

ANILAB-12




USER MANUAL

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1. Introduction

1.1 Symbols used in this guide

	Helpful Information / Note Is an important piece of information about the software or the handling of the operating instructions, to which special attention should be drawn
	Caution This means that minor bodily injury can occur if the appropriate precautions are not taken.
	Attention Means that an adverse event or condition may occur if the appropriate precautions are not taken.

1.2 PC Hardware Requirements

Operating System: Windows 10

Processor: I5 or similar

Ram: at least 4GB

Hard Drive: 256GB

Graphics card resolution: 1920x1080

USB ports: at least 4

Accessories: Mouse, keyboard and possibly a printer

2. Structure of the software

The software is divided into 4 areas:

- Measurement program
- Calibration
- Results
- Settings

All functions can also be accessed via the menu bar



Measurement program → Measure samples

Calibration → Create calibrations

Results → View and print results

Settings → Setting the methods, user management, device configuration, and service settings

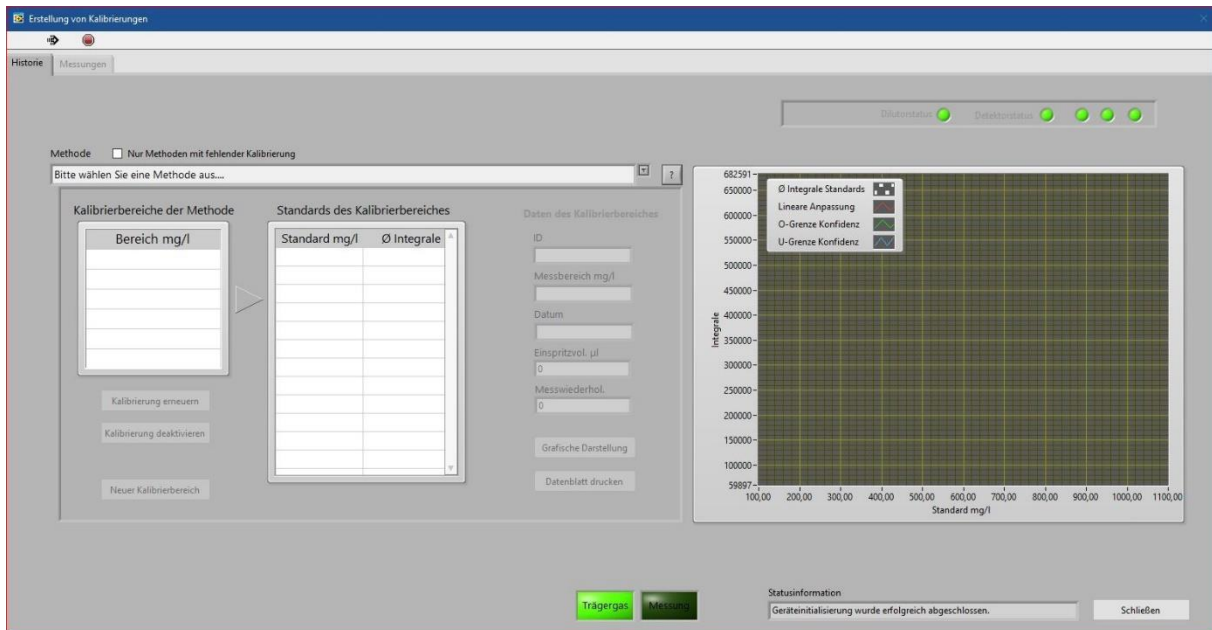
3. Calibration

Under this point, you can create and renew calibrations. Detailed instructions can be found under point 5.

As a short version:

You have to wait for the device to initialize and all 5 lights in the top right of the window are green.

Select method -> Create a new calibration range or renew an existing calibration -Start > measurement



At the top left you have two different tabs: "History", here you can create the calibrations and view the calibrations created, and "Measurements", where you can see the current measurement of the calibration.

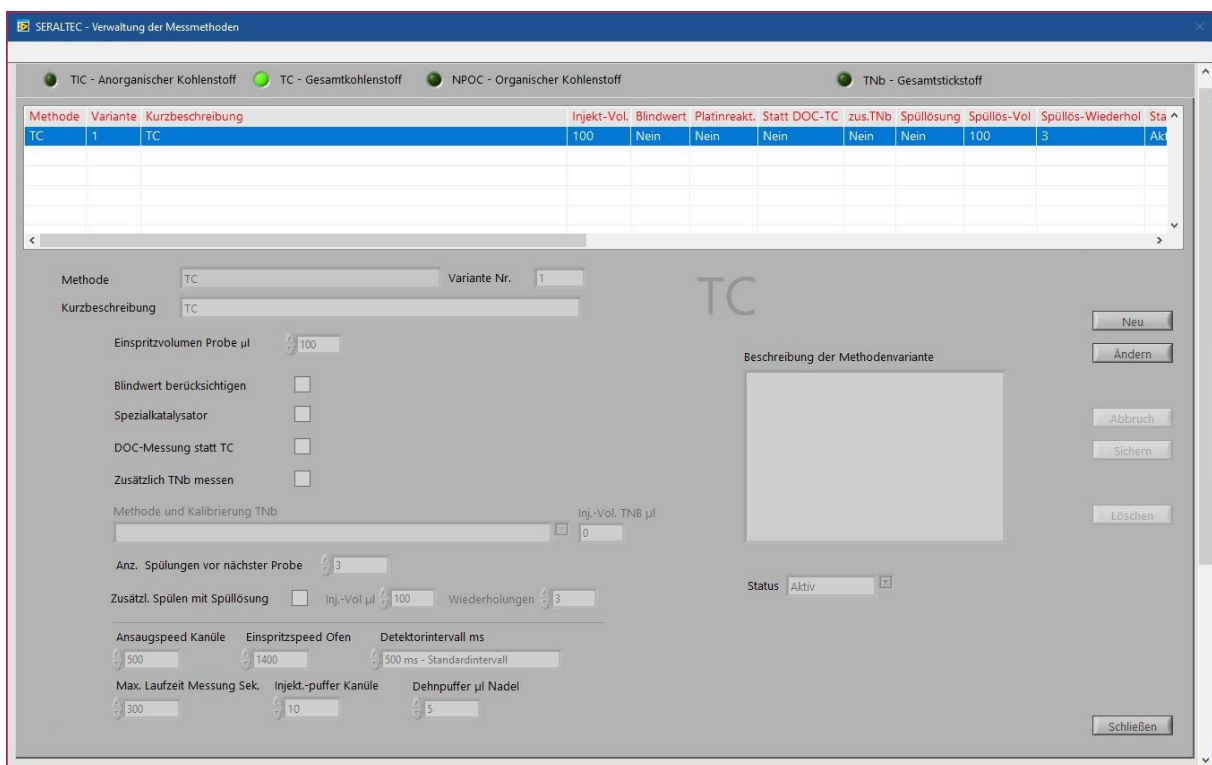
4. Method Creation

You can create the methods under Settings -> Methods on the Home page or in the menu bar under Settings-> Method Management.

You must edit the method management per parameter. At the top of the bar you can see the different parameters. The Active parameter is marked with the light green circle.

4.1 TC Total Carbon

Method for determining total carbon, a sum of inorganic, organic and free carbon.



To create a method, you have to click on New on the right side of this window.

The short description is important if a CSV import is desired. In the CSV file, the short description must always match.

The injection volume can be selected between 35 – 800uL. The injection volume depends on your samples.



Only for systems with sampler

You only need to tick the special catalytic converter if:

- You have a ANILAB25 with 2 channels.
- TC should be measured over both channels so that the software can distinguish in which furnace the injection is required. In this case, you will also need two different TC methods, one with and one without a special catalyst.
- TC channel and TNb via the other channel. In this case, the special catalyst must be ticked in the TNb method.

The furnace in which the special catalyst is then located must be determined when the furnace is assigned. The stove assignment can be found under point 4.2.1.1 Stove assignment.

