



# Operating manual

for the NIR analyser

**Apo-Ident 2.1**

based on version 2.9



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## 1. Starting the program

Start the program „QuickStep 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.

**Help:** If the NIR analysis can provide an unambiguous result for the selected substance, the search field will turn green. All information on colour coding can be found on **Section 2**.

## 4. Measuring by substance category

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

#### Start measurement

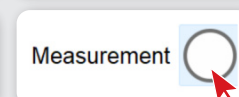
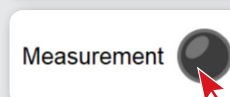
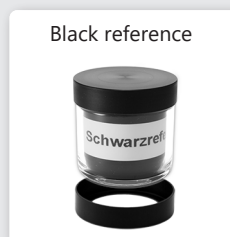
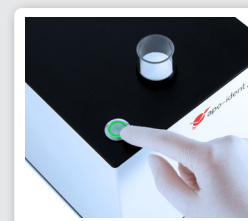
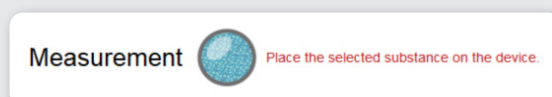
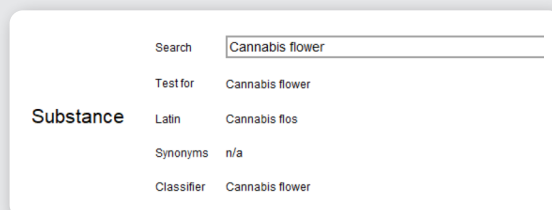
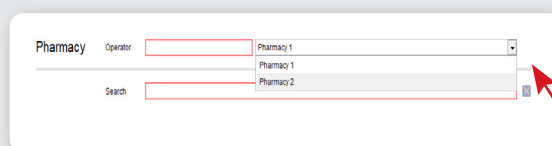
First place your **sample cup containing the substance** (filling height 4 mm) and the **adapter ring** on the measurement point. Start the measurement process by clicking on the blue button next to **Measurement** or by pressing the measurement button (lights up green) directly on top of the device.

**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 cup**. Using the adapter ring, place the cup, 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 cup. 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 cup 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 blue 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 cup so that no air bubbles are visible, but all 3 stamp feet are visible.

## 4.3. Determination of cannabis flower content

### Start measurement

First place your **sample cup with the cannabis flower** (if possible, place the stem upwards to get a large contact surface in the cup) 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 thin-layer chromatography**“ carefully.

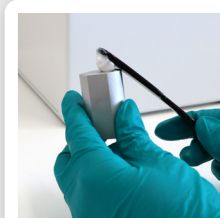
transflectance insert



Measurement



Place the transflectance insert feet facing down in an empty sample container and use them for the next measurement too



Measurement



Place the selected substance on the device.

Documentation (methods and results)



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 thin-layer chromatography.

In the following text field, enter the steps you have carried out in advance and the result of the identity check. You can display help on macroscopy and microscopy under [Recommendation](#). 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 unit 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.

### Determination of the content of cannabis flowers:

After a few seconds, the device shows you the THC and CBD content and the type classification 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 > Tester**. 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 or the recommendation for macroscopic and microscopic examination.

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 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 thin-layer chromatography.

**Macroscopy**  
The female inflorescences are undivided or have disintegrated into their individual parts. The densely packed bracts and flowers of the entire inflorescence form a strongly compressed panicle about 1 to 5 cm long and wide, with the dark green bracts protruding slightly. The light brown to brown pistils and stigma branches are up to 1 cm long. The petals are green to light green and, like the bracts, densely covered with yellowish white hairs and glued together by resin. The disintegrated drug contains fragments of the inflorescence stems, bracts and panicle sections as well as individual flowers and flower organs. The single flower is about 5 to 10 mm long, sometimes short-stalked, and consists of the hooded, green to light green perianth, the 1 to 2 mm whitish ovary, which may contain a small brown ovule, and the brown pistil with 2 long, slender stigma branches. The fragments of the bracts are dark green to green, the inflorescence stalks light green. The bracts and all flower organs except the pistils are more or less densely covered with sticky glandular hairs caused by excreted resin.

**Microscopy**  
The test is carried out under the microscope using chloral hydrate solution R. The powdered drug (SSS) shows the following characteristics: Large glandular hairs with multicellular stalk and multicellular caputulum (A), isolated stalks (B) and isolated caputula (C), multicellular glandular stalks from below (D); large, tapering guard hairs of various lengths with strongly thickened cell walls, isolated or on epidermis (E), sometimes with cystoliths (F); Leaf fragments of the bracts with short, broad cystoliths hairs on the upper epidermis (G, H), the upper epidermis with polygonal or indented anticlinal cell walls, the cystolith hairs with strongly thickened, sometimes warty cell walls, the cystoliths can be recognized as grape-like structures, the palisade parenchyma can be recognized under the epidermis; fragments of the bracts with fine, unicellular guard hairs (I); Leaf fragments with bent or wavy, pearl-like thickened anticlinal cell walls of the lower epidermis, the stomata of the anomocytic type; leaf fragments densely covered with attachment points of the multicellular stalks of the large glandular hairs; leaf fragments with very numerous calcium oxalate drusen in the mesophyll (J); the vessels in the leaf fragments have helically thickened cell walls; the leaf epidermis may show small glandular hairs with unicellular stalks and one- to four-celled heads or sessile glandular hairs with radially arranged cells (K); fragments of inflorescence stalks with guard hairs, spiral vessels and crystal cell rows with calcium oxalate glands; fragments of caplets, the upper epidermis has cells with straight or slightly indented (X) and the lower epidermis has cells with strongly wavy anticlinal cell walls (L); fragments of brown pistils and stigmas, densely covered with long, club-shaped papillae; rare pollen grains, tricolpate and with smooth exine.

