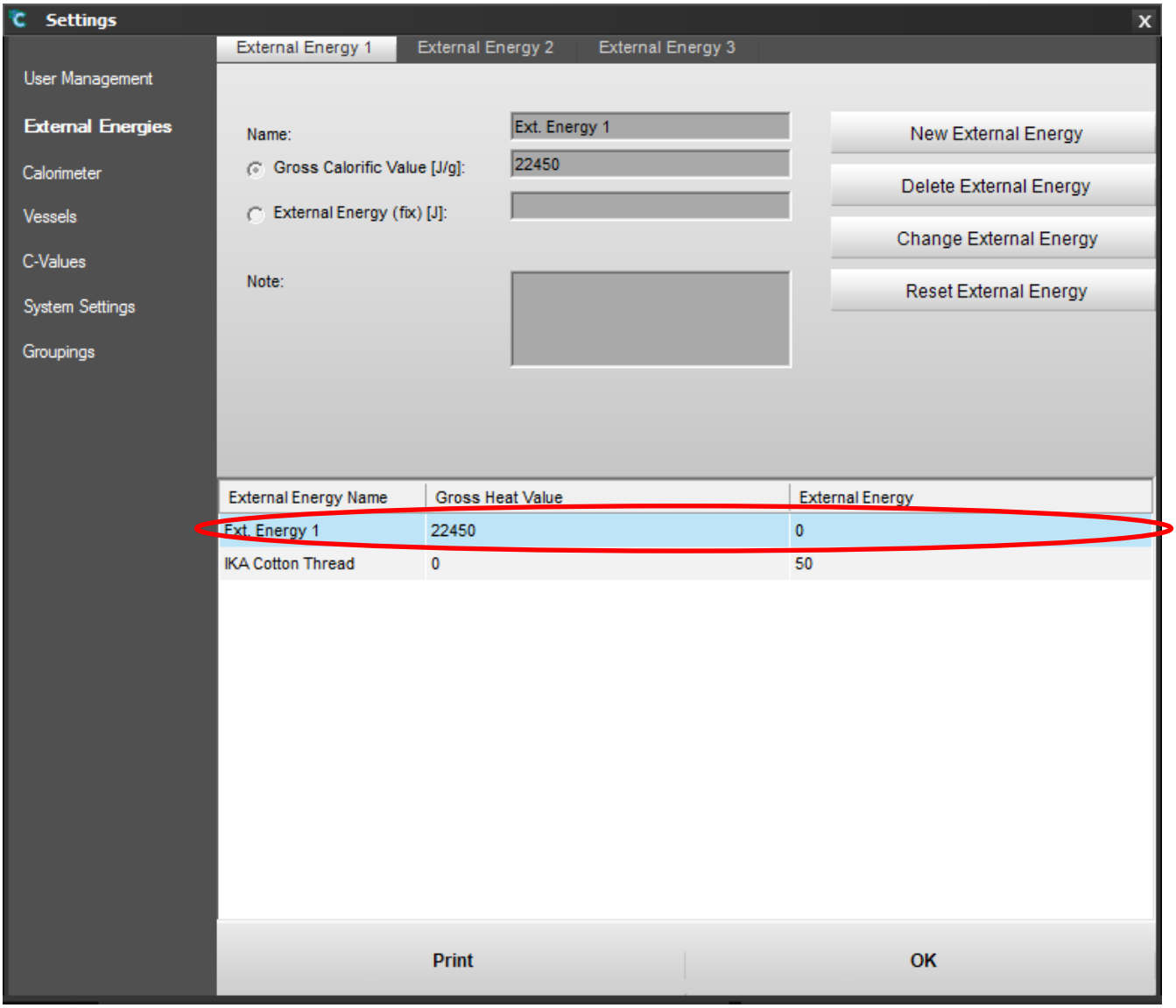
1. Select an external energy tab 1 – 3 to insert item.
2. Click on "New External Energy"



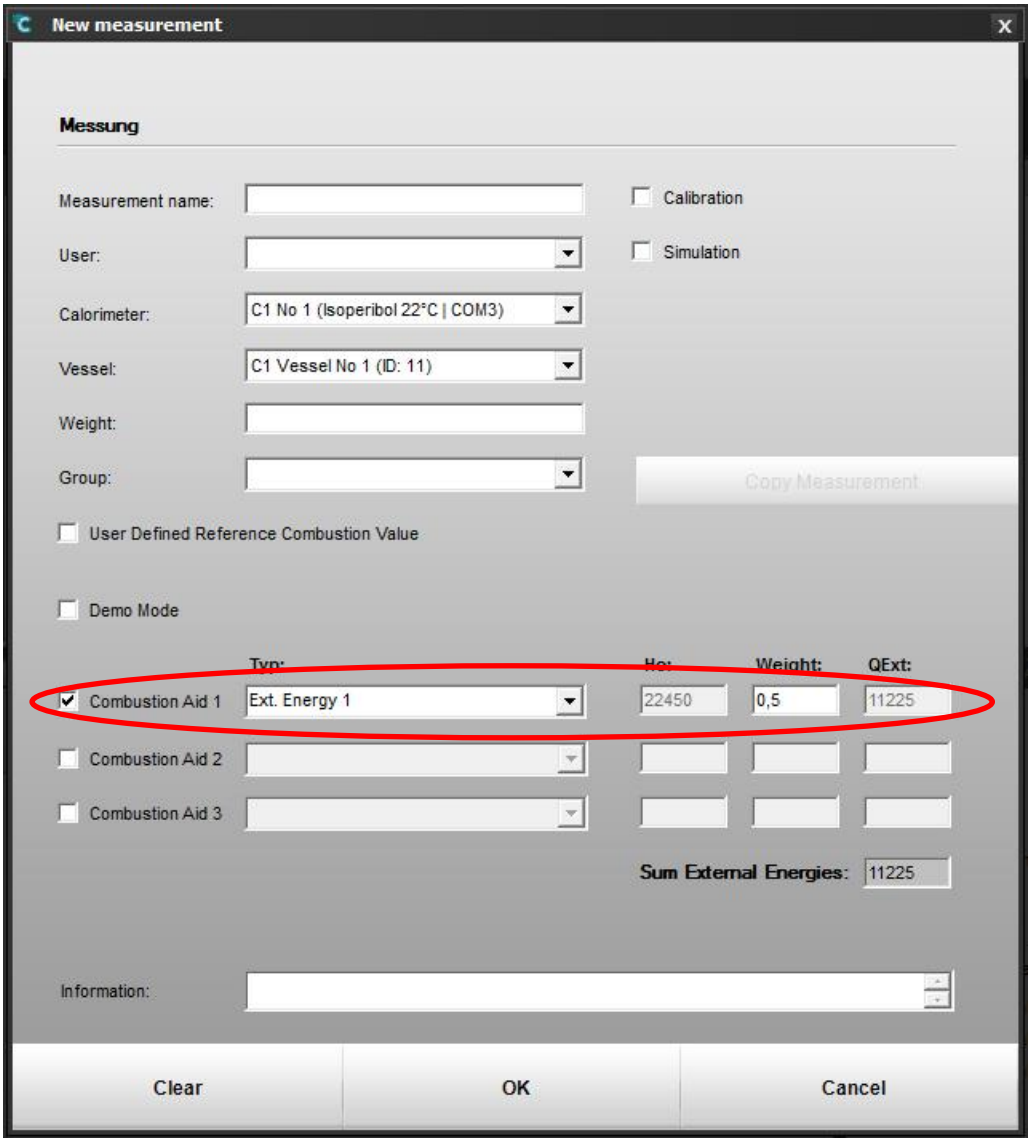
3. Select your kind of external energy:
    1. Gross Calorific Value: an additional indication of the weight is necessary when setting up a new measurement
    2. External Energy (fix): predefined fix energy value
    3. It is possible to add a note to the external energy that's being created, e.g., creation date