If DOC samples are measured, you can tick DOC measurement to have this noted on the printout.

If you want to measure TNb, you must also tick Measure TNb and select the TNb method.

In the description, you can make special comments or the like.

You can choose between Active and Deactive status. If the status is set to Deactive, the method is currently not available for use and cannot be calibrated or used for measurement.

In the case of dirty and/or very greasy samples, this method can also be used to rinse with rinsing solution after each sample, this is an extra position next to the needle rinsing vessel and must be set beforehand under the sampler settings. To do this, simply tick the box at "Zusätzl. schpülen mit Spüllösung".

4.2 NPOC - Organic Carbon

Method for the determination of non-outgassing organic carbon.

The screenshot shows the 'SERALTEC - Verwaltung der Messmethoden' window. At the top, there are four tabs: 'TIC - Anorganischer Kohlenstoff', 'TC - Gesamtkohlenstoff', 'NPOC - Organischer Kohlenstoff' (which is active), and 'TNb - Gesamtstickstoff'. Below the tabs is a table with columns: 'Methode', 'Variante', 'Kurzbeschreibung', 'Injekt.-Vol.', 'Blindwert', 'Platinreakt.', 'Statt DOC-TC', 'zus.TNb', 'HCL + Ausgasen', 'Vol. HCl µl', 'Ausgas. Min.', and 'Sp'. The first row is highlighted in blue and contains: 'NPOC', '1', 'NPOC', '100', 'Nein', 'Nein', 'Nein', 'Nein', 'Ja', '100', '5', and 'N'. Below the table, the 'Methode' is set to 'NPOC' and 'Variante Nr.' is '1'. The 'Kurzbeschreibung' is 'NPOC'. There are several checkboxes: 'Einspritzvolumen Probe µl' (100), 'Blindwert berücksichtigen' (unchecked), 'Spezialkatalysator' (unchecked), 'DOC-Messung statt TC' (unchecked), and 'Zusätzlich TNb messen' (unchecked). There are also input fields for 'Injekt.-Vol. TNb µl' (0), 'Autom. Ansäuern und Ausgasen der Probe' (checked), 'HCl zum Ansäuern Vol. µl' (0), 'Ausgasungszeit Min.' (100), 'Anz. Spülungen vor nächster Probe' (3), 'Zusätzl. Spülen mit Spüllösung' (unchecked), 'Injekt.-Vol µl' (100), and 'Wiederholungen' (3). At the bottom, there are fields for 'Ansaugspeed Kanüle' (500), 'Einspritzspeed Ofen' (1400), 'Detektorintervall ms' (500 ms - Standardintervall), 'Max. Laufzeit Messung Sek.' (300), 'Injekt.-puffer Kanüle' (10), and 'Dehnpuffer µl Nadel' (5). On the right side, there are buttons: 'Neu', 'Ändern', 'Abbruch', 'Sichern', 'Löschen', and 'Schließen'. The status is set to 'Aktiv'.

To create a method, you have to click on New on the right side of this window.

The short description is important if a CSV import is desired. In the CSV file, the short description must always match.

The injection volume can be selected between 35 – 800µL. The injection volume depends on your samples.

For the NPOC, the samples must be acidified either manually or automatically using software. To do this, you have to tick the box for automatic acidification and outgassing of the sample. The volume of HCl can be selected between 0-100µL. The outgassing time can be selected between 0-30 minutes.

Only for systems with sampler



You only need to tick the special catalytic converter if:

- TC should be measured over both channels so that the software can distinguish in which furnace the injection is required. In this case, you will also need two different TC methods, one with and one without a special catalyst.
- TC channel and TNb via the other channel. In this case, the special catalyst must be ticked in the TNb method.

The furnace in which the special catalyst is then located must be determined when the furnace is assigned. The stove assignment can be found under point 4.2.1.1 Stove assignment.

If DOC samples are measured, you can tick DOC measurement to have this noted on the printout.

If you want to measure TNb, you must also tick Measure TNb and select the TNb method.

In the description, you can make special comments or the like.

You can choose between Active and Deactive status. If the status is set to Deactive, the method is currently not available for use and cannot be calibrated or used for measurement.

In the case of dirty and/or very greasy samples, this method can also be used to rinse with rinsing solution after each sample, this is an extra position next to the needle rinsing vessel and must be set beforehand under the sampler settings. To do this, simply tick the box at " Zusätzl. schpülen mit Spüllösung ".

5 Routine Measurement

5.1 Measurement program

This is where all samples are entered and the measurements are started.

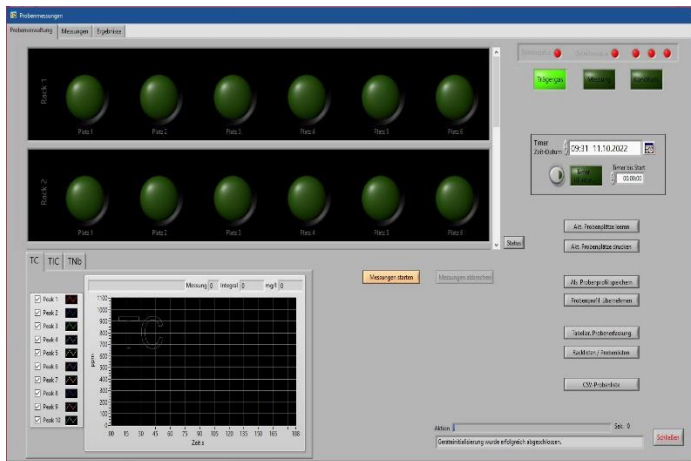
Under Measurement Program you can measure your samples. There are different ways to create your samples in the table. For this purpose, you will find the different variants described under point 6.

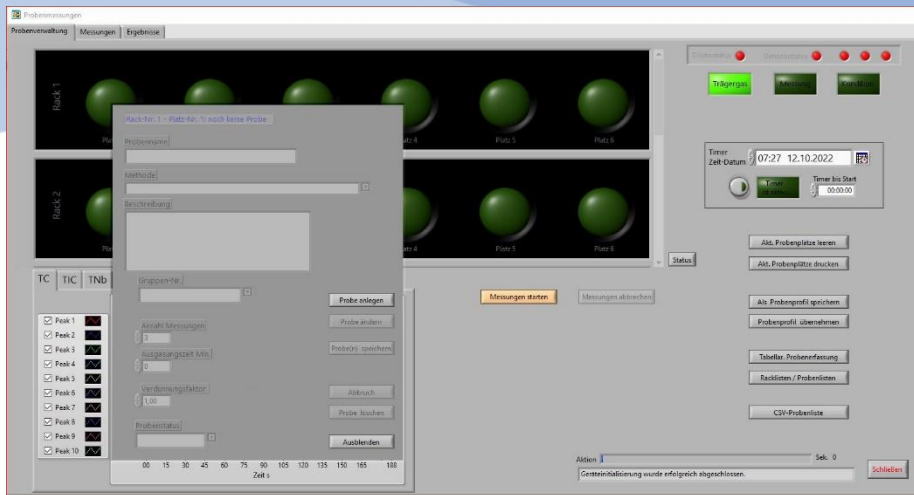
At the top left you will find the three tabs:

- Sample management to create your samples and start the measurement
- measurements, here you can see the current measurements and the corresponding peaks
- Results you will see all the results you have already measured with this device