Documentation: ☒ Completed [Recommendation](#) Cancel OK

Black reference

White reference

Measurement

Measurement

**Result**

Name: **Fructose**

NIR Result: Match Rating: **99.9%** (Limits 98% to 100%)

Comment: (empty)

[Additional tests](#)

**Result**

Name: **Cannabis flower (THC-dominant type)**

THC: **16.7% ± 0.9% (g/g)** CBD: **0.0% ± 0.2% (g/g)**

Comment: Macroscopy: The female inflorescences are undivided or have disintegrated into their individual parts. The densely packed [Documentation](#) [Recommendation](#)

**Sample**

PPN: Producer: Expiry date: Batch: Period of grace: Quantity: - + Corre. factor: Distributor: € Delivery date:

**Sample**

PPN: Variety: Producer: Expiry date: Batch: Grace Period: Quantity: - + Content: % THC % CBD Supplier: € Delivery date:

**Report**

[Save](#) [PDF](#) [Print](#) [Print Label](#) **240716-152048**

### 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.
- Make sure that there is no ingress of objects or liquids into the device. 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 QuickStep\_\*.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 Apo-Ident 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.

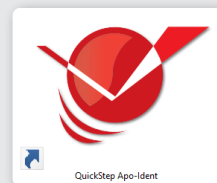
### 1.4. Starting the program

Start the program „QuickStep 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

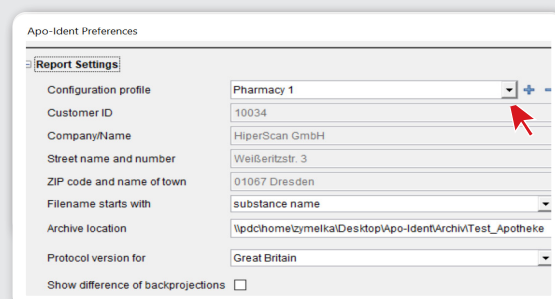
If you have misplaced your licence key or need support, please contact our customer service on telephone +49 351 212 496 33 or via e-mail to [kundenservice@apo-ident.de](mailto:kundenservice@apo-ident.de).

**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/Apo-Ident/Archiv/Profile\_Name1*

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

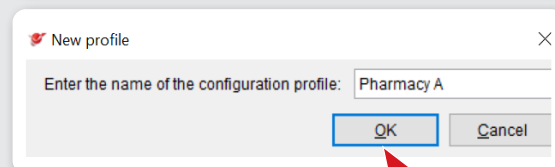
This ensures that several profiles are not saved in one and the same archive and that no errors occur while retrieving the archive.



Apo-Ident Preferences

**Report Settings**

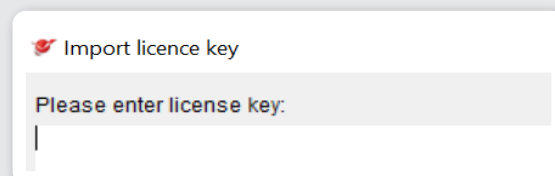
Configuration profile	Pharmacy 1
Customer ID	10034
Company/Name	HiperScan GmbH
Street name and number	Weißeritzstr. 3
ZIP code and name of town	01067 Dresden
Filename starts with	substance name
Archive location	\\pdc\home\z\melka\Desktop\Apo-Ident\Archiv\Test_Apotheke
Protocol version for	Great Britain
Show difference of backprojections	<input type="checkbox"/>



New profile

Enter the name of the configuration profile: Pharmacy A

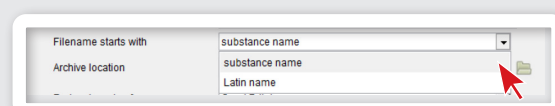
**OK** Cancel



Import licence key

Please enter licence key:

|

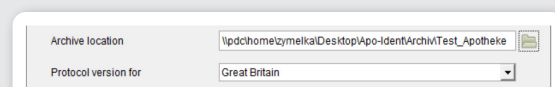


Filename starts with

substance name

substance name

Latin name



Archive location

\\pdc\home\z\melka\Desktop\Apo-Ident\Archiv\Test\_Apotheke

Protocol version for

Great Britain



**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.

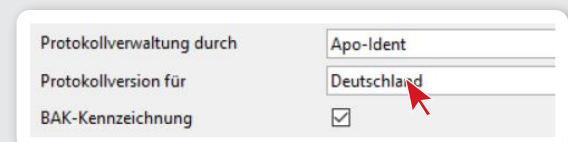
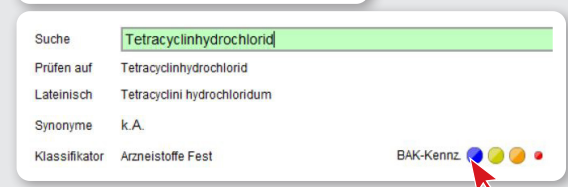
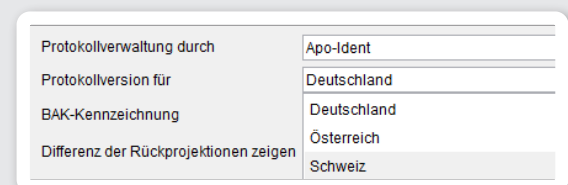
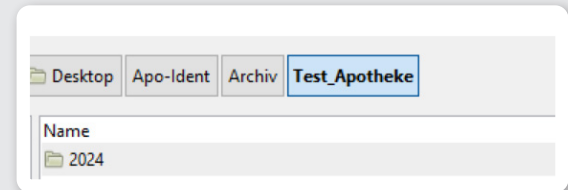
**Report version for** > The language or form of the test report for the selected profile is preset. You cannot change this.

**Show difference of back projection** > Section 4.3.

**Complementary test as mandatory field** > Section 2.3.

**Printout of validation in the report** > Section 4.5.

**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. WLAN-/LAN-settings

Please leave these settings as they have been pre-configured. If you have any questions, please contact customer service via e-mail at [kundenservice@apo-ident.de](mailto:kundenservice@apo-ident.de) or by telephone on +49 351/212 496 33.

### 1.5.3. Settings for the Ident module

Please leave these settings as they have been pre-configured (identification: „Local Ident Module“).

### 1.5.4. Label printer settings

#### Brother label printers

**Up to Windows 10:** First install the drivers. You will find these on the USB stick supplied under *Useful information/Brother drivers/up to Win10*. Select your model and start the D\_SETUP.exe application. Follow the installation instructions.

