



# Operating manual

for the NIR analyser

**Apo-Ident 2.1**

based on version 3.0



<b>Quick start guide .....</b>	<b>3</b>
<b>1. First steps .....</b>	<b>6</b>
1.1 Safety instructions .....	6
1.2 Software installation .....	6
1.3 Connecting the analyser .....	7
1.4 Starting the program .....	7
1.5 Apo-Ident settings.....	7
1.5.1 Report settings .....	8
1.5.2 Software Update.....	9
1.5.3 Label printer settings .....	10
<b>2. Measurement .....</b>	<b>13</b>
2.1 APIs & excipients (solid) and narcotic substances (solids) clearly identifiable using Apo-Ident .....	14
2.1.1 Measurement with the sample insert for small amounts of substance .....	15
2.2 APIs & excipients (semisolid/liquid) clearly identifiable using Apo-Ident .....	16
2.3 Special features of substances with inconclusive test results .....	18
2.4 Determination of cannabis flower content .....	19
<b>3. Cleaning/use of sample containers, transreflectance insert and sample insert .....</b>	<b>21</b>
<b>4. Additional functions.....</b>	<b>22</b>
4.1 Percentage of agreement + setpoint .....	22
4.2 Display of the difference line between reference and sample spectrum .....	22
4.3 Search function (query) by substance, expiration date or other criteria .....	22
4.4 Display of the validation documents.....	23
4.5 Data backup .....	23
4.6 Identification details (ranking list) .....	24
4.7 Help .....	25
4.8 Info .....	25
<b>5. Explanation of terms.....</b>	<b>26</b>
<b>6. Technical specifications and disposal .....</b>	<b>27</b>
6.1 Technical specifications of Apo-Ident 2.1 .....	27
6.2 Disposal.....	28

## 1. Starting the program

Start the program „NextStep Apo-Ident“ by double-clicking on the desktop icon. The Apo-Ident user interface opens.

**Note:** If the internal unit temperature is too low, a warm-up program is started automatically. When the temperature of at least 20°C is reached, the system is ready to start.

## 2. Selection of the pharmacy

Choose your stored pharmacy under **Configuration profile**, if you have more than one configuration profile.

**Note:** Our detailed instructions on **Section 1.5.1** explain how to create a configuration profile.

## 3. Selection of the substance

Under **Substance**, enter the name of the substance to be tested in the search field, e.g. Fructose. The monograph name, the Latin name, synonyms stored in the database, and the classifier, in this case “APIs & excipients, solid”, are now displayed.

**Note:** The software shows suggestions to you as you enter the first few letters. You can choose the correct substance from the suggested options.

## 4. Measuring by substance category

### 4.1 APIs & excipients (solid) and narcotic substances (solid)

#### Start measurement

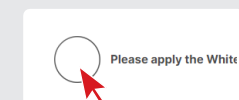
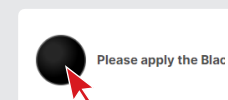
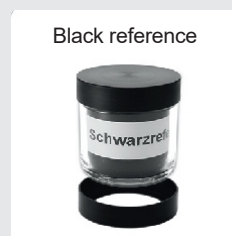
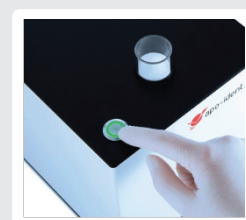
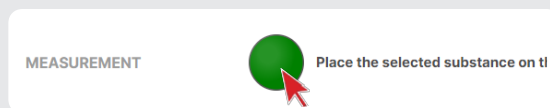
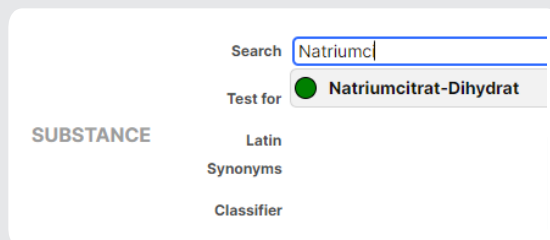
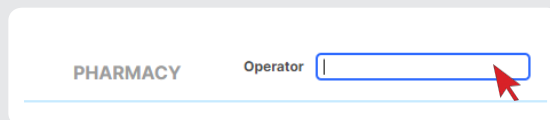
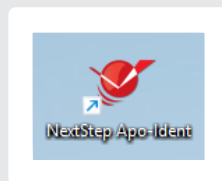
First place your **sample container containing the substance** (filling height 4 mm) and the **adapter ring** on the measurement point. Start the measurement process by clicking on the button next to **Measurement** or by pressing the measurement button (lights up green) directly on top of the device.

**Note:** Some substances can also be identified with smaller quantities. The appropriate procedure can be found in our detailed operating instructions on **Section 2.1.1**.

#### Referencing

After the first substance measurement, you will be asked to place the reference standards onto the measurement point. Follow the instructions of the software and first place the black reference, followed by the white reference on the measurement point. Start the reference measurements by clicking on the black or white button next to **Measurement**.

**Note:** Please always use the black adapter ring. The measurement of the references is requested again by the software after approx. 60 min.



### 4.2 APIs & excipients (semisolid/liquid)

#### Transflectance reference measurement

Start with the transflectance reference measurement. Place the clean **transflectance insert** with the feet pointing downwards in a clean, **empty sample container**. Using the adapter ring, place the sample container, with the transflectance insert, onto the Apo-Ident device's measurement point. Start the **transflectance reference measurement** by clicking on the grey button or by pressing the button directly on the device.

**Important:** Both the transflectance reference measurement as well as the measurement of the liquid/ointment or emulsion must be carried out with the same measurement transflectance insert and sample container. Otherwise, identification may not be possible.

**Note:** After successful transflectance reference measurement, a time frame of 5 min. is provided for starting the substance measurement. If the measurement is not carried out during this period, the transflectance insert reference measurement must be repeated.

#### Referencing

After the transflectance reference measurement, you will be asked to place the supplied reference standards onto the measurement point. Please follow the instructions on referencing under 4.1 of the Quick start guide.

#### Start measurement

Place your **sample container with the substance** and the **transflectance insert** as well as the **adapter ring** on the measurement point. Start the measurement process by clicking on the button next to **Measurement** or by pressing the measurement button (lights up green) directly on top of the device.

**Note:** Make sure that you press the measurement transflectance insert with the feet downwards onto the bottom of the sample container so that no air bubbles are visible, but all 3 feet of the transflectance insert are visible.

### 4.3 Quantification of THC and CBD in cannabis flowers

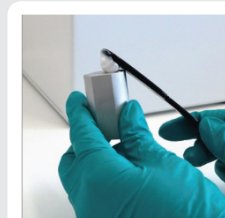
#### Start measurement

First place your **sample container with the cannabis flower** (if possible, place the stem upwards to get a large contact surface in the sample container) and the **adapter ring** on the measurement point. Start the measurement process by clicking on the cannabis button next to Measurement or by pressing the measurement button (lights up green) directly on the top of the device.

The „**Documentation (methods and results)**“ window will now appear. Please read the text „**The Quantifier module enables the determination of the THC and CBD content by means of NIR spectroscopy using quantitative methods based on a mathematical-statistical (prediction) model. It is not an identification of THC and CBD in the sense of thinlayer chromatography**“ carefully.



Place the Transflectance Insert feet facing



MEASUREMENT



Place the selected substance on th

In the following text field, enter the steps you have carried out in advance and the result of the identity check. Once you have entered the documentation and the associated identity check, the „Documentation: Completed“ box can be checked. By clicking on OK, the window closes and the measurement is started.