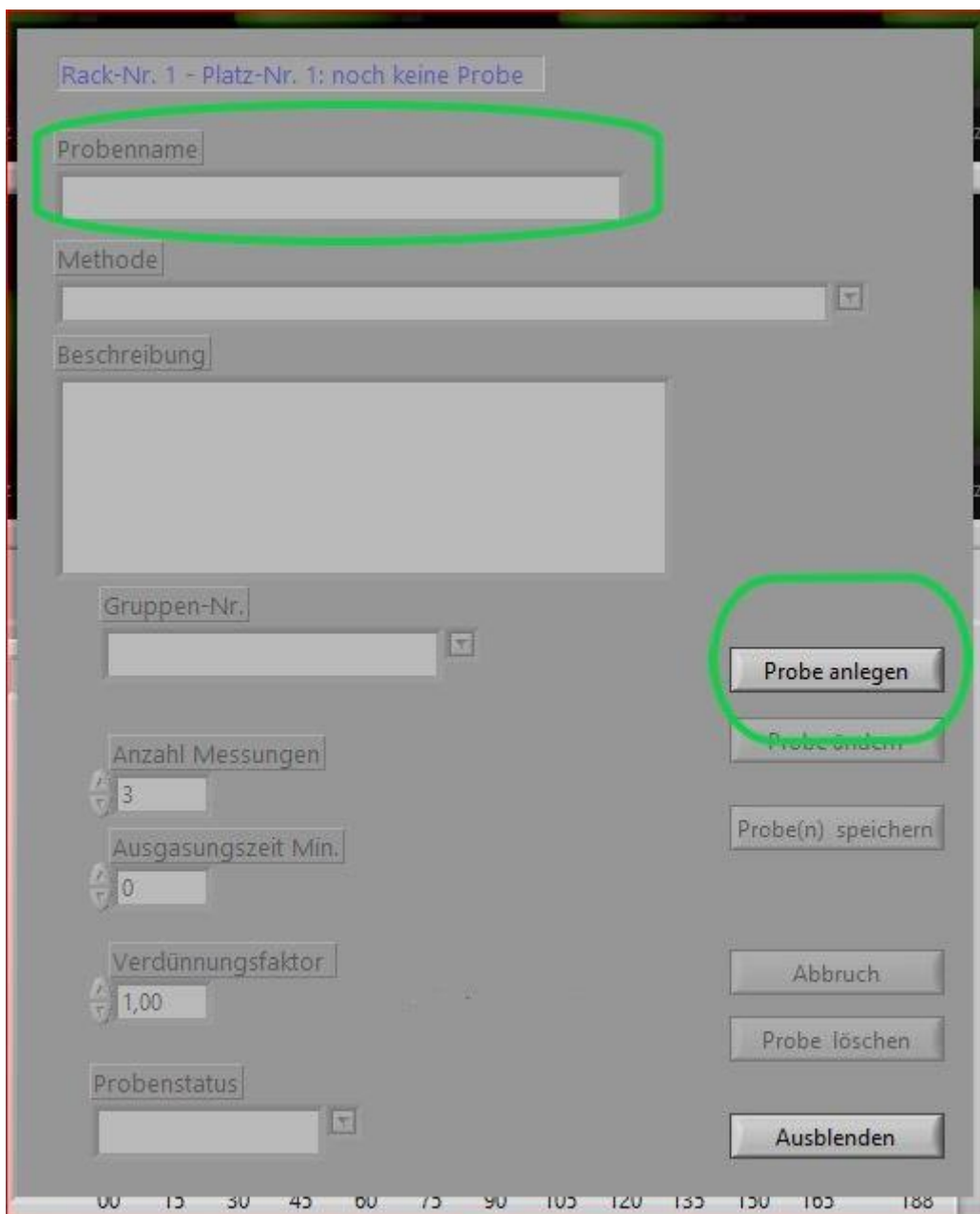
During the measurement, you can move between the tabs.

To enter samples, click on a free sample slot (dark green)

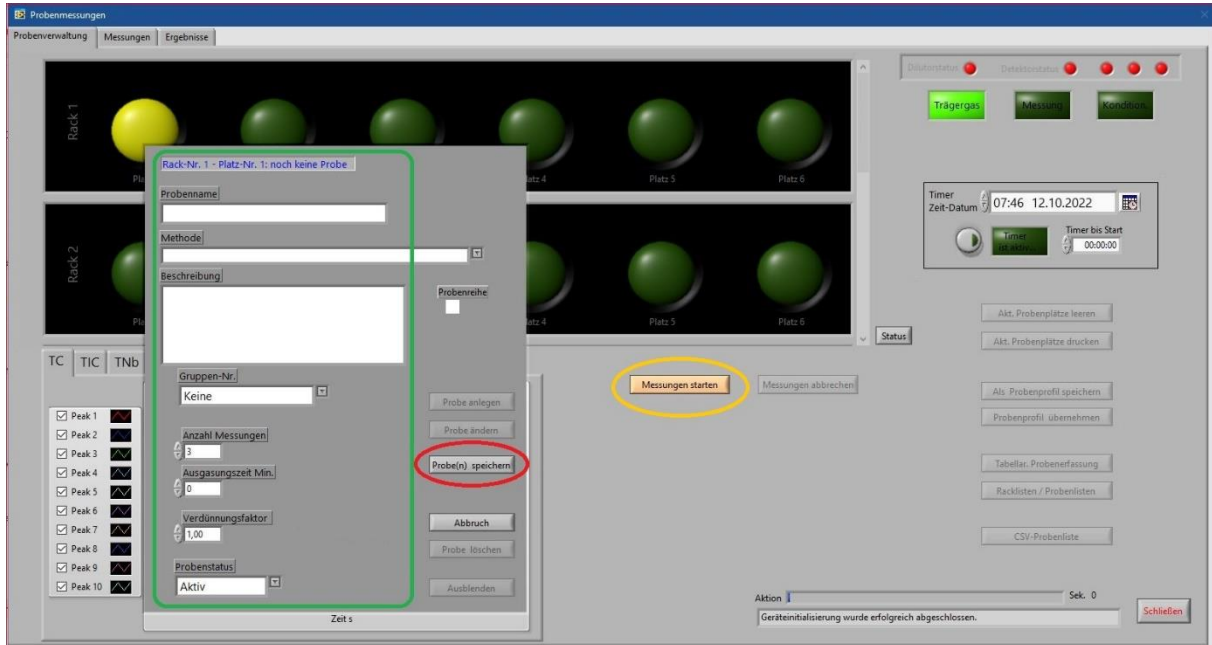




The sample input field appears. The input field can be moved by holding down the right mouse button.



By double-clicking on the sample name or by clicking on "Create sample" you can now create the sample.



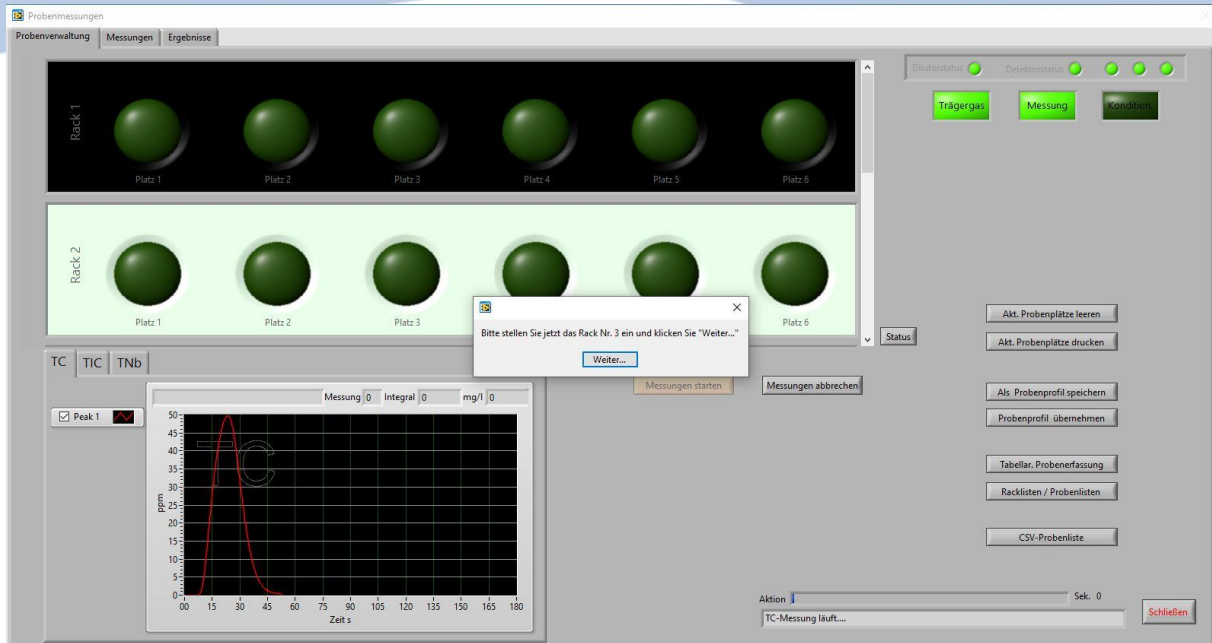
After entering the **sample name, method, number of measurements, and dilution factor**, click Save sample(s). Optionally, you can enter additional information about the sample in the remark field. The result of the is printed at the end of the measurement. Should

Click "Hide" to complete the entry of the sample.

