# PRIMELAB 2.0
MULTITEST
PHOTOMETER

## THE ULTIMATE PHOTOMETER


DEVELOPED
in GERMANY

Start · Start
Début · Comienzo
Inizio

Settings · Einstellungen
Paramètres · Ajustes
Impostazioni

Accounts · Konten
Comptes · Cuentas
Conti

Camera · Kamera
Caméra · Cámara
Telecamera

USB

Parameters · Parameter
Paramètres · Parámetros
Parametri

TEST

Favourites · Favoriten
Favoris · Favoritas
Preferite

Cloud

Chemistry · Chemie
Chimie · Química
Chimica

Software · Logiciel

Support · Hilfe
Soutien · Apoyo
Supporto

# Introduction

## Dear PrimeLab 2.0 user

We are pleased that you have decided to purchase a PrimeLab 2.0 Multitest Photometer kit to analyse your water quality / quality of liquid samples.

With this kit you have acquired a device "**Developed in Germany**" by Water-i.d. GmbH.

Highly accurate readings on 18 parallel wavelengths, Bluetooth-USB-WiFi-4G*-connections, powerful LabCOM software and app, synchronized via a free cloud service, large HD touch display and the option to connect test probes are just some features** of the new PrimeLab 2.0 which supersedes the well-established PrimeLab 1.0.

Whilst normal Photometers perform tests on one selected wavelength only, the PrimeLab 2.0 receives data from 18 different wavelengths in parallel with each measurement, covering the full VIS-spectrum as well as key parts of UV- and IR-spectrum.
3 sensors with 6 wavelengths each are connected in parallel. Correspondent LEDs are set up at 180° as well as at 90° to enable NTU-Turbidity, PTSA and Fluorescein measurements as well.
Very narrow peaks between 390 and 950 nm allow utmost accurate readings, similar to the performance of a spectrophotometer.

The PrimeLab 2.0 features a state-of-the-art 5.5'' colour HD touch-display.
The large display gives a perfect overview of all basic info, such as battery status, Bluetooth, Wi-Fi and 4G* connectivity and offers highest flexibility for you to arrange icons as you would on your smartphone.

As with PrimeLab 1.0, the PrimeLab 2.0 will offer a flexible parameter setup with all options to upgrade whenever needed.
The PrimeLab 2.0 offers more than 140 different parameter-methods, covering the needs of many different industries.

**Water-i.d. reagents are entirely produced in Germany, UK and Spain.**

We wish you joy and successful testing with
YOUR PrimeLab 2.0

## Latest user manual

Due to being able to update your PrimeLab 2.0 (internet connection required) and -by that- receiving the latest features, this user manual might not contain the latest information.

You can always download the most up-to-date user manual from the download section under www.water-id.com.

DEVELOPED
in GERMANY

**Laboratories** **Cooling Towers** **Marine Industry** **Water Plants**

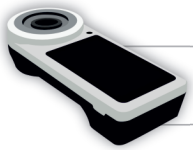
**Waste Water** **Potable Water** **Food processing** **Boiler Water**

*via USB Internet Stick / accessories / may be subject to costs for connection
**some features might not immediately available at product launch

# Content

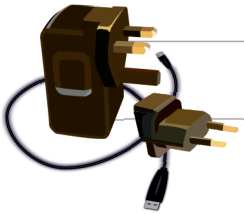

| | | | |
|---|---|---|---|
| Parts list | | | 8 |
| The PrimeLab 2.0 | | | 9 |
| Vial adapters | | | 10 |
| Charging the battery | | | 10 |
| Icons | | | 11-15 |
| First Setup | | | 17 |
| Home-Screen | | | 18 |
| Status-bar | | | 19 |
| Settings | Data scheme | | 21 |
| | Connectivity | | 21 |
| | Display | | 22 |
| | General | | 22 |
| | Sound | | 22 |
| | Ideal Ranges | | 22 |
| | Calibration | PrimeLab | 23 |
| | | Turbidity (NTU) | 24 |
| | | PTSA | 24 |
| | | Fluorescein | 25 |
| | Operator | | 26 |
| | News | | 26 |
| | Device Info and Factory Reset | | 27 |
| Accounts (water-sites) | | | 29 |
| Camera / QR-code-scanner | | | 33 |
| USB | | | 35 |
| parameters | | | 37 |
| TEST- main procedure | | | 39 |
| | parameters (procedure) | | after page 41 |
| Favourites | | | 42 |
| Cloud | | | 44 |
| Chemistry (Indexes, water treatment products, conversions) | | | 46 |
| Software (LabCOM) | | | 48 |
| Support | Troubleshoot | | 50 |
| | Update | | 52 |
| | Support-Options | | 53 |
| | News | | 54 |
| | Cleaning the device | | 55 |
| | Technical data | | 56 |
| | Compliance | | 57 |
| | Guarantee policy | | 58 |
| | Safety instructions | | 59 |
| | Disposal | | 66 |
| | Certifications | CE-Certification | 67 |
| | | EAC certification | 68 |
| | | RoHS declaration | 69 |
| | | FCC/IC certification | 70 |
| | | TELEC (MIC) / IMDA certification | 72 |
| | Privacy policy | | 73 |

# Parts list



PrimeLab 2.0 PL02B...

Light shield PL2Sp-LS



Charger / cable / plugs PL2Sp-DC / USBcable

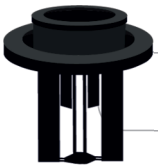

24mm vial PLSp-Kv2410

16mm vial PLSp-Kv1610

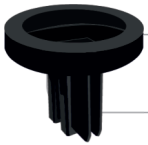
3ml vial PLSp-Kv1

# Parts list

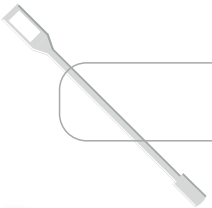
24mm vial Adapter PL2Sp-Adk24



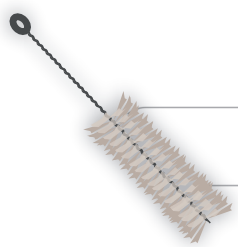
16mm vial Adapter PL2Sp-Adk16



3ml vial Adapter PL2Sp-AdkEp



Stirring rod (10.5/13 cm) PLSp-str / SPstr1

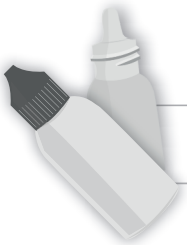


Cleaning brush PLSp-clb1

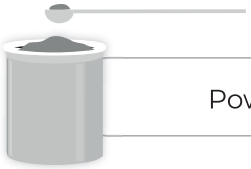
# Parts list

Tablets Tbs...

Powder Pillow PP...



Liquid reagents PL...

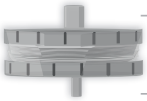


Powder in can Plpow...

graduated syringe PLSp-inj...

# Parts list


Lab-Pipette PLSp-PIP...

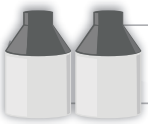


Filter-holder PLSp-Filtad1

Filter paper in a can PLSp-Filt...


Calibration standards PL2Sp-Ref

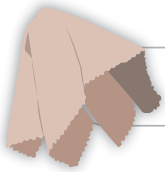
in vials



Calibration standards EM...buf...

in bottles or sachets

# Parts list



Micro fibre cleaning cloth PL2Sp-mft-1

Measuring/dilution cup SVZdev100

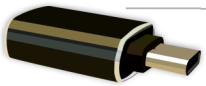
Glass-bottle w. stopper PLSp-GlsBot50ml

Digital thermometer PLSp-DCthermContr

Mini-Refridgerator PLSp-Leg-Fridge

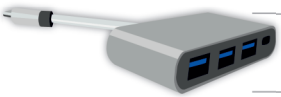
# Parts list

Heat block PLSp-CODheatblock-...



USB A-C switch PLSp-USBac

GSM-modem* PLSp-GSM



USB-hub PLSp-USBhub

Electrode PLSp-Ele...

*may be subject to costs for connection

# The PrimeLab 2.0


*

**short:**
when on: display off

**1 second:**
when on: option menu to shut down/sleep mode

**3 seconds:**
when off: switch on

**10 seconds:**
shut down PrimeLab 2.0

## Vial-adapters

Your PrimeLab 2.0 works with different vial sizes, such as round 24mm, 16mm and rectangle 3ml vials, each needing a different vial-adapter.

To ensure a perfect fit of the specific vial-adapter, please follow the instructions below, showing you how to change to a different adapter:

Unlatch the adapter installed by turning it 90° counter clockwise to be able to take it out.

Enter the adapter by placing it on the transparent measurement-chamber and turn it until you feel it slides in position. Then turn it 90° clockwise until you feel/hear a click. Make sure the adapter does not wiggle.

**If the adapter cannot be turned smoothly or only with high force, please put a small drop of silicon-grease on the edge of the transparent part of the measurement chamber.**

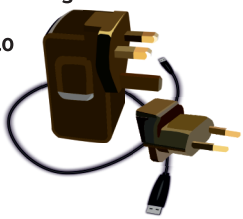
## Charging the battery

Your PrimeLab 2.0 has a powerful Lithium-Ion battery built in which can be charged by using the DC-adapter plus USB-cable, given with your device.

Please make sure you only use the charger and cable that came with your PrimeLab 2.0 as otherwise you might destroy the in-built battery!

The DC-adapter has a 2-pin built-in plug, suitable e.g. for the USA. Nevertheless, we offer exchangeable plugs for e.g. Europe, UK and Australia, which can be slid over the USA-outlet.

**Fastest charging results can be obtained if you plug the charger to the PrimeLab 2.0 whilst PrimeLab 2.0 is switched on.**
**Once plugged for charging, switch off your PrimeLab 2.0**



# Icons


Bluetooth


WiFi


Display


General Settings


Sound


Device Information


Cloud


Accounts


QR Scanner / Camera

# Icons

 Favourites

 Calculator

 Main Menu

 Battery

 Search (General)

 Create New Account

 Edit

 Return

 Log Out

# Icons

Delete (General)

Settings

Operator

GSM* connection

Dosage-recommendation

Parameter

Ideal ranges

Index calculation

*via USB Internet Stick / accessories / may be subject to costs for connection

# Icons

Active Chlorine Calculation

Water treatment products

Calibration

Save

Test

Request parameter code

Activate parameter

Add new...

# Icons

Filter

Check for updates / update available

Refresh

EMPTY
due to technical reasons

# First Setup

**Prior first use, you must connect the PrimeLab 2.0 with a USB cable to either the charger or your computer, to wake it up from shipping mode! Not doing so means that the device will not turn on.**
**After that, switch on by pressing the on/off button for 3 seconds.**

Once PrimeLab 2.0 is switched on for the first time, you have to select the language you want to use the device with and the country you are located (for Wi-Fi settings). The entire First Setup will be in English. It is possible to change language and country settings after completing the First Setup sequence (menu: 'Settings').

To directly setup your cloud account on the device, please set up a Wi-Fi connection during First Setup. You can still add, delete or edit internet connections later (menu: 'Settings').

## Language

Defining a language is required to let the PrimeLab 2.0 know, in which language it shall communicate with you.
Please select the language you feel comfortable with:
• Tap on the drop-down menu and select your preferred language

## Country

Defining a country is required for the device to operate on the correct Wi-Fi frequency.
On a ship, you should therefore select the country under which the routers run.
Please select the country where your PrimeLab 2.0 will be operated (Wi-Fi network):
• Tap on the drop-down menu and select a country
• Tap on "Ok". (PrimeLab might re-start to re-boot with these settings)

## WiFi

If you already want to setup your internet connection, please choose an internet connection from the list of available networks, found by PrimeLab 2.0
• You can still connect to (another) Wi-Fi network later on (menu: 'Settings')

## Cloud

Test results, accounts (water-sites) and more can be instantly synchronized with the free LabCOM cloud. All you need is a valid account:
• Register to the cloud by typing in a valid email-address and a password of your choice (6 digits minimum)
• If you already have a LabCOM cloud account, login with your known login details
• All data from your cloud-account will be synchronized to your PrimeLab 2.0 and back

**Your PrimeLab 2.0 is now ready for use.**
**If you want to change any settings, please do so from the 'Settings' menu.**

# Home Screen

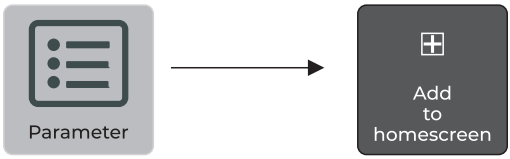
The home screen of your PrimeLab 2.0 is the screen which appears after switching on the device. You can individualize your PrimeLab 2.0 home screen.

## Enter main menu

To enter the main menu, tap on the 3-lines symbol at the lower end of the home screen.

## Create shortcuts

If you want to create a shortcut of one of the icons of the main menu on the home screen, just press and hold one of the icons. It will slightly change its shape and you will be asked, if a shortcut shall be installed on the home-screen. By doing so, you can individualize your home screen with such icons, you mostly need.




## Home Screen background graphic

As with your smartphone, you can select from various home-screen background graphics.

To do so, tap on the main menu symbol, choose ‚Settings', followed by a tap on Display. There you will find an entry ‚Background'. Tap on the background graphic you like. It will instantly be taken as your new home screen background graphic.

## Back to main menu

If you are in the main menu and want to return to the home screen, just swipe down the touch screen.

# Status bar

The status bar of your PrimeLab 2.0 is always visible on top of the PrimeLab 2.0 display:


It can be extended by swiping it down.


A: Time and date are shown. This time stamp will also be used when test results are saved, so please make sure the date and time settings are correct.

B: This icon is a shortcut to the 'Settings' menu which will be explained on the following pages.

C: Wi-Fi connection (blue when established / white if switched off)

D: Bluetooth-connection (blue when established / white if switched off)

E: GSM-connection* (appears once a modem-connection got established)

F: LabCom cloud-connection (blue when established / white if switched off)
An exclamation mark (!) will be displayed in case of missing internet connection whilst being logged on.

G: Indicates if the speaker is switched on or off.
Note: If switched off, you won't be able to receive audio-feedback of timer countdowns

H: By shifting the dot left and right, you can decrease/increase the brightness of the display

I: This icon indicates that an update for your PrimeLab 2.0 is available

J: Battery status indicator

K: News for you! Check for latest PrimeLab 2.0 news in the 'News' menu

*via USB Internet Stick / accessories / may be subject to costs for connection

EMPTY
due to technical reasons

# Settings

**To open the 'Settings' menu click on the settings symbol in 'Main Menu'.**

## Data Scheme

All test results are stored under "Accounts" to keep track of your test results in connection with the water-site (Account) you performed the test for.

When receiving your PrimeLab 2.0, a "default" account is already active.
You can define as many individual accounts as you wish (in 'Accounts' menu).

When adding Accounts, you might not want to use the pre-defined field-names, such as "forename", "street" ... but you might want to give those fields individual names. You can do so under 'Data Scheme' in the 'Settings' menu.

To change the field names of Accounts, tap on 'Data Scheme'.
- Tap on 'Accounts Scheme' and choose the field name you want to edit.
- You can also reset your settings to "default", by tapping the 'Reset to Default' button.

## Connections

The 'Connections' menu allows you to manage your internet connections. An internet connection is necessary to communicate with the LabCOM cloud (synchronizing Accounts, measurements and water treatment chemicals), to receive updates and for automated online activation of additional test-parameters.

An internet-connection can be established by Wi-Fi or by a GSM-modem*.
Your PrimeLab 2.0 also offers a Bluetooth-connection which, by the date of printing this manual, is without use.

To manage connections, tap on the 'Connections' symbol from the ‚Settings' menu.

Tap on Wi-Fi:
A list of available Wi-Fi networks will be displayed.
If Wi-Fi is activated and a Wi-Fi connection is established, the paired network will be displayed in blue.
- Enable or disable Wi-Fi connection by tapping the green/red point.
- To add a WiFi connection, tap on Wi-Fi followed by tapping one of the networks found. Then enter the network-password in the password field and confirm.
- To delete a network which was previously paired, slide the network line to the left and tap the delete symbol.

GSM*:
Internet connections established via the USB-port (e.g. GSM-stick*) can't be managed under 'Settings'. The connection establishes automatically, once a GSM-modem with valid SIM-card was plugged into the USB-port.

*via USB Internet Stick / accessories / may be subject to costs for connection

Continued...

# Settings

## Display

Under ‘Display‘ on the ‘Settings‘ menu, you can:
• adjust the brightness of your display (influences the battery time)

• set the auto-display-off time (after what time the display shall be switched off)

• set the auto-power-off time (after what time the PrimeLab 2.0 shall shut down)

• define an individual home screen graphic

• activate / deactivate the screensaver (after 30 sec. inactivity)

## General Settings

Under ‘General Settings‘ on the ‘Settings‘ menu you can:

• change the country (location) by tapping on ‘Country‘ and selecting the preferred one. This setting is important for a successful Wi-Fi connection as there are specific Wi-Fi settings along with different countries.

• change the language by tapping on ‘Language‘ and select the preferred one.

• Activate ‘automatic‘ to receive date and time from the network, as long as PrimeLab 2.0 has established a working internet connection. Deactivating allows you to change date and time manually.

• change the time-zone by tapping on it and select your time-zone.
The time-zone is important in case you or an administrator applied “rules“ (admin menu under www.labcom.cloud) which are time-sensitive, such as “pH needs to be tested every morning at 9:00 am local time“.

## Sound

Under ‚Sound‘ on the ‘Settings‘ menu you can:

• Enable/disable audio alerts.
Note: If switched off, you won‘t be able to receive audio-feedback of timer countdowns.

## Setting Ideal ranges

Under ‘Ideal Ranges‘ on the ‚Settings‘ menu you can define -for each parameter offered on your PrimeLab- which test-result-range you consider as ‘OK‘, ‘LOW‘ or ‘HIGH‘. Simply enter the min.- and max.-value to have your test results validated as OK/LOW/HIGH.

With a tap on the search button, you can filter the parameters list.

If you set an ideal range, the PrimeLab 2.0 automatically saves this rule for the selected parameter. Therefore the comments OK/LOW/HIGH will be automatically added.

Continued...

# Settings

## Calibration

Because of the innovative PrimeLab technology, it is no longer necessary to return the photometer for calibration. The precision of the sensors is so good, that the strength of the light source (LED) is measured and the system is calibrated on basis of the measured LED-values. Calibration should be carried out on a regular basis (e.g. every month) to ensure accurate test results at all times.

Nevertheless, some special water-parameters, such as NTU-Turbidity, PTSA and Fluorescein, require a special calibration procedure which influences the measurement curve installed on your PrimeLab 2.0.

- Tap on “Calibration” to open the calibration menu.
- Select the calibration procedure you want to carry out by tapping on one of them:

**PrimeLab**
**NTU-Turbidity**
**PTSA**
**Fluorescein**

**If you receive an error message ‚Calibration failed‘, please refer to the ERROR section at the end of this chapter.**

## PrimeLab calibration

A step-by-step procedure will be displayed on your PrimeLab 2.0 screen.

Please make sure, that:
- the transparent part of the PrimeLab 2.0 measurement chamber is perfectly clean.
- the adapter to enter 24mm vials is installed properly.
- there is no vial inside the measurement chamber.
- the light shield is properly set on top of the measurement chamber.

Tap on ‚PrimeLab‘ to start the PrimeLab calibration.
Follow the instructions displayed on the PrimeLab 2.0 screen.
Once completed, a message ‚Calibration successful‘ will appear.

In case your PrimeLab is linked to the LabCOM cloud, a calibration certificate (PDF) will be available in your account under www.labcom.cloud.

Continued...

## NTU-Turbidity calibration

**Please perform a PrimeLab calibration prior to NTU-Turbidity calibration.**

A step-by-step procedure will be displayed on your PrimeLab 2.0 screen.

Please make sure, that:
• the transparent part of the PrimeLab 2.0 measurement chamber is perfectly clean.
• the adapter to enter 24mm vials is installed properly.
• there is no vial inside the measurement chamber.
• you have properly sealed 24mm glass vials with calibration solutions (not expired) 0.5 / 10 / 1000 NTU‘ in hand.
• calibration solution vials are 100% clean, without fingerprints, scratches, spots.
• you always align the arrow on the vial with the arrow on the measurement chamber.