### Referencing

After the first measurement, you will be asked to place the supplied reference standards onto the measurement point. Follow the instructions in the software and first place the black reference and then the white reference on the measuring point. Start the reference measurements by clicking on the black or white button next to **Measurement** or by pressing the measurement button (lights up green) directly on the top of the device.

**Note:** Please always use the black adapter ring. The measurement of the references is requested again by the software after approx. 60 min.

### 5. Result

#### Identification of raw materials:

After a few seconds, the device shows you whether the substance has been identified.

**Note:** If the result is negative, please read the further information on non-identification. Check or repeat your measurement procedure accordingly.

#### Quantification of THC and CBD in cannabis flowers:

After a few seconds, the device shows you the THC and CBD content and the type of your measured cannabis flower.

### 6. Report details

After successful measurement, fill in all mandatory fields (marked with a red frame) next to the **Sample** as well as **Pharmacy > Operator**. Under **Result**, you may fill in **Comment** and **Additional tests**, if required.


When determining the content of cannabis flowers, it is also possible to make a **Comment** and to reopen the documentation.

Please note that only after filling out all mandatory fields can you create the report.

### 7. Creating the report

Now you can save the measurement result, view the test report as a PDF file, or print it out.


**Note:** No matter which function you select, the measurement result will be saved in any case. In addition, you may also print your test label on your label printer.


**Documentation (methods and results)**


The Quantifier module enables the determination of the THC and CBD content by using quantitative methods based on a mathematical-statistical (prediction) model. THC and CBD in the sense of thinlayer chromatography.


Documentation: ☒ Completed
 OK Cancel


Black reference



White reference





Please apply the Black


Please apply the White

RESULT

Name Cannabisblüten, CBD-dominanter Typ
 NIR Result Match Rating 100.0% (Limits 98% to 100%)


Comment
 Additional Tests

RESULT

Name Cannabisblüten THC/CBD-Quantifikation (no defined type)
 

THC 2.6% ± 5.8% (2σ) CBD 4.7% ± 2.2% (2σ)

Comment
 Documentation documented

SAMPLE

PPN

Producer

Batch

Quantity

Supplier

Expiry Date

Correction Factor

SAMPLE

PPN

Producer

Batch

Quantity

Supplier

Expiry Date

Correction Factor

REPORT

Save
PDF
Print
Print Label

### 1. First steps

#### 1.1 Safety instructions

Please read the safety instructions carefully.

- Use only the power supply unit or power cord supplied.
- If the power connector cord or the power supply unit is defective or damaged, contact the manufacturer immediately. Operation with a defective power cord or power supply unit may be life-threatening.
- Environmental influences such as high temperatures and high humidity must be avoided, as well as dust, dirt and corrosive gases.
- The installation site should be well ventilated and not exposed to direct sunlight. Install the device on a non-combustible, horizontal surface that does not transmit vibrations.
- If this happens, immediately unplug the device and contact the manufacturer.
- Do not open the device. There are no user-serviceable parts inside the device.
- Do not operate the device in explosive or flammable atmosphere.
- Apo-Ident is often used for determining hazardous substances. This type of work should be undertaken only by qualified personnel. If you are not absolutely sure, contact your supervisor or a competent expert.

#### 1.2 Software installation

- Connect the provided USB flash drive to your PC.
- Drag the "Apo-Ident" folder to your desktop and open the „Current Software“ folder in it. Start the installation by double-clicking on NextStep\_\*.exe. Read and accept the licence conditions. Follow the set-up wizard.
- Next, double-click on the IdentModul\_\*.exe file. Read and accept the licence conditions. Follow the set-up wizard.
- Now install the Quantifier module by double-clicking on the QuantifierModul\_\*.exe file. Read and accept the licence conditions. Follow the setup wizard.
- Thereafter, if the installation is correct, you will get an update certificate displayed. Save the certificate in the folder "Apo-Ident/ Update certificates" with specification of the version or the date.

### 1.3 Connecting the analyser

Apo-Ident 2.1 requires a power connection and computer/laptop (for system requirements see **section 6.1**) with Apo-Ident software installed. Connect the power supply unit supplied (100 V to 240 V~ and 50/60 Hz) to a mains socket using an IEC and then plug the small round plug of the desktop power supply unit into the socket marked 12V IN on the back side of the device.

#### Connection via USB cord

Use the USB cable supplied to establish connection with a USB port on your PC/laptop to the USB type B port on the back side of the Apoldent device. Switch on the device with the toggle switch on the back side of the device. The signal lamp in the control button on top of the device lights up in red colour. Apo-Ident is now ready for use.

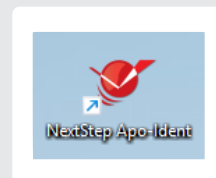
### 1.4 Starting the program

Start the program „NextStep Apo-Ident“ by double-clicking on the desktop icon. The Apo-Ident user interface opens.

**Note:** *If the internal unit temperature is too low, a warm-up program is started automatically. When the temperature of at least 20°C is reached, the system is ready for operation.*

### 1.5 Apo-Ident settings

When the program is started for the first time, the settings open automatically. By default, a demo profile is saved, which is used for presentations. **However, you cannot create valid test reports with the demo profile!**





## 1.5.1 Report settings

**Settings** > Report Settings > To create your own profile, click on the Configuration profile button on the right side of the „+“ sign

Enter the name of your pharmacy as the profile name and confirm with **<OK>**.

Another window will open asking you to enter your licence key

**Note:** *If you use Apo-Ident in more than one pharmacy, you need a separate licence key for each pharmacy and you have to create a separate configuration profile for each pharmacy.*

For new customers, the licence key is inserted by our sales staff at the time of delivery.

Thereafter, you will find it on the desktop as a PDF under 'Licence documents' in the 'Apo-Ident' folder or on the USB flash drive supplied.

You will need your licence key again in the following cases:

- Re-installation
- Change of computer

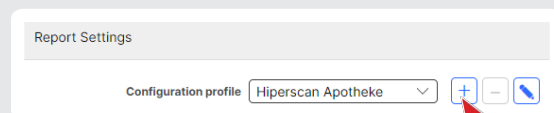
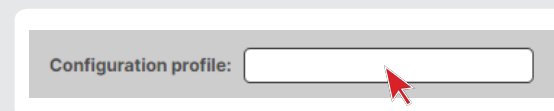
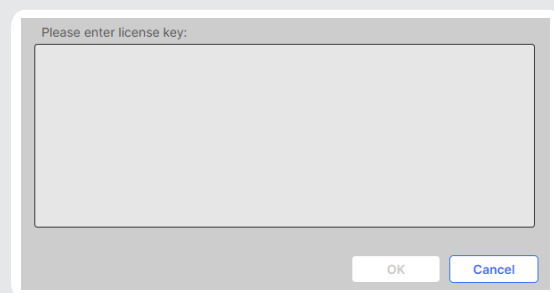
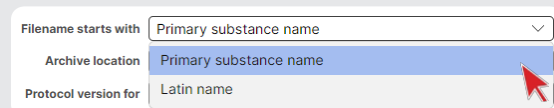
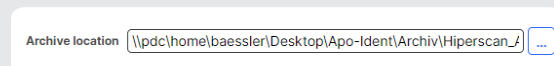
If you have misplaced your licence key or need support, please contact our customer service on telephone +49 351 212 496 33 or via e-mail to [kundenservice@apo-ident.de](mailto:kundenservice@apo-ident.de).

**Filename starts with** > Here you can select whether the „Primary substance name“ (English) or, if available, the „Latin substance name“ should be used in the file name of the test report.

**Archive location** > If a profile is created, the software automatically saves the archive (test reports) on the desktop under Desktop/ApoIdent/Archiv/Profile\_Name1

If a second profile is created, the software also saves the second archive under Desktop/Apo-Ident/Archiv/Profil\_Name2

This ensures that several profiles are not saved in one and the same archive and that no errors occur while retrieving the archive.