You can create 6 samples per rack, which are then measured automatically. If more than six samples are to be measured, start with rack 2, seat 1 for additional Samples. A maximum of 60 samples can be placed on 10 racks.

After entering all samples, click on **"Start measurements"**

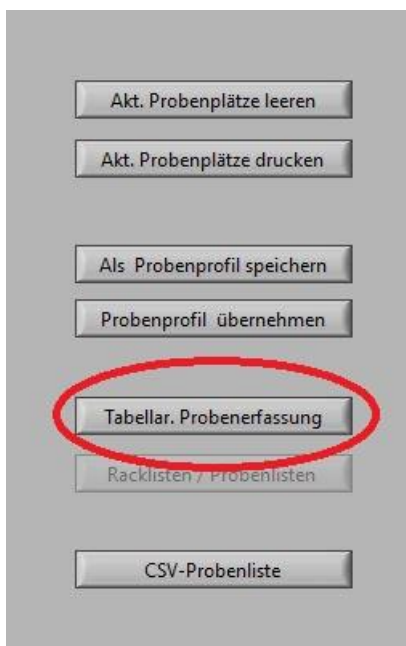
If there is more than one sample rack, a note to change the rack will appear after the last measurement of the rack. Then place the next rack under the needles and click next.

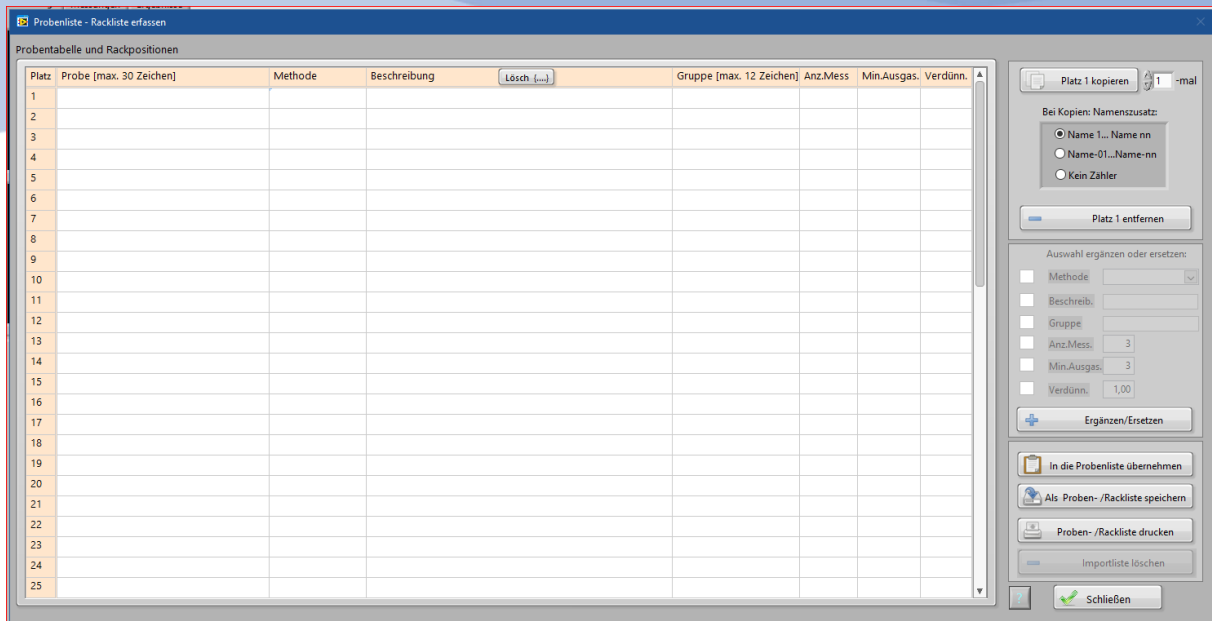


5.2 Sample Entry

5.2.1 Tabular sample entry

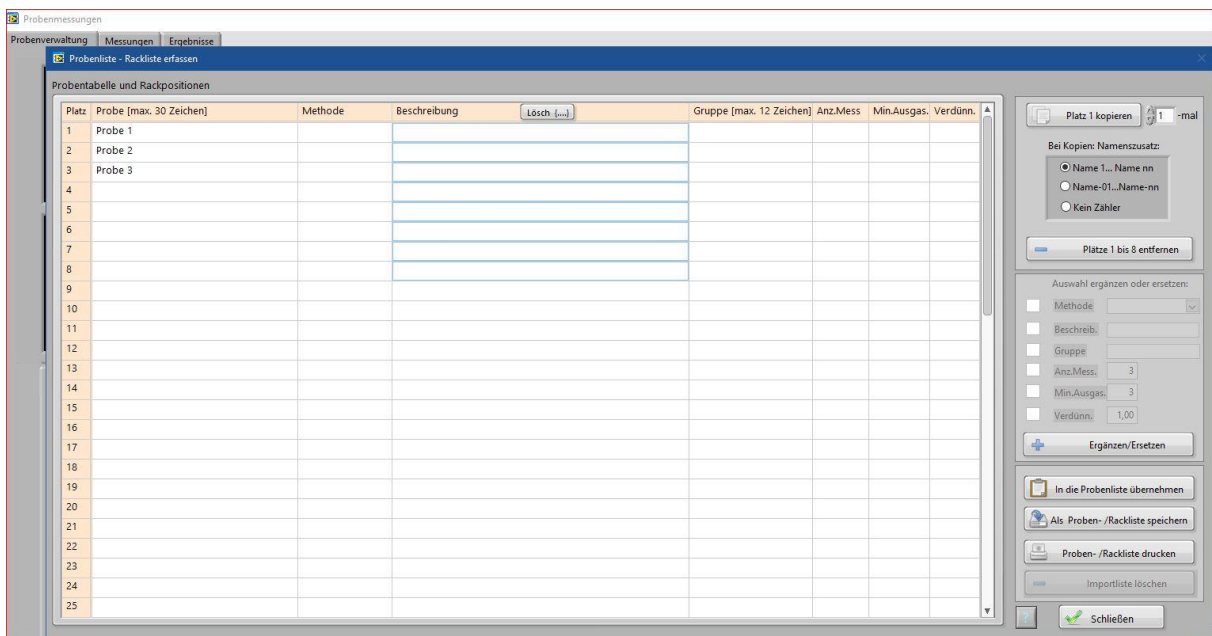
To insert several samples into the table at the same time, it is easier to enter samples in tabular form.





In the table you can enter the sample names, if the samples have the same name and should be numbered consecutively, you can number the name additions on the upper right side. For this, the complete line must be filled in, description and group can also remain free.

If you want to measure several samples with the same method and the same measurement conditions, you only have to enter the sample names in the table and then you can enter the method, number of measurements, outgassing time and dilution via the right side. For all samples that are not yet filled, you can then add the missing input via the + button. If only a part of the samples gets the same method, for example, you can drag over the samples, mark them and add the missing input on the + button.



Use the left mouse button to mark rows that should be filled.