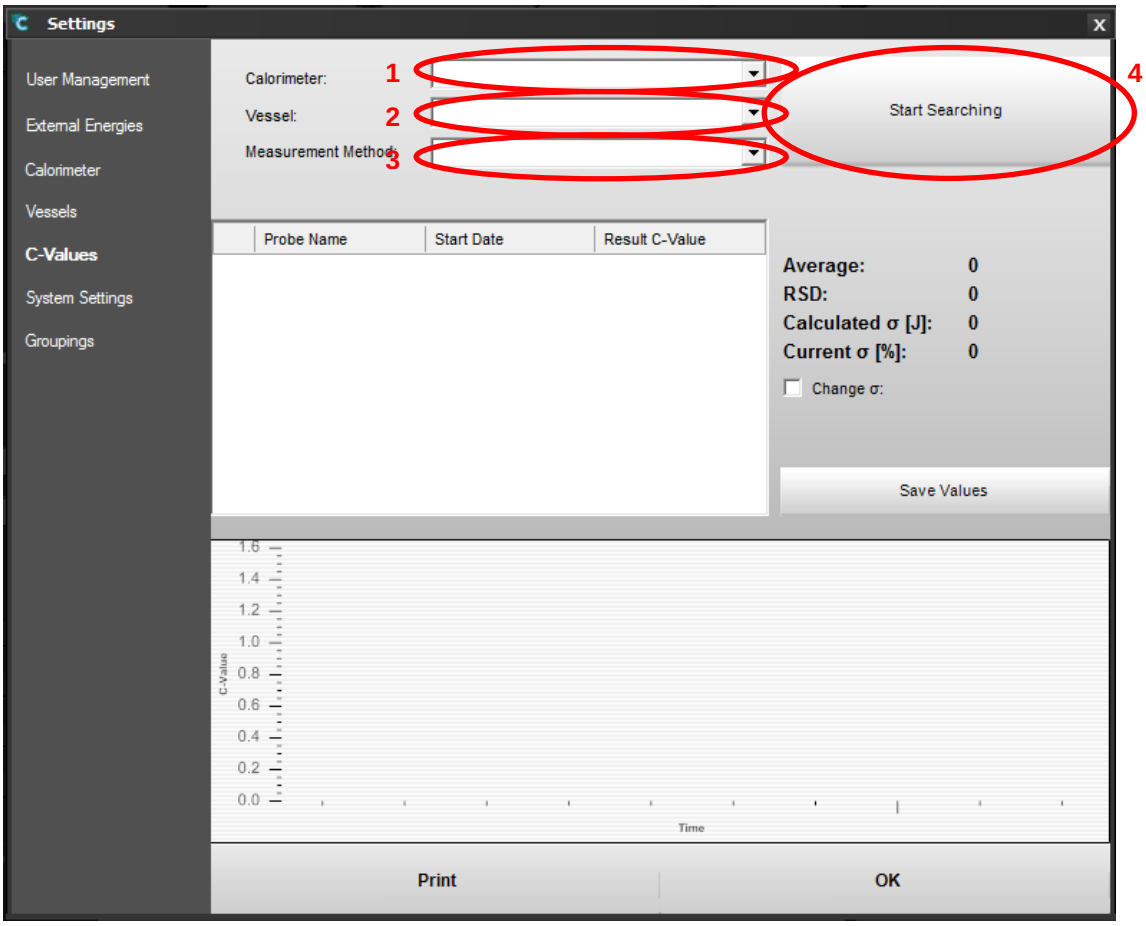
4. Confirm by clicking “Add External Energy”



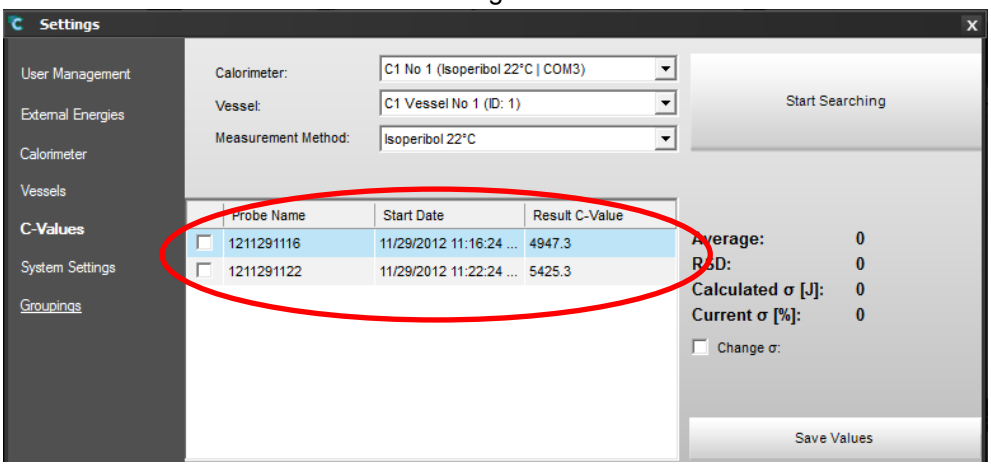
5. Now it is possible to select this external energy as “Combustion Aid 1” in the new measurement screen and to add a weight.


New measurement
Messung
Measurement name:
Calibration
User:
Simulation
Calorimeter:
C1 No 1 (Isoperibol 22°C | COM3)
Vessel:
C1 Vessel No 1 (ID: 11)
Weight:
Group:
Copy Measurement
User Defined Reference Combustion Value
Demo Mode
Typ:
Hc:
Weight:
QExt:
Combustion Aid 1
Ext. Energy 1
22450
0,5
11225
Combustion Aid 2
Combustion Aid 3
Sum External Energies:
11225
Information:
Clear
OK
Cancel