**Note:** During the initial installation by our sales staff, the folder structure „Apo-Ident“ is created for you, which integrates the archive. If you would like to change the destination for saving files, first move the entire „Apo-Ident“ folder from your desktop to the new storage location. This may be a local drive or a network drive on your PC. You can change the archive directory by clicking on the folder symbol under „Profile storage location“ in Settings, Report settings. In the „Select archive directory“ window that opens, select the appropriate drive on the left and the desired folder on the right where you want to move the „Apo-Ident“ folder. Closing the settings window will transfer your changes. In the menu bar, you can use the „Archive“ button to check whether the new path has been accepted.

**Report version for** > The language or form of the test report for the selected profile is preset.

### Show difference of back projection > Section 4.3

**Note:** If after measuring and saving the report, you notice that the report version needs to be changed, the measuring has to be repeated after changing the necessary settings.

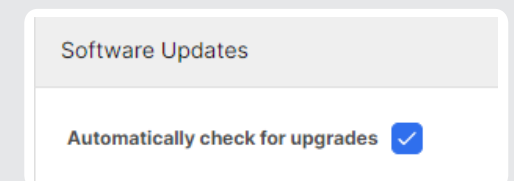
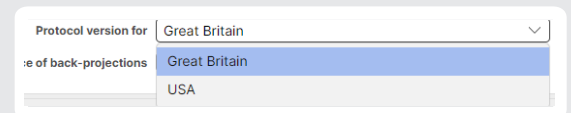
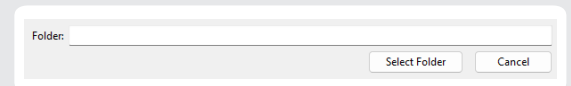
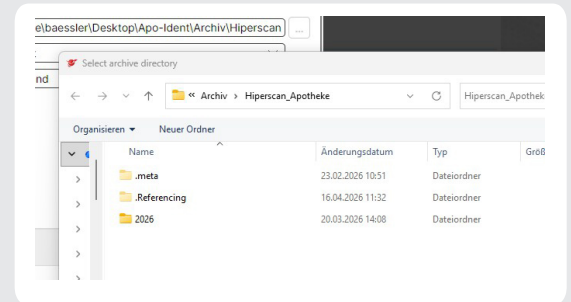
### 1.5.2 Software Update

To check whether new software updates are available for Apo-Ident, click on **Help > Check for Updates**.

Apo-Ident automatically searches the Internet for new software updates. This function is activated by default.

To deactivate this function, under **Settings > Software update**, remove the tick next to **<Automatic check for upgrades>**.

**Note:** A prerequisite for the automatic search for software updates is the use of a Windows PC that is connected to the Internet. It is also necessary that the system settings of your PC allow background downloads.



### 1.5.3 Label printer settings

#### Brother label printers

**Windows 11:** First install the driver. You will find this on the USB stick supplied under *Useful information/Brotherdriver/Win11*. Follow the installation instructions.

Alternatively, you can find the latest drivers online at the [Brother Solution Center](#).

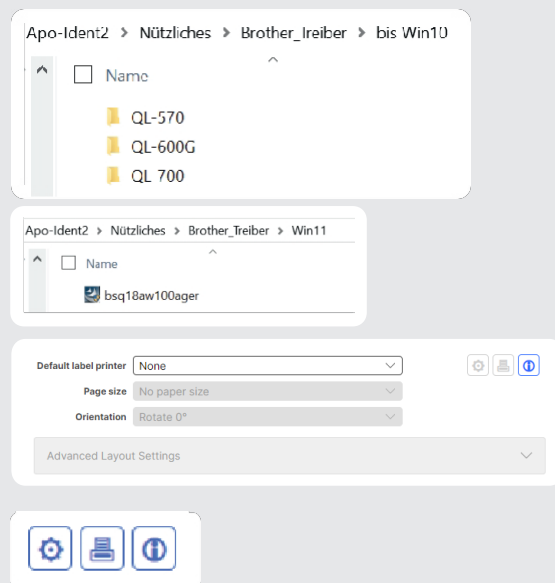
#### Setting up in the Apo-Ident software

If you have installed the drivers successfully, you can now choose your printer from the **Standard label printer** list (Brother QL-700 or older models) under **Label Printer Settings**

#### Continuous Paper Settings DK-22205

Choose the following settings:

- Page size: 62mm
- Orientation: Rotated by 0°



### Advanced Layout Settings:

- Label width / mm: 62.0
- Label height / mm: 35.0
- X-offset / mm: 0.0
- Y-offset / mm: 0.0
- Scaling factor: 1.00

Now click on the left **tool icon** „Printer settings“. Change the following settings in the dialogue window that opens:

- Paper Size: 62mm
- Length: 35.0
- Belt feed: 3.0
- Alignment: Portrait format
- Quality: Prioritise print quality 300 x 300 dpi

Click first on **<Apply>** and then confirm with **<OK>**. You are now back in the settings of the Apo-Ident software.

**Note:** You can check your settings by starting a test print. To do this, click on the middle icon “Test printing”.

If your test print was successful, click **<Close>**.  
Your settings are accepted and saved.

### Settings for single labels DK-11201

Choose the following settings:

- Paper Size: 29 mm x 90 mm
- Orientation: Rotated by 90°

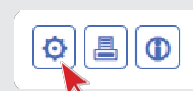
### Advanced Layout Settings:

- Label width / mm: 29.0
- Label height / mm: 89.9
- X-offset / mm: 0.0
- Y-offset / mm: 0.0
- Scaling factor: 1.00

Now click on the left **tool icon** „Printer settings“. In the dialogue window that opens, modify the following settings:

- Paper size: 29 mm x 90 mm
- Alignment: Portrait format
- Quality: Prioritise print quality 300 x 300 dpi

Click first on **<Apply>** and then confirm with **<OK>**. You are now back in the settings of the Apo-Ident software.



**Note:** You can check your settings by starting a test print. To do this, click on the middle icon “Test printing”. If your test print was successful, click **<Close>**. Your settings are accepted and saved.

### Installation of the driver software for DYMO LabelWriter

First install the driver. You will find these online at the [DYMO Support Center](#). After installing the printer driver, connect the printer to your PC.

### Settings for single labels 99012

Select the following settings under **<Settings>**  
**<Label printer settings>**:

- Default label printer: DYMO LabelWriter 450  
or DYMO LabelWriter 550
- Page Size: 99012 Large Address
- Orientation: Rotate 0°

Advanced Layout Settings:

- Label width / mm: 35.8 mm
- Label height / mm: 88.4 mm
- X-offset / mm: 0 mm
- Y-offset / mm: 0 mm
- Scaling factor: 2.20

Now click on the left tool icon **<Printer settings>**.  
Change the following settings in the dialogue window that opens:

- Orientation: Landscape
- Page Order: Front to back

Click **<Advanced>** to make the following setting:

- Paper/Output: 99012 Large Address

Click first on **<OK>** and then confirm with **<OK>**. You are now back in the settings of the Apo-Ident software.

**Note:** You can check your settings by starting a test print. To do this, click on the middle icon **<Test printing>**. If your test print was successful, click **<Close>**. Your settings are accepted and saved.

**Note:** These instructions only apply to the label printer DYMO LabelWriter 450/550 with labels 99012. With other DYMO models (e.g. Turbo, Twin Turbo, etc.) the label settings may differ.



## 2. Measurement

Under **Substance**, enter the raw material to be tested in the search field. The search field recognises both English and Latin substance *names*.