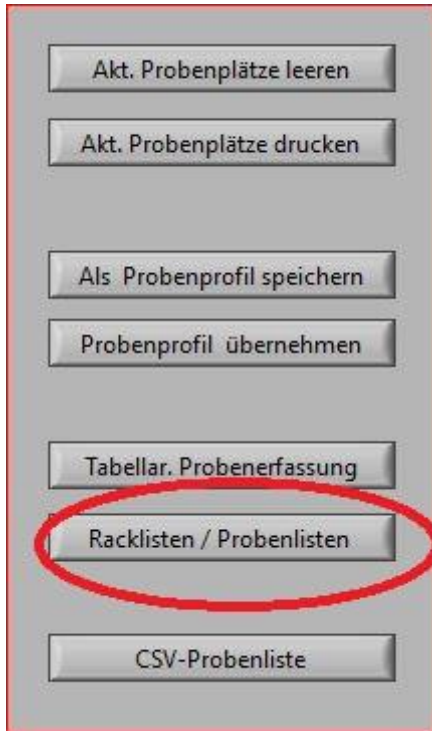
When the table is ready, you can add the table to "Add to Sample List" or "Save as Sample/Rack List".

Once the sample table is ready, they need to click on "Start Measurements" to begin the measurements.

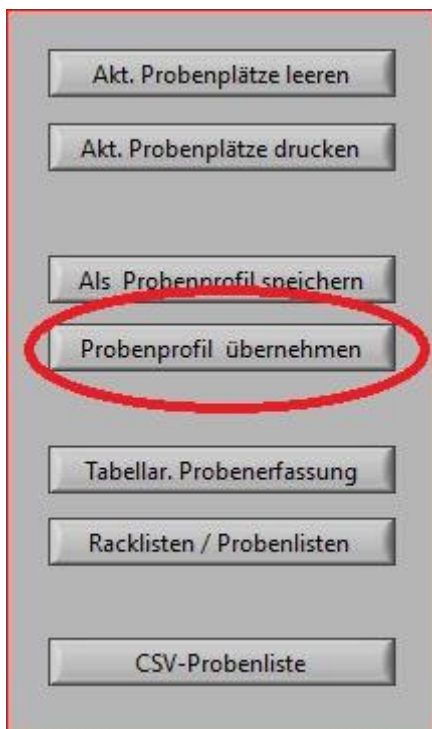
5.2.2 Loading Lists/Profiles

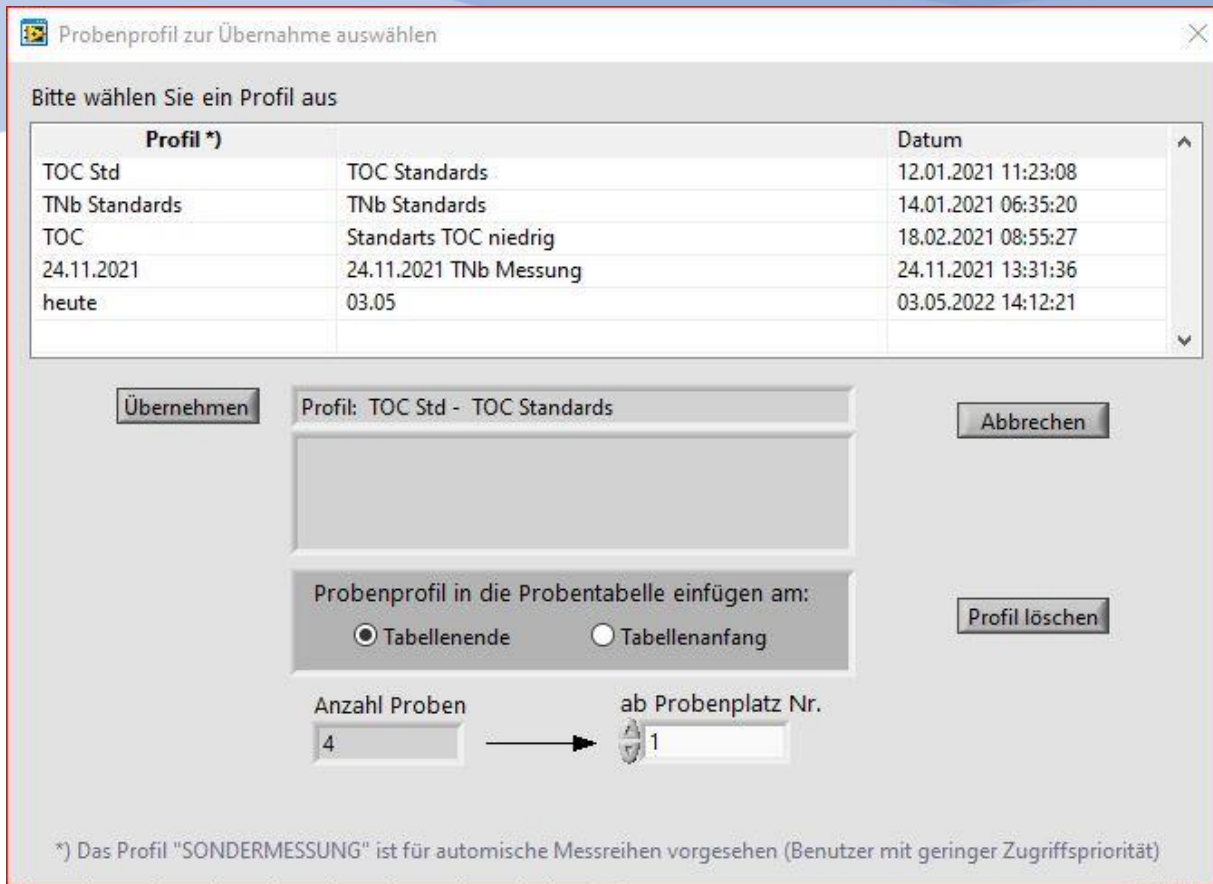
To load lists/profiles, you must first create and save a table as described in point 7.1.2 Tabular sample entry.

To reopen sample lists, click on Rack Lists/Sample Lists.



A window will open where you can choose your sample list.





Here you can still decide whether the table should be inserted at the beginning or at the end, if you already have it in the sample list.

Once you have selected the list you want to measure, click "Apply".

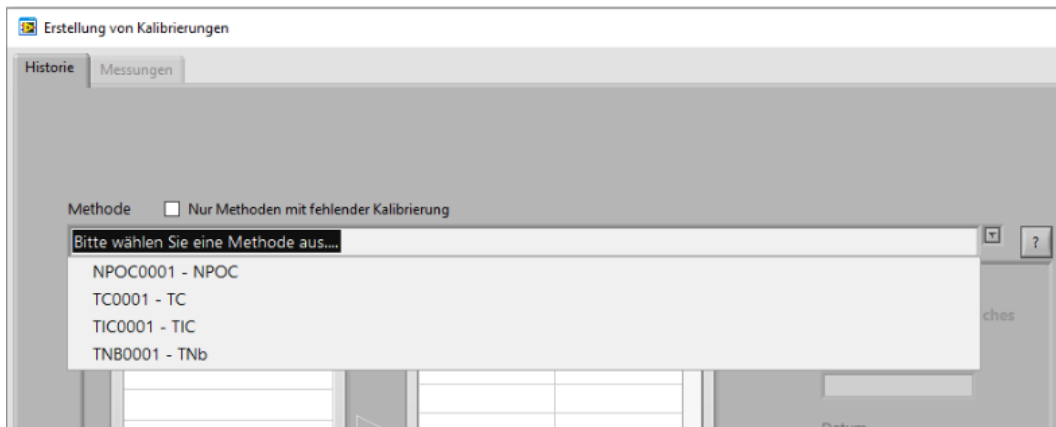
Once the sample table is ready, they need to click on "Start Measurements" to begin the measurements.