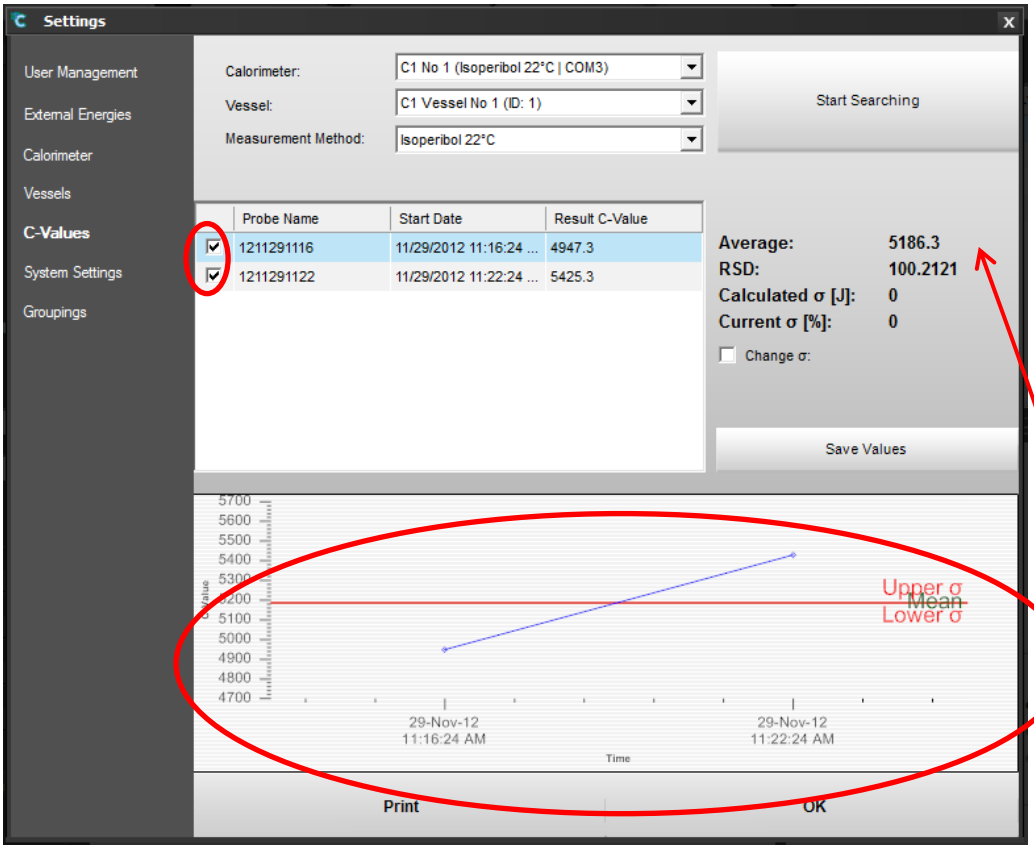
5.3 C-Values



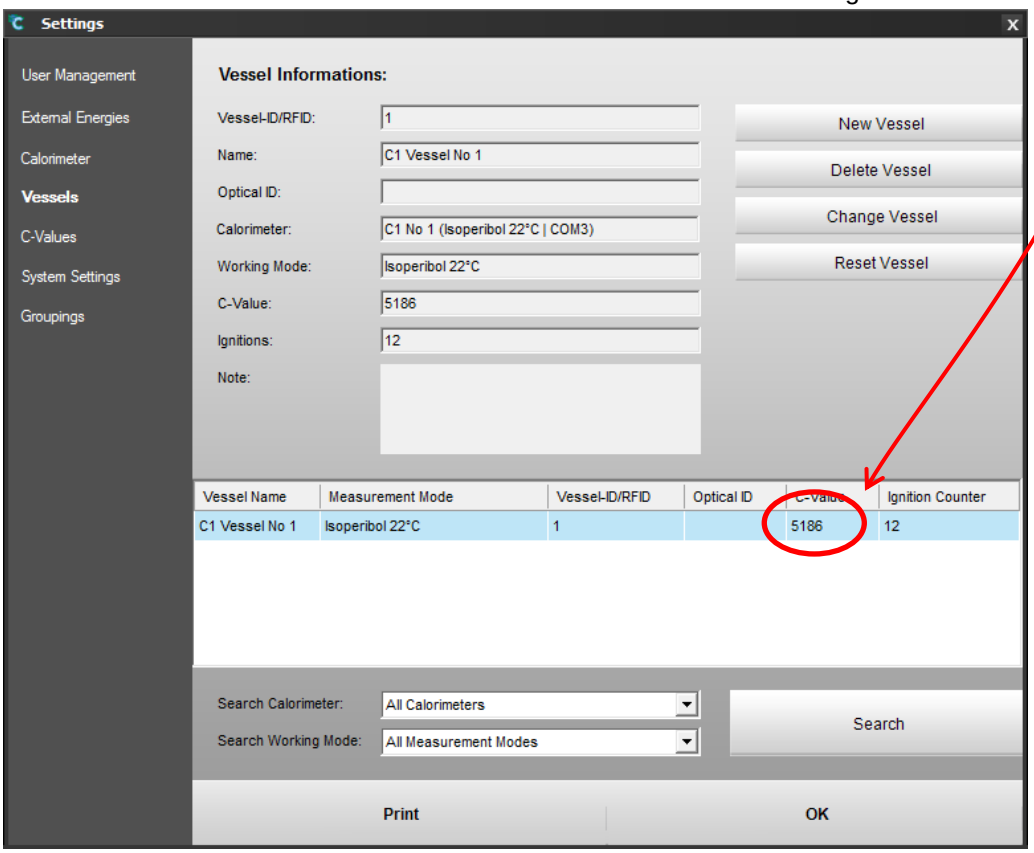
1. Select a calorimeter
2. Select a vessel
3. Select a measurement method
4. Press the “Start Searching” button



5. The found calibrations are now listed.
6. Select the calibrations for calculating the c-value. The selected calibrations are shown in the graph.

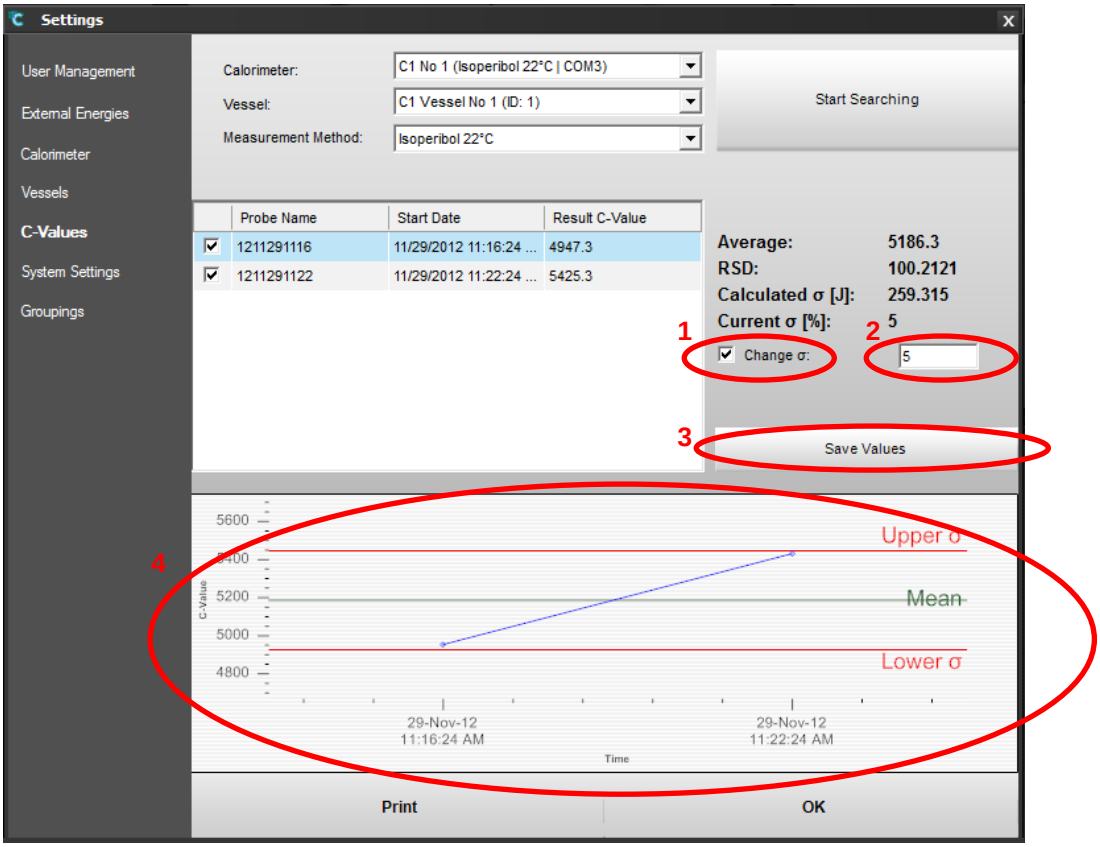


7. Click „Save Values“ to set the calculated average as new c-value.
8. The new c-value can also be found in the vessels settings form.



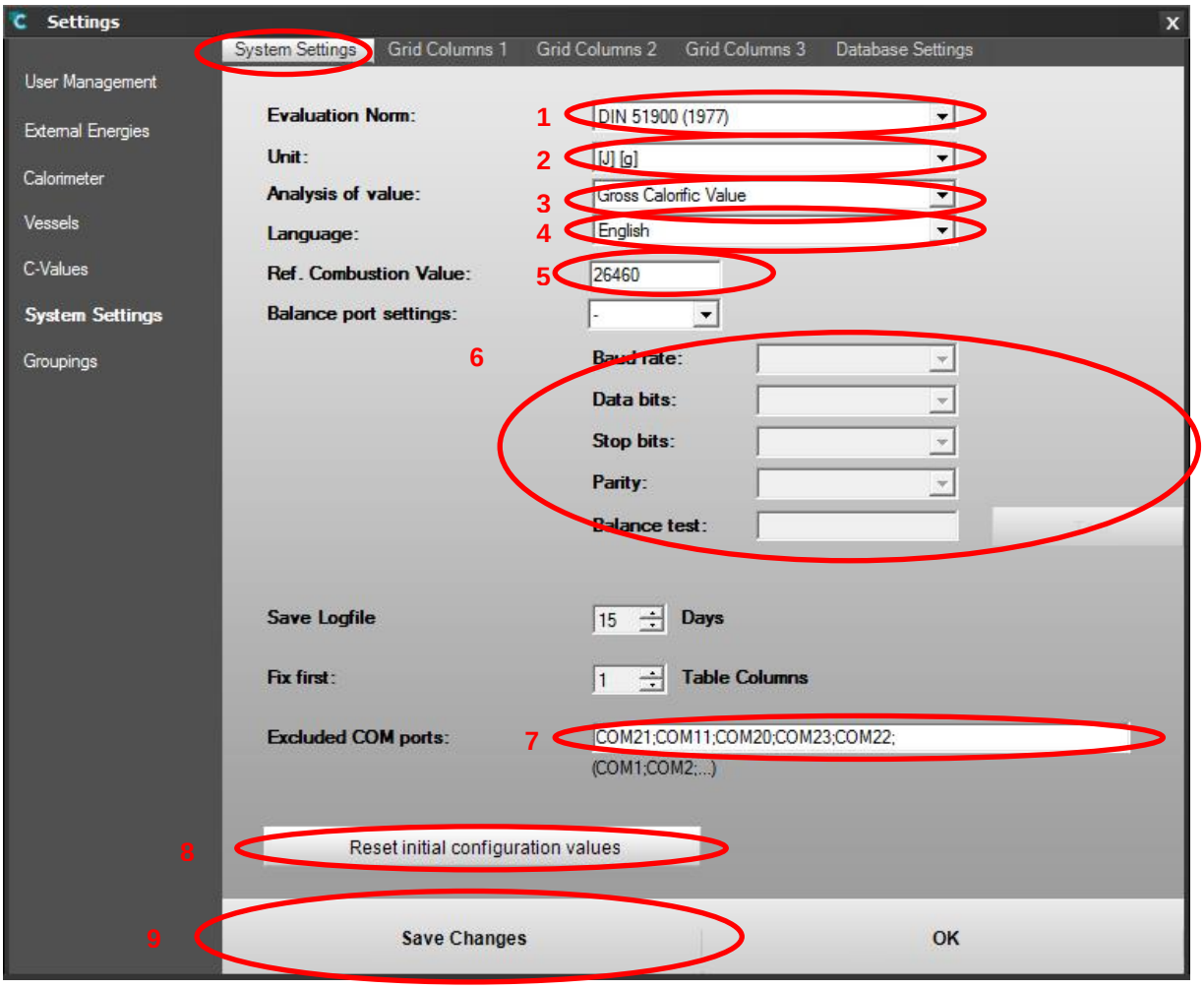
5.3.1 Comparing C-Values

It is possible to check if the c-values are inside a tolerance limit (σ - sigma).