Tap on ‚NTU-Turbidity‘ to start the calibration process.
Follow the instructions displayed on the PrimeLab 2.0 screen.

**Use caution to shaking-/rest-instructions on the standard vials (0.5/10/1000 NTU):**

0.5 NTU standard vial: Let vial rest for at least 3 hours before use.
Turn vial TWO TIMES immediately before use. Do not shake!

10 NTU standard vial: Turn vial THREE TIMES immediately before use. Do not shake!

1000 NTU standard vial: Turn vial FIVE TIMES immediately before use. Do not shake!

Once completed, a message ‘Calibration successful‘ will appear.

## PTSA calibration

**Please perform a PrimeLab calibration prior to PTSA calibration.**

A step-by-step procedure will be displayed on your PrimeLab 2.0 screen.

Please make sure, that:
• the transparent part of the PrimeLab 2.0 measurement chamber is perfectly clean.
• the adapter to enter 24mm vials is installed properly.
• there is no vial inside the measurement chamber.
• you selected a 24mm glass-vial which is 100% clean, without fingerprints, scratches, spots.
• you have at least 10ml distilled water in hand.
• you have at least 10ml of ‚500 ppb PTSA calibration‘ standard in hand which has not expired.
• you have a 10ml lab-pipette with at least 2 clean tips.
• you always align the arrow on the vial with the arrow on the measurement chamber.

Tap on ‘PTSA‘ to start the calibration process.
Follow the instructions displayed on the PrimeLab 2.0 screen.

Once completed, a message ‘Calibration successful‘ will appear.

**Please use THIS VIAL ONLY for future PTSA measurements!**

Continued...

## Fluorescein calibration

**Please perform a PrimeLab calibration prior to Fluorescein calibration.**

A step-by-step procedure will be displayed on your PrimeLab 2.0 screen.

Please make sure, that:
• the transparent part of the PrimeLab 2.0 measurement chamber is perfectly clean.
• the adapter to enter 24mm vials is installed properly.
• there is no vial inside the measurement chamber.
• you selected a 24mm glass-vial which is 100% clean, without fingerprints, scratches, spots.
• you have at least 10ml distilled water in hand.
• you have at least 10ml of '100 ppb Fluorescein calibration' standard in hand which has not expired.
• you have a 10ml lab-pipette with at least 2 clean tips.
• you always align the arrow on the vial with the arrow on the measurement chamber.

Tap on 'Fluorescein' to start the calibration process.
Follow the instructions displayed on the PrimeLab 2.0 screen.

Once completed, a message 'Calibration successful' will appear.

**Please use THIS VIAL ONLY for future Fluorescein measurements!**

## Calibration Error messages

A calibration can fail due to some reasons which can be:

• missing PrimeLab calibration: Perform a PrimeLab calibration prior another calibration.

• Battery depleted: Make sure the battery has at least 50% power

• The calibration solution does not match the curve installed on Primelab: Check that the calibration solution used is the right one for the calibration you want to perform. Check it is not expired and the volume taken (ml) is exactly the volume needed for the calibration.

• Optical path in the measurement-chamber (PrimeLab) dirty or wet: Make sure that the transparent part (behind the vial-adapter) is properly clean and the vials used are without fingerprints, dirt, scratches. Make sure the arrow on the vial matches the arrow on the measurement-chamber of the PrimeLab.
The PrimeLab beams light (LED) from one side of the measurement-chamber through the measurement chamber to the sensor(s) on the opposite or 90° side of the measurement chamber. Any interference (dirt, fingerprints, scratches) influence the light beam (less transmission) and will lead to wrong readings / wrong or failed calibration.

• Hardware issue: In very rare cases, a failed calibration can also be down to hardware issues, such as a defective LED or a not properly working sensor.
If all before named solutions did not help to successfully perform a calibration, please contact your PrimeLab dealer for a factory-check of your PrimeLab 2.0.

Continued...

# Settings

## Operator

Each measurement file does not only show the test result in connection with the tested account plus time stamp, but also the operator who conducted the test.
When receiving your PrimeLab 2.0, there already is a ‘Default‘ operator in place, but you can add as many operators as you like.

Tap on “Operator” in the ‘Settings‘ menu

• To add an operator, either tap on ‚+‘ or the 3-bar menu button followed by ‘Add Operator‘ and insert all required data. Once done, tap the ‚save‘ button.

• To edit an operator, swipe the operator‘s name to the right, followed by a tap on the edit button.

• To delete an operator, swipe the operator‘s name to the left, followed by a tap on the delete button.
You can also tap-hold an operator‘s name followed by tapping additional ones. A delete button will appear at the lower end of the display.

• To switch between operators, simply tap on the tick-box on the right side of the operator‘s name. For following measurements, this operator then will be stored along with the measurement data.

• To search for an operator, simply tap the 3-bar menu button, followed by a tap on the search button. Then enter (part of) the operator‘s name you are searching for.

## News

Keep yourself informed with news about your PrimeLab 2.0 (‘Support‘ -> ‘News‘). By that, you will always be noted if, for example, new parameters and new features are available. This service is free of charge but requires the PrimeLab 2.0 to be connected to the internet.

If you do not wish to be informed about PrimeLab 2.0 news, here you have the option to deactivate the news-ticker.

# Settings

## Device Information

Under ‘Device Information‘ from the ‘Settings Menu‘ you can:
- check Database version
- check Firmware version
- check Branding of the PrimeLab 2.0
- check serial number of your PrimeLab 2.0
- Legal notices (including Licenses, Privacy Policy, GTC, safety instructions and EULA)

- **Check for updates**

Under ‘Device Information‘ you can also check if updates for your PrimeLab 2.0 are available by tapping on “check for Updates“.

To enable the PrimeLab to check on available updates, an internet connection must be established.

By updating your PrimeLab 2.0, you will always have the latest parameters, curves and features.

- **Check for Parameters**

If your request for additional parameters got approved but you still cannot see them as 'activated' on the parameters list, you might have to refresh the parameter's list by tapping on 'Update Parameters'

- **Perform a Factory-Reset**

Performing a factory reset means that all user data (accounts, test results, cloud logins, water treatment products) will be deleted on the PrimeLab (not in the cloud) and PrimeLab will launch in „First Setup“ mode the next time it gets switched on. All activated parameters will remain activated!

EMPTY
due to technical reasons

# Accounts

**Your PrimeLab 2.0 makes testing and managing data comfortable and easy!**

One of the main features of your PrimeLab 2.0 is that you are able to connect test results to ‘Accounts“ (water-sites).
By that, you always keep track of your test results in conjunction with the water site that was tested.
PrimeLab 2.0 offers you to create an almost unlimited number of such individual water-sites.

The ‘Account‘ menu allows you to add, edit, delete and search accounts.
You can also create and print QR-codes for individual accounts, to be used with the PrimeLab 2.0 camera/QR-code scanner.

Furthermore, here you can find all your test results, stored under the account‘s name for which the measurement was done.

## Add accounts

To add an account, tap on the 3-bar menu (upper right corner) and click on “Add Account”.

• Each account is structured in 3 different parts: Details, Address and Contact. Fill in the account-fields and tap on the save button.

! You can change the field names under ‘General Settings‘, ‘Data Scheme‘ to make them match your data structure.

## Edit accounts

To edit an existing account, swipe the account‘s name to the right, followed by a tap on the edit button.

## Delete accounts

PrimeLab 2.0 offers you several options to delete an account:

• Tap-hold an account until its background changes (darker). Tap on other accounts you want to delete as well, if wished.
Tap on the 3-bar menu button and select ‘Delete selected accounts‘ or simply click on the delete button which appears on the lower end of the screen, once an account got marked.

• Swipe an account to the left, followed by a tap on the delete-symbol.

Continued...

# Accounts

## Search accounts

To search for an account, simply click on the search button on the tool bar or tap the 3-bar menu, followed by tapping on ‘Search‘.
A search field and the keyboard appears. You can search for full phrases or just fractions of it.

## QR-Codes

Your PrimeLab 2.0 has an in-built camera to scan QR-codes and barcodes.
As long as your database is connected to the LabCOM cloud (see ‘Cloud‘ menu), you will be able to generate and print QR-codes of each account under www.labcom.cloud.

Once created, printed and held available at the water-site, all you need to do is to scan the QR-code to immediately launch a measurement procedure where this account will be already pre-selected.

## Measurement results

By tapping on an account‘s name, all saved measurements for this account will be listed.
You can then search, filter, delete, add manual test results, create dosage recommendations or directly initiate another measurement for this account.

• **Filter:**
Either tap on the search button on the tool bar or tap on the 3-bar menu and select ‘Filter‘. A window with fields to filter, such as parameter, date etc. will appear.

• **Delete:** PrimeLab 2.0 offers you several options to delete measurements:

Tap-hold a measurement until its background changes (darker). Tap on other measurements you want to delete as well, if wished.
Tap on the 3-bar menu button and select ‘Delete selected measurements‘ or simply click on the delete button which appears on the lower end of the screen, once (a) measurement(s) got marked.

Swipe a measurement to the left, followed by a tap on the delete-symbol.

• **Add measurement results manually:**
To add measurements manually, e.g. temperature or results obtained with other devices, just tap on the 3-bar menu and select ‘Add Measurement‘ followed by entering the required information into the fields offered.

Continued...

## (Continued) **Measurement results**

• **Create dosage recommendations:**
As long as you entered the water volume of this account (when typing in the account information) and as long as you listed matching chemicals under the 'Chemicals' menu, you can let the PrimeLab 2.0 calculate dosage recommendations for you to know exactly, how much of your individual chemicals have to be added to bring the tested water value to a desired one.
To start a dosage recommendation, just tap-hold the test result, tap the 3-bar menu button, followed by selecting 'Dosage Recommendation' from the menu.

By selecting ‚Dosage Recommendation' from the menu without marking (tap hold) a test result before, you will be able to individually create a dosage recommendation by entering a parameter and the start value.

• **Start a new measurement:**
By tapping on the 3-bar menu button, followed by a tap on 'New Measurement', PrimeLab 2.0 switches automatically to the measurement menu with this account pre-selected as the water-site to be tested.

## Single Measurement

To view details of each measurement saved, simply tap on the test result to open a new window where all info, related to this measurement, will be displayed. Just swipe up to see more details.

To edit a saved measurement, just swipe the measurement result to the right, followed by tapping on the edit button.

You can then tap in the fields shown and edit the information.
Note that PrimeLab 2.0 will mark those manually edited test results as 'changed' and will provide a history of the changes made, also showing the original values.
Filds to be edited are:
• measurement value
• Timestamp
• Operator
Here you can also enter a free text as a comment, saved along with this measurement.

## Print, export and report Measurement results

As long as your accounts, test-results and individual chemistry is being synchronized by the cloud (see menu 'Cloud'), you will have access to all this data through the LabCOM app, LabCOM software and LabCOM cloud, where you can manage all accounts, view, edit, print, export (PDF and Excel)and report easily as well.

EMPTY
due to technical reasons

# QR-Scanner / Camera

**The in-built camera of the PrimeLab 2.0 is designed to make your life easier by scanning QR-codes and barcodes.**

So far, PrimeLab 2.0 offers three options to scan QR-codes and barcodes:
- Reagents
- Water-sites
- Activation codes

## Scanning Accounts

As PrimeLab 2.0 always saves test results in conjunction with an account (water-site), the test process starts with selecting the account for which you intend to perform the following measurement.

As long as your database is connected to the LabCOM cloud (see 'Cloud' menu), you will be able to generate and print QR-codes of each account under www.labcom.cloud and have it ready near the water site, to scan it.

Once created, printed and held available at the water-site, all you need to do is to scan the QR-code to immediately launch a measurement procedure where this account will be already pre-selected.

PrimeLab 2.0 offers two options to pre-select the account to be measured, using the in-built camera:

- Tap on the camera symbol on the main menu and scan the QR-code of the account. The 'Test' menu will appear instantly, with the scanned account pre-selected.

- Start a test procedure by tapping the 'Test' icon on main menu, then tap the camera symbol next to the account field, followed by scanning the QR-code of the account.

## Scanning Reagents

PrimeLab 2.0 offers two options to pre-select the test to be performed, using the in-buil camera:

- Tap on the camera symbol on the main menu and scan the QR-code of the reagent-pack in hand. PrimeLab then offers you a list of parameters matching the reagent scanned. Tap on the test method you wish to use. The 'Test' menu will appear instantly, with the test method pre-selected.

- Start a test procedure by tapping the 'Test' icon on main menu, then tap the camera symbol next to the test-methods field, followed by scanning the QR- code of the reagent-pack in hand. PrimeLab then offers you a list of parameters matching the reagent scanned. Tap on the test method you wish to use.

## Activating additional parameters

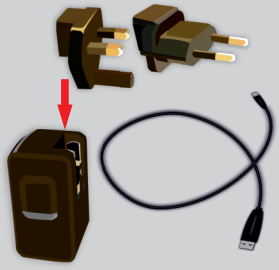
When your request for additional parameters for your PrimeLab 2.0 is aproved, you will receive an Email which contains a QR-code. Just tap on the camera symbol on main-menu and scan this QR-code to activate the requested parameters.

EMPTY
due to technical reasons

# USB

## Connectivity:

PrimeLab 2.0 offers various connection options.
Simply connect the associated parts to the USB (type C) port on the left side of the PrimeLab 2.0..



**Charger / USB-cable**

Charge the PrimeLab 2.0 in-built battery or connect the PrimeLab 2.0 to your computer, using the USB-cable given with your PrimeLab 2.0.

When connecting the PrimeLab 2.0 to your computer via USB, you can choose to auto-install the LabCOM software (Windows and Mac) and to synchronize all data from your PrimeLab 2.0 with the LabCOM software. A more convenient way would be to link both, your PrimeLab 2.0 as well as your computer, to the LabCOM cloud (see menu 'Cloud'), enabling real-time synchronization.

**USB type C to USB type A adapter**

Some peripherals might have a USB type A plug (e.g. GSM-modem) which does not match the USB type C plug of your PrimeLab 2.0. In this case, just use the USB type C to USB type A adapter.

**4G***

PrimeLab comes with an in-built Wi-Fi option. Nevertheless, there might be no Wi-Fi network available in field but still you want to have full connectivity and instant upload to the LabCOM cloud. In such cases, just plug a GSM-modem* with proper SIM card into the USB-slot of your PrimeLab. An internet connection will be established instantly (subject to network coverage).

**Hub**

In some cases, the single USB type C connector on your PrimeLab 2.0 might not be enough. The PrimeLab USB-HUB expands the USB type C on the PrimeLab to 1x USB type C plus and 3x USB type A.

**Electrodes**

PrimeLab allows to connect electrodes via USB.
This option was not yet available at the time this user-manual was printed.

*via USB Internet Stick / accessories / may be subject to costs for connection

EMPTY
due to technical reasons

# Parameter

Most probably, your PrimeLab 2.0 has been factory setup with just those parameters you ordered / need. Nevertheless, your PrimeLab 2.0 always offers you the latest list of all parameters developed which can be activated at any time.

The ‘Parameters‘ menu allows you to:
• obtain information about the water-parameter itself, including information about the needed reagents.

• check which parameters are activated on your PrimeLab 2.0.

• request additional parameters to be activated on your device.

• activate additional parameters on your PrimeLab 2.0.

## Parameter dictionary

Click on the arrow on the right side of the parameter name to expand the window.
Interesting facts and information about this parameter will be displayed and a list of needed reagents will be shown as well.

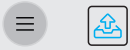
## Show activated parameters

Filter the parameters-list to show only such parameters which are activated on your device, by tapping the 3-bar menu button followed by a tap on ‘Show only activated Parameters‘. A new window will appear, showing you all parameters which are activated on your PrimeLab 2.0

## Request parameter

You might want, at some point, activate additional parameters (test methods) on your PrimeLab. To activate additional parameters, you first have to request them (internet-connection necessary!):

• Tap on the 3-bar menu button
• Tap on the “Request parameter” button



• Select one or more parameters you want to activate from the list

• Enter your email-address in the designated field (auto-filled with your LabCOM cloud email-address, if entered) and press ‘OK‘.

Once the request has been successfully sent, you will receive a confirmation message on the PrimeLab 2.0 screen.

Continued...

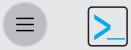
## Activate Parameters

There are several options how to activate additional parameters:

• Automatically:
If your PrimeLab 2.0 uses a working internet connection (e.g. Wi-Fi) and your request for additional parameters was approved, the activation of the requested parameters will happen automatically.

• Scanning a QR-code:
When your request for additional parameters for your PrimeLab 2.0 was aproved, you will receive an Email which contains a QR-code. Just tap on the camera symbol on main-menu and scan this QR-code to activate the requested parameters.

• Enter an activation code:
When your request for additional parameters for your PrimeLab 2.0 was aproved, you will receive an Email which contains a text-code next to the QR-code. Tap on the 3-bar menu button on the ‘Parameters‘ menu followed by a tap on ‘Activate parameter‘. You then need to type in the code received, followed by tapping ‚OK‘



# Test

**PrimeLab 2.0 makes testing easy:**

On your PrimeLab 2.0 5.5" colour HD-display you will receive step-by-step guidance through every test you are performing, plus animated clips showing graphically what needs to be done to successfully perform the measurement.

Each test result will be saved to an account (water-site) in conjunction with the selected operator name, time-stamp and dilution factor, if chosen.

## How to enter TEST menu

Launch a test procedure by:

- tapping the “TEST” icon on the main menu
(! Account and parameter are pre-set with the ones from last measurement!)

- tapping on “New Measurement” from the ‚Account‘ menu
(! the Account from where you initiate “New Measurement“ will be pre-selected !)

- scanning a reagent QR code
(! last account used will be pre-set. Parameter to be tested can be selected from a dropdown menu, which shows suitable parameters according to the QR-code scanned !)

- scanning an Account (water-site) QR code
(! last parameter tested will be pre-set. Account will be pre-set according to the QR code information !)

## Perform a measurement

Once you entered the ‘TEST‘ menu...

- Choose/change the account (water-site) for which the test shall be performed from the drop-down menu.

- Choose/change the parameter you want to test from the drop-down menu.

- Choose/change the dilution-factor if applicable. Not every parameter offers dilution.

- Choose/change the operator performing the test from the drop-down menu.

- Press “START” to start the measurement.

## Intelligent OTZ (One-Time-Zero)

Almost every test requires a ZERO measurement. The ZERO value determines the colour/turbidity of your water sample to key-out the ZERO-result from the actual measurement.
PrimeLab 2.0 stores the last ZERO value to be able to perform more than 1 test of the same, undiluted water source (!) without the need to repeat ZERO every time.
As some parameters use different ZERO procedures, such as 10ml water sample or 5ml water sample plus 5ml deionized water, PrimeLab recognizes the ZERO type of each measurement and only offers OTZ, once the following measurement matches the ZERO type of the last performed measurement.

Continued...

# Test

**Please read the following instructions carefully because these must be strictly observed to ensure accurate measurements:**

- Before inserting the cuvette into the sampling chamber please ensure that the cuvette is absolutely dry and clean, that there is no soiling by fingerprints etc., so that the light ray transmitted by the device for testing is not refracted or blocked. It is best to wipe the outside of the cuvette with a soft, clean and dry cloth before inserting it.
- The cuvette lid, the cuvette itself and the stirring rod (if used) must be clean, to ensure that the samples to be tested are not contaminated by dirt, residues or remaining reagents of a previous test.
- Never clean cuvette, lid or stirring rod with a detergent as these will leave residues and could influence any subsequent tests.
- It is best to always use the same cuvette for any single parameter and to mark the cuvette on the outside on the bottom with a waterproof marker accordingly for this particular parameter.
- The cuvette must also be free of any scratches as these would divert the light ray transmitted during the test. Replace any scratched or damaged cuvettes with new ones.
- Make sure that you use only photometer grade reagents (PL range and Photometer tablets). Using RAPID reagents will lead to incorrect results!
- Check before each test-run that the reagents used have not exceeded their best before date.
- Always keep the sampling chamber (behind the cuvette adapter) clean. On 4 sides of the chamber you will see small holes behind the transparent chamber. The LEDs and sensors are located behind these holes. All transparent parts in front of these must be dry and clean.
  Any soiling must be cleaned properly.
- The measurement must be performed in a radiation-free environment which is not electromagnetically influenced. Keep mobile phones and radio devices away during testing.
- Some reagents are classified as hazardous materials. These are identified as such on the packaging. In addition you can download safety datasheets for the reagents offered from https://msds.water-id.com.
  Always adhere to the safety instructions on the packaging and in the safety specifications to prevent damages to yourself, the device and the environment.
- NEVER touch reagents with your fingers, pour them directly from the container into the water sample!
- Always close liquid- and powder reagent containers immediately after use.
  Always ensure uniform drop sizes / powder-spoon-sizes are used.
- Air bubbles on the inside of the cuvette wall will result in incorrect measurements!
  If there are any bubbles, carefully shake/tap the cuvette to release these.