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

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

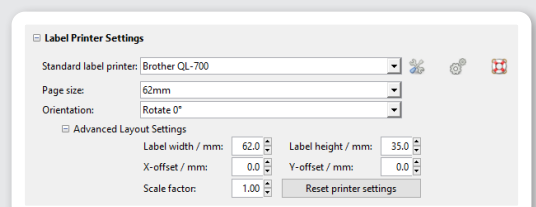
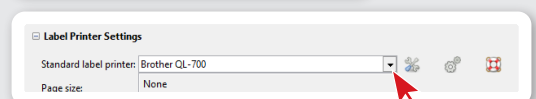
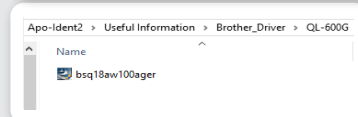
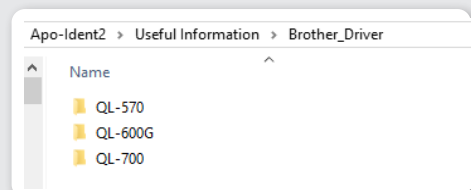
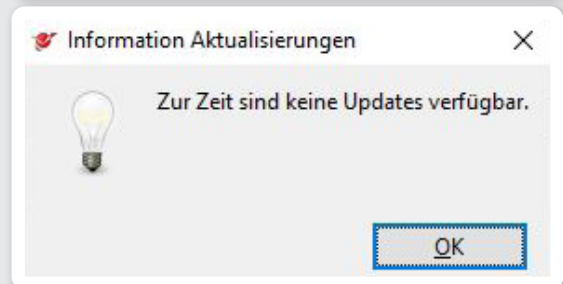
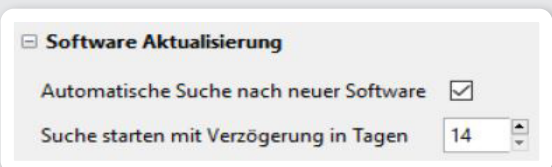
#### Setting up in the Apo-Ident software

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** „Open 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 „Print test label“.

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

## Settings for single labels DK-11201

Choose the following settings:

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

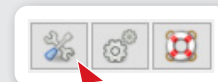
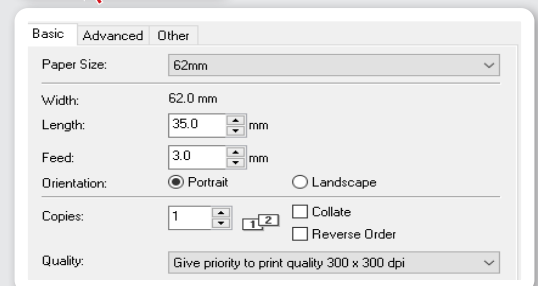
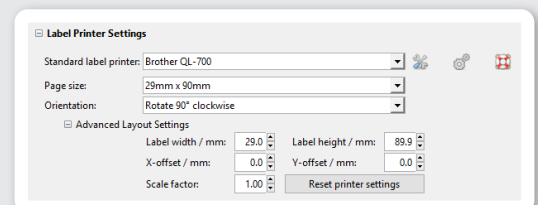
## Advanced Layout Settings:

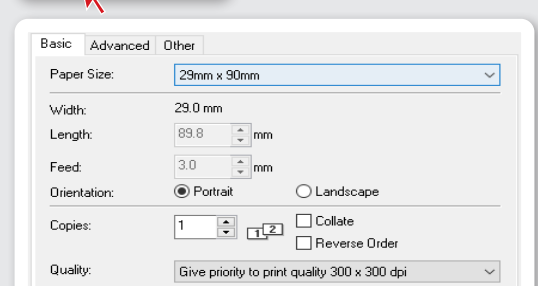
- Label width / mm: 29.0
- Label height / mm: 89.9
- X-offset / mm: 0.0
- Y-offset / mm: 0.0
- Scaling factor: 1.00

Now click on the left **tool icon** „Open 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 “Print test label”. 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
- Skaling factor: 2.20

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

- Orientation: Landscape
- Page Order: Front to back

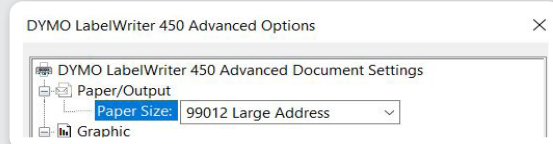
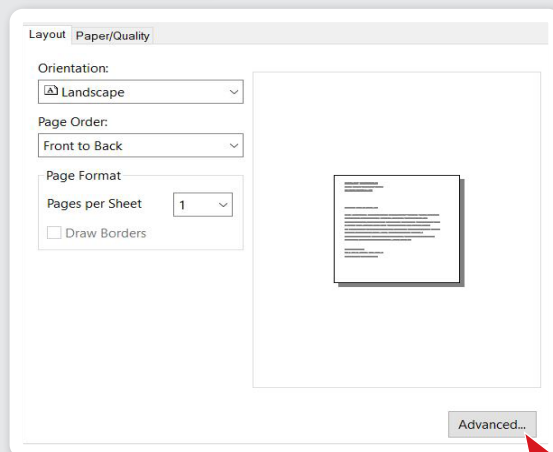
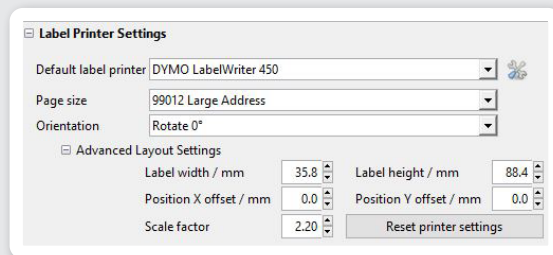
Click **<Advanced>** to make the following setting:

- 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 **<Print test label>**. 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. After entering the substance, the search field turns green. → **Section 2.1. / 2.2.**