1. Select the “Change σ” checkbox
2. Enter a value into the appearing input field.
3. Press the “Save Values” button to apply the input value
4. Check the upper and lower limits in the graph.

5.4 System Settings

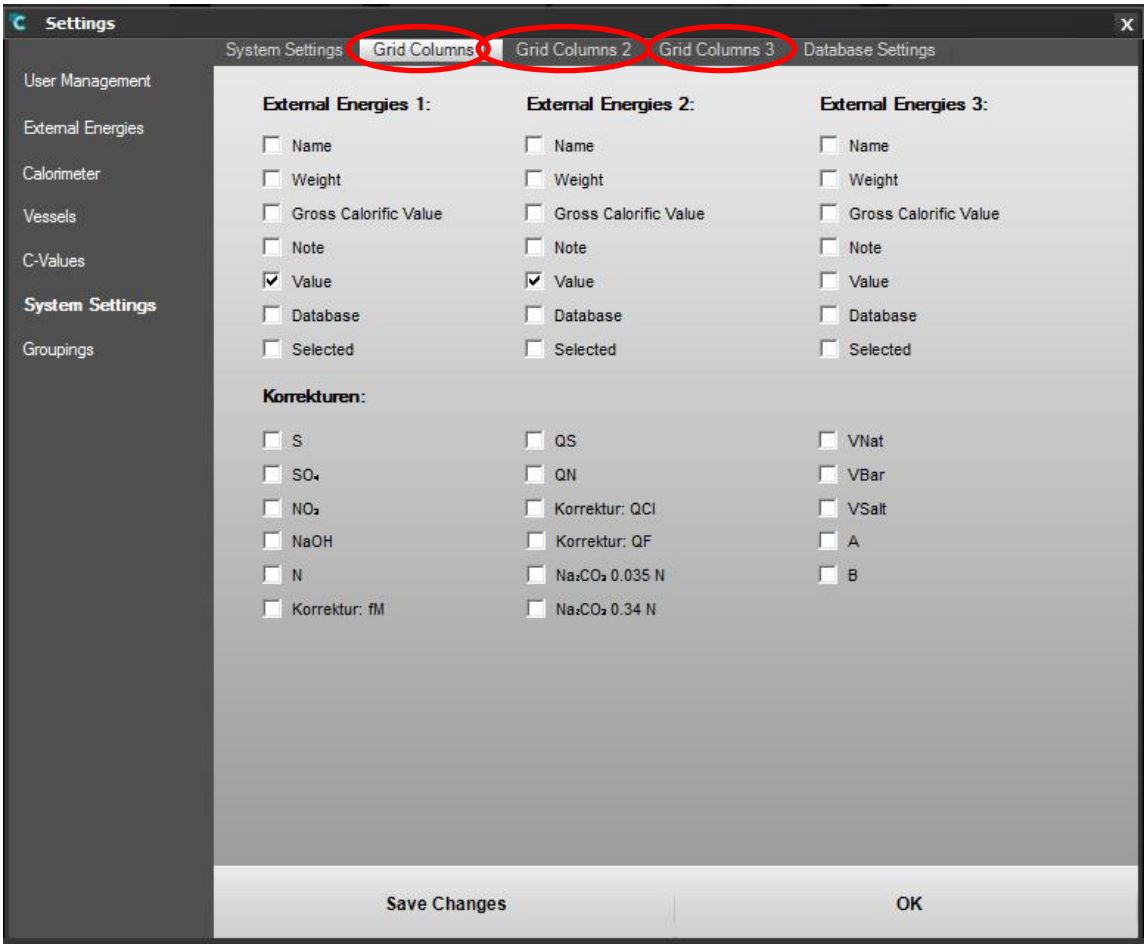


1. Select the evaluation norm to calculate the result of a measurement.
2. The calculation unit.
3. The result value used for the calculations in the “Analysis” tab in the main screen.
4. The application language.
5. The Reference Combustion Value of Benzoic Acid.
6. Possible to connect a balance directly with the PC. If a port is selected, the port setting input fields get activated and the port test button.
7. It is possible to exclude unneeded COM-Ports. If a port cannot be opened or is not reachable at startup it will be added to this list.
   If you want to re-activate a port, remove it from the input field and it will be used on next application start.
8. Reset the user settings to initial values.
9. If you want to save changes of any input field(s), press the “Save Changes” button to take over the new value(s).

5.4.1 Grid Columns 1 – 3

Set the visible columns at the main screen. If you want to hide or add a column, this is possible in the 3 “Grid Columns” tabs.

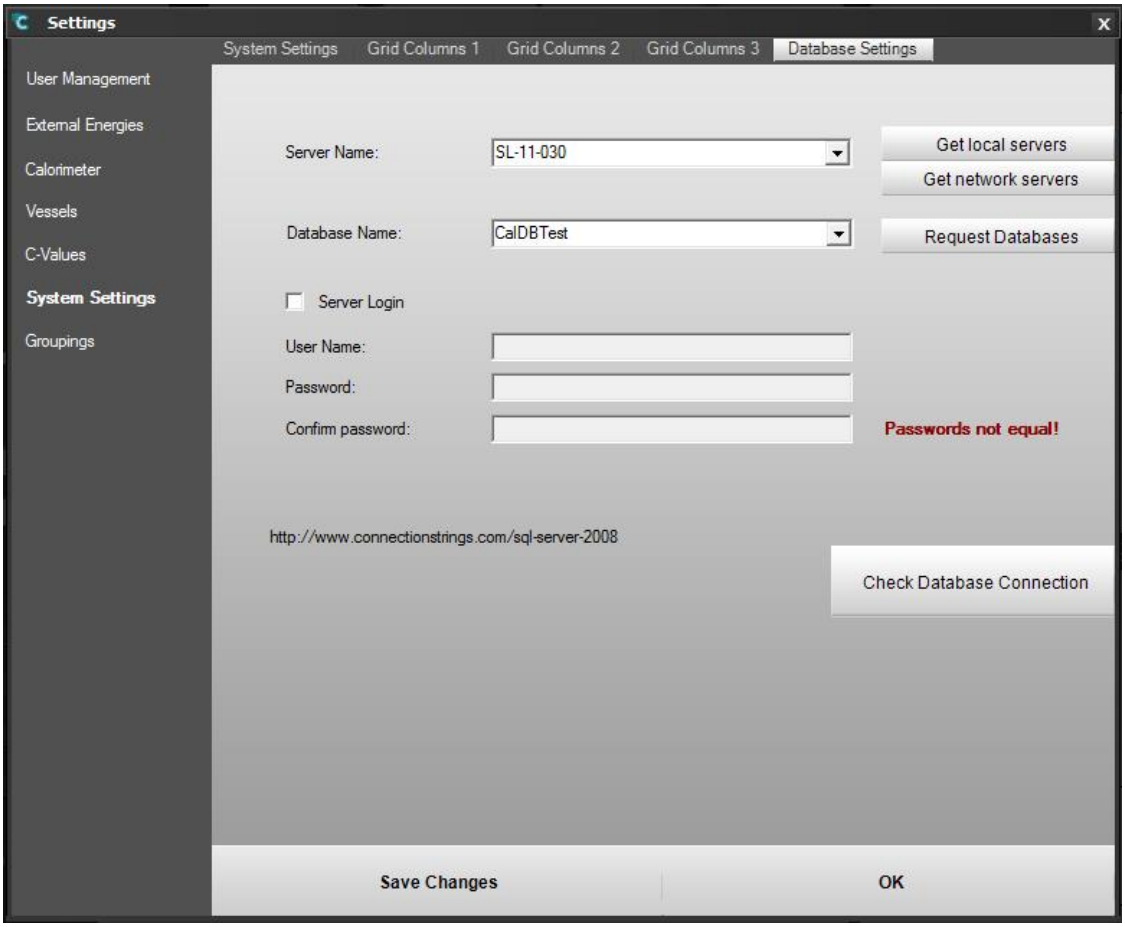
To take over the changes on a tab, press on the “Save Changes” button.