Continued...

# Test

Always conduct baseline (zero) measurements with the same cuvette used for the subsequent test. Always make sure that the triangular marking on the cuvette is aligned with the triangle on the front of the sampling chamber on the device. There are always small differences between cuvettes (tolerances due to production).

The device must be acclimatised to the ambient temperature. Great differences between the device temperature and that of the environment can lead to the formation of condensation obstructing the optical system, which in turn will lead to incorrect measurements.

The sampling chamber must be free from water or humidity, otherwise there will be the risk of damage to the electronics inside the device.

**Please calibrate your PrimeLab on a regular basis (at least once per month) as described under 'Settings' to obtain the best possible measurement results.**

**PrimeLab must remain on a flat surface while testing as otherwise the LED light will not pass correctly through the sample water, leading to incorrect results.**

# TEST/Parameter list/Measurement method

| group/ method | parameter | ID | range | unit | wavelength | switch | reagent |
|---|---|---|---|---|---|---|---|
| **Active Oxygen** | | | | | | | |
| 01-Act-oxi-MPS-tab | Active Oxygene | 250 | 0 - 40 | ppm (MPS) | - | mg/l (MPS) | Tablet |
| **Aluminium** | | | | | | | |
| 04-Aluminium-tab | Aluminium | 4 | 0 - 0.3 | ppm (Al) | - | mg/l (Al) | Tablet |
| **Ammonia** | | | | | | | |
| 02-Ammonia-LR-pow | Ammonia (LR pow) | 3 | 0 - 2 | ppm (N) | - | mg/l (N) | Powder |
| 155-AmmoniaHR-pre | Ammonia (HR) | 176 | 1 - 50 | ppm (N) | - | mg/l (N) | Reagent-Kit |
| **Boron** | | | | | | | |
| 07-Boron-tab | Boron | 7 | 0 - 2 | ppm (B) | - | mg/l (B) | Tablet |
| **Bromine** | | | | | | | |
| 08-Bromine-tab | Bromine total | 10 | 0 - 18 | ppm (tBr2) | - | mg/l (tBr2) | Tablet |
| 08-Bromine-tab | Bromine total | 10 | 0 - 18 | ppm (tBr2) | - | mg/l (tBr2) | Tablet |
| 128-Bromine-pp | Bromine pp | 150 | 0 - 4.5 | ppm (Br2) | - | mg/l (Br2) | Powder Pack |
| 63-Bromine-liq | Bromine pp | 150 | 0 - 4.5 | ppm (Br2) | - | mg/l (Br2) | Liquid |
| 63-Bromine-liq | Bromine pp | 150 | 0 - 4.5 | ppm (Br2) | - | mg/l (Br2) | Liquid |
| **COD** | | | | | | | |
| 17-COD-HR-pre | COD (HR) | 19 | 0 - 15000 | ppm (O2) | - | mg/l (O2) | Prepared Vial |
| 79-COD-LR-pre | COD (LR) | 75 | 0 - 150 | ppm (O2) | - | mg/l (O2) | Prepared Vial |
| 80-COD-MR-pre | COD (MR) | 76 | 0 - 1500 | ppm (O2) | - | mg/l (O2) | Prepared Vial |
| **Chloride** | | | | | | | |
| 10-Chloride-tab | Chloride | 12 | 0.5 - 25 | ppm (Cl-) | - | mg/l (Cl-) | Tablet |
| 124-Chloride-liq | Chloride (Liq) | 170 | 0 - 100 | ppm (Cl-) | - | mg/l (Cl-) | Liquid |
| 167-Chloride-in-MeOH | Chloride in Methanol | 207 | 0 - 20 | mg/l (Cl-) | - | | Liquid |

| group/ method | parameter | ID | range | unit | wavelength | switch | reagent |
|---|---|---|---|---|---|---|---|
| **Chlorine** | | | | | | | |
| 11-Chlorine-tab | Chlorine free | 13 | 0 - 8 | ppm (fCl2) | - | mg/l (fCl2) | Tablet |
| 12-Chlorine-liq | Chlorine free | 13 | 0 - 8 | ppm (fCl2) | - | mg/l (fCl2) | Liquid |
| 122-ChlorineMR-tab | Chlorine (MR tab) free | 115 | 0 - 10 | ppm (fCl2) | - | mg/l (fCl2) | Tablet |
| 129-Chlorine-pp | Chlor-pp | 151 | 0 - 2 | ppm (fCl2) | - | mg/l (fCl2) | Powder Pack |
| 14-Chlorine-HR-tab | Chlorine HR (KI tab) | 16 | 5 - 200 | ppm (Cl2) | - | mg/l (Cl2) | Tablet |
| 15-Chlorine-HR-liq | Chlorine HR (KI liq) | 17 | 0 - 200 | ppm (Cl2) | - | mg/l (Cl2) | Liquid |
| 95-Chloramines-tab | Chloramine-tab - fCl | 91 | 0 - 8 | ppm (fCl) | - | mg/l (fCl) | Tablet |
| **Chlorine Dioxide** | | | | | | | |
| 108-Total-Oxid-liq | Chlorine total | 15 | 0 - 8 | ppm (tCl2) | - | mg/l (tCl2) | Liquid |
| 130-Chl-Diox-pp | Chl-Diox-pp | 152 | 0 - 5 | ppm (ClO2) | - | mg/l (ClO2) | Liquid |
| 16-Chlorin-Dio-tab | Chlorine Dioxide | 18 | 0 - 15 | ppm (ClO2) | - | mg/l (ClO2) | Tablet |
| 16-Chlorin-Dio-tab | Chlorine Dioxide | 18 | 0 - 15 | ppm (ClO2) | - | mg/l (ClO2) | Tablet |
| 64-Chlorin-Dio-liq | Chlorine Dioxide | 18 | 0 - 15 | ppm (ClO2) | - | mg/l (ClO2) | Liquid |
| 64-Chlorin-Dio-liq | Chlorine Dioxide | 18 | 0 - 15 | ppm (ClO2) | - | mg/l (ClO2) | Liquid |
| **Chlorite** | | | | | | | |
| 106-Chlorite-liq | Chlorite (liq) | 102 | 0 - 8 | ppm (ClO2-) | - | mg/l (ClO2-) | Liquid |
| **Chromium** | | | | | | | |
| 103-Chromium-liq | Chrom (hexavalent liq) | 97 | 0 - 1 | ppm (Cr6+) | - | mg/l (Cr) | Powder Pack |
| 94-chromium-tab | Chrom (hexavalent tab) | 87 | 0 - 2.2 | ppm (Cr6+) | - | mg/l (Cr) | Tablet |
| **Colour** | | | | | | | |
| 107-Colour | Colour | 107 | 0 - 500 | ppm (Pt-Co) | - | mg/l (Pt-Co) | - |
| 107-Colour | Colour | 107 | 0 - 500 | ppm (Pt-Co) | - | mg/l (Pt-Co) | - |

| group/ method | parameter | ID | range | unit | wavelength | switch | reagent |
|---|---|---|---|---|---|---|---|
| **Copper** | | | | | | | |
| 18-Copper-tab | Copper free | 68 | 0 - 5 | ppm (fCu) | - | mg/l (fCu) | Tablet |
| 19-Copper-pow | Copper free (pow) | 71 | 0 - 5 | ppm (fCu) | - | mg/l (fCu) | Powder Can |
| **Cyanide** | | | | | | | |
| 158-Cyanide-pow | Cyanide | 195 | 0.01 - 0.5 | ppm (CN) | - | | Reagent-Kit |
| **Cyanuric Acid** | | | | | | | |
| 20-Cyanur-Acid-tab | PL Cyanuric Acid | 185 | 0 - 160 | ppm (CYA) | - | mg/l (CYA) | Tablet |
| **DBNPA** | | | | | | | |
| 65-DBNPA-liq | DBNPA | 21 | 0 - 13 | ppm (DBNPA) | - | mg/l (DBNPA) | Liquid |
| 82-DBNPA-tab | DBNPA | 21 | 0 - 13 | ppm (DBNPA) | - | mg/l (DBNPA) | Tablet |
| **Dissolved Oxygen** | | | | | | | |
| 163-Dis.Oxygen | Dissolved Oxygen | 204 | 0 - 10 | ppm (O2) | - | mg/l (O2) | Liquid |
| **Fluorescein** | | | | | | | |
| 113-Fluorescein-Ad | Fluorescein | 157 | 0 - 500 | ppb (C20H10Na2O5) | - | µg/l (C20H10Na2O5) | - |
| **Fluoride** | | | | | | | |
| 72-Fluoride-liq | Fluoride | 27 | 0 - 2 | ppm (F) | - | mg/l (F) | Liquid |
| 72-Fluoride-liq | Fluoride | 27 | 0 - 2 | ppm (F) | - | mg/l (F) | Liquid |
| **Hardness** | | | | | | | |
| 09-Hard-Cal-HR_tab | Hardn.- Calcium (HR) | 29 | 50 - 1000 | ppm (CaCO3) | - | mg/l (CaCO3) | Tablet |
| 148-Total-Hardness-liq | PL Total Hardness | 199 | 0 - 500 | ppm (CaCO3) | - | mg/l (CaCO3) | Tablet |
| 56-Hard-tot-LR-tab | Hardn.- Total (LR) | 30 | 2 - 50 | ppm (CaCO3) | - | mg/l (CaCO3) | Tablet |
| 57-Hard-tot-HR-tab | Hardn.- Total (HR) | 31 | 20 - 500 | ppm (CaCO3) | - | mg/l (CaCO3) | Tablet |
| 78-Hard-Cal-tab | Hardn.- Calcium | 28 | 0 - 500 | ppm (CaCO3) | - | mg/l (CaCO3) | Tablet |

| group/ method | parameter | ID | range | unit | wavelength | switch | reagent |
|---|---|---|---|---|---|---|---|
| **Hydrazine** | | | | | | | |
| 23-Hydrazine-liq | Hydrazine | 32 | 5 - 600 | ppb (N2H4) | - | µg/l (N2H4) | Liquid |
| **Hydrocarbons** | | | | | | | |
| 160-Hydrocarbons | Hydrocarbons NTU | 197 | 0 - 1 | NTU (Turb) | - | | - |
| **Hydrogen Peroxide** | | | | | | | |
| 109-DEWAN50-liq | DEWAN-50 (HR liq) | 109 | 150 - 300 | ppm (DW50) | - | mg/l (DW50) | Liquid |
| 109-DEWAN50-liq | DEWAN-50 (HR liq) | 109 | 150 - 300 | ppm (DW50) | - | mg/l (DW50) | Liquid |
| 162-HydrPer-HR-tab | Hydrogen Peroxide (HR) | 66 | 0 - 200 | ppm (H2O2) | - | mg/l (H2O2) | Tablet |
| 24-Hydr-Per-LR-tab | Hydrogen Peroxide (LR tab) | 65 | 0 - 3.8 | ppm (H2O2) | - | mg/l (H2O2) | Tablet |
| 25-Hydr-Per-HR-liq | Hydrogen Peroxide (HR) | 66 | 0 - 200 | ppm (H2O2) | - | mg/l (H2O2) | Liquid |
| 66-Hydr-Per-LR-liq | Hydrogen Peroxide (LR liq) | 64 | 0 - 3.8 | ppm (H2O2) | - | mg/l (H2O2) | Liquid |
| **Iodine** | | | | | | | |
| 27-Iodine-tab | Iodine | 34 | 0 - 28 | ppm (I2) | - | mg/l (I2) | Tablet |
| 67-Iodine-liq | Iodine | 34 | 0 - 28 | ppm (I2) | - | mg/l (I2) | Liquid |
| **Iron** | | | | | | | |
| 127-Iron-MR-Fe-pow | Iron MR (Ferrous) | 123 | 0 - 10 | ppm (Fe2+) | - | mg/l (Fe2+) | Powder Can |
| 132-Iron-tot-LR-pp | Iron-tot-LR-pp | 153 | 0 - 3 | ppm (Fe) | - | mg/l (Fe) | Powder |
| 149-Iron-Oil-liq | Iron (Oil) | 167 | 10 - 450 | ppm (Fe2+) | - | mg/l (Fe2+) | Liquid |
| 28-Iron-LR-tab | Iron (LR) | 244 | 0 - 1 | ppm (O2) | - | mg/l (O2) | Tablet |
| 29-Iron-MR-pow | Iron (MR) | 245 | 0 - 10 | ppm (O2) | - | mg/l (O2) | Powder Can |
| 29-Iron-MR-pow | Iron (MR) | 245 | 0 - 10 | ppm (O2) | - | mg/l (O2) | Powder Can |
| 30-Iron-HR-liq | Iron (HR) | 25 | 0 - 30 | ppm (Fe2+/3+) | - | mg/l (Fe2+/3+) | Liquid |
| 30-Iron-HR-liq | Iron (HR) | 25 | 0 - 30 | ppm (Fe2+/3+) | - | mg/l (Fe2+/3+) | Liquid |

| group/ method | parameter | ID | range | unit | wavelength | switch | reagent |
|---|---|---|---|---|---|---|---|
| **Isothiazolinone** | | | | | | | |
| 88-Isothiazol-liq | Isothiazolinone (liq) | 145 | 0 - 10 | ppm (C3H3 NOS) | - | mg/l (C3H3NOS) | Liquid |
| **Legionella** | | | | | | | |
| 147-Legionella-liq (Countdown + Test) | Legionella - liq | 159 | 60 - 1000000 | cfu/test (Leg) | - | | Reagent-Kit |
| 147-Legionella-liq (ZERO + Test) | Legionella - liq | 159 | 60 - 1000000 | cfu/test (Leg) | - | | Reagent-Kit |
| **Magnesium** | | | | | | | |
| 93-Magnesium-tab | Magnesium (tab) | 86 | 0 - 100 | ppm (Mg) | - | mg/l (Mg) | Tablet |
| **Manganese** | | | | | | | |
| 161-Manganese-VLR | Manganese VLR | 198 | 0 - 0.03 | ppm (Mn) | - | mg/l (Mn) | Tablet |
| 31-Manganes-LR-tab | Mangan (tab) | 38 | 0.2 - 5 | ppm (Mn) | - | mg/l (Mn) | Powder Pack |
| **Molybdate** | | | | | | | |
| 134-Molybd-HR-pp | Molybdate (HR pp) | 246 | 0 - 40 | ppm (O2) | - | mg/l (O2) | Powder |
| 32-Molybdat-HR-tab | Molybdate (HR tab) | 41 | 1 - 100 | ppm (MoO4 ) | - | mg/l (MoO4) | Tablet |
| 33-Molybdat-HR-liq | Molybdate (HR liq) | 40 | 5 - 200 | ppm (MoO4 ) | - | mg/l (MoO4) | Liquid |
| 96-Molybd-LR-tab | Molybdat (LR tab) | 88 | 0 - 15 | ppm (MoO4 ) | - | mg/l (MoO4) | Tablet |
| **Nickel** | | | | | | | |
| 100-Nickel-HR-liq | Nickel (HR liq) | 94 | 0 - 10 | ppm (Ni) | - | mg/l (Ni) | Liquid |
| 90-Nickel-HR-tab | Nickel (HR tab) | 84 | 0 - 7 | ppm (Ni) | - | mg/l (Ni) | Tablet |
| **Nitrate** | | | | | | | |
| 169-Nitrate-HR-pp | Nitrate | 221 | 1 - 100 | ppm (NO3) | - | | Powder Pack |
| 34-Nitrate-pow | Nitrate | 44 | 0 - 11 | ppm (N) | - | mg/l (N) | Powder Can |

| group/ method | parameter | ID | range | unit | wavelength | switch | reagent |
|---|---|---|---|---|---|---|---|
| **Nitrite** | | | | | | | |
| 101-Nitrite-HR-liq | Nitrite (HR liq) | 96 | 0 - 3000 | ppm (NaNO2) | - | mg/l (NaNO2) | Liquid |
| 35-Nitrite-LR-tab | Nitrite (LR) | 45 | 0 - 0.5 | ppm (N) | - | mg/l (N) | Powder Pack |
| 36-Nitrite-HR-pow | Nitrite (HR pow) | 46 | 5 - 200 | ppm (NaNO2) | - | mg/l (NaNO2) | Powder |
| 97-Nitrite-HR-tab | Nitrite (HR tab) | 89 | 0 - 1500 | ppm (NaNO2) | - | mg/l (NaNO2) | Tablet |
| **Nitrogen** | | | | | | | |
| 151-NitroTotLR-pre | Nitrogen-Total (LR) | 172 | 0.5 - 25 | ppm (N) | - | mg/l (N) | Reagent-Kit |
| 151-NitroTotLR-pre | Nitrogen-Total (LR) | 172 | 0.5 - 25 | ppm (N) | - | mg/l (N) | Reagent-Kit |
| 152-NitroTotHR-pre | Nitrogen-Total (HR) | 173 | 5 - 150 | ppm (N) | - | mg/l (N) | Reagent-Kit |
| 152-NitroTotHR-pre | Nitrogen-Total (HR) | 173 | 5 - 150 | ppm (N) | - | mg/l (N) | Reagent-Kit |
| **Oil** | | | | | | | |
| 168-BN-LUX | no content | no content | no content | no content | - | mg/l (O2) | Liquid |
| 171-IronInOil-tab | Iron (Oil) | 243 | 20 - 450 | ppm (Fe2+) | - | mg/l (Fe2+) | Liquid |
| **Oxygen Scavengers** | | | | | | | |
| 21-DEHA-liq | DEHA | 22 | 20 - 1000 | ppb (DEHA) | - | µg/l (DEHA) | Liquid |
| 26-Hydroquinon-liq | Hydroquinone | 247 | 0 - 2.5 | ppm (C6H6O2) | - | | Liquid |
| 69-Methylethyl-liq | Methylethylketoxime | 248 | 0 - 4.1 | ppm (C4H9NO) | - | | Liquid |
| 70-Erythorbic-Acid | Erythorbic Acid | 26 | 0 - 3.5 | ppm (EA) | - | mg/l (EA) | Liquid |
| 71-Carbohydra-liq | Carbohydrazide | 249 | 0 - 1.3 | ppm | - | | Liquid |
| **Ozone** | | | | | | | |
| 37-Ozone-tab | Ozone | 47 | 0 - 5.4 | ppm (O3) | - | mg/l (O3) | Tablet |
| 37-Ozone-tab | Ozone | 47 | 0 - 5.4 | ppm (O3) | - | mg/l (O3) | Tablet |
| 92-Ozone-liq | Ozone | 47 | 0 - 5.4 | ppm (O3) | - | mg/l (O3) | Liquid |
| 92-Ozone-liq | Ozone | 47 | 0 - 5.4 | ppm (O3) | - | mg/l (O3) | Liquid |