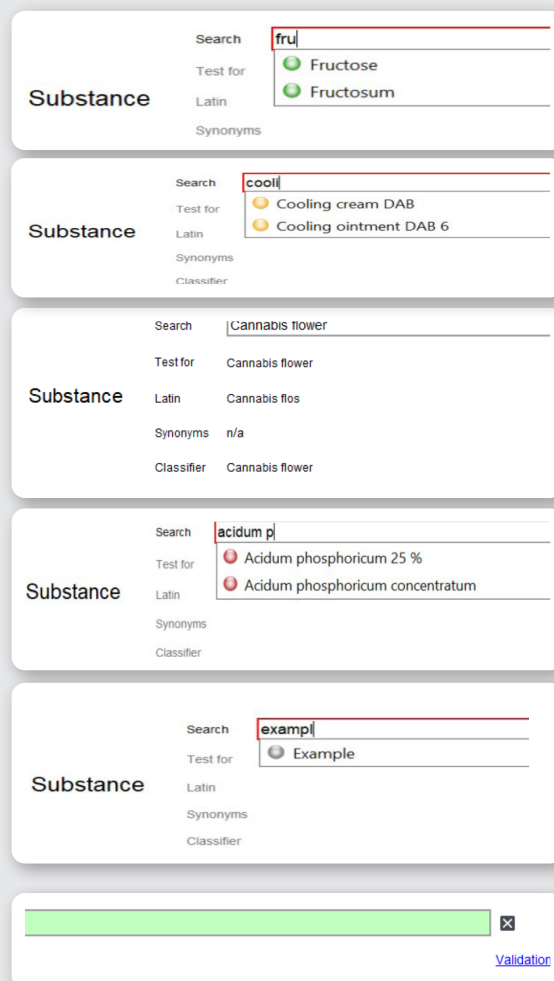
**Yellow dot:** For substances with a yellow dot in front of the name, only an ambiguous test result can be obtained, i.e. the identity is limited to a few options. After entering the substance, the search field turns yellow. → **Section 2.3.**

**White dot:** Cannabis flowers are labelled with a white dot. For this substance, only a content determination can be carried out with Apo-Ident. After the substance has been added, the search field turns white → **Section 2.4.**

**Red dot:** The substance cannot be identified by Apo-Ident. However, these substances are predefined in order to document the results of other tests in the test report. After entering the substance, the search field turns red. → **Section 2.5.**

**Grey dot:** In substance management, you can create substances yourself to create a test report for user-defined substances and document the results of other tests. These substances cannot be identified by Apo-Ident. After entering the substance, the search field turns grey. → **Section 4.1.**

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



The screenshot displays the 'Substance' search interface of the Apo-Ident software. It shows five examples of search results, each with a colored dot indicating the identification status:

- Green dot:** Search field contains 'fru'. Suggestions: Fructose, Fructosum.
- Yellow dot:** Search field contains 'cool'. Suggestions: Cooling cream DAB, Cooling ointment DAB 6.
- White dot:** Search field contains 'Cannabis flower'. Suggestions: Cannabis flower, Cannabis flos.
- Red dot:** Search field contains 'acidum p'. Suggestions: Acidum phosphoricum 25 %, Acidum phosphoricum concentratum.
- Grey dot:** Search field contains 'examp'. Suggestion: Example.

Below the search results, there is a green validation bar with a cross icon and the text 'Validation'.

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

### Start measurement

First place your **sample cup containing the substance** and the **adapter ring** on the measurement point. Start the measurement process by clicking on the blue 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 cups (solid substance)“:**  
Fill about 4 mm of the substance to be tested into the sample cup. Make sure that the base of the sample cup is covered evenly. The transfectance 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

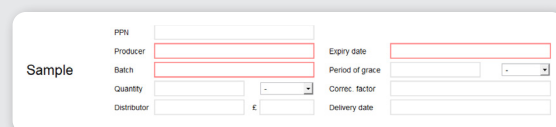
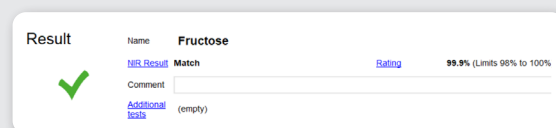
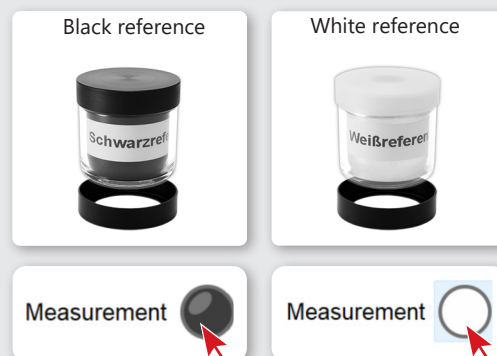
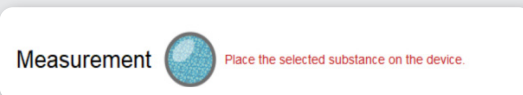
After a few seconds, the device shows you whether the substance has been identified.

**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 **User**. The fields **PPN**, **Quantity**, **Distributor**, **Period of grace**, **Weighing correction factor**, **Delivery Date** and **Additional tests** can be filled in if required.

**Note:** If you fill in the **Period of grace** field, the software calculates it from the day of the check and indicates it as „**Expiry date**“ on both the test report and the test label. If the **Expiry date** is earlier than the **Period of grace**, the expiry date is automatically printed on the test report or test label.





## Creating the protocol

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 cup with sample insert** and the **substance** with the **adapter ring** on the measurement point. Start the measurement process by clicking on the blue-black 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 cups 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.


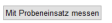
After a few seconds, the device shows you whether the substance was identified. Then proceed as usual.