5.4.2 Database Settings

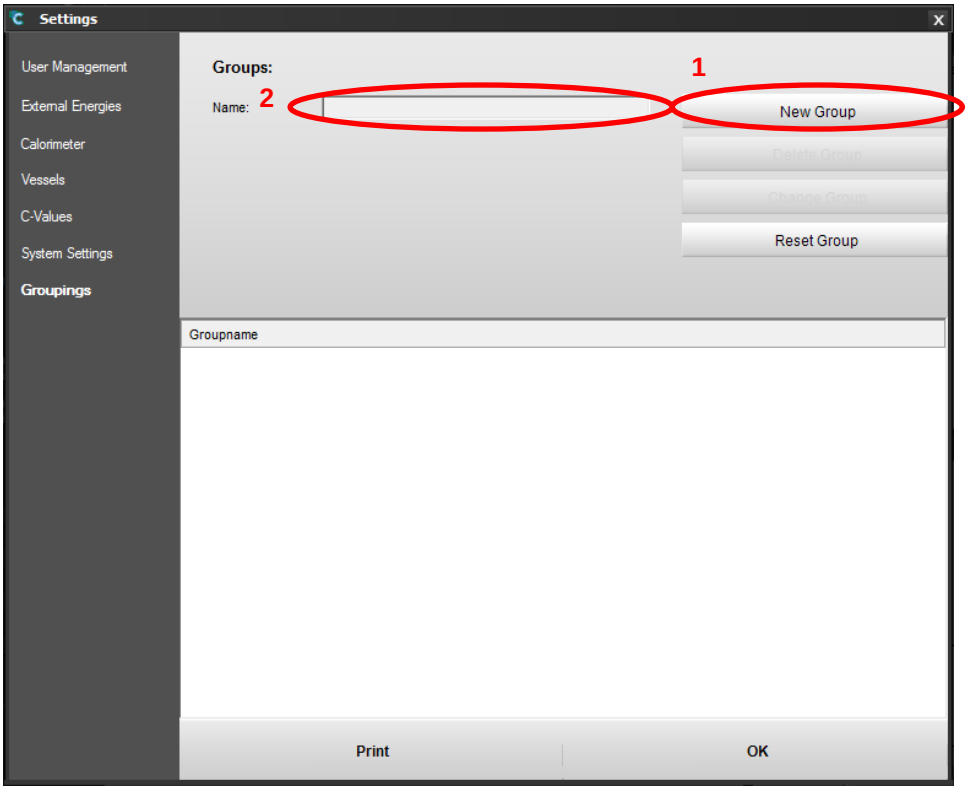
On this form you can change the access to the underlying database. This tab is only visible if you selected the SQL Data Storage method.

WARNING: change these values only if you know exactly what you are doing!!!

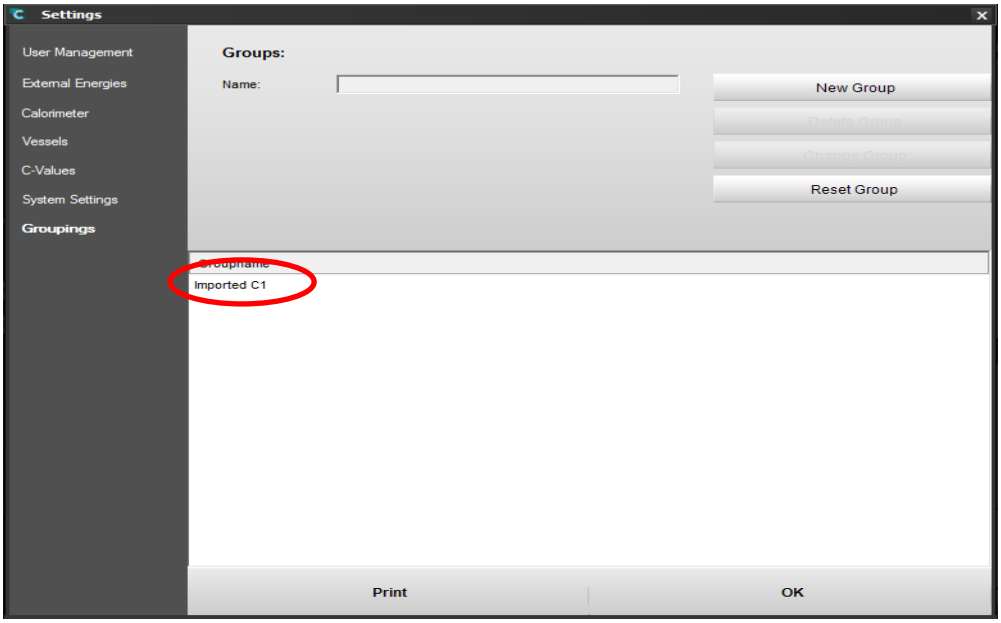


5.5 Groupings

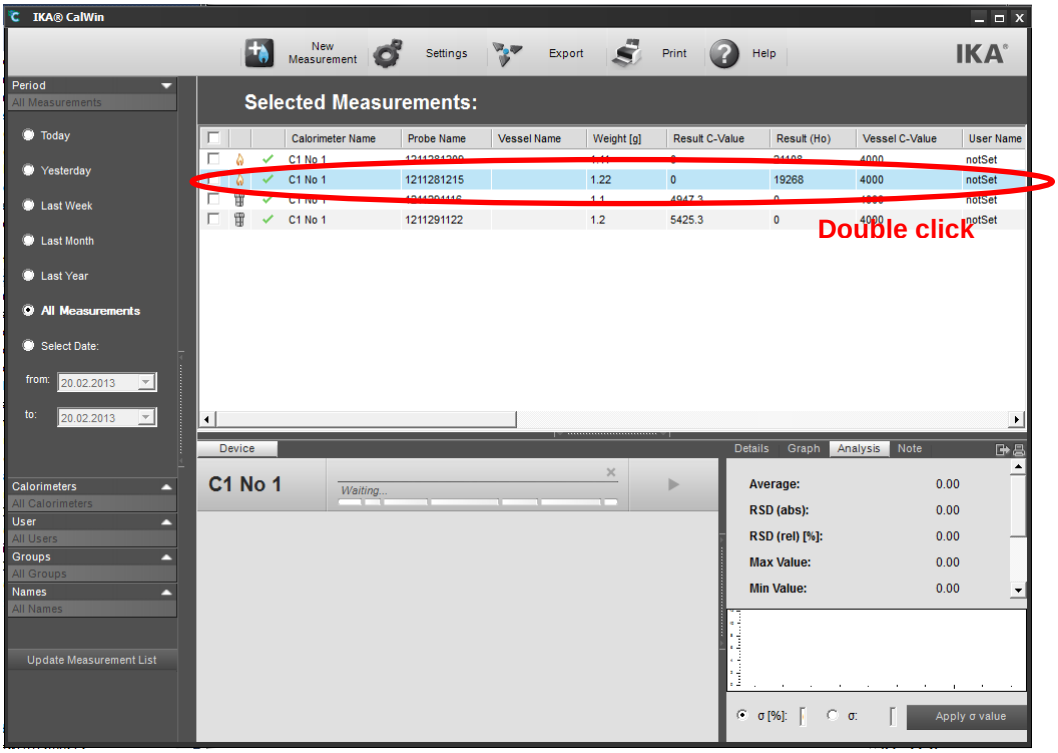
You can create various groups, to have an additional way to sort your measurements.
E.g.: If you have samples which should be tested on different days, you can add them to a group so that they can be found, displayed and analyzed much easier on the main screen.