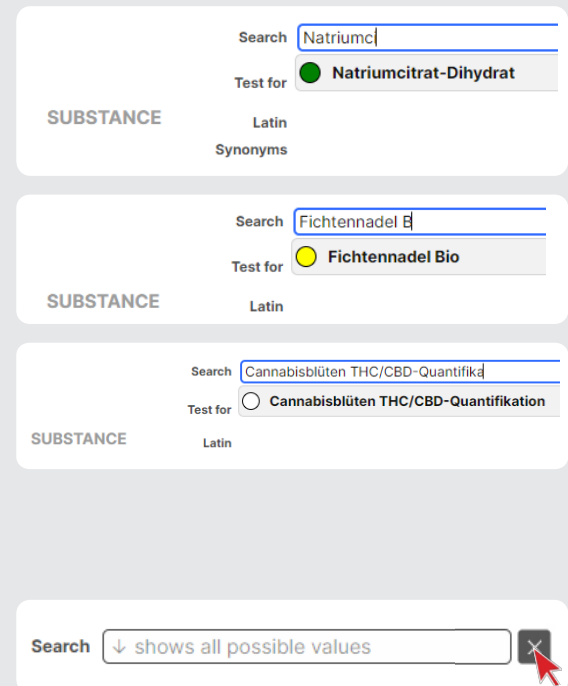
**Note:** The software shows suggestions to you as you enter the first few letters. You can choose the correct substance from the suggested options.

**Green dot:** The substance is unambiguously identifiable if there is a green dot in front of the name. → **Section 2.1 / 2.2**

**Yellow dot:** For substances with a yellow dot in front of the name, only an ambiguous test result can be obtained, i.e. the identity is limited to a few options. → **Section 2.3**

**White dot:** Cannabis flowers are labelled with a white dot. For this substance, only a THC and CBD quantification can be carried out with Apolident. → **Section 2.4**

**Note:** The cross behind the search field deletes all your entries.



The screenshot displays three examples of the software's search interface for substances. Each example is contained within a white box with a light gray border. The first example shows a search for 'Natriumc' resulting in a green dot next to 'Natriumcitrat-Dihydrat'. The second example shows a search for 'Fichtennadel B' resulting in a yellow dot next to 'Fichtennadel Bio'. The third example shows a search for 'Cannabisblüten THC/CBD-Quantifikation' resulting in a white dot next to the same text. Each example also includes a 'SUBSTANCE' label and a 'Latin' label. At the bottom, there is a search bar with a dropdown arrow and a red cross icon to delete the entry.

Search: Natriumc  
Test for: ● Natriumcitrat-Dihydrat  
SUBSTANCE  
Latin  
Synonyms

Search: Fichtennadel B  
Test for: ● Fichtennadel Bio  
SUBSTANCE  
Latin

Search: Cannabisblüten THC/CBD-Quantifikation  
Test for: ● Cannabisblüten THC/CBD-Quantifikation  
SUBSTANCE  
Latin

Search: ↓ shows all possible values

## 2.1 APIs & excipients (solid) and narcotic substances (solids) clearly identifiable using Apo-Ident

### Start measurement

First place your **sample container containing the substance** and the **adapter ring** on the measurement point. Start the measurement process by clicking on the button next to **Measurement** or by pressing the measurement button (lights up in green colour) directly on top of the device.

### Excursus „Correct filling of the sample containers (solid substance)“:

Fill about 4 mm of the substance to be tested into the sample container. Make sure that the base of the sample container is covered evenly. The transreflectance insert is not used for solid substances.

**Note:** All solids can also be identified using smaller quantities. See **Section 2.1.1** for instructions.

### Referencing

After the first substance measurement, you will be asked to set up and measure the reference standards. Follow the instructions of the software and first place the black reference, followed by the white reference on the measurement point. Start the reference measurements by clicking on the black or white button next to **Measurement**.

**Note:** Please always use the black adapter ring. The measurement of the references is requested again by the software after approx. 60 min.

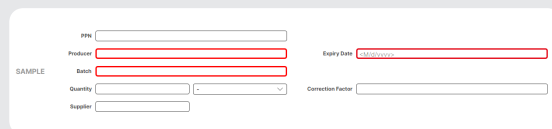
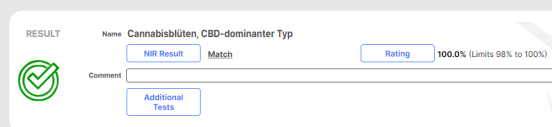
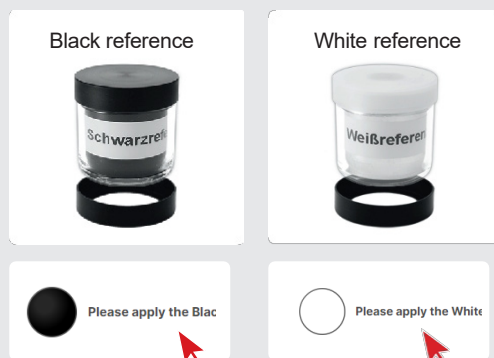
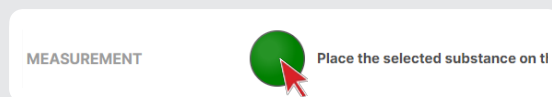
### Output of the result

After a few seconds, the device shows you whether the substance has been identified.

**Note:** If the result is negative, please display detailed information on non-identification. Check or repeat your measurement process accordingly.

### Measurement specifications

After successful measurement, fill in all mandatory fields (marked with a red frame) next to the **Sample** item as well as the **Operator**. The fields **PPN**, **Quantity**, **Supplier**, **Correction Factor** and **Additional tests** can be filled in if required.



## Creating the test report

Now you can save the measurement result, view the test report as a PDF file, or print it out.

**Note:** No matter which functions you select, the measurement result will be saved in any case. In addition, you may also print your test label on your label printer.

### 2.1.1 Measurement with the sample insert for small amounts of substance

All substances in the APIs & excipients (solid) and Narcotic substances (solids) categories can also be identified using smaller quantities. To do this, you need the **sample insert** and the associated **white reference for the sample insert**.

After selecting the substance, the check box **Use sample Insert** appears on the right-hand side of Measurement.

First place your **sample container with sample insert** and the **substance** with the **adapter ring** on the measurement point. Start the measurement process by clicking on the button next to **Measurement** or by pressing the measurement button (lights up in green colour) directly on top of the device

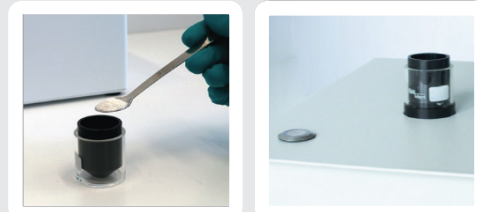
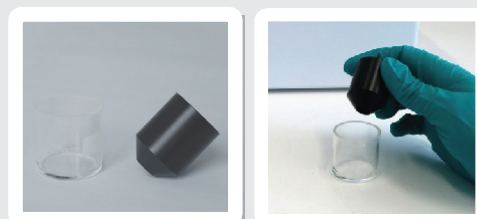
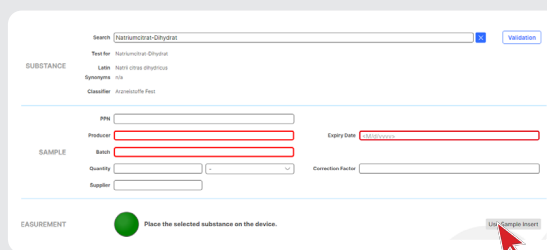
**Excursus „Correct filling of the sample containers with the sample insert“:** The sample should be filled into the sample insert up to a height of approx. 4 mm.