| group/ method | parameter | ID | range | unit | wavelength | switch | reagent |
|---|---|---|---|---|---|---|---|
| **PHMB** | | | | | | | |
| 43-PHMB-tab | PHMB | 51 | 2 - 60 | ppm (PHMB) | - | mg/l (PHMB) | Tablet |
| **PTSA** | | | | | | | |
| 111-PTSA-Ad | PTSA | 119 | 0 - 1000 | ppb (PTSA) | - | µg/l (PTSA) | - |
| 156-Watch-Ad | Watch Products | 177 | 0 - 1000 | ppb (Watch) | - | µg/l (Watch) | - |
| 157-TraceR-Ad | TraceR | 178 | 0 - 1000 | ppb (TraceR) | - | µg/l (TraceR) | - |
| **Peracetic Acid** | | | | | | | |
| 164-Peracetic-Acid-LR | Peracetic Acid LR | 208 | 0 - 10 | ppm (PAA) | - | | Tablet |
| 165-Peracetic-Acid-HR | Peracetic Acid HR | 205 | 0 - 300 | ppm (PAA) | - | | Tablet |
| **Permanganate** | | | | | | | |
| 159-PTT-tab | Permanganate TT | 196 | 0 - 100 | %A (PTT) | - | | Tablet |
| **Phenol** | | | | | | | |
| 98-Phenol-tab | Phenol | 90 | 0 - 5 | ppm (C6H5OH) | - | mg/l (C6H5OH) | Tablet |
| **Phosphate** | | | | | | | |
| 44-Phosphat-LR-tab | Phosphate (LR tab). ortho | 52 | 0 - 4 | ppm (PO4) | - | mg/l (PO4) | Powder Pack |
| 45-Phosphat-LR-liq | Phosphate (LR liq). ortho | 53 | 0 - 4 | ppm (PO4) | - | mg/l (PO4) | Liquid |
| 46-Phosphat-HR-tab | Phosphate (HR tab). ortho | 54 | 0 - 80 | ppm (PO4) | - | mg/l (PO4) | Powder Pack |
| 47-Phosphat-HR-liq | Phosphate (HR liq). ortho | 55 | 0 - 100 | ppm (PO4) | - | mg/l (PO4) | Liquid |
| **Phosphonate** | | | | | | | |
| 110-Phosphon-tab | Phosphonate (tab) | 105 | 0 - 20 | ppm (PO4) | - | mg/l (PO4) | Tablet |
| 87-Phosphonate-liq | Phosphonate (liq) | 78 | 0 - 20 | ppm (PO4) | - | mg/l (PO4) | Powder Can |
| **Phosphorus** | | | | | | | |
| 153-PsphrTotLR-tab | Phosphorus-Total (LR) | 174 | 0 - 2.6 | ppm (P) | - | mg/l (P) | Powder Pack |
| 154-PsphrTotHR-tab | Phosphorus-Total (HR) | 175 | 0 - 52 | ppm (P) | - | mg/l (P) | Powder Pack |

| group/ method | parameter | ID | range | unit | wavelength | switch | reagent |
|---|---|---|---|---|---|---|---|
| **Polyacrylate** | | | | | | | |
| 85-Polyacryl-liq | Polyacrylate | 80 | 1 - 30 | ppm (Polyac .Ac.) | - | mg/l (Polyac.Ac.) | Liquid |
| **Potassium** | | | | | | | |
| 48-Potassium-tab | Potassium | 35 | 0.7 - 12 | ppm (K) | - | mg/l (K) | Tablet |
| **QAC** | | | | | | | |
| 83-QAC-tab | QAC | 81 | 25 - 150 | ppm (QAC) | - | mg/l (QAC) | Powder Pack |
| **Silica** | | | | | | | |
| 49-Silica-LR-liq | Silica (LR) | 56 | 0 - 5 | ppm (SiO2) | - | mg/l (SiO2) | Liquid |
| 50-Silica-HR-pow | Silica (HR) | 57 | 0 - 100 | ppm (SiO2) | - | mg/l (SiO2) | Powder Can |
| **Sod.-Hypochlorite** | | | | | | | |
| 51-Sodium-Hypo-tab | Sodium Hypochlorite | 42 | 0.2 - 40 | % (NaOCl ) | - | | Tablet |
| 68-Sodium-Hypo-liq | Sodium Hypochlorite | 42 | 0.2 - 40 | % (NaOCl ) | - | | Liquid |
| **Sulphate** | | | | | | | |
| 54-Sulphate-tab | Sulphate (tab) | 100 | 5 - 100 | ppm (SO4) | - | mg/l (SO4) | Powder Pack |
| 55-Sulphate-pow | Sulphate (pow) | 58 | 5 - 100 | ppm (SO4) | - | mg/l (SO4) | Powder Can |
| **Sulphide** | | | | | | | |
| 140-Sulphide-Ha | Sulphide | 60 | 0 - 0.7 | ppm (S) | - | mg/l (S) | Liquid |
| 52-Sulphide-tab | Sulphide (tab) | 160 | 0.04 - 0.5 | ppm (S) | - | mg/l (S) | Tablet |
| **Sulphite** | | | | | | | |
| 105-Sulphite-HR-tab | Sulphite (HR tab) | 103 | 0 - 300 | ppm (Na2S O3) | - | ppm (SO3) | Tablet |
| 53-Sulphite-LR-tab | Sulphite (LR) | 61 | 0 - 10 | ppm (SO3) | - | mg/l (SO3) | Tablet |
| **Suspended Solids** | | | | | | | |
| 81-Suspended-Sol | Suspended Solids | 82 | 0 - 750 | ppm (TSS) | - | mg/l (TSS) | - |

| group/ method | parameter | ID | range | unit | wavelength | switch | reagent |
|---|---|---|---|---|---|---|---|
| **Tannin** | | | | | | | |
| 91-Tannic-acid-liq | Tannic | 85 | 0 - 150 | ppm (Tan. Ac.) | - | mg/l (Tan. Ac.) | Liquid |
| **Total Alkalinity** | | | | | | | |
| 05-Alkalinit-M-tab | Alkalinity M (HR tab) | 114 | 0 - 200 | ppm (CaCO 3) | - | mg/l (CaCO3) | Tablet |
| 06-Alkalinit-P-tab | Alkalinity P | 6 | 5 - 300 | ppm (CaCO 3) | - | mg/l (CaCO3) | Tablet |
| 121-Alka-M-HR-tab | Alkalinity M (HR tab) | 114 | 0 - 200 | ppm (CaCO 3) | - | mg/l (CaCO3) | Tablet |
| **Transmission** | | | | | | | |
| 170-Transmission | Transmission | 112 | 0 - 100 | % (Trnsm ) | - | | - |
| **Turbidity** | | | | | | | |
| 112-Turbidity-NTU | Turbidity-NTU | 118 | 0.02 - 1100 | NTU (Turb) | - | FTU (Turb) | - |
| 59-Turbidity | Turbidity | 63 | 20 - 1000 | FAU (Turb) | - | FTU (Turb) | - |
| **Urea** | | | | | | | |
| 120-Urea-tab-liq | Urea | 122 | 0.1 - 2.5 | ppm ((NH2) 2CO) | - | mg/l ((NH2)2CO) | Powder |
| 150-UreaHR-tab-liq | Urea (HR) | 171 | 0.2 - 5 | ppm ((NH2) 2CO) | - | mg/l ((NH2)2CO) | Powder |
| **Zinc** | | | | | | | |
| 62-CoZinc-tab | Zinc | 67 | 0 - 1 | ppm (Zn) | - | mg/l (Zn) | Tablet |
| 62-CoZinc-tab | Zinc | 67 | 0 - 1 | ppm (Zn) | - | mg/l (Zn) | Tablet |
| **pH** | | | | | | | |
| 38-pH-MR-tab | pH-Value (MR) | 49 | 6.4 - 8.4 | (pH) | - | | Tablet |
| 39-pH-MR-liq | pH-Value (MR) | 49 | 6.4 - 8.4 | (pH) | - | | Liquid |
| 40-pH-LR-tab | pH-Value (LR) | 48 | 5.2 - 6.8 | (pH) | - | | Tablet |
| 41-pH-univ-tab | pH-Universal (tab) | 74 | 5 - 11 | (pH Univ) | - | | Tablet |
| 42-pH-univ-liq | pH-Universal (liq) | 50 | 4 - 11 | (pH Univ) | - | | Liquid |

# (01) Active Oxygen Tablet

## 0 - 40 mg/l (MPS)

**Internal Name: 01-Act-oxi-MPS-tab**

DPD N°4 Photometer (TbsPD4)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Add 1 DPD N°4 Photometer tablet(s) to the test water in the cuvette. |
| 8 | Crush the tablet with a clean stirring rod. |
| 9 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 10 | Screw the lid back on the cuvette. |
| 11 | Gently swirl the cuvette to mix the liquid well. |
| 12 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 13 | Tap TEST to start a 02:00 minutes countdown. |
| 14 | After the lapse of a 02:00 minute(s) countdown the determined result is displayed. |

## Notes:

- The chemical to be identified with this test procedure is potassium monopersulfate (MPS).
- When preparing the measurement it is important to avoid any active oxygen escaping. This is done by using a pipette and shaking of the sample water. The measurement must be conducted immediately after taking the sample.

# (04) Aluminium Tablet

## 0 - 0.3 mg/l (Al)

**Internal Name: 04-Aluminium-tab**

Aluminium N°1 Photometer (TbsHAlm1)
Aluminium N°2 Photometer (TbsPAlm2)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Add 1 Aluminium N° 1 Photometer tablet(s) to the test water in the cuvette. |
| 8 | Crush the tablet with a clean stirring rod. |
| 9 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 10 | Add 1 Aluminium N° 2 Photometer tablet(s) to the test water in the cuvette. |
| 11 | Crush the tablet with a clean stirring rod. |
| 12 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 13 | Screw the lid back on the cuvette. |
| 14 | Gently swirl the cuvette to mix the liquid well. |
| 15 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 16 | Tap TEST to start a 05:00 minutes countdown. |
| 17 | After the lapse of a 05:00 minute(s) countdown the determined result is displayed. |

## Notes:

- The temperature of the water sample should be between 20 °C and 25 °C.

- Fluorides and polyphosphates in the sample water will reduce the measurement results. So long as no fluoride has been actively added this effect is negligible. Otherwise, the result will be, depending on the fluoride concentration in the water, 0.01 to 0.23 mg/l too low. To take this effect into account the fluoride content in the water must be determined in a separate procedure. Multiply the separately determined fluoride value with 0.4 and then add 1 to this result, which will render the factor by which the measurement result (aluminium) must be multiplied to get the correct value. Example: Determined fluoride value = 0.6 mg/l; multiplied with 0.4 = 0.24; plus 1 = 1.24 (= factor). Determined aluminium value = 0.15; multiply with the above factor (1.24) = 0.186 mg/l aluminium concentration.
- Iron and manganese are eliminated by the reagent tablet and have no influence on the measurement result.

# (02) Ammonia (LR) Powder

## 0 - 2 mg/l (N)

**Internal Name: 02-Ammonia-LR-pow**

Ammonia N°1 Photometer (PPHAM1)
Ammonia N°2 Photometer (PPPAM2)

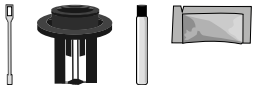
## Measurement procedure:

| | |
|---|---|
| **1** | Fill 10ml test water into a clean 24mm cuvette. |
| **2** | Screw the lid back on the cuvette. |
| **3** | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| **4** | Start ZERO measurement. |
| **5** | Remove the cuvette again. |
| **6** | Unscrew the lid from the cuvette. |
| **7** | Add 1 Ammonia N° 1 Photometer powder pillow(s) to the sample water in the cuvette. |
| **8** | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| **9** | Add 1 Ammonia N° 2 Photometer powder pillow(s) to the sample water in the cuvette. |
| **10** | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| **11** | Screw the lid back on the cuvette. |
| **12** | Gently swirl the cuvette to mix the liquid well. |
| **13** | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| **14** | Tap TEST to start a 10:00 minutes countdown. |
| **15** | After the lapse of a 10:00 minute(s) countdown the determined result is displayed. |

# (155) Ammonia (HR) Reagent-Kit

## 1 - 50 mg/l (N)

**Internal Name: 155-AmmoniaHR-pre**



Ammonia HR Kit (PL155-Kit)

## Measurement procedure:

| | |
|---|---|
| 1 | Provide 2 Ammonia HR cuvettes (16mm). Label one as a ZERO cuvette. |
| 2 | Open the first cuvette (ZERO cuvette). |
| 3 | Fill 0.1ml distilled water into the cuvette, using a pipette. |
| 4 | Open the second vial (sample vial). |
| 5 | Fill 0.1ml sample water in the cuvette. |
| 6 | Add 1 x Am. Silic. F5 powder pillow(s) into both cuvettes. |
| 7 | Add 1 x Am. Cyan. F5 powder pillow(s) into both cuvettes. |
| 8 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 9 | The reagents should now react. |
| 10 | Tap TEST to start a 20:00 minutes countdown. |
| 11 | Place the 16mm adapter in the PrimeLab. |
| 12 | Place the ZERO cuvette in the PrimeLab. |
| 13 | Put on the lightshield. |
| 14 | Start ZERO measurement. |
| 15 | Remove the cuvette again. |
| 16 | Insert the sample cuvette in the PrimeLab. |
| 17 | Put on the lightshield. |
| 18 | Tap TEST to perform the measurement. |

## Notes:

- The test result can be converted into the following unit(s): mg/l NH3, mg/l NH4+.
- Expect tolerances of up to 25% at very low levels (0 - 5 mg/l). If you intend to measure low levels of ammonia, please use "Ammonia LR" (ID02).
- Adjust strong alkaline or acidic water samples to pH 7 by using 1 mol/l hypochloric acid / 1 mol/l soldium hydroxide, before performing the test.
- In presence of chlorine, add 0.1 mol/l sodium thiolufate per 0.3 mg/l Cl2.

- In presence of iron, measure the iron content of your water and add an iron standard solution with the same concentration to your ZERO vial (first test step)

# (07) Boron Tablet

## 0 - 2 mg/l (B)

**Internal Name: 07-Boron-tab**

Dechlor (TbsHBo1)
Boron N°2 Photometer (TbsPBo2)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Add 2 Boron N° 1 Photometer tablet(s) to the test water in the cuvette. |
| 8 | Crush the tablet with a clean stirring rod. |
| 9 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 10 | Add 1 Boron N° 2 Photometer tablet(s) to the test water in the cuvette. |
| 11 | Crush the tablet with a clean stirring rod. |
| 12 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 13 | Screw the lid back on the cuvette. |
| 14 | Gently swirl the cuvette to mix the liquid well. |
| 15 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 16 | Tap TEST to start a 20:00 minutes countdown. |
| 17 | After the lapse of a 20:00 minute(s) countdown the determined result is displayed. |

## Notes:

- The test result can be converted into the following unit(s): mg/l H3BO3
- The pH value of the water sample should be between 6 and 7.
- The temperature of the water sample has an influence on the measurement precision and should be at 20 °C (+/- 1 °C).

# (08) Bromine (without Chlorine) Tablet

## 0 - 18 mg/l (tBr2)

**Internal Name: 08-Bromine-tab**

DPD N°1 Photometer (TbsPD1)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Empty the cuvette to a few drops. |
| 8 | Add 1 DPD N° 1 tablet(s) to the test water in the cuvette. |
| 9 | Crush the tablet with a clean stirring rod. |
| 10 | Fill the cuvette to 10ml with the sample water. Caution, air bubbles dissolve. |
| 11 | Screw the lid back on the cuvette. |
| 12 | Gently swirl the cuvette to mix the liquid well. |
| 13 | Tap TEST to perform the measurement. |
| 14 | The determined result is immediately displayed. |

## Notes:

- If the water sample contains other reducing chemicals (e.g. active oxygen, chlorine, bromine etc.) this will also be detected and be included in the result.
- When preparing the measurement it is important to avoid any bromine escaping, which can happen during pipetting and shaking the sample. The measurement must be performed directly after sampling.
- It is important that the measurement devices to be used have not been cleaned with household detergent, as this could greatly reduce the measurement. To prevent any contamination, the cuvette, the cuvette lid and the stirrer should be stored in a 0.1 % sodium hypochlorite solution for one hour and then rinse thoroughly with distilled water.

- The DPD reagent used in this procedure buffers the pH value of the sample water in a range of 6.2 to 6.5 pH. If your sample water is very alkaline or acidic it must be adjusted to a pH range between 6 and 7 by adding 0.5 mol/l sulphuric acid or respectively 1 mol/l caustic soda.
- Water samples with parameter levels higher than the defined range may lead to errors with the DPD chemistry, resulting in an incorrect reading (possibly showing none detected). For measurement of higher bromine values, please dilute the water sample prior to testing.
- Water samples with a high calcium content resp. a high conductivity will render the sample cloudy, which is detrimental to the measurement precision. In this case use the "DPD N°1 High Calcium (HC)".

# (08) Bromine (with Chlorine) Tablet

## 0 - 18 mg/l (tBr2)

**Internal Name: 08-Bromine-tab**

DPD N°1 Photometer (TbsPD1)
Glycine (TbsHGC)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Add 1 Glycine tablet(s) to the test water in the cuvette. |
| 8 | Crush the tablet with a clean stirring rod. |
| 9 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 10 | Empty the cuvette to a few drops. |
| 11 | Add 1 DPD N° 1 Photometer tablet(s) to the test water in the cuvette. |
| 12 | Crush the tablet with a clean stirring rod. |
| 13 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 14 | Fill the cuvette with the rest of the treated sample water from the first cuvette. |
| 15 | Screw the lid back on the cuvette. |
| 16 | Gently swirl the cuvette to mix the liquid well. |
| 17 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 18 | Tap TEST to start a 02:00 minutes countdown. |
| 19 | After the lapse of a 02:00 minute(s) countdown the determined result is displayed. |

## Notes:

- When preparing the measurement it is important to avoid any bromine escaping, which can happen during pipetting and shaking the sample. The measurement must be performed directly after sampling.

- It is important that the measurement devices to be used have not been cleaned with household detergent, as this could greatly reduce the measurement. To prevent any contamination, the cuvette, the cuvette lid and the stirrer should be stored in a 0.1 % sodium hypochlorite solution for one hour and then rinse thoroughly with distilled water.
- The DPD reagent used in this procedure buffers the pH value of the sample water in a range of 6.2 to 6.5 pH. If your sample water is very alkaline or acidic it must be adjusted to a pH range between 6 and 7 by adding 0.5 mol/l sulphuric acid or respectively 1 mol/l caustic soda.
- If the water sample contains other reducing chemicals (e.g. active oxygen, chlorine, bromine etc.) this will also be detected and be included in the result.
- Water samples with parameter levels higher than the defined range may lead to errors with the DPD chemistry, resulting in an incorrect reading (possibly showing none detected). For measurement of higher bromine values, please dilute the water sample prior to testing.
- Water samples with a high calcium content resp. a high conductivity will render the sample cloudy, which is detrimental to the measurement precision. In this case use the "DPD N°1 High Calcium (HC)".

# (128) Bromine Powder Pack

## 0 - 4.5 mg/l (Br2)

**Internal Name: 128-Bromine-pp**

DPD N°1 Photometer (PPPD1)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Add 1 DPD N° 1 Photometer powder pillow(s) to the sample water in the cuvette. |
| 8 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 9 | Screw the lid back on the cuvette. |
| 10 | Gently swirl the cuvette to mix the liquid well. |
| 11 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 12 | Tap TEST to start a 03:00 minutes countdown. |
| 13 | After the lapse of a 03:00 minute(s) countdown the determined result is displayed. |

## Notes:

- Alkalinity of more than 250 mg/l CaCO3 affect the measurement and the colour development. Neutralize to pH 6 - 7 with 1 N hydrochloric acid before performing the test.
- Acidity of more than 150 mg/l CaCO3 affect the measurement and the color development. Neutralize to pH 6-7 with 1 N Sodium Hydroxide before performing the test.
- Other oxidants, such as chlorine, chlorine dioxide, ozone, peroxides as well as iodine will interfere with the reagent reaction and will be part of the displayed value.
- If oxidized manganese or oxidized chromium is present in the sample, sample needs to be pre-treated.
- Hardness levels above 1000 mg/l CaCO3 affect the measurement.
- Extreme pH-values of the sample need to be corrected to pH 6-7 before measuring the sample.