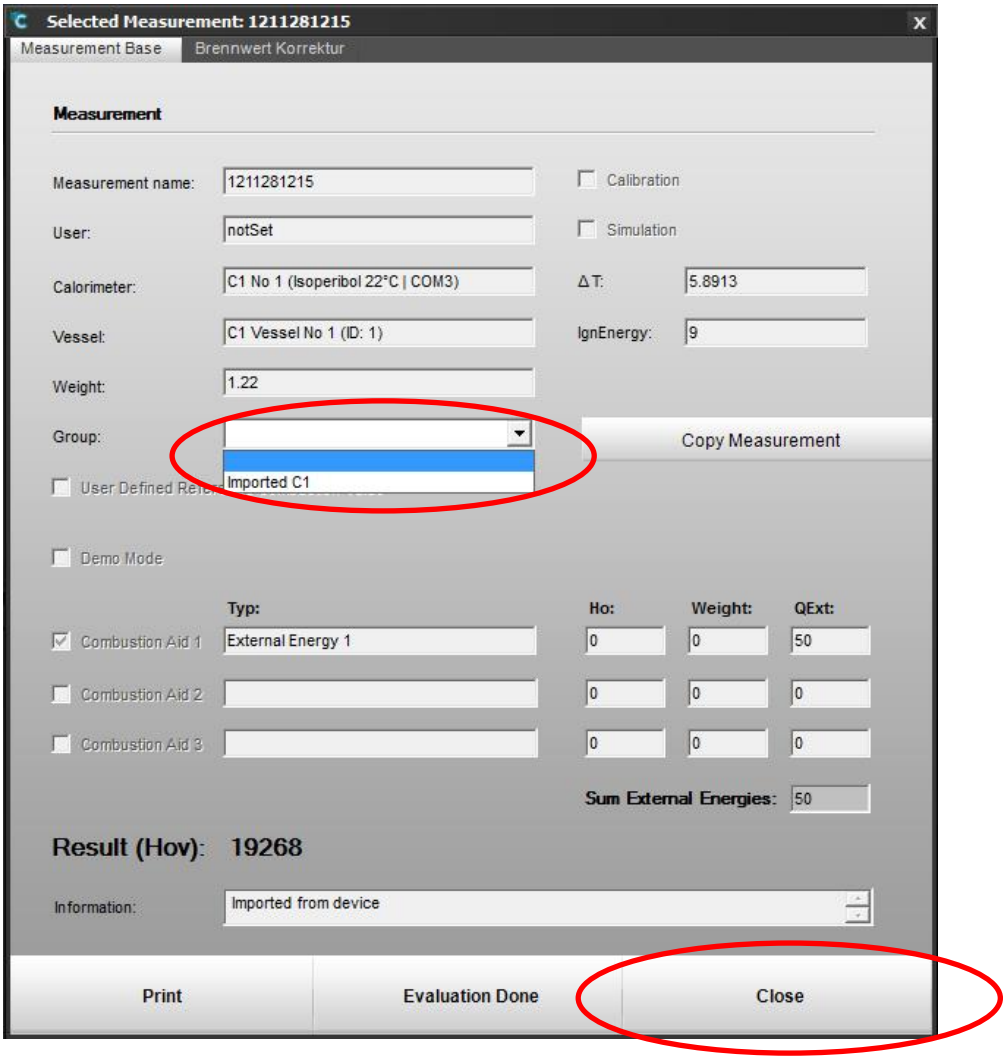
1. Press “New Group”.
2. Enter Name.



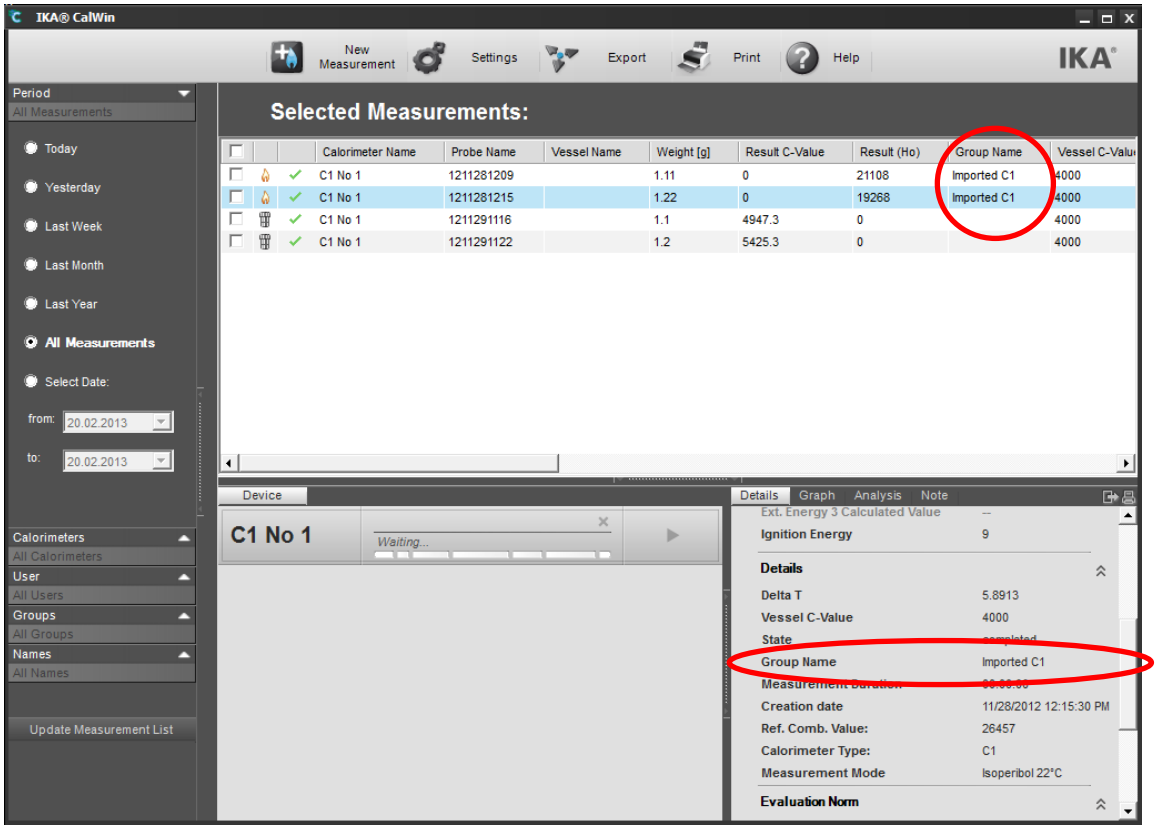
3. Now you can add measurements from the main screen to this group.
4. Open measurement on the main screen by double clicking.



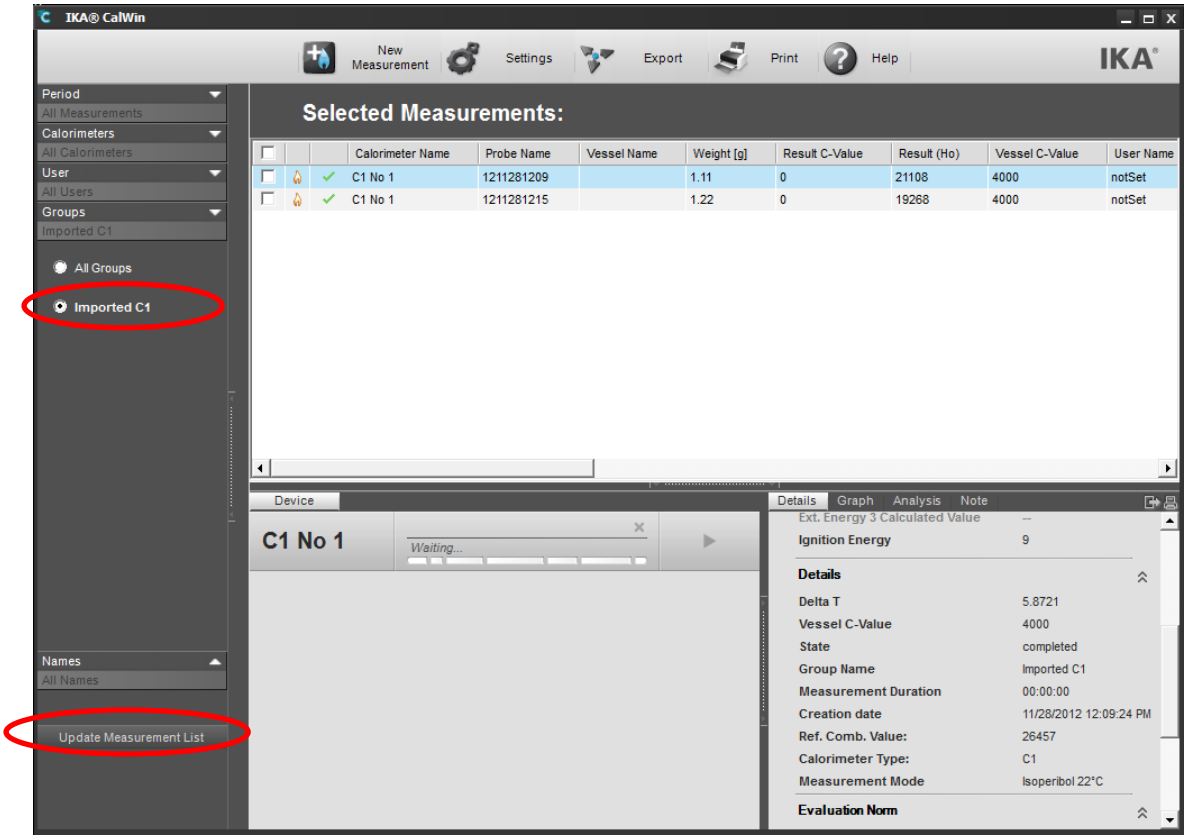
5. Measurement opens and Group can be selected