## Referencing

After the first substance measurement, you will be asked to set up and measure the references. Please use the black reference and the **white reference for sample insert**, otherwise non-identification will occur.

**Note:** The measurement of the references is requested again after approx. 60 min. by the software automatically.

After a few seconds, the device shows you whether the substance was identified. Then proceed as usual.





### 2.2 APIs & excipients (semisolid/liquid) clearly identifiable using Apo-Ident

#### Transflectance reference measurement

Start with the transflectance reference measurement. Place the clean **transflectance insert** with the feet pointing downwards in a clean, **empty sample container**. Together with the **adapter ring**, now place the sample container with the transflectance insert on the measurement point of the Apo-Ident. Start the **transflectance reference measurement** by clicking on the grey button or by pressing the button directly on the device.

**Important:** Both the transflectance reference measurement as well as the measurement of the liquid/semisolid substance must be carried out with the same transflectance insert and sample container. Otherwise, non-identifications may occur.

**Note:** After successful transflectance reference measurement, a time frame of 5 min. is provided for starting the substance measurement. If the measurement is not carried out within this period, the transflectance insert reference measurement must be repeated.

#### Referencing

After the transflectance reference measurement, you will be asked to set up and measure the reference standards.

Please follow the instructions on referencing under **Section 2.1** of the Quick start guide.

#### Start measurement

Place your **sample container with the substance** and the transflectance insert as well as the **adapter ring** on the measurement point. Start the measurement process by clicking on the button next to **Measurement** or by pressing the measurement button (lights up green) directly on top of the device.

Measuring stamp



Place the Transflectance Insert feet facing down in an emp

**Excursus „Correct filling of the sample containers (semisolid substance)“:** After the transfectance reference measurement has been completed, remove the transfectance insert from the sample container and hold it the feet pointing upwards. Using a spatula, take an approximately hazelnut-sized amount of the previously homogenised substance and scrape it on one of the straight edges of the transfectance insert.

Put the empty sample container over it and spread the substance over the entire surface. Finally, press the transfectance insert into the substance until all three feet visibly touch the bottom of the sample container. Make sure that there are no air bubbles under the transfectance insert.

**Excursus „Correct filling of the sample containers (liquid substance)“:** After the transfectance reference measurement has been completed, remove the transfectance insert from the sample container. Pour a small amount of homogenised liquid into the sample container so that the bottom is completely covered. Place the transfectance insert in the sample container with the feet pointing downwards. A part of the substance should visibly rise up between the sample container and transfectance insert. Lift the sample container up quite high and check that there are no air bubbles under the measurement transfectance insert.

## Result

After a few seconds, the device shows you whether the substance has been identified.

**Note:** If the result is negative, please display detailed information on non-identification. Check or repeat your measurement process accordingly.

## Measurement specifications

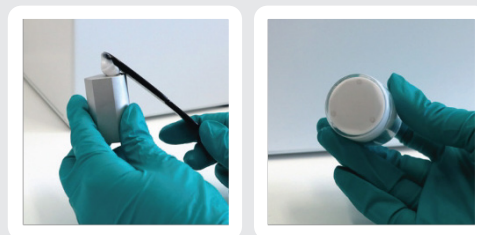
After successful measurement, fill in all mandatory fields (marked with a red frame) next to the **Sample** item as well as the **Operator**. The fields **PPN**, **Quantity**, **Supplier**, **Correction factor** and **Additional tests** can be filled in if required.

Please note that the protocol can only be completed once all mandatory fields have been filled in.

## Creating the report

Now you can save the measurement result, view the test report as a PDF file, or print it out.

**Note:** No matter which functions you select, the measurement result will be saved in any case. In addition, you may also print your test label on your label printer.



RESULT

Name

Basiccreme DAC

NIR Result

Match

Rating

100.0% (Limits 98% to 100%)

Comment

Additional Tests

PPN

Product

Batch

Quantity

Supplier

Empty Date

Correction Factor

REPORT

Save


PDF

Print

Print Label

## 2.3 Special features of substances with inconclusive test results

**Important:** For unique identification, an **complementary test is necessary**. The pharmacist is responsible for assessing which additional tests need to be carried out to ensure adequate certainty.

To the right of the selected substance, click on the warning sign  for more information.

Click on **<Show as PDF>** if you want to print this information.

### Start measurement

Proceed as usual with your measurement (**Section 2.1 or 2.2**)

After successful measurement, fill in all mandatory fields (marked with a red frame) next to the Sample item as well as the **Operator**. The fields **PPN, Quantity, Supplier, Correction factor** can be filled in if required.

Carry out an additional test and document it. The documentation of the additional test can also be done in the software.

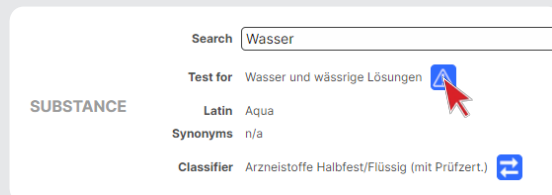
### Using the software to document additional tests

The additional test and the test result can be entered in the software via **Additional Tests**.


If the result of the additional test is available at the time of the measurement, you can do this by clicking on the check box **<Identified>** in the footer of the dialogue field. With **<OK>** your entries are accepted. The text input and the final result then appear directly on the test report.

### Handwritten entry of the result on the printed report

If the additional test is performed later on, methods and the final test result will be manually noted on the printed test report afterwards. Do **not** tick **<Identified>** checkbox in this case.




Search:

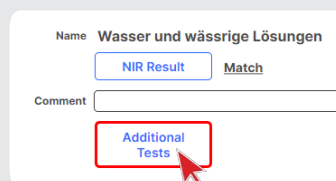
Test for: Wasser und wässrige Lösungen 

SUBSTANCE

Latin: Aqua


Synonyms: n/a

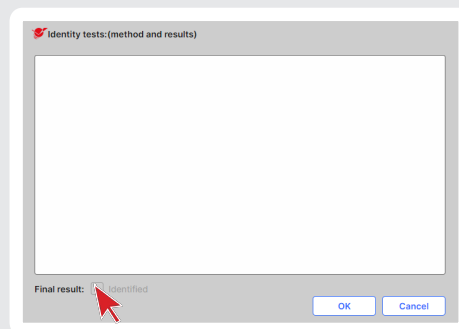
Classifier: Arzneistoffe Halbfest/Flüssig (mit Prüfzert.) 




Name: Wasser und wässrige Lösungen

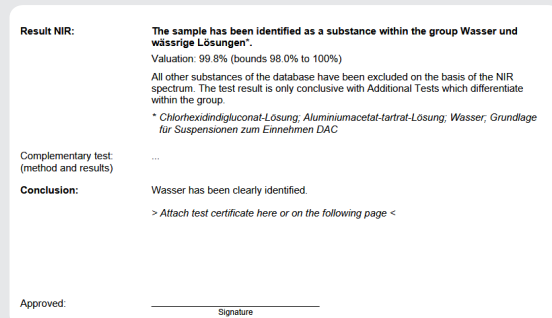
Comment:





Identity tests: (method and results)

Final result: ☒ Identified 



Result NIR: The sample has been identified as a substance within the group Wasser und wässrige Lösungen.  
Valuation: 99.8% (bounds 98.0% to 100%)  
All other substances of the database have been excluded on the basis of the NIR spectrum. The test result is only conclusive with Additional Tests which differentiate within the group.  
\* Chlorhexidindigluconat-Lösung; Aluminiumacetat-tartrat-Lösung; Wasser; Grundlage für Suspensionen zum Einnehmen DAC

Complementary test: (method and results) ...