Calibrations

6.1 Creating a calibration

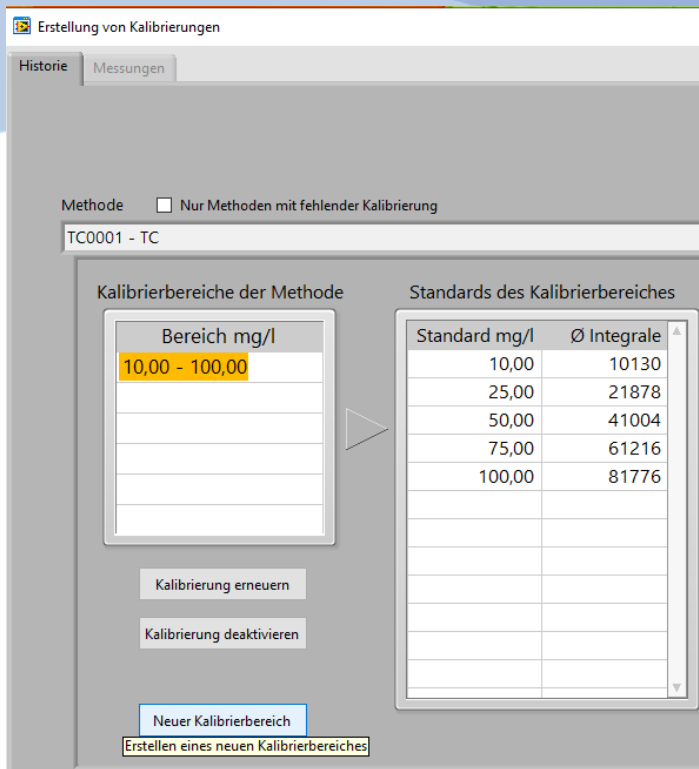
First, open the Calibration tab.

The first thing you need to do is select the method you want to calibrate.

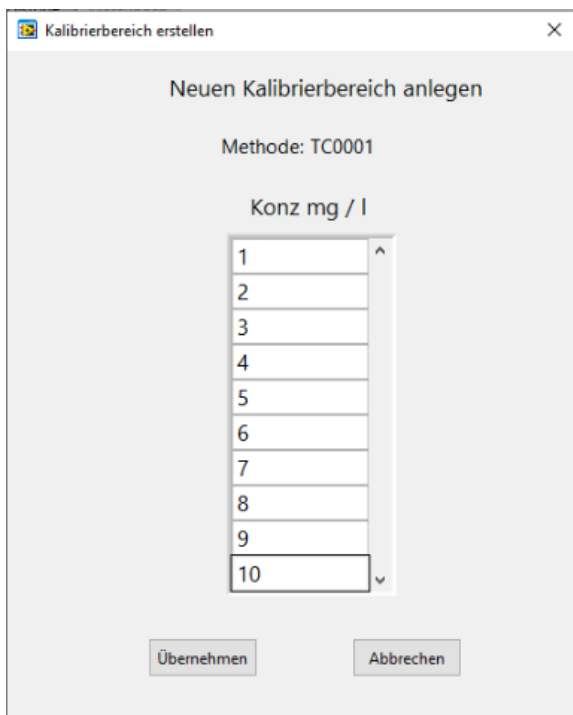


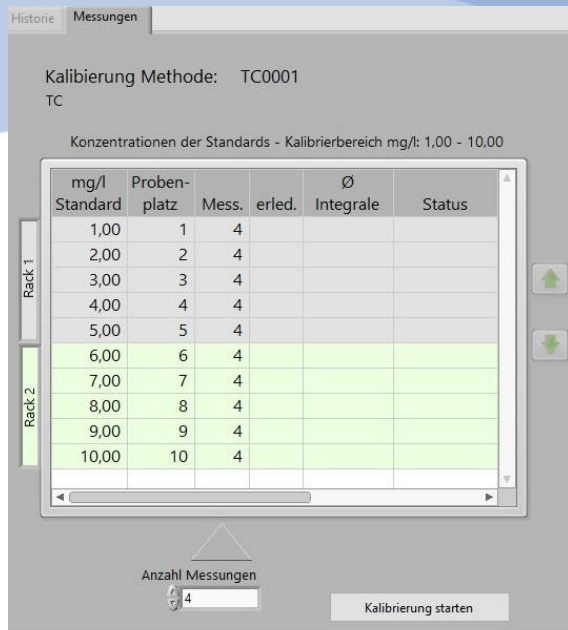
Here you will find the choice between the methods that have previously been created and are active in the Settings methods. To create a new method or set a deactivate method to active, see point 5. Method creation.

Then the range to be calibrated must be determined. Either a new calibration area must be created or an existing area must be renewed.



If you create a new calibration area, you must enter the concentrations in the following window.





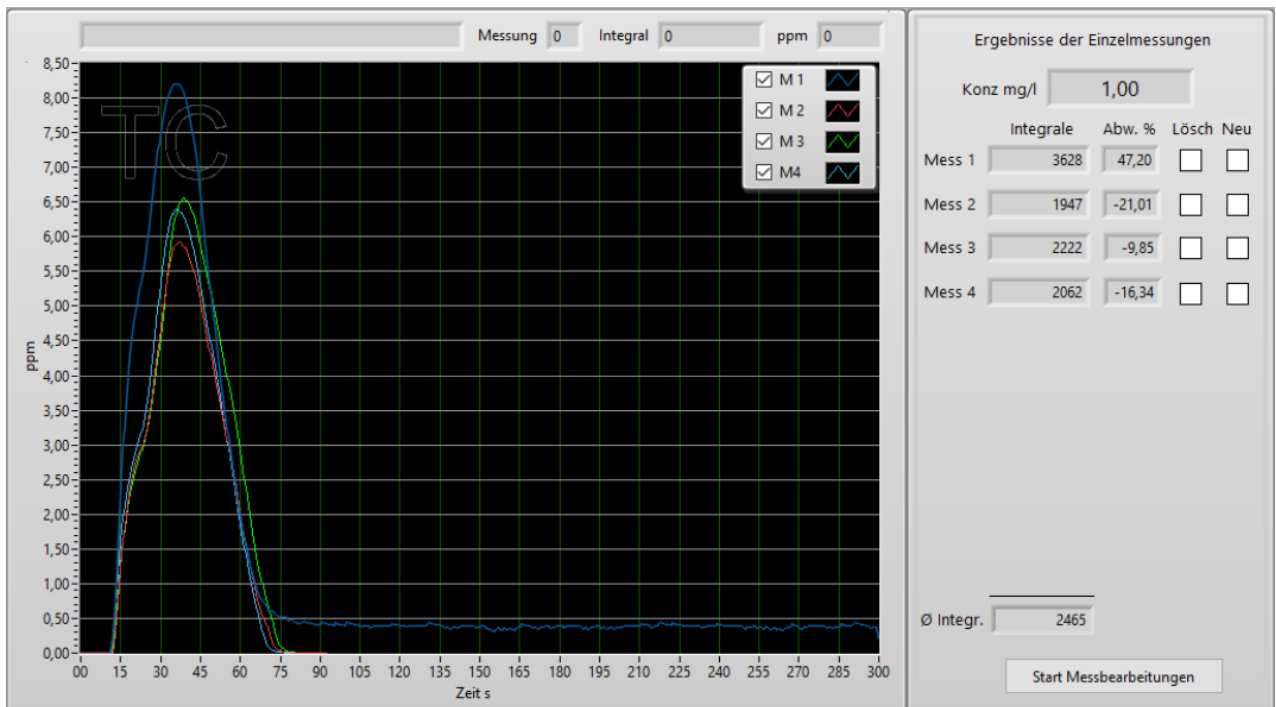
The "Measurements" tab opens automatically, where you will see a table showing the concentrations entered. The table is divided into Rack 1 and Rack 2. In Rack 1 are the first 5 standards and Rack 2 is the next 5. When the first 5 standards have been measured, the rack must be replaced so that the remaining standards can be measured. A rack change notice appears.

Below the table you can still select the number of measurements.