6. Select Group and press on the “Close” button

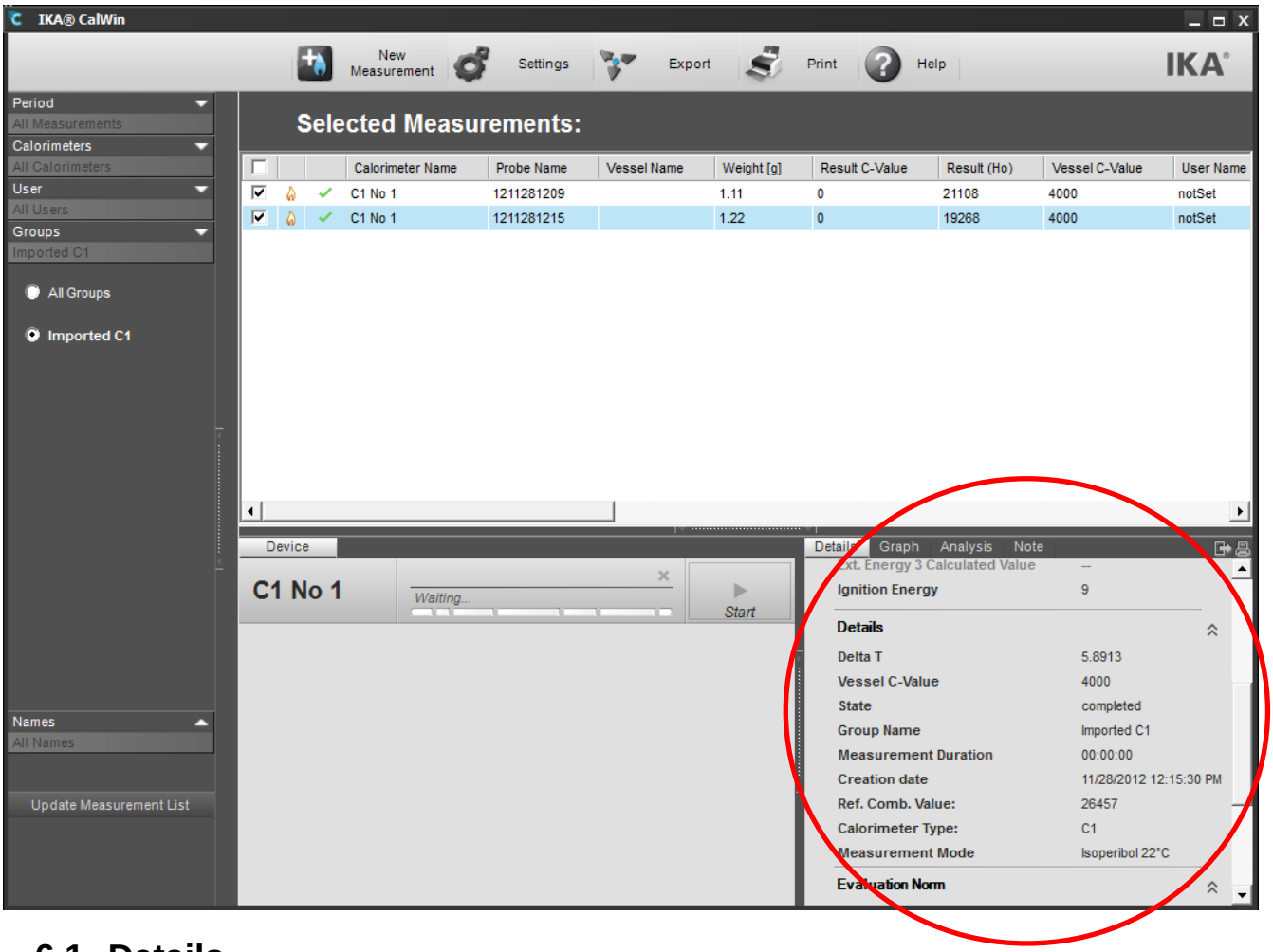


7. The selected group name is shown in the Details tab and in the Group Name column, if it is activated in the Settings.



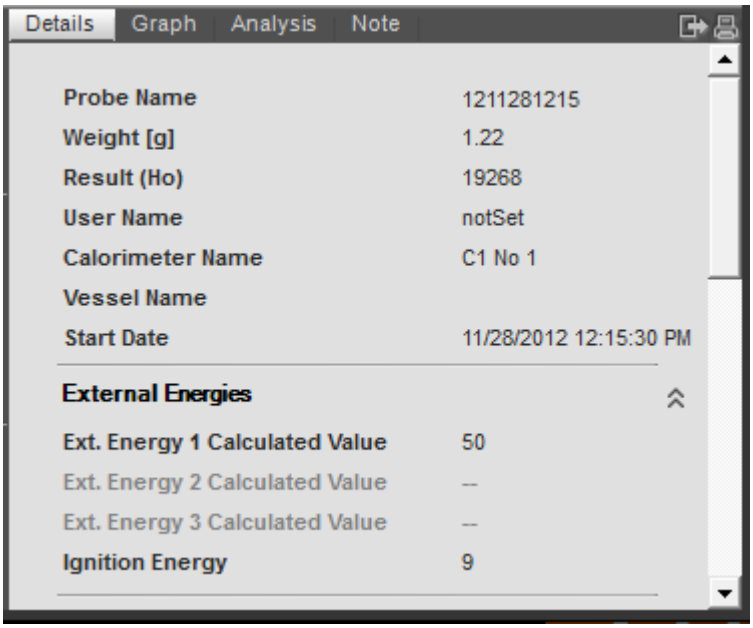
8. Now you can use the group name as a filtering option when searching for measurements. Just select the group you want to display and click on “Update Measurements”.

6 Detail tabs



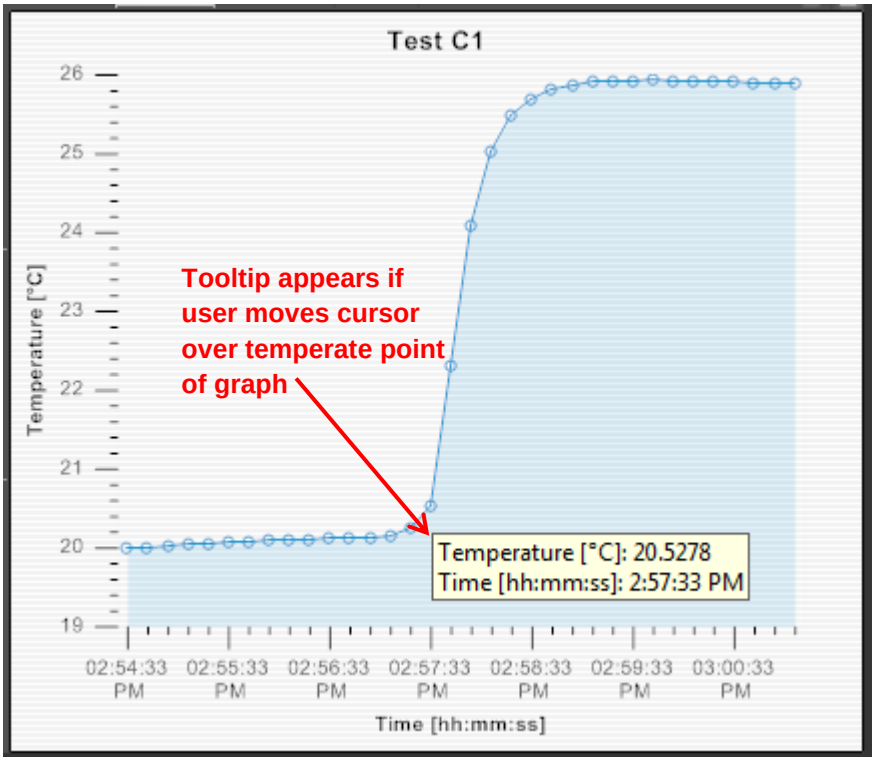
6.1 Details

Get an overview of the selected measurement.