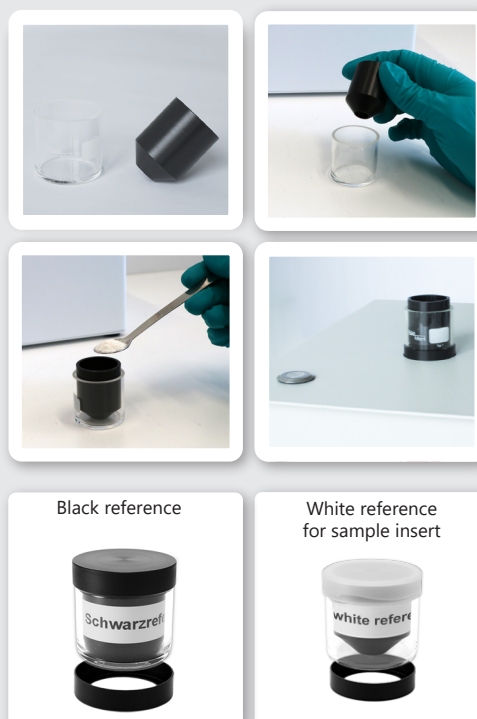
Protocol  Save  PDF  Print  Label Printer Test number

Suche  

Substanz Prüfen auf Cellulose, mikrokristallin [Validierung](#)  
Lateinisch Cellulosum microcrystallinum  
Synonyme k.A.  
Klassifikator Arzneistoffe Fest BAK-Kennz. ● ● ● ●

Probe PZN   
Hersteller   
Charge   
Bezugsmenge   
Lieferant   
Verfallsdatum   
Aufbrauchfrist   
Korrekturfaktor   
Lieferdatum

Messung  Bitte stellen Sie die Substanz auf 



## 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 cup**. Together with the **adapter ring**, now place the cup 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 cup. 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 cup with the substance** and the measurement transflectance insert as well as the **adapter ring** on the measurement point. Start the measurement process by clicking on the blue button next to **Measurement** or by pressing the measurement button (lights up green) directly on top of the device.

transflectance insert



Measurement



Place the transflectance insert feet facing down in an empty sample container and use them for the next measurement too

**Excursus „Correct filling of the sample cups (semisolid substance)“:** After the transfectance reference measurement has been completed, remove the transfectance insert from the sample cup 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 cup 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 cup. Make sure that there are no air bubbles under the transfectance insert.

**Excursus „Correct filling of the sample cups (liquid substance)“:** After the transfectance reference measurement has been completed, remove the transfectance insert from the sample cup. Pour a small amount of homogenised liquid into the cup so that the bottom is completely covered. Place the transfectance insert in the sample cup with the feet pointing downwards. A part of the substance should visibly rise up between the sample cup and transfectance insert. Lift the cup 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 **User**. The fields **PPN**, **Quantity**, **Distributor**, **Period of grace**, **Weighing correction factor**, **Delivery Date** and **Additional tests** can be filled in if required.

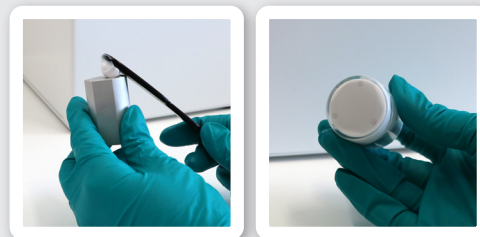
**Note:** If you fill in the **Period of grace** field, the software calculates it from the day of the check and indicates it as „**Expiry date**“ on both the test report and the test label. If the **Expiry date** is earlier than the **Period of grace**, the expiry date is automatically printed on the test report or test label.

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.




<b>Result</b> ✓	Name	Sodium citrate	
	NIR Result	Match	Valuation 100.0% (Limits 98% to 100%)
	Comment		
	Additional tests	(empty)	

<b>Sample</b>	PPN		Expiry date	
	Producer		Period of grace	
	Batch		Correc. factor	
	Quantity		Delivery date	
	Distributor			

Protocol	Save	PDF	Print	Label Printer	Test number
----------	------	-----	-------	---------------	-------------

## 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 **<Display 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 **User**. The fields **PPN**, **Quantity**, **Distributor**, **Period of grace**, **Weighing correction factor**, **Delivery Date** and **Additional tests** 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, see below.

**Excursus „Settings for complementary tests“:** Complementary test for substances that cannot be unambiguously identified is pre-configured as mandatory. You can change this setting at any time. To do this, under **<Settings>**, choose the option **<Report Settings>** and remove the tick from „Complementary test as mandatory“.



### Using the software to document additional tests


The additional test and the test result can be entered in the software via **Complementary 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	Water
Test for	Water and aqueous solutions 
Substance	Latin: Aqua
Synonyms	n/a
Classifier	APIs & excipients, liquid/semi-solid (with analysis certificate) 

Result	Name: Water and aqueous solutions
	NIR Result: Match Rating: 99.6% (Limits 98% to 100%)
	Comment: (empty)
	Complementary tests: (empty)

Complementary tests (Method and Result)

Final result: ☐ Identified

Cancel OK

Result NIRS:	The sample has been identified as a substance within the group Water and aqueous solutions*. Value: 99.2% (limits 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 differentiates within the group. * Bepanthen® solution; Aloe Vera gel, 1:1; Aloe vera gel, 10x concentrated; Water; SySpend® SF pH4 aroma free; SySpend® SF pH4 cherry aroma; Retterspitz external
Complementary tests: (Method and results)	Further information...
Conclusion:	Water has been clearly identified. <input type="checkbox"/> Yes <input type="checkbox"/> No > Attach test certificate here or on the following page <
Approved by:	Name: _____ Date/Signature: _____

## 2.4 Determination of cannabis flower content

### Start measurement

Place your **sample cup 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 cups (Cannabis Flower)“:

Place the cannabis flower to be tested in the sample cup with the stem facing upwards so that the flower covers most of the bottom of the cup. 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. For help with macroscopy and microscopy, click on the [Recommendation](#). Once you have entered the documentation, you can click on the „Documentation: completed“ box. Click OK to close the window and start the measurement.

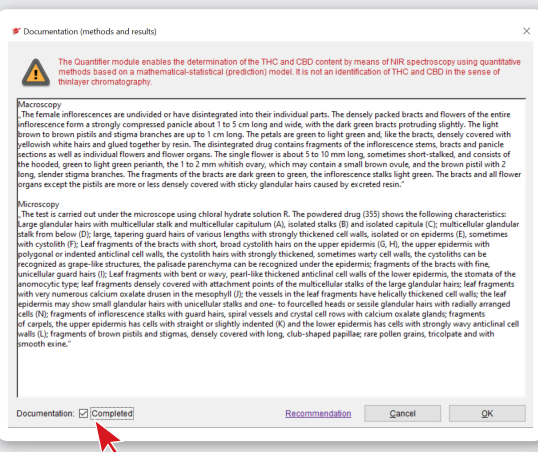
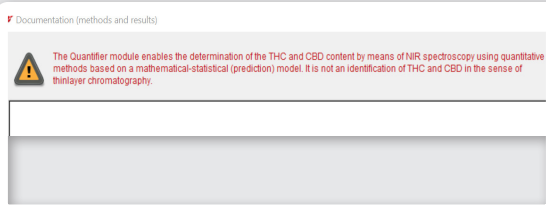
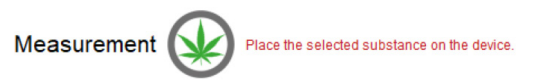
### Referencing

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 > Tester**. If required, you can fill in the fields **PZN**, **quantity purchased**, **supplier**, **use-by date**, **delivery date** and **comment**.