6.2 Post-processing/evaluating calibration

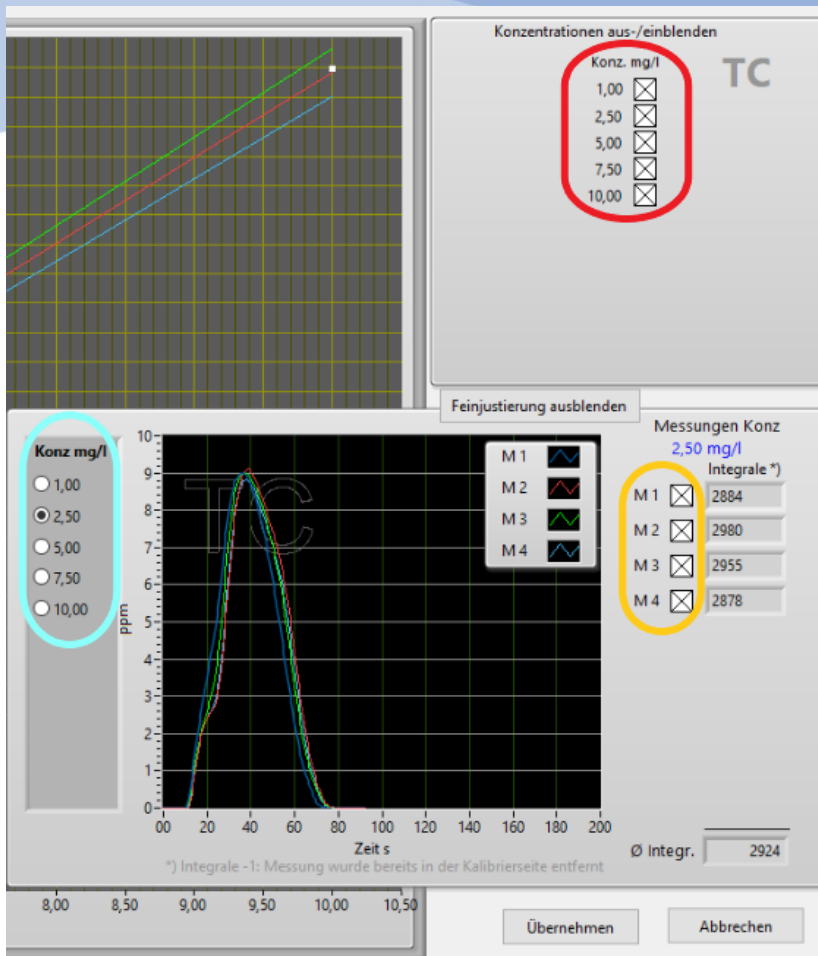
When the calibration is complete, the status in the table is set to "Done". With the Green Arrow Test you can look at the individual standards.

If you want to measure individual measurements or a complete standard, you can do so on the right.



To do this, tick "Delete" for Delete and "New" for a new measurement. To start the remeasurement, click on "Start measurement processing" in the bottom right.

If you click on "Graphic Linear Adjustment", you will see the graphical representation of the calibration function. With a TNb calibration, a quadratic evaluation is also possible.



You can either remove complete standards (marked in red here) or remove individual measurements for the respective standard (marked in light blue here) (marked orange here).

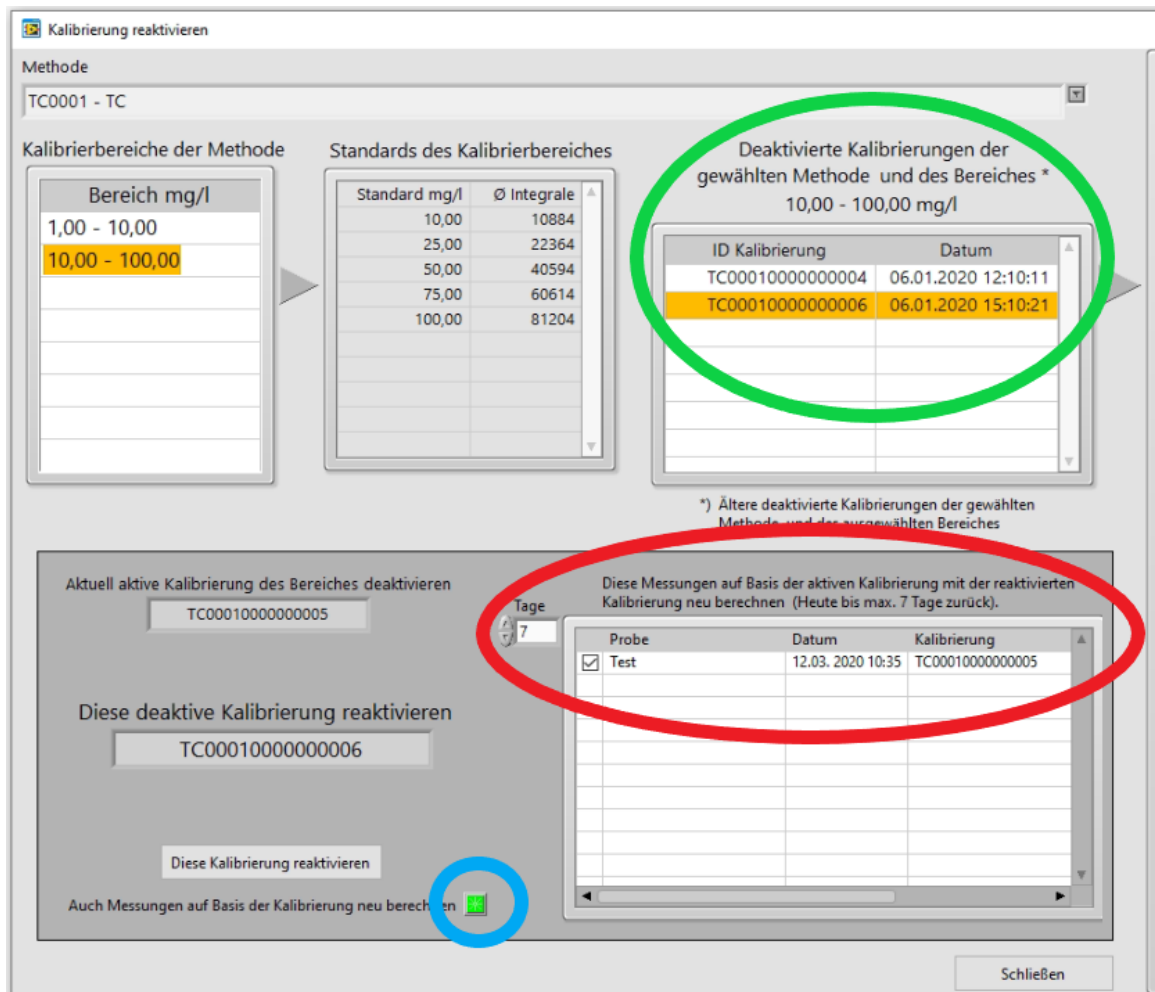
When all the customizations are done, click Apply.

6.3 Reactivating calibration

To reactivate a deactivated calibration, you must open the ANILAB software. In order to allow measurement data to be recalculated, it must not be older than 7 days.

Select Reactivate Calibration via Settings → .

- Select Method
- Click on the calibration area



- Click on the desired deactivated calibration (marked in green here). The calibrations are displayed graphically on the right side of the window.
- If measurements are to be recalculated, activate the field (marked in blue here).
- Click on measurements that are to be recalculated (marked in red here).
- When everything is selected, click "Reactivate this calibration".
- Newly calculated measurement data can be found under Measurements → Measurement Program → Results.