# (63) Bromine (without Chlorine)

**Liquid + Powder**

## 0 - 4.5 mg/l (Br2)

**Internal Name: 63-Bromine-liq**

30ml PL DPD 1 A (PL30DPD1A)
30ml PL DPD 1 B (PL30DPD1B)
PL DPD Nitrite Powder (PLpow20DPDNitr)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Empty the cuvette to a few drops. |
| 8 | Add 3 drops of PL DPD 1 A into the cuvette. |
| 9 | Add 3 drops of PL DPD 1 B into the cuvette. |
| 10 | Fill the cuvette to 10ml with the sample water. |
| 11 | Screw the lid back on the cuvette. |
| 12 | Gently swirl the cuvette to mix the liquid well. |
| 13 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 14 | Tap TEST to perform the measurement. |
| 15 | The determined result for tBr (total bromine) is immediately displayed. |
| 16 | If you require determination of ´combined´ and/or ´free´ bromine, please proceed with the following steps. |
| 17 | Remove the cuvette again. |
| 18 | Empty the cuvette. |
| 19 | Clean the cuvette. |
| 20 | Fill 10ml sample water into a second clean 24mm cuvette. |
| 21 | Add 1 x 0.05mL (measuring spoon) PL DPD Nitrite powder to the sample water in the cuvette. |
| 22 | Screw the lid back on the cuvette. |
| 23 | Gently swirl the cuvette to mix the liquid well. |
| 24 | Add 3 drops of PL DPD 1 A into a second clean 24mm cuvette. |
| 25 | Add 3 drops of PL DPD 1 B into the cuvette. |

26 Fill the cuvette with 10ml of the treated sample water from the first cuvette.

27 Screw the lid back on the cuvette.

28 Gently swirl the cuvette to mix the liquid well.

29 Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette.

30 Tap TEST to perform the measurement.

31 The determined result for "aBr" = active bromine, "cBr" = combined bromine and "tBr" = total bromine is immediately displayed.

## Notes:

- DPD 1 A and DPD 1 B reagent MUST be added to the vial BEFORE water sample is added to avoid misreadings!
- When preparing the measurement procedure it is important to avoid any chlorine escaping, which can happen during pipetting and shaking the sample. The measurement should be performed directly after sampling.
- It is important that the measurement devices to be used have not been cleaned with household detergent, as this could greatly reduce the measurement. To prevent any contamination, the cuvette, the cuvette lid and the stirrer should be stored in a 0.1 % sodium hypochlorite solution for one hour and then rinse thoroughly with distilled water.
- The DPD reagent used in this procedure buffers the pH value of the sample water in a range of 6.2 to 6.5 pH. If your sample water is very alkaline or acidic it must be adjusted to a pH range between 6 and 7 by adding 0.5 mol/l sulphuric acid or respectively 1 mol/l caustic soda.
- Water samples with parameter levels higher than the defined range may lead to errors with the DPD chemistry, resulting in an incorrect reading (possibly showing none detected). For measurement of higher bromine values, please dilute the water sample prior to testing.
- If the water sample contains other reducing chemicals (e.g. active oxygen, chlorine, bromine etc.) this will also be detected and be included in the result.
- Water samples with a high calcium content resp. a high conductivity will render the sample cloudy, which is detrimental to the measurement precision. In this case use the "DPD N°1 High Calcium (HC)".

# (63) Bromine (with Chlorine) Liquid + Powder

## 0 - 4.5 mg/l (Br2)

**Internal Name: 63-Bromine-liq**

30ml PL DPD 1 A (PL30DPD1A)
30ml PL DPD 1 B (PL30DPD1B)
PL DPD Nitrite Powder (PLpow20DPDNitr)
30ml PL DPD Glycine (PL30DPDGlycine)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Add 3 drops of PL DPD Glycine into the cuvette. |
| 8 | Gently swirl the cuvette to mix the liquid well. |
| 9 | Add 3 drops of PL DPD 1A and PL DPD 1 B into a second clean 24mm cuvette. |
| 10 | Fill the cuvette with the treated sample of the first cuvette. |
| 11 | Screw the lid back on the cuvette. |
| 12 | Gently swirl the cuvette to mix the liquid well. |
| 13 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 14 | Tap TEST to perform the measurement. |
| 15 | The determined result for tBr (total bromine) is immediately displayed. |
| 16 | If you require determination of ´combined´ and/or ´free´ bromine, please proceed with the following steps. |
| 17 | Fill 10ml test water into a clean 24mm cuvette. |
| 18 | Add 1 x 0,05ml (measuring spoon) PL DPD Nitrite powder to the sample water in the cuvette. |
| 19 | Screw the lid back on the cuvette. |
| 20 | Gently swirl the cuvette to mix the liquid well. |
| 21 | Add 3 drops of PL DPD 1 A and PL DPD 1 B into a second clean 24mm cuvette. |
| 22 | Fill the cuvette with 10ml of the treated sample water from the first cuvette. |
| 23 | Screw the lid back on the cuvette. |
| 24 | Gently swirl the cuvette to mix the liquid well. |
| 25 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |

26 Tap TEST to perform the measurement.

27 The determined result for “aBr“ = "active bromine“ ; “cBr“ = “combined bromine“ ; “tBr“ = “total bromine“ is immediately displayed.

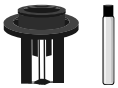
## Notes:

- DPD 1 A and DPD 1 B reagent MUST be added to the vial BEFORE water sample is added to avoid misreadings!
- When preparing the measurement procedure it is important to avoid any chlorine escaping, which can happen during pipetting and shaking the sample. The measurement should be performed directly after sampling.
- It is important that the measurement devices to be used have not been cleaned with household detergent, as this could greatly reduce the measurement. To prevent any contamination, the cuvette, the cuvette lid and the stirrer should be stored in a 0.1 % sodium hypochlorite solution for one hour and then rinse thoroughly with distilled water.
- The DPD reagent used in this procedure buffers the pH value of the sample water in a range of 6.2 to 6.5 pH. If your sample water is very alkaline or acidic it must be adjusted to a pH range between 6 and 7 by adding 0.5 mol/l sulphuric acid or respectively 1 mol/l caustic soda.
- Water samples with parameter levels higher than the defined range may lead to errors with the DPD chemistry, resulting in an incorrect reading (possibly showing none detected). For measurement of higher bromine values, please dilute the water sample prior to testing.
- If the water sample contains other reducing chemicals (e.g. active oxygen, chlorine, bromine etc.) this will also be detected and be included in the result.
- Water samples with a high calcium content resp. a high conductivity will render the sample cloudy, which is detrimental to the measurement precision. In this case use the "DPD N°1 High Calcium (HC)".

# (17) COD (HR) Prepared Vial

## 0 - 15000 mg/l (O2)

**Internal Name: 17-COD-HR-pre**



COD HR (tubetest) (COD-17-HR)

## Measurement procedure:

| | |
|---|---|
| 1 | Provide 2 COD-17-HR cuvettes (16mm). Label one as a ZERO cuvette. |
| 2 | Open the first cuvette (ZERO cuvette). |
| 3 | Fill 0,2ml distilled water into the cuvette. |
| 4 | Open the second vial (sample vial). |
| 5 | Fill 0,2ml sample water into the cuvette. |
| 6 | Screw the lid back on both cuvettes. |
| 7 | Gently swirl the cuvette to mix the liquid well. Caution, heat development! |
| 8 | Place cuvettes for 120 minutes at 150°C in the preheated thermoreactor. |
| 9 | CAUTION: Cuvettes are hot! |
| 10 | Remove the cuvettes from the thermoreactor. |
| 11 | Let the cuvettes cool down to at least 60°C. |
| 12 | Turn the warm cell upside down several times to mix the contents well. |
| 13 | Let the cuvettes cool down to room temperature. |
| 14 | Place the 16mm adapter in the PrimeLab. |
| 15 | Place the ZERO cuvette in the PrimeLab. |
| 16 | Put on the lightshield. |
| 17 | Start ZERO measurement. |
| 18 | Remove the cuvette again. |
| 19 | Insert the sample cuvette in the PrimeLab. |
| 20 | Put on the lightshield. |
| 21 | Tap TEST to perform the measurement. |
| 22 | The determined result is immediately displayed. |

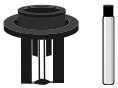
## Notes:

- Suspended particles in the zero cell and / or the sample cell lead to wrong test results. Make sure that any existing suspended solids have settled to the bottom of the cell and are not disturbed by the insertion into the PrimeLab.
- Both cells used for the measurement (zero / sample) must be from the same production batch. The cell used for ZERO can be kept for other tests (of the same batch) but must be stored in the dark.
- For COD content below 1000 mg/l, the use of method COD MR is recommended, for COD content below 100 mg/l, the use of method COD LR is recommended to achieve accurate results.
- Never insert hot cells into the PrimeLab!
- This method is not suitable for water samples with chloride values higher than 10000 mg/l.

# (79) COD (LR) Prepared Vial

## 0 - 150 mg/l (O2)

**Internal Name: 79-COD-LR-pre**



COD LR (tubetest) (COD-79-LR)

## Measurement procedure:

| | |
|---|---|
| 1 | Provide 2 COD-LR cuvettes (16mm). Label one as a ZERO cuvette. |
| 2 | Open the first cuvette (ZERO cuvette). |
| 3 | Fill 2ml distilled water into the cuvette. |
| 4 | Open the second vial (sample vial). |
| 5 | Fill 2ml sample water in the cuvette. |
| 6 | Screw the lid back on the cuvette. |
| 7 | Gently swirl the cuvette to mix the liquid well. Caution, heat development! |
| 8 | Place cuvettes for 120 minutes at 150°C in the preheated thermoreactor. |
| 9 | Remove the cuvettes from the thermoreactor. |
| 10 | Flip both 16mm cuvettes to mix the liquid well. Then allow to cool to room temperature. |
| 11 | Place the 16mm adapter in the PrimeLab. |
| 12 | Place the ZERO cuvette in the PrimeLab. |
| 13 | Start ZERO measurement. |
| 14 | Remove the lightshield. |
| 15 | Remove the cuvette again. |
| 16 | Insert the sample cuvette in the PrimeLab. |
| 17 | Put on the lightshield. |
| 18 | Tap TEST to perform the measurement. |
| 19 | The determined result is immediately displayed. |

## Notes:

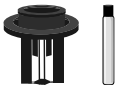
- Suspended particles in the zero cell and / or the sample cell lead to wrong test results. Make sure that any existing suspended solids have settled to the bottom of the cell and are not disturbed by the insertion into the PrimeLab.
- Both cells used for the measurement (zero / sample) must be from the same production batch. The cell used for ZERO can be kept for other tests (of the same batch) but must be stored in the dark.

- For COD content above 150 mg/l, the use of another method (COD MR / COD HR) is recommended to achieve accurate results.
- Never insert hot cells into the PrimeLab!
- This method is not suitable for water samples with chloride values higher than 1000 mg/l.

# (80) COD (MR) Prepared Vial

## 0 - 1500 mg/l (O2)

**Internal Name: 80-COD-MR-pre**



COD MR (tubetest) (COD-80-MR)

## Measurement procedure:

| | |
|---|---|
| 1 | Provide 2 COD-MR cuvettes (16mm). Label one as a ZERO cuvette. |
| 2 | Open the first cuvette (ZERO cuvette). |
| 3 | Fill 2ml distilled water into the cuvette. |
| 4 | Open the second vial (sample vial). |
| 5 | Fill 2ml sample water in the cuvette. |
| 6 | Screw the lid back on both cuvettes. |
| 7 | Gently swirl the cuvette to mix the liquid well. Caution, heat development! |
| 8 | Place cuvettes for 120 minutes at 150°C in the preheated thermoreactor. |
| 9 | CAUTION: Cuvettes are hot! |
| 10 | Remove the cuvettes from the thermoreactor. |
| 11 | Let the cuvettes cool down to at least 60°C. |
| 12 | Turn the warm cell upside down several times to mix the contents well. |
| 13 | Let the cuvettes cool down to room temperature. |
| 14 | Place the 16mm adapter in the PrimeLab. |
| 15 | Place the ZERO cuvette in the PrimeLab. |
| 16 | Put on the lightshield. |
| 17 | Start ZERO measurement. |
| 18 | Remove the cuvette again. |
| 19 | Insert the sample cuvette in the PrimeLab. |
| 20 | Put on the lightshield. |
| 21 | Tap TEST to perform the measurement. |
| 22 | The determined result is immediately displayed. |

## Notes:

- Suspended particles in the zero cell and / or the sample cell lead to wrong test results. Make sure that any existing suspended solids have settled to the bottom of the cell and are not disturbed by the insertion into the PrimeLab.
- Both cells used for the measurement (zero / sample) must be from the same production batch. The cell used for ZERO can be kept for other tests (of the same batch) but must be stored in the dark.
- For COD content above 1500 mg/l, the use of another method (COD HR) is recommended to achieve accurate results.
- Never insert hot cells into the PrimeLab!
- This method is not suitable for water samples with chloride values higher than 1000 mg/l.

# (10) Chloride Tablet

## 0.5 - 25 mg/l (Cl-)

**Internal Name: 10-Chloride-tab**

Chloride N°1 Photometer (TbsHCRD1)
Chloride N°2 Photometer (TbsPCRD2)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Add 1 Chloride N°1 Photometer tablet(s) to the test water in the cuvette. |
| 8 | Crush the tablet with a clean stirring rod. |
| 9 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 10 | Add 1 Chloride N°2 Photometer tablet(s) to the test water in the cuvette. |
| 11 | Crush the tablet with a clean stirring rod. |
| 12 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 13 | Screw the lid back on the cuvette. |
| 14 | Gently swirl the cuvette to mix the liquid well. |
| 15 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 16 | Tap TEST to start a 05:00 minutes countdown. |
| 17 | After the lapse of a 05:00 minute(s) countdown the determined result is displayed. |

## Notes:

- The test result can be converted into the following unit(s): mg/l NaCl
- Avoid severe shaking of the water sample after adding the reagent, as this can lead to incorrect measurements.
- The reagent used will cause fine clouding.
- Other substances in the water that may react with silver nitrate in an acidic medium will lead to a falsification of the measurement result. Such species are bromide and iodine.
- Very alkaline water should be neutralized before the measurement by adding nitric acid.

# (124) Chloride Liquid

## 0 - 100 mg/l (Cl-)

**Internal Name: 124-Chloride-liq**

65ml PL Chloride N°1 (PL65Chloride1)
65ml PL Chloride N°2 (PL65Chloride2)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Add 15 drops of PL Chloride 1 into the cuvette. |
| 8 | Add 15 drops of PL Chloride 2 into the cuvette. |
| 9 | Screw the lid back on the cuvette. |
| 10 | Gently swirl the cuvette to mix the liquid well. |
| 11 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 12 | Tap TEST to perform the measurement. |
| 13 | After the lapse of a 05:00 minute(s) countdown the determined result is displayed. |

# (167) Chloride in MeOH

**Liquid**

**0 - 20** mg/l (Cl-)

**Internal Name: 167-Chloride-in-MeOH**

30ml Chloride in Methanol (PL30CLMEOH)

## Measurement procedure:

| | |
|---|---|
| **1** | Fill 10ml test water into a clean 24mm cuvette. |
| **2** | Add 10 drops of PL30CLMEOH into the cuvette. |
| **3** | Screw the lid back on the cuvette. |
| **4** | Gently swirl the cuvette to mix the liquid well. |
| **5** | Tap TEST to start a 15:00 minutes countdown. |
| **6** | Swirl the cuvette back and forth for 5 times. |
| **7** | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| **8** | Tap TEST to perform the measurement. |
| **9** | The determined result is immediately displayed. |

## Notes:

- Shake the liquid bottle before adding the liquid to the vial.

# (11) Chlorine(free/ combined - /total) Tablet

-

0 - 8 mg/l (fCl2)

Internal Name: 11-Chlorine-tab

DPD N°1 Photometer (TbsPD1)
DPD N°1 High Calcium Photometer (TbsPD1HC)
DPD N°3 Photometer (TbsPD3)
DPD N° 3 HC Photometer (TbsPD3HC)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Empty the cuvette to a few drops. |
| 8 | Add 1 DPD N°1 Photometer tablet(s) to the test water in the cuvette. |
| 9 | Crush the tablet with a clean stirring rod. |
| 10 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 11 | Fill the cuvette to 10ml with the sample water. |
| 12 | Screw the lid back on the cuvette. |
| 13 | Gently swirl the cuvette to mix the liquid well. |
| 14 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 15 | Tap TEST to start a 00:10 minutes countdown. |
| 16 | After the lapse of a 10 second(s) countdown the determined result for "fCl" (free chlorine) is displayed. |
| 17 | Unscrew the lid from the cuvette. |
| 18 | Add 1 DPD N°3 Photometer tablet(s) to the test water in the cuvette. |
| 19 | Crush the tablet with a clean stirring rod. |
| 20 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 21 | Screw the lid back on the cuvette. |
| 22 | Gently swirl the cuvette to mix the liquid well. |
| 23 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |

24 Tap TEST to start a 02:00 minutes countdown.

25 After the lapse of a 02:00 minute(s) countdown the total result is displayed, divided in "fCl" = "free chlorine“, "cCl" = "combined chlorine“, "tCl" = "total chlorine"..

## Notes:

- Sample water with a high calcium content or high conductivity will cloud the sample and deteriorate the measurement precision. In this case use the DPD N°1 High Calcium (HC) and DPD N°3 High Calcium (HC) tablets.
- If the measuring water contains further oxidizing chemicals (e.g. active oxygen, chlorine, bromine etc.) this will also be detected and is part of the result.
- When preparing the measurement procedure it is important to avoid any chlorine escaping, which can happen during pipetting and shaking the sample. The measurement should be performed directly after sampling.
- It is important that the measurement devices to be used have not been cleaned with household detergent, as this could greatly reduce the measurement. To prevent any contamination, the cuvette, the cuvette lid and the stirrer should be stored in a 0.1 % sodium hypochlorite solution for one hour and then rinse thoroughly with distilled water.
- The DPD reagent used in this procedure buffers the pH value of the sample water in the range between 6.2 and 6.5 pH. If your sample water is very alkaline or acidic this must be adjusted to a pH range between 6 and 7 by the addition of 0.5 mol/l sulphuric acid or resp. 1 mol/l caustic soda before the DPD reagent is added.
- Water samples with parameter levels higher than the defined range may lead to errors with the DPD chemistry, resulting in an incorrect reading (possibly showing none detected). For measurement of higher chlorine values please select the respective matching procedure.

# (12) Chlorine(free/ combined - /total) Liquid

-

0 - 8 mg/l (fCl2)

**Internal Name: 12-Chlorine-liq**

30ml PL DPD 1 A (PL30DPD1A)
30ml PL DPD 1 B (PL30DPD1B)
30ml PL DPD 3 C (PL30DPD3C)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Empty the cuvette. |
| 8 | Add 3 drops of "PL DPD 1 A" into the cuvette. |
| 9 | Add 3 drops of "PL DPD 1 B" into the cuvette. |
| 10 | Fill the cuvette to 10ml with the sample water. |
| 11 | Screw the lid back on the cuvette. |
| 12 | Gently swirl the cuvette to mix the liquid well. |
| 13 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 14 | Tap TEST to perform the measurement. |
| 15 | The determined result for "fCl" (free chlorine) is immediately displayed. |
| 16 | Remove the cuvette again. |
| 17 | Unscrew the lid from the cuvette. |
| 18 | Add 3 drops of "PL DPD 3 C" into the cuvette. |
| 19 | Screw the lid back on the cuvette. |
| 20 | Gently swirl the cuvette to mix the liquid well. |
| 21 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 22 | Tap TEST to start a 02:00 minutes countdown. |
| 23 | After the lapse of a 02:00 minute(s) countdown the total result is displayed, divided in "fCl" = "free chlorine“, "cCl" = "combined chlorine“, "tCl" = "total chlorine".. |

## Notes:

- DPD 1 A and DPD 1 B reagent MUST be added to the vial BEFORE water sample is added to avoid misreadings!
- The notes under ID 11 apply here as well.
- Liquid reagents should be stored below 10 °C and above 5 °C in securely closed bottles.