**Note:** If you fill in the **Period of grace field**, the software calculates it from the day of the check and indicates it as „**Expiry date**“ on both the test report and the test label. If the **Expiry date** is earlier than the **Period of grace**, the **expiry date** is automatically printed on the test report or test label.

## Creating the protocol

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.

PZN	<input type="text"/>	Variety	<input type="text"/>
Producer	<input type="text"/>	Expiry date	<input type="text"/>
Batch	<input type="text"/>	Grace Period	<input type="text"/>
Quantity	<input type="text"/>	Content	<input type="text"/> % THC <input type="text"/> % CBD
Supplier	<input type="text"/>	Delivery date	<input type="text"/>

Report [Save](#) [PDF](#) [Print](#) [Print Label](#) 240716-152048



## 2.5. Special features of substances that cannot be tested with Apo-Ident

**Not identifiable:** Substances that cannot be identified by Apo-Ident, e.g. because they do not have adequate signature in the NIR, are marked immediately after (partial) entry of the name (there is a red dot in front of the name, and after the entry the search field turns red, and a notice window appears).

A different test method is required to identify this substance. Nevertheless, a report without measurement can be created via the Apo-Ident software. To do this, click **<OK>** and complete the mandatory information on the substance.

### Entering the identity test using the software

The method of identity test and the test result can be entered in the software via **Identity test**.

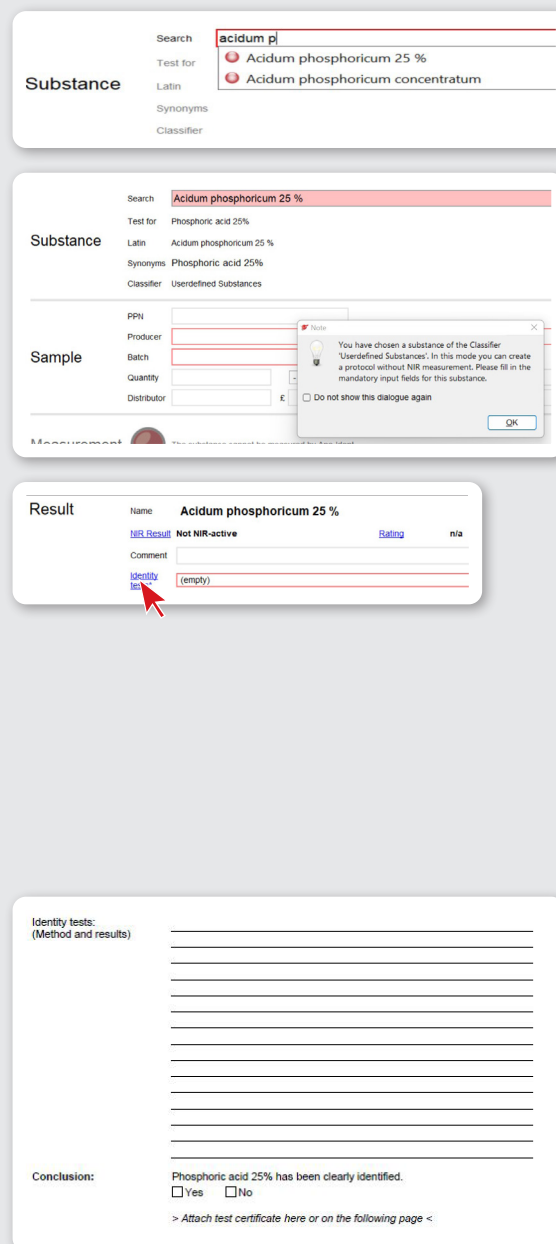
If the result of the identity test is already available at the time that the report is created, it can be documented by clicking on the checkbox **<Identified>** at the bottom of the dialogue field. Click **<Close>** to accept your inputs.

The text input and the final result then appear directly on the report.

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

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

**Excursus „Settings for Identity test“:** The identity test for non-identifiable substances is set as mandatory. You can change this setting at any time. To do this, under **<Settings>** select the option **<Report settings>** and remove the tick from „**Complementary test as mandatory**“.



The screenshots illustrate the software workflow for handling substances that cannot be tested. The first screen shows a search for 'acidum pl' resulting in 'Acidum phosphoricum 25 %' and 'Acidum phosphoricum concentratum'. The second screen shows the 'Sample' entry form with fields for PPN, Producer, Batch, Quantity, and Distributor. A warning dialog box appears, stating: 'You have chosen a substance of the Classifier "Userdefined Substances". In this mode you can create a protocol without NIR measurement. Please fill in the mandatory input fields for this substance.' The third screen shows the 'Result' entry form with fields for Name, NIR Result, Comment, and Identity. The 'Identity' field is highlighted with a red arrow. The final screenshot shows the printed report with a section for 'Identity tests: (Method and results)' and a 'Conclusion' section with checkboxes for 'Yes' and 'No'.

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

#### Sample cups

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

**Before measuring, particularly check that the bottom of the cup 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 cup 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 cup
- 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. Additional functions

#### 4.1. Substance management

Substance management allows you to manage or create additional substances that cannot be tested using NIR, but for which you can create reports.

You will find **<Substances>** at the top of the menu bar.

The **Additional Substances** window opens. Substance management **must** be customised individually for each configuration profile.

#### Pre-defined additional substances

Substances that cannot be tested with Apo-Ident, but are often searched for, are predefined by default. A report can be created with all selected substances using the Apo-Ident software without NIR measurement (see **Section 2.5.**).