6 Results / Sample Evaluation


Probenmessungen


Probenverwaltung Messungen Ergebnisse

After measuring your samples, the results can be found under the tab
Measurement program - > results

The screenshot shows the 'Probenmessungen' software interface. The top navigation bar includes 'Probenverwaltung', 'Messungen', and 'Ergebnisse'. The main window is divided into several sections:

- Ergebnisliste:** A table listing the last 500 measurements sorted by date. The selected sample 'TC K2' is highlighted in yellow.
- Parameter und Ergebnisse der Messung:** A detailed view for the selected sample, including:
 - Probenname: TC K2
 - Datum: 13.10.2020 12:01:08
 - Probenplatz: 2, Lfd. Nr: 2748
 - Methode: TC0003 - TC
 - Gruppe: (empty)
 - Anz. Messungen: 1
 - Ausgasung Min: 0, Verdünnungsfaktor: 1,00
 - TIC: 0,65 mg/l, Konfid. ±mg/l: 0,01, Integr.: 935
 - TC/NPOC: 0,0000 mg/l, Std.-abw.: 0,0000, Var.-koeff.: 0,0000
 - TNB: (empty)
- Ergebnisse der Einzelmessungen - Probe: TC K2:** A table showing individual measurement results for the selected sample. The results for TIC, TC/NPOC, TNb, and TOC are shown in light gray, indicating they are outliers.

If you can't find your measured sample, refresh the list by clicking .

On the right side you can see various parameters, results and the corresponding calibration curve of the sample selected in the list. You can display the calibration curve via the icon .

To the right of the table you can view the peaks on "Measurement curves".

It is also possible to print out the sample or the list here.

You can also use the magnifying glass to filter the results or search for samples.

In the table below, you can see the individual measurements of the selected sample. The results shown in light gray have been marked as outliers.

If outliers have been marked incorrectly, you can select the correct outliers on "Outlier Correction".

Manuelle Zuordnung von Ausreißern

Proben-ID: 2743 Probenname: test7

TIC TC / NPOC TNb

Anpassung der Ausreißer TIC

Mess	mg/l	Integrale	Abw. %	Wh.
<input type="checkbox"/> 1	15,33	10960	0,23	
<input type="checkbox"/> 2	15,60	11138	1,86	
<input type="checkbox"/> 3	15,30	10940	0,05	
<input type="checkbox"/> 4	15,18	10860	-0,69	Wh
<input checked="" type="checkbox"/> 5	15,06	10778	-1,44	Wh
Ø	15,35	10974		

Cluster-TIC-Stats
 Var.-koeff. 0,0115
 Std.-abw. 0,1773
 Konfid. ±mg/l 0,87

Ergebnisse der Einzelmessungen - Probe: test7

Mess	TIC				TC / NPOC				TNb				TOC
	mg/l	Integrale	Abw. %	Wh.	mg/l	Integrale	Abw. %	Wh.	mg/l	Integrale	Abw. %	Wh.	mg/l
1	15,33	10960	0,23		15,35	11214	-6,34		0,00	0	0,00		0,00
2	15,60	11138	1,86		16,76	12198	0,30		0,00	0	0,00		1,16
3	15,30	10940	0,05		16,77	12206	0,37		0,00	0	0,00		1,47
4	15,18	10860	-0,69	Wh	16,40	11945	-1,78	Wh	0,00	0	0,00	Wh	1,21
5	15,06	10778	-1,44	Wh	16,90	12299	1,13	Wh	0,00	0	0,00	Wh	0,00
Ø	15,35	10974			16,71	12162			0	0			1,28

Ø DOC mg/l 1,355

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You can use the tabs above to select the parameter in each case.

On the right side of the table you can make the adjustments of the outliers, the individual measurements that are offset with a tick are marked as outliers.

When you are done with the adjustments, you still need to apply the values.

7.1 Sample evaluation

Probenmessungen


Probenverwaltung Messungen Ergebnisse

After measuring your samples, the results can be found under the tab
Measurement program - > results

The screenshot shows the 'Probenmessungen' software interface. The main window is divided into several sections:

- Top Navigation:** 'Probenverwaltung', 'Messungen', and 'Ergebnisse' tabs.
- Measurement List (Table):** A table listing measurements with columns for 'Probe', 'Gruppe', 'Methode', 'TIC mg/l', 'TC/NPOC mg/l', 'TOC mg/l', 'TNb mg/l', and 'Status'. The selected row is 'TC K2' with a date of '13.10.2020 12:01:08' and a status of 'Gedruckt'.
- Measurement Details (Right Panel):** A form showing parameters for the selected measurement:
 - Probenname: TC K2
 - Datum: 13.10.2020 12:01:08
 - Probenplatz: 2
 - Lfd. Nr: 2748
 - Methode: TC0003 - TC
 - Gruppe: (empty)
 - Anz. Messungen: 1
 - Ausgasung Min: 0
 - Verdünnungsfaktor: 1,00
 - TIC: mg/l 0,65, Konfid. ±mg/l 0,01, Integr. 935
 - TC/NPOC: mg/l 0,0000, Konfid. ±mg/l 0,0000, Integr. 0,0000
 - TNb: mg/l (empty), Konfid. ±mg/l (empty), Integr. (empty)
- Measurement Results (Bottom Left):** A table titled 'Ergebnisse der Einzelmessungen - Probe: TC K2' showing individual measurement data for TIC, TC/NPOC, TNb, and TOC. The first row shows values: TIC 0,00, TC/NPOC 0,65, TNb 0,00, TOC 0,00.
- Actions:** Buttons for 'Liste drucken', 'Liste nach CSV', 'Messkurven', 'Ausreißerkorrektur', 'Probe drucken', and 'Probe nach CSV'.
- Status Bar:** 'Aktion' and 'Sek. 0'.

If you can't find your measured sample, refresh the list by clicking .

On the right side you can see various parameters, results and the corresponding calibration curve of the sample selected in the list. You can display the calibration curve via the icon. 

To the right of the table you can view the peaks on "Measurement curves".

It is also possible to print out the sample or the list here.

You can also use the magnifying glass to filter the results or search for samples.

In the table below, you can see the individual measurements of the selected sample. The results shown in light gray have been marked as outliers.

If outliers have been marked incorrectly, you can select the correct outliers on "Outlier Correction".

Manuelle Zuordnung von Ausreißern

Proben-ID: 2743 Probenname: test7

TIC TC / NPOC TNb

Anpassung der Ausreißer TIC

Mess	mg/l	Integrale	Abw. %	Wh.
<input type="checkbox"/> 1	15,33	10960	0,23	
<input type="checkbox"/> 2	15,60	11138	1,86	
<input type="checkbox"/> 3	15,30	10940	0,05	
<input type="checkbox"/> 4	15,18	10860	-0,69	Wh
<input checked="" type="checkbox"/> 5	15,06	10778	-1,44	Wh
Ø	15,35	10974		

Cluster-TIC-Stats
 Var.-koeff. 0,0115
 Std.-abw. 0,1773
 Konfid. ±mg/l 0,87

Ergebnisse der Einzelmessungen - Probe: test7

Mess	TIC				TC / NPOC				TNb				TOC mg/l
	mg/l	Integrale	Abw. %	Wh.	mg/l	Integrale	Abw. %	Wh.	mg/l	Integrale	Abw. %	Wh.	
1	15,33	10960	0,23		15,35	11214	-6,34		0,00	0	0,00		0,00
2	15,60	11138	1,86		16,76	12198	0,30		0,00	0	0,00		1,16
3	15,30	10940	0,05		16,77	12206	0,37		0,00	0	0,00		1,47
4	15,18	10860	-0,69	Wh	16,40	11945	-1,78	Wh	0,00	0	0,00	Wh	1,21
5	15,06	10778	-1,44	Wh	16,90	12299	1,13	Wh	0,00	0	0,00	Wh	0,00
Ø	15,35	10974			16,71	12162			0	0			1,28

Ø DOC mg/l 1,355

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You can use the tabs above to select the parameter in each case.

On the right side of the table you can make the adjustments of the outliers, the individual measurements that are offset with a tick are marked as outliers.

When you are done with the adjustments, you still need to apply the values.

7 Contact details

If you have any questions, please do not hesitate to contact us:

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