# (122) Chlorine (MR) (free/combined - / total) - 0 - 10 mg/l (fCl2) Tablet

**Internal Name: 122-ChlorineMR-tab**

DPD N°1 MR Photometer (TbsPD1MR)
DPD N°3 MR Photometer (TbsPD3MR)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Empty the cuvette to a few drops. |
| 8 | Add 1 DPD N° 1 MR Photometer tablet(s) to the test water in the cuvette. |
| 9 | Crush the tablet with a clean stirring rod. |
| 10 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 11 | Fill the cuvette to 10ml with the sample water. |
| 12 | Screw the lid back on the cuvette. |
| 13 | Gently swirl the cuvette to mix the liquid well. |
| 14 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 15 | Tap TEST to perform the measurement. |
| 16 | After the lapse of a 00:10 minute(s) countdown the determined result is displayed. |
| 17 | Unscrew the lid from the cuvette. |
| 18 | Add 1 DPD N° 3 MR Photometer tablet(s) to the test water in the cuvette. |
| 19 | Crush the tablet with a clean stirring rod. |
| 20 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 21 | Screw the lid back on the cuvette. |
| 22 | Gently swirl the cuvette to mix the liquid well. |
| 23 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 24 | Tap TEST to perform the measurement. |

25 After the lapse of a 02:00 minute(s) countdown the determined result is displayed.

## Notes:

- Water samples with chlorine level 20 mg/l lead to incorrect results because the counter bleaches.
- If the measuring water contains further oxidizing chemicals (e.g. active oxygen, chlorine, bromine etc.) this will also be detected and is part of the result.
- When preparing the measurement procedure it is important to avoid any chlorine escaping, which can happen during pipetting and shaking the sample. The measurement should be performed directly after sampling.
- It is important that the measurement devices to be used have not been cleaned with household detergent, as this could greatly reduce the measurement. To prevent any contamination, the cuvette, the cuvette lid and the stirrer should be stored in a 0.1 % sodium hypochlorite solution for one hour and then rinse thoroughly with distilled water.
- The DPD reagent used in this procedure buffers the pH value of the sample water in the range between 6.2 and 6.5 pH. If your sample water is very alkaline or acidic this must be adjusted to a pH range between 6 and 7 by the addition of 0.5 mol/l sulphuric acid or resp. 1 mol/l caustic soda before the DPD reagent is added.
- Water samples with parameter levels higher than the defined range may lead to errors with the DPD chemistry, resulting in an incorrect reading (possibly showing none detected). For measurement of higher chlorine values please select the respective matching procedure.

# (129) Chlrine free Powder Pack

## 0 - 2 mg/l (fCl2)

**Internal Name: 129-Chlorine-pp**

DPD N°1 Photometer (PPPD1)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Add 1 DPD N° 1 Photometer powder pillow(s) to the sample water in the cuvette. |
| 8 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 9 | Screw the lid back on the cuvette. |
| 10 | Gently swirl the cuvette to mix the liquid well. |
| 11 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 12 | Tap TEST to perform the measurement. |
| 13 | After the lapse of a 00:10 minute(s) countdown the determined result is displayed. |

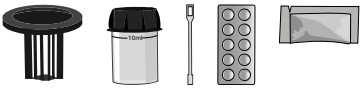
## Notes:

- Alkalinity of more than 250 mg/l CaCO3 affect the measurement and the colour development. Neutralize to pH 6 - 7 with 1 N sodium hydroxide before performing the test.
- Acidity of more than 150 mg/l CaCO3 affect the measurement and the color development. Neutralize to pH 6-7 with 1 N Sodium Hydroxide before performing the test.
- Other oxidants, such as chlorine, chlorine dioxide, ozone, peroxides as well as iodine will interfere with the reagent reaction and will be part of the displayed value.
- Organic chloramines may interfere. Monochloramines lead to higher readings (~0.1 mg/l at 3 mg/l monochloramines after 1 minute).
- If oxidized manganese or oxidized chromium is present in the sample, sample needs to be pre-treated.
- Hardness levels above 1000 mg/l CaCO3 affect the measurement.
- Extreme pH-values of the sample need to be corrected to pH 6-7 before measuring the sample.

# (14) Chlorine (KI) (HR) Tablet + Powder Pack

5 - 200 mg/l (Cl2)

Internal Name: 14-Chlorine-HR-tab



Chlorine HR (KI) Photometer (TbsPClhr)
Acidifying GP (PPHAFG)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Add 1 Chlorine HR (KI) Photometer tablet(s) to the test water in the cuvette. |
| 8 | Crush the tablet with a clean stirring rod. |
| 9 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 10 | Add 1 Acidifying GP powder pillow(s) to the sample water in the cuvette. |
| 11 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 12 | Screw the lid back on the cuvette. |
| 13 | Gently swirl the cuvette to mix the liquid well. |
| 15 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 16 | Tap TEST to start a 00:10 minutes countdown. |
| 17 | After the lapse of a 00:10 minute(s) countdown the determined result is displayed. |

## Notes:

- In this procedure all oxidizing substances contained in the test liquid will be detected.

# (15) Chlorine (HR) Liquid

## 0 - 200 mg/l (Cl2)

**Internal Name: 15-Chlorine-HR-liq**

65ml PL Chlorine HR N°1 (PL65ClHR1)
65ml PL Chlorine HR N°2 (PL65ClHR2)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Add 3 drops of PL Chlorine HR 1 into the cuvette. |
| 8 | Add 3 drops of PL Chlorine HR 2 into the cuvette. |
| 9 | Screw the lid back on the cuvette. |
| 10 | Gently swirl the cuvette to mix the liquid well. |
| 11 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 12 | Tap TEST to start a 00:30 minutes countdown. |
| 13 | After the lapse of a 00:30 minute(s) countdown the determined result is displayed. |

## Notes:

- In this procedure all oxidizing substances contained in the test liquid will be detected.
- Liquid reagents should be stored below 10 °C and above 5 °C in securely closed bottles.

# (95) Chloramines (Mono-/Di-) Tablet

## 0 - 8 mg/l (fCl)

**Internal Name: 95-Chloramines-tab**

DPD N°1 Photometer (TbsPD1)
DPD N°2 Photometer (TbsPD2)
DPD N°3 Photometer (TbsPD3)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Empty the cuvette to a few drops. |
| 8 | Add 1 DPD N° 1 Photometer tablet(s) to the test water in the cuvette. |
| 9 | Crush the tablet with a clean stirring rod. |
| 10 | Fill the cuvette to the 10ml mark. |
| 11 | Screw the lid back on the cuvette. |
| 12 | Gently swirl the cuvette to mix the liquid well. |
| 13 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 14 | Tap TEST to start a 00:10 minutes countdown. |
| 15 | After the lapse of a 00:10 minute(s) countdown the determined result is displayed. |
| 16 | Unscrew the lid from the cuvette. |
| 17 | Add 1 DPD N° 2 Photometer tablet(s) to the test water in the cuvette. |
| 18 | Crush the tablet with a clean stirring rod. |
| 19 | Screw the lid back on the cuvette. |
| 20 | Gently swirl the cuvette to mix the liquid well. |
| 21 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 22 | Tap TEST to perform the measurement. |
| 23 | After the lapse of a 00:10 second(s) countdown the determined result for NH2Cl is displayed. |
| 24 | Unscrew the lid from the cuvette. |
| 25 | Add 1 DPD N° 3 Photometer tablet(s) to the test water in the cuvette. |

| | |
|---|---|
| **26** | Crush the tablet with a clean stirring rod. |
| **27** | Screw the lid back on the cuvette. |
| **28** | Gently swirl the cuvette to mix the liquid well. |
| **29** | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| **30** | Tap TEST to perform the measurement. |
| **31** | After the lapse of a 02:00 second(s) countdown the determined result for fCl, NH2Cl, NHCl2 is displayed. |

# (108) Total Oxidant Liquid

**0 - 8** mg/l (tCl2)

**Internal Name: 108-Total-Oxid-liq**

30ml PL DPD 1 A (PL30DPD1A)
30ml PL DPD 1 B (PL30DPD1B)
30ml PL DPD 3 C (PL30DPD3C)
30ml PL DPD Acidifying (PL30DPDAcidif)
30ml PL DPD Neutralising (PL30DPDNeutr)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Empty the cuvette to a few drops. |
| 8 | Add 3 drops of PL DPD 1 A into the cuvette. |
| 9 | Add 3 drops of PL DPD 1 B into the cuvette. |
| 10 | Fill the cuvette to 10ml with the sample water. |
| 11 | Add 3 drops of PL DPD 3 C into the cuvette. |
| 12 | Screw the lid back on the cuvette. |
| 13 | Gently swirl the cuvette to mix the liquid well. |
| 14 | Tap TEST to perform the measurement. |
| 15 | Wait until the 02:00 minute countdown ran out. |
| 16 | Unscrew the lid from the cuvette. |
| 17 | Add 3 drops of PL DPD Acidifying into the cuvette. |
| 18 | Screw the lid back on the cuvette. |
| 19 | Gently swirl the cuvette to mix the liquid well. |
| 20 | Tap TEST to perform the measurement. |
| 21 | Wait until the 02:00 minute countdown ran out. |
| 22 | Unscrew the lid from the cuvette. |
| 23 | Add 3 drops of PL DPD Neutralising into the cuvette. |
| 24 | Screw the lid back on the cuvette. |
| 25 | Gently swirl the cuvette to mix the liquid well. |
| 26 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 27 | Tap TEST to perform the measurement. |

28 The determined result is immediately displayed.

## Notes:

- DPD 1 A and DPD 1 B reagent MUST be added to the vial BEFORE water sample is added to avoid misreadings!
- The test result can be converted into the following unit(s): mg/l ClO2

# (130) Chlorine Dioxide 0 - 5 mg/l (ClO2) Liquid + Powder Pack

**Internal Name: 130-Chl-Diox-pp**

30ml PL DPD Glycine (PL30DPDGlycine)
DPD N° 1 Photometer (PPDP150)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Add 4 drops of PL DPD Glycine into the cuvette. |
| 8 | Screw the lid back on the cuvette. |
| 9 | Gently swirl the cuvette to mix the liquid well. |
| 10 | Add 1 DPD N° 1 Photometer powder pillow(s) to the sample water in the cuvette. |
| 11 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 12 | Screw the lid back on the cuvette. |
| 13 | Gently swirl the cuvette to mix the liquid well. |
| 14 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 15 | Tap TEST to start a 02:00 minutes countdown. |
| 16 | After the lapse of a 02:00 minute(s) countdown the determined result is displayed. |

## Notes:

- Alkalinity of more than 250 mg/l CaCO3 affect the measurement and the colour development. Neutralize to pH 6 - 7 with 1 N hydrochloric acid before performing the test.
- Acidity of more than 150 mg/l CaCO3 affect the measurement and the color development. Neutralize to pH 6-7 with 1 N Sodium Hydroxide before performing the test.
- Bromine at all levels, ozone (if >1.5 mg/l) and chlorine (if >6 mg/l) as well as iodine will react with the reagent and will be part of the displayed value. Peroxides may interfere as well.
- Organic chloramines may interfere. Monochloramines lead to higher readings (~0.1 mg/l at 3 mg/l monochloramines after 1 minute).

- If oxidized manganese or oxidized chromium is present in the sample, sample needs to be pre-treated.
- Hardness levels above 1000 mg/l CaCO3 affect the measurement.
- Extreme pH-values of the sample need to be corrected to pH 6-7 before measuring the sample.

# (16) Chlorine Dioxide (without Chlorine) Tablet

**0 - 15** mg/l ($ClO_2$)

**Internal Name: 16-Chlorin-Dio-tab**

DPD N°1 Photometer (TbsPD1)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Empty the cuvette to a few drops. |
| 8 | Add 1 DPD N° 1 Photometer tablet(s) to the test water in the cuvette. |
| 9 | Crush the tablet with a clean stirring rod. |
| 10 | Fill the cuvette to 10ml with the sample water. |
| 11 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 12 | Screw the lid back on the cuvette. |
| 13 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 14 | Tap TEST to start a 00:10 minutes countdown. |
| 15 | After the lapse of a 00:10 minute(s) countdown the determined result is displayed. |

## Notes:

- By selecting the procedure "Chlorine dioxide with chlorine" and adding the Glycine tablet the chlorine content of the water is eliminated.
- Otherwise observe the notes as under ID11 (chlorine tablet).

# (16) Chlorine Dioxide (with Chlorine) Tablet

## 0 - 15 mg/l (ClO2)

**Internal Name: 16-Chlorin-Dio-tab**

DPD N°1 Photometer (TbsPD1)
Glycine (TbsHGC)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Add 1 Glycine tablet(s) to the test water in the cuvette. |
| 8 | Crush the tablet with a clean stirring rod. |
| 9 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 10 | Place 1 DPD N° 1 Photometer tablet(s) into a second empty, clean cuvette. |
| 11 | Crush the tablet with a clean stirring rod. |
| 12 | Fill the cuvette with 10ml of the treated sample water from the first cuvette. |
| 13 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 14 | Screw the lid back on the cuvette. |
| 15 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 16 | Tap TEST to start a 00:10 minutes countdown. |
| 17 | After the lapse of a 00:10 minute(s) countdown the determined result is displayed. |

## Notes:

- By selecting the procedure "Chlorine dioxide with chlorine" and adding the Glycine tablet the chlorine content of the water is eliminated.
- Otherwise observe the notes as under ID11 (chlorine tablet).

# (64) Chlorine Dioxide (with chlorine) Liquid

**0 - 15 mg/l (ClO2)**

**Internal Name: 64-Chlorin-Dio-liq**

30ml PL DPD 1 A (PL30DPD1A)
30ml PL DPD 1 B (PL30DPD1B)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Add 3 drops of PL DPD Glycine into the cuvette. |
| 8 | Screw the lid back on the cuvette. |
| 9 | Gently swirl the cuvette to mix the liquid well. |
| 10 | Add 3 drops of PL DPD 1 A into the cuvette. |
| 11 | Add 3 drops of PL DPD 1 B into a second empty, clean cuvette. |
| 12 | Fill the cuvette with  of the treated sample water from the first cuvette. |
| 13 | Screw the lid back on the cuvette. |
| 14 | Gently swirl the cuvette to mix the liquid well. |
| 15 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 16 | Tap TEST to perform the measurement. |
| 17 | The determined result is immediately displayed. |

## Notes:

- DPD 1 A and DPD 1 B reagent MUST be added to the vial BEFORE water sample is added to avoid misreadings!
- Otherwise observe the notes as under ID11 (chlorine tablet).
- Liquid reagents should be stored below 10 °C and above 5 °C in securely closed bottles.

# (64) Chlorine Dioxide (without chlorine) Liquid

**0 - 15** mg/l ($ClO_2$)

**Internal Name: 64-Chlorin-Dio-liq**

30ml PL DPD 1 A (PL30DPD1A)
30ml PL DPD 1 B (PL30DPD1B)
30ml PL DPD Glycine (PL30DPDGlycine)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Empty the cuvette to a few drops. |
| 8 | Add 3 drops of PL DPD 1 A into the cuvette. |
| 9 | Add 3 drops of PL DPD 1 B into the cuvette. |
| 10 | Fill the cuvette to 10ml with the sample water. |
| 11 | Screw the lid back on the cuvette. |
| 12 | Gently swirl the cuvette to mix the liquid well. |
| 13 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 14 | Tap TEST to perform the measurement. |
| 15 | The determined result is immediately displayed. |

## Notes:

- DPD 1 A and DPD 1 B reagent MUST be added to the vial BEFORE water sample is added to avoid misreadings!
- Otherwise observe the notes as under ID11 (chlorine tablet).
- Liquid reagents should be stored below 10 °C and above 5 °C in securely closed bottles.

# (106) Chlorite Liquid

**0 - 8** mg/l ($ClO_2^-$)

**Internal Name: 106-Chlorite-liq**

30ml PL DPD Glycine (PL30DPDGlycine)
30ml PL DPD 1 A (PL30DPD1A)
30ml PL DPD 1 B (PL30DPD1B)
30ml PL DPD 1 A (PL30DPD1A)
30ml PL DPD Acidifying (PL30DPDAcidif)
30ml PL DPD Neutralising (PL30DPDNeutr)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Add 3 drops of PL DPD Glycine into the cuvette. |
| 8 | Screw the lid back on the cuvette. |
| 9 | Swirl the cuvette back and forth for 5 times. |
| 10 | Add 3 drops of PL DPD 1 A into a second empty, clean cuvette. |
| 11 | Add 3 drops of PL DPD 1 B into the cuvette. |
| 12 | Fill the cuvette with 10 ml of the treated sample water from the first cuvette. |
| 13 | Screw the lid back on the cuvette. |
| 14 | Gently swirl the cuvette to mix the liquid well. |
| 15 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 16 | Tap TEST to perform the measurement. |
| 17 | Remove the cuvette from the PrimeLab and set it aside. It is no longer required for this test. |
| 18 | Add 3 drops of PL DPD 1 A into a second empty, clean cuvette. |
| 19 | Add 3 drops of PL DPD 1 B into the cuvette. |
| 20 | Then fill 10ml of the sample water in the cuvette. |
| 21 | Add 10 drops of PL DPD 3 C into the cuvette. |
| 22 | Screw the lid back on the cuvette. |
| 23 | Gently swirl the cuvette to mix the liquid well. |
| 24 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 25 | Tap TEST to start a 02:00 minutes countdown. |
| 26 | Wait until the 02:00 minute countdown ran out. |

| | |
|---|---|
| 27 | Remove the cuvette again. |
| 28 | Unscrew the lid from the cuvette. |
| 29 | Add 3 drops of PL DPD Acidifying into the cuvette. |
| 30 | Screw the lid back on the cuvette. |
| 31 | Gently swirl the cuvette to mix the liquid well. |
| 32 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 33 | Tap TEST to perform the measurement. |
| 34 | Wait until the 02:00 minute countdown ran out. |
| 35 | Remove the cuvette again. |
| 36 | Unscrew the lid from the cuvette. |
| 37 | Add 3 drops of PL DPD Neutralising into the cuvette. |
| 38 | Screw the lid back on the cuvette. |
| 39 | Gently swirl the cuvette to mix the liquid well. |
| 40 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 41 | Tap TEST to perform the measurement. |
| 42 | The determined result is immediately displayed. |

## Notes:

- DPD 1 A and DPD 1 B reagent MUST be added to the vial BEFORE water sample is added to avoid misreadings!
- The range of the side measurements performed during the chlorite tests may be up to 8 mg/l whilst it is rather unlikely that the range of chlorite can be tested up to 8 mg/l.

# (103) Chromium (hexavalent) 0 - 1 mg/l (Cr6+)

**Powder Pack + Liquid**

**Internal Name: 103-Chromium-liq**

PL Chromate 1 (PLpow40Chromate1)
PL Chromate 2 (PL65Chromate2)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Empty the cuvette to a few drops. |
| 8 | Add 1 x 0.05mL (measuring spoon) PL Chromate 1 powder to the sample water in the cuvette. |
| 9 | Add 15 drops of PL Chromate 2 into the cuvette. |
| 10 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 11 | Fill the cuvette to 10ml with the sample water. |
| 12 | Screw the lid back on the cuvette. |
| 13 | Gently swirl the cuvette to mix the liquid well. |
| 14 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 15 | Tap TEST to start a 05:00 minutes countdown. |
| 16 | After the lapse of a 05:00 minute(s) countdown the determined result is displayed. |

## Notes:

- The test result can be converted into the following unit(s): mg/l CrO42-.

# (94) Chromium (hexavalent) Tablet + Powder Pack

0 - 2.2 mg/l (Cr6+)

**Internal Name: 94-chromium-tab**

Chromium N° 1 (TbsHChro150)
Chromium N° 2 (PPHChro250)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Add 1 Chromium N° 1 tablet(s) to the test water in the cuvette. |
| 8 | Crush the tablet with a clean stirring rod. |
| 9 | Add 1 Chromium N° 2 powder pillow(s) to the sample water in the cuvette. |
| 10 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 11 | Screw the lid back on the cuvette. |
| 12 | Gently swirl the cuvette to mix the liquid well. |
| 13 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 14 | Tap TEST to perform the measurement. |
| 15 | After the lapse of a 10:00 minute(s) countdown the determined result is displayed. |

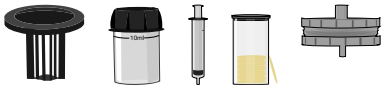
## Notes:

- The test result can be converted into the following unit(s): mg/l CrO42-.