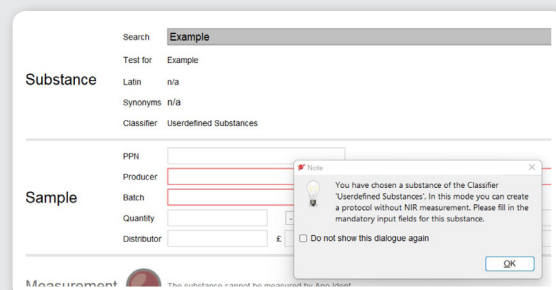
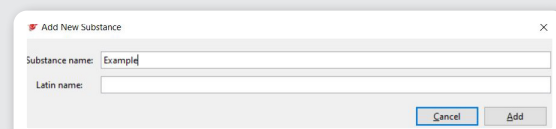
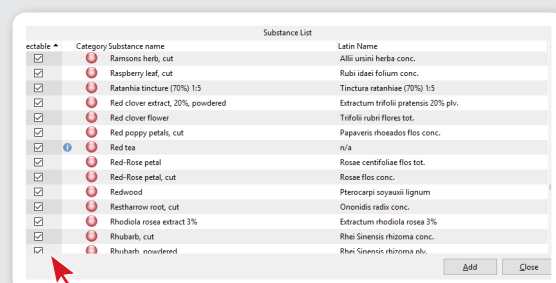
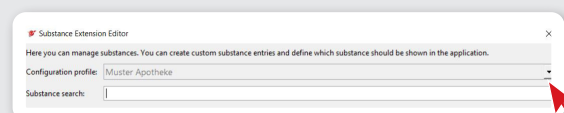
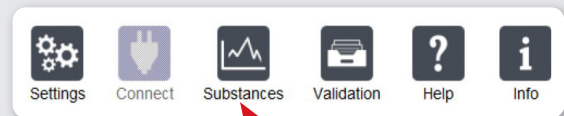
If a substance is not required for log creation, it can be deselected by removing the checkmark. As soon as the substance is required again, the checkmark can be set again.

The blue info circle next to the checkmark shows alternative English and alternative Latin substance names.

#### Self-defined additional substances

Under **<Add>**, you may create new substances for which you would like to create test reports. The substance name must be specified; the Latin name is optional. After clicking again on **<Add>**, the newly created substance appears with a grey dot in the substance list. **<Close>** the window.

Now, you can also create a report without measurement for the self-defined substance (proceed as given in **Section 2.5.**)



### 4.2. 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.

### 4.3. 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**“.

### 4.4. 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 **Use-by Date/ Shelf Life** 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 user, supplier or a batch number.

In the **timestamp** query, you may, for example, select all measurements for query starting from 01/01/2010.

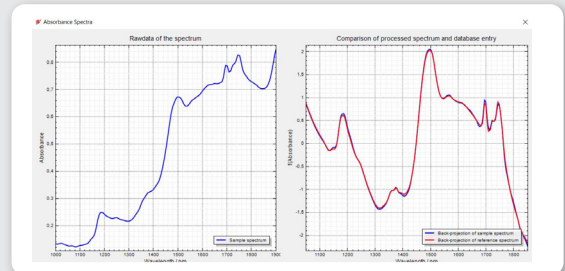
**Result**

Name: **Fructose**

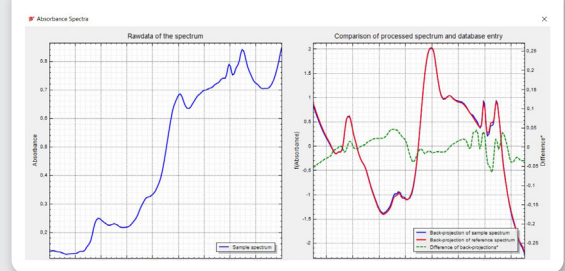
**NIR Result** Match Rating: **99.9%** (Limits 96% to 100%)

Comment: (empty)

Additional: (empty)



Graphic without differential display



Graphic with differential display

**Archive Query**

Substance Use-by Date/Shelf Life Advanced

Search for substance with given name, test number or PPN.

Substance name, test number or PPN:

**Execute**

**Archive Query**

Substance Use-by Date/Shelf Life Advanced

Advanced Archive Query

Substance name:

Test number:

PPN:

Operator name:

Manufacturer/Supplier or batch number:

Comment:

Timestamp: 01 January 2010 to 31 December 2035

Use-by date/Shelf life: January 2010 to December 2035

**Execute**

8 matches found.

Primary Name	Latin Name	Manufacturer/Supplier	Batch Number	Test number	PPN	Timestamp	Use-by Date/Shelf Life
Nanaminze, geschm.	Menthae Nana folium conc.	Caelo	1235464	210517-154146		17/05/2021 15:41:46	January 2022
Natriumcitrat	Natrii citras	Caelo	123456123	210517-152911		17/05/2021 15:29:11	January 2022
Natriumcitrat	Natrii citras	Caelo	1234563	210525-162226		25/05/2021 16:22:26	January 2021
Natriumcitrat	Natrii citras	Caelo	123456	210504-141949		04/05/2021 14:19:49	January 2023
Natriumcitrat	Natrii citras	Caelo	12356	210422-120449		22/04/2021 13:24:49	February 2023
Phosphoric acid 25%	Acidum phosphoricum 25 %	Caelo	1235349	210726-113501	12345	26/07/2021 11:35:01	January 2021
Tetracyclinhydrochlorid	Tetracyclini hydrochloridum	Caelo	123456	210503-15745	123456	03/05/2021 15:37:45	January 2021
Water	Aqua	Caelo	1234564036	210726-112933	123567	26/07/2021 11:29:33	January 2021

Information Show Report Print Report Print Label

Save Copy to ... Close

### 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.

### 4.5. 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**.

The validation information on the database entry of tested substances is given in the test report. You can change this default setting. To do this, under **<Settings>** select the item **<Report Settings>** and remove the tick mark from „**Print validation within protocol**“.