Conclusion: Wasser has been clearly identified.  
> Attach test certificate here or on the following page <

Approved: \_\_\_\_\_  
Signature

## 2.4 Quantification of THC and CBD in cannabis flowers

### Start measurement

Place your **sample container with the cannabis flower** and the **adapter ring** on the measurement point. Start the measurement process by clicking on the cannabis button next to **Measurement** or by pressing the measurement button (lights up green) directly on the top of the device.

**Excursus „Correct filling of the sample containers (Cannabis Flower)“:** Place the cannabis flower to be tested in the sample container with the stem facing upwards so that the flower covers most of the bottom of the sample container. The more surface area is covered, the more accurate the measurement results will be.

The „**Documentation (methods and results)**“ window will appear.

„The Quantifier module enables the determination of the THC and CBD content by means of NIR spectroscopy using quantitative methods based on a mathematical-statistical (prediction) model. This is not an identification of THC and CBD in the sense of thin-layer chromatography“.

In the following text field, enter the tests you have carried out in advance and the respective result. Once you have entered the documentation, you can click on the „Documentation: Completed“ box. Click OK to close the window and start the measurement.

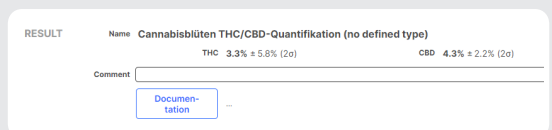
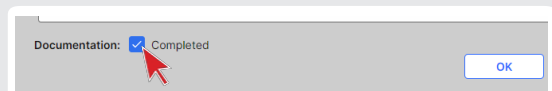
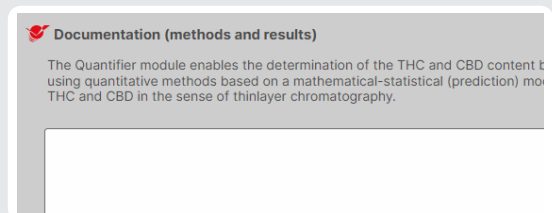
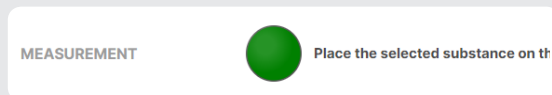
### Referencing

After the first measurement, you will be prompted to set up and measure the reference standards. Follow the software instructions and set up the black reference first, then the white reference on the measuring point. Start the reference measurements by clicking on the black or white button next to **Measurement** or by pressing the measurement button (lights up green) directly on the top of the device.

**Note:** Please always use the black adapter ring. The measurement of the references will be requested again by the software after approx. 60 minutes.

### Output of the result

After a few seconds, the THC and CBD content of the cannabis flower are displayed. In addition, it is shown whether it is a THC-dominant type, a CBD-dominant type, a THC/CBD-intermediate type or whether it is an undefined result, if the measurement result cannot be categorised into a product group.



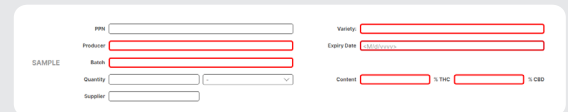
### Measurement specifications

After the measurement, complete all mandatory fields (outlined in red) under **Sample** and under **Pharmacy > Operator**. If required, you can fill in the fields **PPN**, **Quantity**, **Supplier** and **comment**.

### Creating the report

Now you can save the measurement result, view the test report as a PDF file, or print it out.

**Note:** No matter which functions you select, the measurement result will be saved in any case. In addition, you may also print your test label on your label printer.



The screenshot shows a form with the following fields:

- PPN: [text input]
- SAMPLE: [text input]
- Quantity: [text input] [dropdown menu]
- Supplier: [text input]
- Pharmacy: [text input]
- Operator: [text input]
- Empty Date: [text input]
- Content: [text input] % THG [text input] % ODE

REPORT

[Save](#)

[PDF](#)

[Print](#)

[Print Label](#)

### 3. Cleaning/use of sample containers, transfectance insert and sample insert

#### Sample containers

- Pre-clean sample containers with a paper towel after the measurement
- After measuring ointment and emulsion bases, pre-cleaning of the sample containers with 70% isopropyl alcohol is recommended
- Cleaning with rinsing agent, warm water and a soft cloth
- Next, rinse the sample containers with purified water and rub them dry with a lint-free cloth
- Before using the sample containers, sterilise them with 70% isopropyl alcohol and dry them with a disposable cloth

**Before measuring, particularly check that the bottom of the sample container is clean and not greasy. No water marks should be visible.**

If you decide to use the sample in the compounding, please check whether the microbiological purity of the sample container and the measuring transfectance insert are also guaranteed.

#### Transfectance insert

Scratches between the transfectance insert feet or strong discolouration can influence the identification. Please handle the transfectance insert with care.

- Never clean the transfectance insert with pot scrapers, spatulas or other tools
- No cleaning in the dishwasher!
- Roughly wipe the transfectance insert with a paper towel after measurement
- Cleaning with rinsing agent, warm water and a soft cloth
- Next, rinse the transfectance insert with purified water and rub it dry with a lint-free cloth
- Before using the transfectance insert, sterilise it with 70% isopropyl alcohol and wipe it dry with a disposable cloth

#### Sample insert for measuring small quantities of substance

- After the measurement, remove any powder residues from the sample insert by gently tapping the sample container
- Cleaning with rinsing agent, warm water and a soft cloth
- Then rinse the sample insert clear with purified water and rub it dry with a lint-free cloth
- Before using the sample insert, clean it with 70% isopropyl alcohol and let it dry

#### Measurement point / sample window

Please ensure that the measurement point (sample window) of the Apo-Ident is kept clean. For cleaning, we recommend a cloth soaked in 70% isopropyl alcohol.

### 4.1 Percentage of agreement + setpoint (only for identity check of recipe raw materials)

The agreement of the sample spectrum with the saved reference spectrum is displayed as a percentage. Behind this, the permissible range of the assessment (setpoint) is shown. If the sample spectrum is beyond the permissible range, the substance is shown as „**No match**“ and indicated as unidentified. By clicking on **NIR Result** you can have the measured spectrum displayed.

### 4.2 Display of the difference line between reference and sample spectrum

If required, you can display the difference between the sample spectrum and the reference spectrum in the graph of the test report (only possible with a positive spectrum). Please note that the right-hand scale is used for the difference line in order to make the differences clearly visible.

To do this, under **<Settings>** select the option **<Report Settings>** and set a tick mark for „**Show difference of back projections**“.

### 4.3 Search function (query) by substance, expiry date or other criteria

This function allows you to re-display and re-print reports or labels.

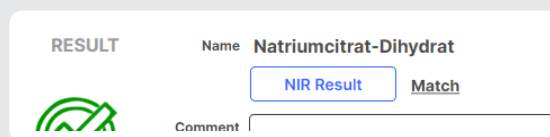
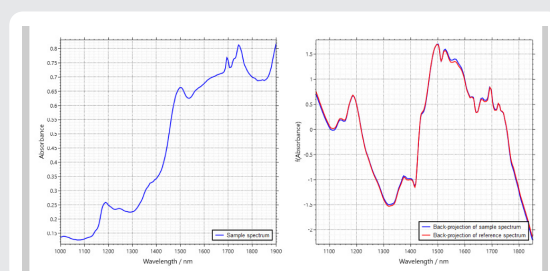
To do this, click on **<Query>** in the menu bar. The Archive Query opens.

If necessary, set the configuration profile for the search query above. Under the **Substance** tab, enter the name of the substance (or the test number or PPN) whose test reports you would like to search for. Click on **<Execute>**. All test reports containing the specified search text are displayed.