# (107) Colour (true)

## 0 - 500 mg/l (Pt-Co)

Internal Name: 107-Colour



## Measurement procedure:

| | |
|---|---|
| 1 | Separate the two halves of the filter holder. |
| 2 | Insert a 0.45µm filter. Screw the filter holder back together, making sure that the O-ring is correctly seated. |
| 3 | Fill the syringe again with destilled water. |
| 4 | Connect the filter syringe to the filter holder. |
| 5 | Empty the syringe with the filter completely. |
| 6 | Remove the filter syringe from the filter holder. |
| 7 | Repeat step 3 - 6 several times. |
| 8 | Fill syringe again with 20ml distilled water. |
| 9 | Connect the filter syringe to the filter holder. |
| 10 | Empty the syringe with the filter up to the 10ml-mark. |
| 11 | Fill the remaining 10ml filtered sample water into a clean 24mm cuvette. |
| 12 | Screw the lid back on the cuvette. |
| 13 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 14 | Start ZERO measurement. |
| 15 | Remove the cuvette again. |
| 16 | Remove the filter syringe from the filter holder. |
| 17 | Fill the syringe with the sample water. |
| 18 | Connect the filter syringe to the filter holder. |
| 19 | Empty the syringe with the filter completely. |
| 20 | Repeat step 16 - 19 several times. |
| 21 | Fill the syringe with the sample water. |
| 22 | Empty the syringe with the filter up to the 10ml-mark. |
| 23 | Fill the remaining 10ml filtered sample water into a clean 24mm cuvette. |
| 24 | Screw the lid back on the cuvette. |
| 25 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 26 | Tap TEST to perform the measurement. |

27 The determined result for ppm (Pt-Co) is immediately displayed.

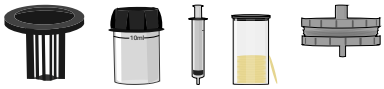
## Notes:

- Special accessories required / not included as standard equipment!
- The sample water needs to have a yelowish to yellowish-brown coloration to be tested with this method which is based on the "Hazan Standard", developed by A. Hazen (EN ISO 7887:1994).
- 1 Pt-Co equals 1 mg/l platinum (as chloroplatinate ion).
- Analyse as soon as possible after taking the sample. Use clean glass or plastic containers for transport and avoid air contact of the sample water. Do not stir sample water. Store sample for max. 24 hours in a dark place at 4 °C.
- Test to be performed with sample water having room temperature.
- The estimated detection limit is 15 units Pt-Co.
- Use the same vial for ZERO and TEST.

# (107) Colour (apparent)

## 0 - 500 mg/l (Pt-Co)

**Internal Name: 107-Colour**



## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml distilled water in a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Empty the cuvette. |
| 8 | Rinse the cuvette with the test water. |
| 9 | Fill the cuvette to the 10ml mark. |
| 10 | Screw the lid back on the cuvette. |
| 11 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 12 | Tap TEST to perform the measurement. |
| 13 | The determined result for ppm (Pt-Co) is immediately displayed. |

## Notes:

- Special accessories required / not included as standard equipment!
- The sample water needs to have a yelowish to yellowish-brown coloration to be tested with this method which is based on the "Hazan Standard", developed by A. Hazen (EN ISO 7887:1994).
- 1 Pt-Co equals 1 mg/l platinum (as chloroplatinate ion).
- Analyse as soon as possible after taking the sample. Use clean glass or plastic containers for transport and avoid air contact of the sample water. Do not stir sample water. Store sample for max. 24 hours in a dark place at 4 °C.
- Test to be performed with sample water having room temperature.
- The estimated detection limit is 15 units Pt-Co.
- Use the same vial for ZERO and TEST.

# (18) Copper(free/ combinde - d/ total) - 0 - 5 mg/l (fCu) Tablet

**Internal Name: 18-Copper-tab**

Copper N°1 Photometer (TbsHCu1)
Copper N°2 Photometer (TbsPCu2)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Add 1 Copper N° 1 Photometer tablet(s) to the test water in the cuvette. |
| 8 | Crush the tablet with a clean stirring rod. |
| 9 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 10 | Screw the lid back on the cuvette. |
| 11 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 12 | Tap TEST to perform the measurement. |
| 13 | The determined result for fCu (free copper) is immediately displayed. |
| 14 | Remove the cuvette again. |
| 15 | Unscrew the lid from the cuvette. |
| 16 | Add 1 Copper N° 2 Photometer tablet(s) to the test water in the cuvette. |
| 17 | Crush the tablet with a clean stirring rod. |
| 18 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 19 | Screw the lid back on the cuvette. |
| 20 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 21 | Tap TEST to perform the measurement. |
| 21 | The determined result for fCu = "free copper“ ; cCu = "combined copper“ ; tCu"= "total copper" is immediately displayed. |

## Notes:

- For the analysis of total copper the following procedure is necessary: i) Add concentrated sulfuric acid to the test sample (1 ml per 100 ml of test sample). By boiling it for 10 minutes, everything is dissolved. Now cool down the test sample. Then add ammonia and bring the sample to a pH value of 3 – 5. The initial volume of 100 ml of fluid has to be filled up with deionized water. The analysis can now be performed as described with 10 ml of the liquid obtained. ii) With organic compounds pretreated water may need to be oxidized (destruction of the copper complexes). Add concentrated sulfuric acid and concentrated nitric acid to the test sample (1 ml per 100ml each). Now cool the test sample. The analysis can now be performed as described.
- For the analysis the water has to have a pH value of 4 - 6. Strongly acidic water having a pH value of < 2 should be neutralized with 8 mol/l potassium hydroxide.
- Not yet completely dissolved powder has no effect on the accuracy of the measurement.
- Disorders: i) Cyanides (CN-): To ensure full color development, the test sample had to be enriched with 0.2 ml of formaldehyde and wait 4 minutes. The analysis can now be performed as described. The test result must be multiplied by 1.02. ii) Silver (Ag+): Silver can cause blackening of the test sample. Add saturated potassium chloride solution (10 drops per 75 ml). Then the test sample had to be poured through a fine filter. The analysis is now carried out as described with 10 ml of the filtered liquid.

# (19) Copper Powder Can

## 0 - 5 mg/l (fCu)

**Internal Name: 19-Copper-pow**

20g PL Copper N°1 (PLpow20Cu1)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Add 2 scoops of 0.05mL PL Copper 1 powder to the sample water in the cuvette |
| 8 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 9 | Screw the lid back on the cuvette. |
| 10 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 11 | Tap TEST to start a 02:00 minutes countdown. |
| 12 | After the lapse of a 02:00 minute(s) countdown the determined result is displayed. |

## Notes:

- For the analysis of total copper the following procedure is necessary: i) Add concentrated sulfuric acid to the test sample (1 ml per 100 ml of test sample). By boiling it for 10 minutes, everything is dissolved. Now cool down the test sample. Then add ammonia and bring the sample to a pH value of 3 – 5. The initial volume of 100 ml of fluid has to be filled up with deionized water. The analysis can now be performed as described with 10 ml of the liquid obtained. ii) With organic compounds pretreated water may need to be oxidized (destruction of the copper complexes). Add concentrated sulfuric acid and concentrated nitric acid to the test sample (1 ml per 100ml each). Now cool the test sample. The analysis can now be performed as described.
- For the analysis the water has to have a pH value of 4 - 6. Strongly acidic water having a pH value of < 2 should be neutralized with 8 mol/l potassium hydroxide.
- Not yet completely dissolved powder has no effect on the accuracy of the measurement.

- Disorders: i) Cyanides (CN-): To ensure full color development, the test sample had to be enriched with 0.2 ml of formaldehyde and wait 4 minutes. The analysis can now be performed as described. The test result must be multiplied by 1.02. ii) Silver (Ag+): Silver can cause blackening of the test sample. Add saturated potassium chloride solution (10 drops per 75 ml). Then the test sample had to be poured through a fine filter. The analysis is now carried out as described with 10 ml of the filtered liquid.

# (158) Cyanide Reagent-Kit

## 0.01 - 0.5 mg/l (CN)

**Internal Name: 158-Cyanide-pow**

PrimeLab Cyanide Kit (PL158-Kit)

## Measurement procedure:

| | |
|---|---|
| **1** | Fill 8ml of destilled water into a clean 24mm cuvette. |
| **2** | Add exactly 2ml sample water to the same cuvette. |
| **3** | Screw the lid back on the cuvette. |
| **4** | Swirl the cuvette back and forth for 5 times. |
| **5** | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| **6** | Start ZERO measurement. |
| **7** | Remove the cuvette again. |
| **8** | Unscrew the lid from the cuvette. |
| **9** | Add 2 spoons of PL Cyanide-11 (powder) to the sample water in the cuvette. |
| **10** | Screw the lid back on the cuvette. |
| **11** | Swirl the cuvette back and forth for 5 times. |
| **12** | Add 2 spoons of PL Cyanide-12 (powder) to the sample water in the cuvette. |
| **13** | Screw the lid back on the cuvette. |
| **14** | Swirl the cuvette back and forth for 5 times. |
| **15** | Add 3 drops of PL Cyanide-13 into the cuvette. |
| **16** | Screw the lid back on the cuvette. |
| **17** | Gently swirl the cuvette to mix the liquid well. |
| **18** | Tap TEST to perform the measurement. |
| **19** | The determined result is immediately displayed. |

## Notes:

- Reagents to be stored at temperatures of 15 °C to 25 °C
- This method only detects free cyanide and cyanides which can be destroyed by chlorine.
- Cyanide must be separated (distillation) before performing the test in case thiocyanate, colorants, heavy metal complexes or aromatic amines are present.

# (20) Cyanuric Acid Tablet

## 0 - 160 mg/l (CYA)

**Internal Name: 20-Cyanur-Acid-tab**

CYA-Test Photometer (TbsPCYA)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Add 1 CYA-Test Photometer tablet(s) to the test water in the cuvette. |
| 8 | Crush the tablet with a clean stirring rod. |
| 9 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 10 | Screw the lid back on the cuvette. |
| 11 | Swirl the cuvette for 01:00 minute(s). |
| 12 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 13 | Tap TEST to perform the measurement. |
| 14 | The determined result is immediately displayed. |

## Notes:

- If a result > 100 mg/l is expected, a more precise measurement can be achieved by following dilution: 1 ml of test water + 9 ml distilled water. The result must be multiplied by 10.

# (65) DBNPA Liquid

## 0 - 13 mg/l (DBNPA)

**Internal Name: 65-DBNPA-liq**

30ml PL DPD 1 A (PL30DPD1A)
30ml PL DPD 1 B (PL30DPD1B)
30ml PL DPD 3 C (PL30DPD3C)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Empty the cuvette to a few drops. |
| 8 | Add 3 drops of PL DPD 1 A into the cuvette. |
| 9 | Add 3 drops of PL DPD 1 B into the cuvette. |
| 10 | Fill the cuvette to 10ml with the sample water. |
| 11 | Add 3 drops of PL DPD 3 C into the cuvette. |
| 12 | Screw the lid back on the cuvette. |
| 13 | Gently swirl the cuvette to mix the liquid well. |
| 14 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 15 | Tap TEST to perform the measurement. |
| 16 | After the lapse of a 02:00 minute(s) countdown the determined result is displayed. |

## Notes:

- DPD 1 A and DPD 1 B reagent MUST be added to the vial BEFORE water sample is added to avoid misreadings!

# (82) DBNPA Tablet

## 0 - 13 mg/l (DBNPA)

**Internal Name: 82-DBNPA-tab**

DPD N°1 Photometer (TbsPD1)
DPD N°3 Photometer (TbsPD3)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Empty the cuvette to a few drops. |
| 8 | Add 1 DPD N° 1 Photometer tablet(s) to the test water in the cuvette. |
| 9 | Crush the tablet with a clean stirring rod. |
| 10 | Fill the cuvette to 10ml with the sample water. |
| 11 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 12 | Add 1 DPD N° 3 Photometer tablet(s) to the test water in the cuvette. |
| 13 | Crush the tablet with a clean stirring rod. |
| 14 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 15 | Screw the lid back on the cuvette. |
| 16 | Gently swirl the cuvette to mix the liquid well. |
| 17 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 18 | Tap TEST to perform the measurement. |
| 19 | After the lapse of a 02:00 minute(s) countdown the determined result is displayed. |

# (163) Dissolved Oxygen Liquid

## 0 - 10 mg/l (O2)

**Internal Name: 163-Dis.Oxygen**

30ml PL Dissolved Oxygen N°1 (PL30DO1)
30ml PL Dissolved Oxygen N°2 (PL30DO2)
30ml PL Dissolved Oxygen N°3 (PL30DO3)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Empty the cuvette. |
| 8 | Clean the cuvette. |
| 9 | Clean the lid as well. |
| 10 | Fill a 50ml glass bottle brimful with the water to be measured. |
| 11 | Place the stopper on the glass bottle. Caution, excess water runs out. |
| 12 | Remove the stopper again. |
| 13 | Add 10 drops of PL DissOx 1 to the glass bottle. |
| 14 | Put the stopper back on. |
| 15 | Swivel/shake glass bottle for 01:00 minutes |
| 16 | Tap TEST to start a 01:00 minutes countdown. |
| 17 | Remove the stopper again. |
| 18 | Add 10 drops of PL DissOx 2 to the glass bottle. |
| 19 | Put the stopper back on. |
| 20 | Swivel/shake glass bottle for 01:00 minutes |
| 21 | Tap TEST to start a 01:00 minutes countdown. |
| 22 | Remove the stopper again. |
| 23 | Add 10 drops of PL DissOx 3 to the glass bottle. |
| 24 | Put the stopper back on. |
| 25 | Swivel/shake glass bottle for 01:00 minutes |
| 26 | Tap TEST to start a 01:00 minutes countdown. |
| 27 | Add 10ml of solution into the previously used ZERO cuvette. |

28 Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette.

29 Tap TEST to perform the measurement.

30 The determined result is immediately displayed.

## Notes:

- Make sure the 50 ml glass bottle is really filled up to the top and the water will run out when applying the stopper.

# (113) Fluorescein

**0 - 500 ppb**

(C20H10Na2O5)

Internal Name: 113-Fluorescein-Ad

## Measurement procedure:

1. Fill 10ml test water into a clean 24mm cuvette.
2. Screw the lid back on the cuvette.
3. Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette.
4. Tap TEST to perform the measurement.
5. The determined result is immediately displayed.

## Notes:

- The test result can be converted into the following unit(s): mg/l C20H12O5.
- Ensure that all parts are clean, dry and free of grease and the adapter must be placed firmly until it stops.
- Because the bottom of the cells can vary greatly it is imperative to always use the cell with which this parameter was also calibrated. It is essential to always ensure the correct amount of water in the cell, which is why exactly 10 ml of liquid should be taken by the pipette for the subsequent sample measurement. Please change or clean the tip of the pipette after each measurement/ calibration.
- Calibrate this parameter via the calibration SET if you use another cell or you have the feel that the measurement result is inaccurate.
- One of the following reasons can lead into receiving an error message: i) Cuvette-hole (PrimeLab) might be dirty (check the two windows), ii) Water sample might be too dark / not enough light can pass water sample to reach the sensor.

# (72) Fluoride (with chlorine) Liquid

**0 - 2 mg/l (F)**

**Internal Name: 72-Fluoride-liq**

65ml PL Fluoride N°1 (PL65Fluoride1)
65ml PL Fluoride N°2 (PL65Fluoride2)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Add 15 drops of PL Fluoride 2 into the cuvette. |
| 8 | Screw the lid back on the cuvette. |
| 9 | Gently swirl the cuvette to mix the liquid well. |
| 10 | Unscrew the lid from the cuvette. |
| 11 | Add 18 drops of PL Fluoride 1 into the cuvette. |
| 12 | Screw the lid back on the cuvette. |
| 13 | Gently swirl the cuvette to mix the liquid well. |
| 14 | Wait for 00:30 minutes. |
| 15 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 16 | Tap TEST to perform the measurement. |

## Notes:

- Waste and sea water must be distilled before testing.
- Chlorine contents exceeding 5 mg/l can falsify the result.
- In order to achieve precise test results water samples with a high fluoride content should be diluted before testing. The most precise values are achieved in the range of 1.2 mg/l. When diluting the water sample, the result must be multiplied by the dilution factor.

# (72) Fluoride (without chlorine) Liquid

**0 - 2 mg/l (F)**

**Internal Name: 72-Fluoride-liq**

65ml PL Fluoride N°1 (PL65Fluoride1)
65ml PL Fluoride N°2 (PL65Fluoride2)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Add 18 drops of PL Fluoride 1 into the cuvette. |
| 8 | Wait for 00:30 minutes. |
| 9 | Screw the lid back on the cuvette. |
| 10 | Gently swirl the cuvette to mix the liquid well. |
| 11 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 12 | Tap TEST to perform the measurement. |

## Notes:

- Waste and sea water must be distilled before testing.
- In order to achieve precise test results water samples with a high fluoride content should be diluted before testing. The most precise values are achieved in the range of 1.2 mg/l. When diluting the water sample, the result must be multiplied by the dilution factor.

(09)

# Hardness-C - alcium - (HR)

50 - 1000 mg/l (CaCO3)

Tablet

Internal Name: 09-Hard-Cal-HR_tab

Calcium Hardness Photometer (TbsPCH)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml distilled water into the cuvette. |
| 2 | Add 1 Calcium Hardness Photometer tablet(s) to the test water in the cuvette. |
| 3 | Crush the tablet with a clean stirring rod. |
| 4 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 5 | Screw the lid back on the cuvette. |
| 6 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 7 | Wait for 02:00 minutes. |
| 8 | Start ZERO measurement. |
| 9 | Remove the cuvette again. |
| 10 | Unscrew the lid from the cuvette. |
| 11 | Add exactly 2ml sample water to the same cuvette. |
| 12 | Screw the lid back on the cuvette. |
| 13 | Swirl the cuvette back and forth for 5 times. |
| 14 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 15 | Tap TEST to perform the measurement. |
| 16 | The determined result is immediately displayed. |

## Notes:

- The test result can be converted into the following unit(s): °dH, °eH, °fH.
- If your reading is towards the upper limit of the test a dilution is recommended.
- Steps 2 and 4 need to be performed quickly. Delays will deteriorate the measurement precision.
- There are slight deviations in every tablet which may lead to different ZERO values. For this reason, the function One-Time-Zero is not included.

- If your water sample is very alkaline or acidic it should be brought into a pH range between 4 and 10 by adding 1 mol/l acetic acid or respectively 1 mol/l caustic soda.

# (148) Hardness-total (HR) Tablet

## 0 - 500 mg/l (CaCO3)

**Internal Name: 148-Total-Hardness-liq**

Total Hardness (POL20TH1)
Total Hardness (POL10TH2)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Add 10 drops of Total Hardness N°1 into the cuvette. |
| 8 | Screw the lid back on the cuvette. |
| 9 | Gently swirl the cuvette to mix the liquid well. |
| 10 | Add 4 drops of Total Hardness N°2 into the cuvette. |
| 11 | Screw the lid back on the cuvette. |
| 12 | Gently swirl the cuvette to mix the liquid well. |
| 13 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 14 | Tap TEST to start a 02:00 minutes countdown. |
| 15 | After the lapse of a 02:00 minute(s) countdown the determined result is displayed. |

## Notes:

- The test result can be converted into the following unit(s): °dH, °eH, °fH, mg/l Ca.
- Sulfide (high levels), sulfite, thiosulfate and hydrogen sulfites interfere with the measurement.

# (56) Hardness-total (LR) Tablet

2 - 50 mg/l (CaCO3)

**Internal Name: 56-Hard-tot-LR-tab**

Total Hardness Photometer (TbsPTH)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Add 1 Total Hardness Photometer tablet(s) to the test water in the cuvette. |
| 8 | Crush the tablet with a clean stirring rod. |
| 9 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 10 | Screw the lid back on the cuvette. |
| 11 | Gently swirl the cuvette to mix the liquid well. |
| 12 | Tap TEST to perform the measurement. |
| 13 | After the lapse of a 05:00 minute(s) countdown the determined result is displayed. |

## Notes:

- The test result can be converted into the following unit(s): °dH, °eH, °fH, mg/l Ca.
- If your sample water is very alkaline or acidic it should be brought within the pH range between 4 and 10 by adding 1 mol/l acetic acid or resp. 1 mol/l caustic soda.