### 4.6. 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>**.

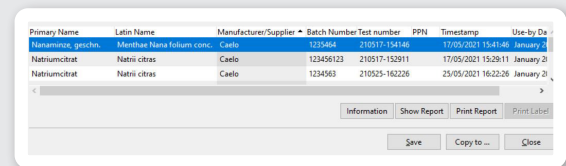
If you want to change computers, it is advisable to make a backup (export including log files, licence key, profile). The backup contains the settings, archive(s) and profile(s).

Click on **<Save>**. By default, the appropriate zip archive is saved on the desktop.

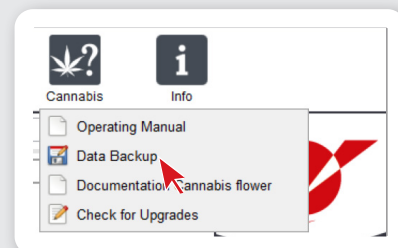
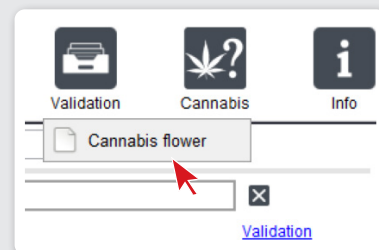
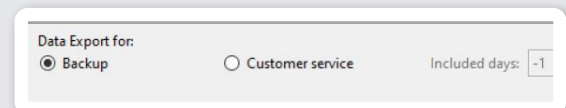
When you export the data for customer service, your spectra are compressed and saved in a ZIP file. You can set the number of measurement days for which you would like to combine and send or save as follows:

- -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).

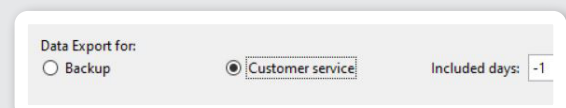


Primary Name	Latin Name	Manufacturer/Supplier	Batch Number	Test number	PPN	Timestamp	Use-by Date
Naruminox, geschn.	Menthae Naia folium conc.	Caelo	12345678	210517-154146		17/05/2021 15:41:46	January 21
Natriumcitrat	Natrii citras	Caelo	123456123	210517-152911		17/05/2021 15:29:11	January 21
Natriumcitrat	Natrii citras	Caelo	1234563	210525-162226		25/05/2021 16:22:26	January 21

Data Export for:

☒ Backup ☐ Customer service Included days: -1



Data Export for:

☐ Backup ☒ Customer service Included days: -1

### 4.7. 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 **Valuation**.

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**.

Result



Name

Fructose

[NIR Result](#)

Match

[Rating](#)

Comment

[Additional tests](#)

(empty)

Ranking	Classification	Sample ID	Significance	Confidence	Correlation	Distance	Rating
1	Fructose	21281	0.9986	1.0000	1.0000	3.7	99.86%
2	NO_ID	NOID25355	0.9752	0.9990	0.9421	16.9	0.00%
3	Calcium glycerophosphate	21234	0.9260	0.9975	0.9880	34.9	0.00%
4	Sodium hyaluronate	25495	0.9249	0.9962	0.9835	35.3	0.00%
5	Polymyxin B sulfate	21329	0.9134	0.9971	0.9711	39.9	0.00%
6	Riboflavin	20825	0.9128	0.9967	0.9687	40.2	0.00%
7	Colistin sulfate	20915	0.9076	0.9950	0.8833	42.4	0.00%
8	Polymyxin B sulfate	20853	0.9054	0.9961	0.9073	43.4	0.00%
9	Amphotericin B	20933	0.8949	0.9941	0.9601	48.5	0.00%
10	Bacitracin	20851	0.8827	0.9950	0.8940	55.3	0.00%

[Help](#)
[Show as PDF](#)
[Close](#)



### 4.8. Help

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

**User 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.

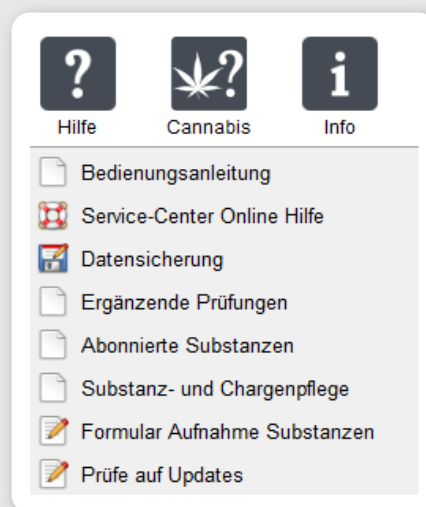
**Update changes** > The latest update changes will be shown.

**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 macro and microscopic testing.

### 4.9. 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. Technical data and disposal

### 6.1. Technical data of Apo-Ident 1

Analysis method	Near-infrared spectroscopy
Spectral range	1000 - 1900 nm
Spectral resolution	10 nm
Diffuse light	< 0.2 %
Measurement time	< 15 s per Scan
Detector	InGaAs single detector, not cooled
Wavelength accuracy	± 1 nm (over the entire temperature range)
Wavelength reproducibility	± 0.3 nm (over the entire temperature range)
Photometric reproducibility	± 0.15 % (average of 500 scans at 25 °C)
Photometric linearity	< 2 % / < 1.5 %
Automatic recalibration/unit test	Integrated wavelengths and white standard
Light source	Tungsten-halogen burner
Probe/optical input	Diffuse reflection, measuring spot with 23 mm diameter (powders, scattering solids, with transmittance insert for liquids and pastes)
Dimensions	185 x 192 x 220 mm
Weight	2.95 kg
Interfaces	1 x USB Typ B Slave
Interfaces aiLINK (optional)	<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 Typ A to 4k/30Hz</li> </ul>
Operating temperatures	15 - 35 °C
Storage temperature range	-20 bis 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
Software	QuickStep Apo-Ident software for recording and visualising spectra
System requirements	<ul style="list-style-type: none"> <li>• PC with Windows 10 and 11</li> <li>• min. 4 GB RAM</li> <li>• min. 1.6 GHz Pentium</li> <li>• 0.5 GB storage space</li> </ul>



The device complies with the following EC directives



- EMV 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 equipment should not be disposed of with household waste. Their components must be recycled or disposed of separately, because toxic and hazardous components may cause sustained damage to health and the environment if disposed of improperly.

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.

Please do not hesitate to contact us if you have any questions.



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