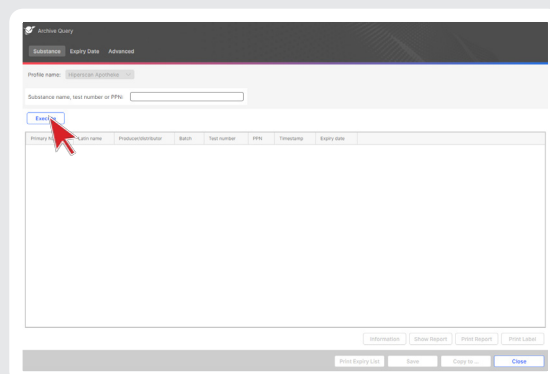
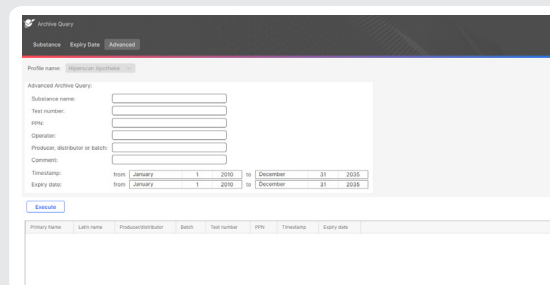
To search for the expiration date, click on the **Expiry Date** tab and enter the relevant dates.

After executing the query, you can select the substance in question in the results window and display information about the measurement or the report.

Under the **Advanced** tab, you can also search for the operator, supplier or other information.

Graphic without difference display



### Exporting the query results in CSV format

The results of the query can be saved in CSV format by clicking on **<Save>**. Then open it in a CSV-enabled program (e.g. MS Excel) to print out the list or use it for further processing.

### Copy files to individual storage locations

(e.g. on a USB flash drive)

If you would like to copy the selected files to an individual location, please click on the **<Copy to...>** button and select the desired storage location. All data matching the search criteria is copied.

## 4.4 Display of the validation documents

Click on **<Validation>** in the menu bar. The validation documents are divided according to substance classes. Here you display the entire document.

After entering the substance to be tested, you can also open the validation document directly via the Apo-Ident user interface. To do this, click in the **Substance** area on the far right on **Validation**.

## 4.5 Data backup

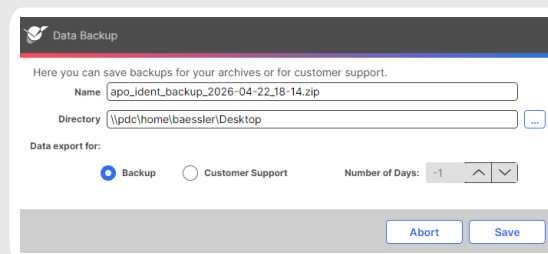
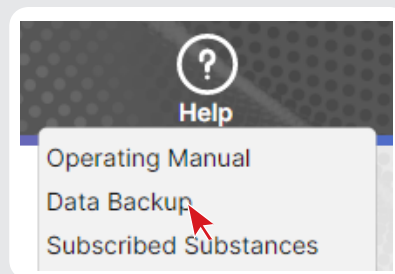
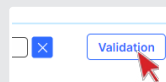
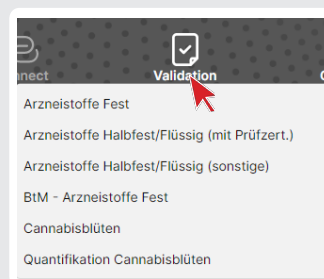
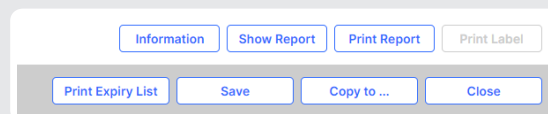
To send your measurement reports to the Apo-Ident customer service or to save them for the purpose of data backup, click on **<Help>** at the top of the menu bar and select **<Data Backup>**. You can now choose whether you would like to perform a **<Backup>** or export data for our **<Customer Service>**.

If you want to change computers, it is advisable to make a back-up (export including log files, licence key, profile). The backup contains the settings, archive(s) and profile(s). Click on **<Save>**. By default, the appropriate zip archive is saved on the desktop.

When you export the data for customer service, your spectra are compressed and saved in a ZIP file. You can set the number of measurement days for which you would like to combine and send or save as follows:

- -1 = all days
- 0 = only LogFiles
- 1 = 1 day
- 2 = 2 day
- etc.

Click on **<Save>**. By default, the appropriate zip archive is saved on the desktop. You can now send the data to us via e-mail to [kundenservice@apo-ident.de](mailto:kundenservice@apo-ident.de).



#### 4.8 Identification details (ranking list) (only for identity verification of recipe raw materials)

Apo-Ident compares the measured spectrum with all samples stored in the reference database. A maximum of 20 results of the highest match can be displayed in the ranking list. To view the ranking list, please click in the result display for the measurement on **Rating**.

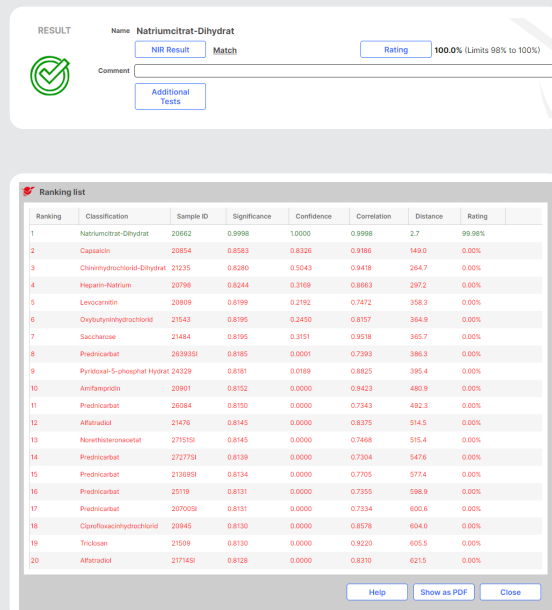
The view with the identification details opens. If you select the **<Show as PDF>** button, you will receive the displayed table in PDF format and can print and file it together with the report.

At the 1st position (rank 1), the reference sample is displayed, which has the **highest compliance with the sample that has been placed**. If the criteria for identification of the substance are met, the substance will be displayed in **green** colour.

This is followed by the **red** marked next reference samples. These are not taken into account directly in the assessment in the sample spectrum. This means that samples of rank 2 or higher cannot lead to a „Match“ result since another sample is closer. In case of substances that are grouped together, it must be noted that the name (classification) listed in the ranking list may differ from the substance name. The group name is then displayed (e.g. „Triglycerides“).

The view is used for traceability and verification of the identification result by the user.

The list shows the test parameters of the measured sample spectrum obtained with respect to the nearest 20 reference samples. An explanation of individual terms is provided on **Section 5**.