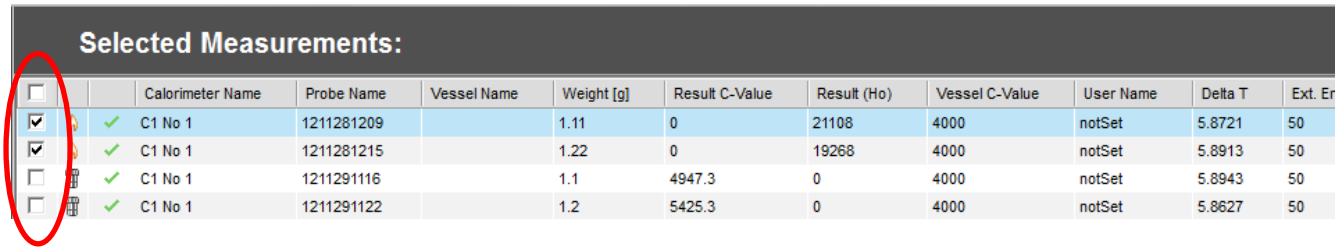
6.2 Graph

See the temperature curve of a selected measurement. This doesn't work for imported measurements!

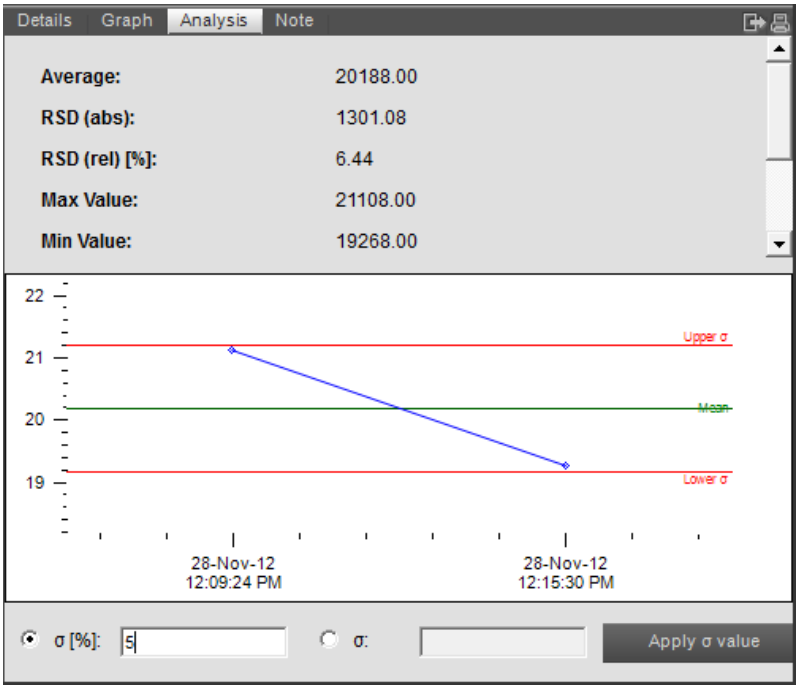


6.3 Analysis

Select measurements using the check box and compare them in the "Analysis" tab.



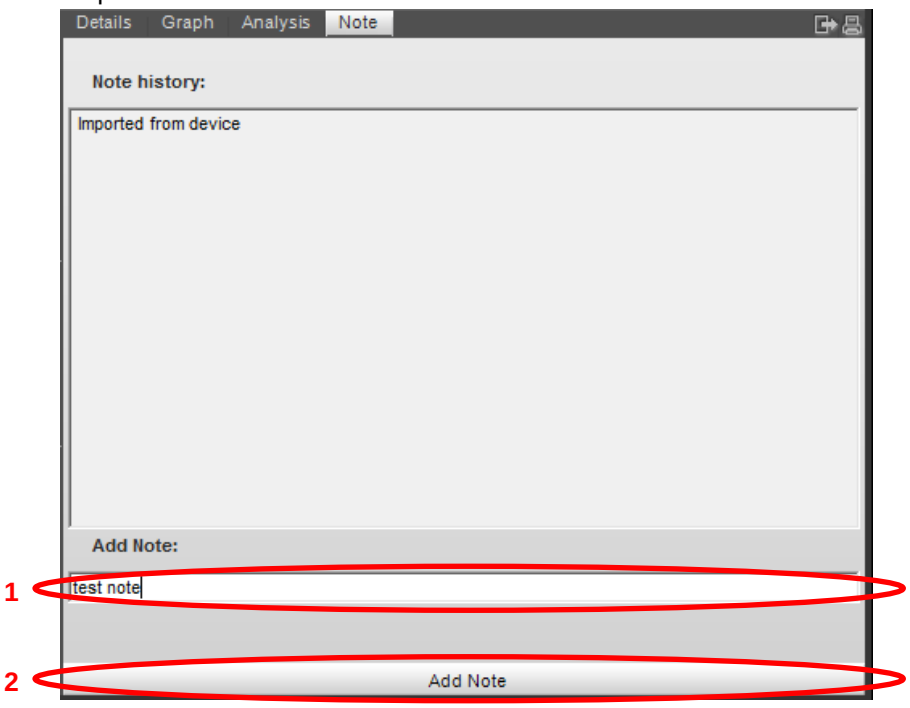
		Calorimeter Name	Probe Name	Vessel Name	Weight [g]	Result C-Value	Result (Ho)	Vessel C-Value	User Name	Delta T	Ext. Er
☑	✓	C1 No 1	1211281209		1.11	0	21108	4000	notSet	5.8721	50
☑	✓	C1 No 1	1211281215		1.22	0	19268	4000	notSet	5.8913	50
☐	✓	C1 No 1	1211291116		1.1	4947.3	0	4000	notSet	5.8943	50
☐	✓	C1 No 1	1211291122		1.2	5425.3	0	4000	notSet	5.8627	50



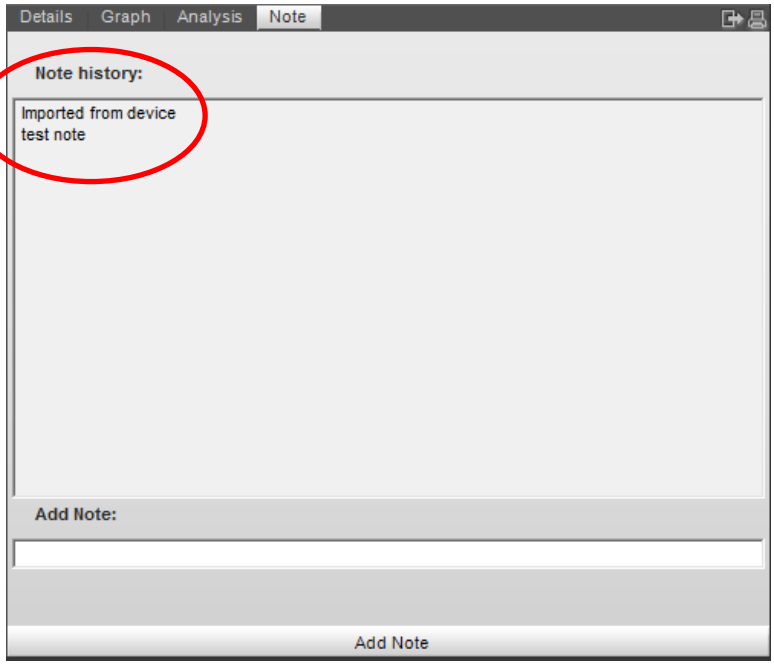
NOTE: these values are just an example for visual representation of σ.

6.4 Notes

It's possible to add some notes to a selected measurement



1. Enter note to add
2. Click "Add Note". The Note is now added to the Note history.



INFORMATION: Notes can't be removed!

6.5 Printing/Export Details

Every tab can be printed or exported to EXCEL. Just click on the button on the top right corner. The print button opens a printer dialog and the export button creates an EXCEL file under: C:\user documents \CalWin\Export that contains the exported data.