Ranking	Classification	Sample ID	Significance	Confidence	Correlation	Distance	Rating
1	Natriumcitrat-Dihydrat	20662	0.9998	1.0000	0.9998	2.7	99.98%
2	Caproic acid	20854	0.8583	0.8326	0.9186	149.0	0.00%
3	Cholesterolester-Dihydrat	21235	0.8280	0.5043	0.9418	264.7	0.00%
4	Heparin-Natrium	20796	0.8244	0.3168	0.8663	297.2	0.00%
5	Levocarnitin	20809	0.8199	0.2162	0.7472	358.3	0.00%
6	Oxybutyrylhydrochlorid	21543	0.8195	0.2450	0.8157	364.9	0.00%
7	Saccharose	21484	0.8195	0.3151	0.9518	365.7	0.00%
8	Prednicarbat	2638331	0.8185	0.0001	0.7393	386.3	0.00%
9	Pyridoxal-5-phosphat Hydrat	24329	0.8181	0.0189	0.8825	395.4	0.00%
10	Amifampridin	20901	0.8152	0.0000	0.8423	480.9	0.00%
11	Prednicarbat	26084	0.8150	0.0000	0.7343	492.3	0.00%
12	Alfentanil	21476	0.8145	0.0000	0.8375	514.5	0.00%
13	Novelsteronacetat	271519	0.8145	0.0000	0.7468	515.4	0.00%
14	Prednicarbat	2727791	0.8138	0.0000	0.7304	547.6	0.00%
15	Prednicarbat	213691	0.8134	0.0000	0.7705	577.4	0.00%
16	Prednicarbat	22119	0.8131	0.0000	0.7355	598.9	0.00%
17	Prednicarbat	2070038	0.8131	0.0000	0.7334	600.6	0.00%
18	Ciprofloxacinhydrochlorid	20945	0.8130	0.0000	0.8578	604.0	0.00%
19	Triclosan	21509	0.8130	0.0000	0.9220	605.5	0.00%
20	Alfentanil	217459	0.8128	0.0000	0.8310	621.5	0.00%

### 4.9 Help

Under the menu option **<Help>** the software provides various Help options for handling the Apo-Ident confidently.

**Operating Manual** > This provides detailed operating instructions for the Apo-Ident analysers.

**Service Centre Online Help** > You are linked to the Apo-Ident Service Centre page. Internet access is absolutely necessary for this. Here you will find current manuals, substance lists and the latest software. Moreover, you can download information material and order forms as well as validation documentation and the open source code.

**Data Backup** > see **Section 4.6**

**Subscribed Substances** > This provides an overview of the substances that can be measured with Apo-Ident.

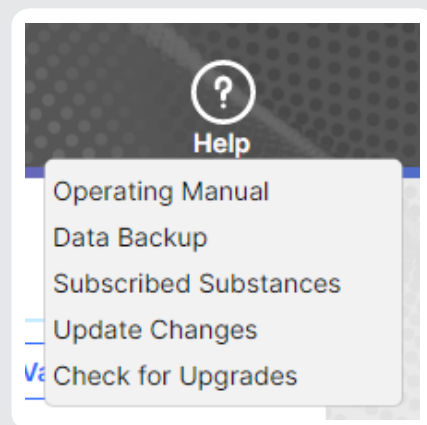
**Update Changes** > The latest update changes will be shown.

**Check for Upgrades** > Shows whether new software versions are available (assuming your Apo-Ident is connected to the Internet and downloads are authorised).

Under the menu option **<Cannabis>** you will find the proposal for macroscopic and microscopic testing.

### 4.10 Info

Here you can obtain information on the installed version, set up a Teamviewer session under **<Service-Center>** or view the **<Certificate>** for the currently installed software.



## 5. Explanation of terms

Description	Explanation	Estimation
<b>Rank</b>	Determined rank for matching the measurement to be assessed with the reference samples saved in the database	
<b>Classification</b>	Substances or groups of substances that can be clearly distinguished by Apo-Ident. A group of substances represents several substances that are not uniquely separable by Apo-Ident but are available for measurement (e.g. „triglycerides“).	These classifications are marked in yellow (ambiguous result).
<b>Sample ID</b>	Identification number assigned by HiperScan GmbH to the reference samples from which the spectra of the Apo-Ident reference database was built. Detailed information on all reference samples are provided in the validation documentation.	
<b>Significance</b>	Measure for the distance of the measurement result related to the mean values of the reference measurements of a sample or classification.	The higher the value (maximum 1), the closer is the measured sample spectra to the saved reference values.
<b>Confidence</b>	Outlier assessment	The higher the value (maximum 1), the better the measured sample spectrum fits into the distribution of the saved reference values.
<b>Correlation</b>	Statistical measure for the similarity of the back projection of the mean value of the saved reference spectra to the back projection of the measured sample spectrum.	The higher the value (maximum 1), the greater is the match of the back projections.
<b>Distance</b>	Measure of distance between the mean value of the saved spectra of a reference sample and the measured spectra in the main component space (Mahalanobis distance).	The smaller the value, the closer is the sample spectrum to the saved reference values.
<b>Assessment</b>	indicates the overall assessment (in terms of the above-mentioned criteria) of the measured spectrum as they are displayed on the screen and the report.	The higher the value (maximum 100%) the closer is the sample to the saved reference values. The minimum value defined for an identification) is 98 %.
<b>Specificity</b>	The specificity of a classification is the true-negative rate. It denotes the proportion of spectra correctly classified as non-identity during validation.	
<b>Detection rate</b>	This is the true positive rate. It denotes the proportion of the spectra classified as zero identity during validation.	

## 6.1 Technical data Apo-Ident 2

Analysis method	Near infrared spectroscopy
Spectral range	1000 - 1900 nm
Spectral resolution	10 nm
Stray light	< 0,2 %
Measuring time	< 15 s per scan
Detector	InGaAs single detector, uncooled
Wavelength accuracy	± 1 nm (in the entire temperature range)
Wavelength reproducibility	± 0.3 nm (in the entire temperature range)
Photometric reproducibility	± 0.15 % (average of 500 scans at 25 °C)
Photometric linearity (max/RMS)	< 2 % / < 1,5 %
Automatic recalibration/device check	Integrated wavelength and white standard
Light source	Tungsten-halogen burner
Probe/optical input	Diffuse reflection, measuring spot with 23 mm diameter (powder, scattering solids, with transfective stamp liquids and pastes)
Dimensions	185 x 192 x 220 mm
weight	2.95 kg
Interfaces	1 x USB type B slave
optional: Interfaces aiLINK	<ul style="list-style-type: none"> <li>• 2 x USB 2.0 type A host</li> <li>• 2 x USB 3.0 type A host</li> <li>• Wifi 2.4GHz IEEE 802.11ac</li> <li>• 1 x Gigabit Ethernet</li> <li>• 1 x HDMI2.0 Type A up to 4k/30Hz</li> </ul>
Operating temperature	15 - 35 °C
Storage temperature range	-20 to 60 °C (non-condensing)
Operating voltage Apo-Ident 2	12 VDC - 3.35 A - 45 W
Operating voltage external power supply	100 - 240 VAC/50-60 Hz/60 W
System	NextStep software for recording and visualising spectra
Software requirements	<ul style="list-style-type: none"> <li>• PC with Windows 11 operating system</li> <li>• Debian-based Linux</li> <li>• min. 4 GB RAM</li> <li>• min. 1.6 GHz Pentium processor</li> <li>• 1.5 GB local storage space</li> </ul>



The device complies with the following EC directives

- EMC Directive 2014/30/EU
- Low Voltage Directive 2014/35/EU
- RoHS Directive 2011/65/EU

### 6.2 Disposal



*According to the European WEEE Directive, electrical and electronic devices may not be disposed of with household waste. Their components must be recycled or disposed of separately, as toxic and hazardous components can cause lasting damage to health and the environment if disposed of incorrectly.*

In accordance with the Electrical and Electronic Equipment Act (ElektroG), you are obliged to dispose of electrical and electronic equipment properly at the end of their service life. If in your company you have not implemented any procedure for this, HiperScan GmbH will take the device back as the manufacturer.

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



Customer service  
Apo-Ident

Phone: +49 351 212 496 33  
Fax +49 351 212 496 99

kundenservice@apo-ident.de  
www.apo-ident.de

HiperScan wishes you a lot of fun with Apo-Ident!

HiperScan GmbH  
Gerokstraße 13  
01307 Dresden  
Germany

Phone: +49 351 212496-0  
Fax: +49 351 212496-99  
info@hiperscan.com  
www.hiperscan.com