# (57) Hardness-total (HR) Tablet

## 20 - 500 mg/l (CaCO3)

**Internal Name: 57-Hard-tot-HR-tab**

Total Hardness Photometer (TbsPTH)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 9ml distilled water in a clean 24mm cuvette. |
| 2 | Fill 1ml sample water in the same cuvette. |
| 3 | Screw the lid back on the cuvette. |
| 4 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 5 | Start ZERO measurement. |
| 6 | Remove the cuvette again. |
| 7 | Unscrew the lid from the cuvette. |
| 8 | Add 1 Total Hardness Photometer tablet(s) to the test water in the cuvette. |
| 9 | Crush the tablet with a clean stirring rod. |
| 10 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 11 | Screw the lid back on the cuvette. |
| 12 | Gently swirl the cuvette to mix the liquid well. |
| 13 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 14 | Tap TEST to perform the measurement. |
| 15 | After the lapse of a 5:00 minute(s) countdown the determined result is displayed. |

## Notes:

- The test result can be converted into the following unit(s): °dH, °eH, °fH, mg/l Ca.
- If your sample water is very alkaline or acidic it should be brought within the pH range between 4 and 10 by adding 1 mol/l acetic acid or resp. 1 mol/l caustic soda.

# (78) Hardness-C - alcium - Tablet

## 0 - 500 mg/l (CaCO3)

**Internal Name: 78-Hard-Cal-tab**

Calcium Hardness N°2 Photometer (TbsPCH2)
Calcium Hardness N°1 Photometer (TbsHCH1)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Add 1 Calcium Hardness N° 1 Photometer tablet(s) to the test water in the cuvette. |
| 8 | Crush the tablet with a clean stirring rod. |
| 9 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 10 | Add 1 Calcium Hardness N° 2 Photometer tablet(s) to the test water in the cuvette. |
| 11 | Crush the tablet with a clean stirring rod. |
| 12 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 13 | Screw the lid back on the cuvette. |
| 14 | Gently swirl the cuvette to mix the liquid well. |
| 15 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 16 | Tap TEST to perform the measurement. |
| 17 | After the lapse of a 02:00 minute(s) countdown the determined result is displayed. |

## Notes:

- The test result can be converted into the following unit(s): °dH, °eH, °fH.
- If your reading is towards the upper limit of the test a dilution is recommended.
- If your sample water is very alkaline or acidic it should be brought within the pH range between 4 and 10 by adding 1 mol/l acetic acid or resp. 1 mol/l caustic soda.
- Ensure that you are using exactly 10 ml sample water volume.

- Disturbance values in this measurement value: Magnesium (> 200 mg/l CaCO3), zinc (> 5 mg/l), iron (> 10 mg/l).

# (23) Hydrazine Liquid

## 5 - 600 ppb (N2H4)

**Internal Name: 23-Hydrazine-liq**

65ml PL Hydrazine N°1 (PL65Hydraz1)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Add 10 drops of PL Hydrazine 1 into the cuvette. |
| 8 | Screw the lid back on the cuvette. |
| 9 | Gently swirl the cuvette to mix the liquid well. |
| 10 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 11 | Tap TEST to start a 05:00 minutes countdown. |
| 12 | After the lapse of a 05:00 minute(s) countdown the determined result is displayed. |

## Notes:

- mg/l (ppm) deviated by 1000 results in µg/l (ppb). Example: 0.01 mg/l (ppm) = 10 µg/l (ppb).
- The temperature of the water sample should be between 17 °C and 25 °C.
- Interferences: - Hazy test sample - The presence of excessive detergents

# (160) Hydrocarbons

## 0 - 1 NTU (Turb)

Internal Name: 160-Hydrocarbons

## Measurement procedure:

1. Fill 7.5ml distilled water in a clean 24mm cuvette.
2. Fill 2.5ml sample water in the same cuvette.
3. Screw the lid back on the cuvette.
4. Gently swirl the cuvette to mix the liquid well.
5. Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette.
6. Tap TEST to perform the measurement.

## Notes:

- Interferences: - Hazy test sample - The presence of excessive detergents
- The result is interpreted as follows: 0 = PASSED, or = FAILED

# (109) DEWAN-50 (Range 0 - 150 mg/l DW-50) Liquid

## 150 - 300 mg/l (DW50)

**Internal Name: 109-DEWAN50-liq**

PL-DX DEWAN-50 (KTES0302400007)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Add 20 drops of PL DX-DEWAN-50 into the cuvette. |
| 8 | Screw the lid back on the cuvette. |
| 9 | Gently swirl the cuvette to mix the liquid well. |
| 10 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 11 | Tap TEST to perform the measurement. |
| 12 | After the lapse of a 01:00 minute(s) countdown the determined result is displayed. |

## Notes:

- The test result can be converted into the following unit(s): mg/l H2O2.
- More notes please see at "Hydrogen Peroxide" test (ID66).

# (109) DEWAN-50 (Range 150 - 300 mg/l DW-50) Liquid

## 150 - 300 mg/l (DW50)

**Internal Name: 109-DEWAN50-liq**

PL-DX DEWAN-50 (KTES0302400007)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Add 40 drops of PL DX-DEWAN-50 into the cuvette. |
| 8 | Screw the lid back on the cuvette. |
| 9 | Gently swirl the cuvette to mix the liquid well. |
| 10 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 11 | Tap TEST to start a 01:00 minutes countdown. |
| 12 | After the lapse of a 01:00 minute(s) countdown the determined result is displayed. |

## Notes:

- The test result can be converted into the following unit(s): mg/l H2O2.
- More notes please see at "Hydrogen Peroxide" test (ID66).

# (162) Hydrogen Peroxide (HR) Tablet

## 0 - 200 mg/l (H2O2)

**Internal Name: 162-HydrPer-HR-tab**

Acidifying PT Photometer (TbsHAPP)
Hydrogen Peroxide HR Photometer (TbsPHPHR)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Add 1 Acidifying PT Photometer tablet(s) to the test water in the cuvette. |
| 8 | Crush the tablet with a clean stirring rod. |
| 9 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 10 | Add 1 Hydr. Perox. HR Photometer tablet(s) to the test water in the cuvette. |
| 11 | Crush the tablet with a clean stirring rod. |
| 12 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 13 | Screw the lid back on the cuvette. |
| 14 | Gently swirl the cuvette to mix the liquid well. |
| 15 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 16 | Tap TEST to perform the measurement. |
| 17 | The determined result is immediately displayed. |

## Notes:

- If the measuring water contains further oxidizing chemicals (e.g. active oxygen, chlorine, bromine etc.) this will also be detected and is part of the result.
- When preparing the measurement procedure it is important to avoid any hydrogen peroxide escaping, which can happen during pipetting and shaking the sample. The measurement should be performed directly after sampling.

- It is important that the measurement devices to be used have not been cleaned with household detergent, as this could greatly reduce the measurement. To prevent any contamination, the cuvette, the cuvette lid and the stirrer should be stored in a 0.1 % sodium hypochlorite solution for one hour and then rinse thoroughly with distilled water.
- If your sample water is very alkaline or acidic this must be adjusted to a pH range between 6 and 7 by the addition of 0.5 mol/l sulphuric acid or resp. 1 mol/l caustic soda before the reagent is added.

# (24) Hydrogen Peroxide (LR) Tablet

**0 - 3.8** mg/l ($H_2O_2$)

**Internal Name: 24-Hydr-Per-LR-tab**

Hydrogen Peroxide LR Photometer (TbsPHP)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Empty the cuvette to a few drops. |
| 8 | Add 1 Hyd. Peroxide LR Photometer tablet(s) to the test water in the cuvette. |
| 9 | Crush the tablet with a clean stirring rod. |
| 10 | Fill the cuvette to 10ml with the sample water. |
| 11 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 12 | Screw the lid back on the cuvette. |
| 13 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 14 | Tap TEST to start a 02:00 minutes countdown. |
| 15 | After the lapse of a 02:00 minute(s) countdown the determined result is displayed. |

## Notes:

- If the measuring water contains further oxidizing chemicals (e.g. active oxygen, chlorine, bromine etc.) this will also be detected and is part of the result.
- When preparing the measurement procedure it is important to avoid any hydrogen peroxide escaping, which can happen during pipetting and shaking the sample. The measurement should be performed directly after sampling.
- It is important that the measurement devices to be used have not been cleaned with household detergent, as this could greatly reduce the measurement. To prevent any contamination, the cuvette, the cuvette lid and the stirrer should be stored in a 0.1 % sodium hypochlorite solution for one hour and then rinse thoroughly with distilled water.

- The reagent used in this procedure buffers the pH value of the sample water in the range between 6.2 and 6.5 pH. If your sample water is very alkaline or acidic this must be adjusted to a pH range between 6 and 7 by the addition of 0.5 mol/l sulphuric acid or resp. 1 mol/l caustic soda before the reagent is added.
- Water values outside the above measurement range defined for this parameter and this measurement procedure / this reagent can lead to incorrect measurements. For the measurement of higher hydrogen peroxide values, please select the respective matching procedure.

# (25) Hydrogen Peroxide (HR) Liquid

## 0 - 200 mg/l (H2O2)

**Internal Name: 25-Hydr-Per-HR-liq**

65ml PL Hydrogen Peroxide HR N°1 (PL65HydHRP1)
65ml PL Hydrogen Peroxide HR N°2 (PL65HydHRP2)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Add 3 drops of PL Hydrogen Peroxide HR 1 into the cuvette. |
| 8 | Gently swirl the cuvette to mix the liquid well. |
| 9 | Add 3 drops of PL Hydrogen Peroxide HR 2 into the cuvette. |
| 10 | Screw the lid back on the cuvette. |
| 11 | Gently swirl the cuvette to mix the liquid well. |
| 12 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 13 | Tap TEST to perform the measurement. |
| 14 | The determined result is immediately displayed. |

# (66) Hydrogen Peroxide (LR) Liquid

**0 - 3.8** mg/l ($H_2O_2$)

**Internal Name: 66-Hydr-Per-LR-liq**

30ml Hydrogen Peroxide LR N°1 (PL30HydLRP1)
30ml PL Hydrogen Peroxide LR N°2 (PL30HydLRP2)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Empty the cuvette to a few drops. |
| 8 | Add 3 drops of PL Hydrogen Peroxide LR 1 into the cuvette. |
| 9 | Add 3 drops of PL Hydrogen Peroxide LR 2 into the cuvette. |
| 10 | Fill the cuvette to 10ml with the sample water. |
| 11 | Screw the lid back on the cuvette. |
| 12 | Gently swirl the cuvette to mix the liquid well. |
| 13 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 14 | Tap TEST to perform the measurement. |
| 15 | After the lapse of a 02:00 minute(s) countdown the determined result is displayed. |

## Notes:

- DPD 1 A and DPD 1 B reagent MUST be added to the vial BEFORE water sample is added to avoid misreadings!
- If the measuring water contains further oxidizing chemicals (e.g. active oxygen, chlorine, bromine etc.) this will also be detected and is part of the result.
- When preparing the measurement procedure it is important to avoid any hydrogen peroxide escaping, which can happen during pipetting and shaking the sample. The measurement should be performed directly after sampling.

- It is important that the measurement devices to be used have not been cleaned with household detergent, as this could greatly reduce the measurement. To prevent any contamination, the cuvette, the cuvette lid and the stirrer should be stored in a 0.1 % sodium hypochlorite solution for one hour and then rinse thoroughly with distilled water.
- The reagent used in this procedure buffers the pH value of the sample water in the range between 6.2 and 6.5 pH. If your sample water is very alkaline or acidic this must be adjusted to a pH range between 6 and 7 by the addition of 0.5 mol/l sulphuric acid or resp. 1 mol/l caustic soda before the reagent is added.
- Water values outside the above measurement range defined for this parameter and this measurement procedure / this reagent can lead to incorrect measurements. For the measurement of higher hydrogen peroxide values, please select the respective matching procedure.

# (27) Iodine Tablet

## 0 - 28 mg/l (I2)

**Internal Name: 27-Iodine-tab**

DPD N°1 Photometer (TbsPD1)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Empty the cuvette to a few drops. |
| 8 | Add 1 DPD N° 1 Photometer tablet(s) to the test water in the cuvette. |
| 9 | Crush the tablet with a clean stirring rod. |
| 10 | Fill the cuvette to 10ml with the sample water. |
| 11 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 12 | Screw the lid back on the cuvette. |
| 13 | Gently swirl the cuvette to mix the liquid well. |
| 14 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 15 | Tap TEST to start a 00:10 minutes countdown. |
| 16 | After the lapse of a 00:10 minute(s) countdown the determined result is displayed. |

## Notes:

- All oxidizing substances in the water sample, such as chlorine, active oxygen, bromine.. will also be detected and contained in the result.

# (67) Iodine Liquid

## 0 - 28 mg/l (I2)

**Internal Name: 67-Iodine-liq**

30ml PL DPD 1 A (PL30DPD1A)
30ml PL DPD 1 B (PL30DPD1B)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Empty the cuvette to a few drops. |
| 8 | Add 3 drops of PL DPD 1 A into the cuvette. |
| 9 | Add 3 drops of PL DPD 1 B into the cuvette. |
| 10 | Fill the cuvette to 10ml with the sample water. |
| 11 | Screw the lid back on the cuvette. |
| 12 | Gently swirl the cuvette to mix the liquid well. |
| 13 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 14 | Tap TEST to perform the measurement. |
| 15 | The determined result is immediately displayed. |

## Notes:

- DPD 1 A and DPD 1 B reagent MUST be added to the vial BEFORE water sample is added to avoid misreadings!
- All oxidizing substances in the water sample, such as chlorine, active oxygen, bromine.. will also be detected and contained in the result.

# (127) Iron (MR) Ferrous Powder Can

## 0 - 10 mg/l (Fe2+)

**Internal Name: 127-Iron-MR-Fe-pow**

20g PL Iron MR N°2 (PLpow20IronMR2)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Add 1 x 0.05mL (measuring spoon) PL Iron MR 2 powder to the sample water in the cuvette. |
| 8 | Screw the lid back on the cuvette. |
| 9 | Gently swirl the cuvette to mix the liquid well. |
| 10 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 11 | Tap TEST to start a 03:00 minutes countdown. |
| 12 | After the lapse of a 03:00 minute(s) countdown the determined result is displayed. |

## Notes:

- Test needs to be carried out immediately after taking the sample.

# (132) Iron total (LR) Powder

## 0 - 3 mg/l (Fe)

**Internal Name: 132-Iron-tot-LR-pp**

FerroVer Iron (PP) (ppFerVer1)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Add 1 FerroVer Iron powder pillow(s) to the sample water in the cuvette. |
| 8 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 9 | Screw the lid back on the cuvette. |
| 10 | Gently swirl the cuvette to mix the liquid well. |
| 11 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 12 | Tap TEST to start a 03:00 minutes countdown. |
| 13 | After the lapse of a 03:00 minute(s) countdown the determined result is displayed. |

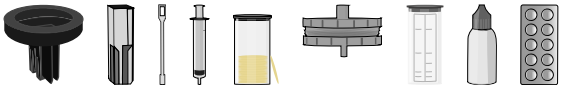
## Notes:

- If your sample contains rust, extend countdown to 05:00 minutes manually by waiting 02:00 minutes before pressing TEST.
- Dilute samples with high iron concentration as high iron samples inhibit colour development.
- Iron oxide requires pre-treatment of the sample (digestion and pH adjustment to pH 3 - 5).

# (149) Iron in Oil Liquid

## 10 - 450 mg/l (Fe2+)

**Internal Name: 149-Iron-Oil-liq**



TM-reagent-S (TM149reagS)
TM-reagent-E (TM149reagE)
TM-reagent-I (TM149reagI)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 2 ml of reagent S into the cuvette. |
| 2 | Place the Eppendorf adapter in the PrimeLab. |
| 3 | Insert the cuvette into the PrimeLab. |
| 4 | Put on the lightshield. |
| 5 | Start ZERO measurement. |
| 6 | Remove the lightshield. |
| 7 | Treat the sample according to the TriboIron Pill procedure. |
| 8 | Shake the measuring cup for 02:00 minutes. |
| 9 | Tap TEST to start a 02:00 minutes countdown. |
| 10 | Put shakertube aside for 08:00 minutes. |
| 11 | Tap TEST to start a 08:00 minutes countdown. |
| 12 | Fill 2ml of the purple solution into a clean 3mm cuvette, using a pipette. |
| 13 | Insert the cuvette into the PrimeLab. |
| 14 | Put on the lightshield. |
| 15 | Tap TEST to perform the measurement. |
| 16 | The determined result is immediately displayed. |

## Notes:

- Be cautious to use exact amounts of sample as well as of reagents as indicated in the test procedure.
- Always use new and clean vials and filter equipment. Do NOT re-use.
- Keep Eppendorf cuvettes free of fingerprints and dirt to avoid misreadings.

# (28) Iron (LR) Tablet

## 0 - 1 mg/l (O2)

**Internal Name: 28-Iron-LR-tab**

Iron LR Photometer (TbsPILR)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Add 1 Iron LR Photometer tablet(s) to the test water in the cuvette. |
| 8 | Crush the tablet with a clean stirring rod. |
| 9 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 10 | Screw the lid back on the cuvette. |
| 11 | Gently swirl the cuvette to mix the liquid well. |
| 12 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 13 | Tap TEST to start a 05:00 minutes countdown. |
| 14 | After the lapse of a 05:00 minute(s) countdown the determined result is displayed. |

## Notes:

- If the sample needs to be filtered (undissolved iron) it must be ensured that after filtration there are no more undissolved iron parts in the sample. If you are unsure, please repeat the filtration.
- If non-soluble iron is expected to be in the water sample, please filter (0.45 µm; special filter accessory needed) before running the test.

# (29) Iron (MR) (dissolved) Powder Can

**0 - 10** mg/l (O2)

**Internal Name: 29-Iron-MR-pow**


## Measurement procedure:

| | |
|---|---|
| 1 | Separate the two halves of the filter holder. |
| 2 | Insert a 25mm (0.45 micron) filter. Screw the filter holder back together, making sure that the O-ring is correctly seated. |
| 3 | Fill a 20ml syringe with 14ml sample water. |
| 4 | Connect the filter syringe to the filter holder. |
| 5 | Empty the syringe with the filter up to the 10ml-mark. |
| 6 | Press 10ml of the remaining sample water in the filter syringe through the filter adapter into a clean 24mm cuvette. |
| 7 | Screw the lid back on the cuvette. |
| 8 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 9 | Start ZERO measurement. |
| 10 | Remove the cuvette again. |
| 11 | Unscrew the lid from the cuvette. |
| 12 | Add 1 x 0.05mL (measuring spoon) PL Iron MR 1 powder to the sample water in the cuvette. |
| 13 | Screw the lid back on the cuvette. |
| 14 | Gently swirl the cuvette to mix the liquid well. |
| 15 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 16 | Tap TEST to start a 03:00 minutes countdown. |
| 17 | After the lapse of a 03:00 minute(s) countdown the determined result is displayed. |

## Notes:

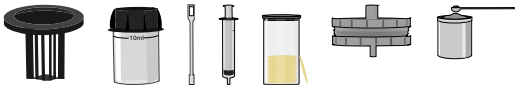
- Special accessories required / not included as standard equipment!
- If the sample needs to be filtered (undissolved iron) it must be ensured that after filtration there are no more undissolved iron parts in the sample. If you are unsure, please repeat the filtration.
- Very alkaline and acidic water samples must be adjusted to a pH value between 3 and 5 before commencing the measurement.

- The measurement is not influenced by undissolved powder.
- If your sample contains visible rust, extend countdown to 05:00 minutes manually by waiting 02:00 minutes before pressing TEST.

# (29) Iron (MR) (total) Powder Can

## 0 - 10 mg/l (O2)

**Internal Name: 29-Iron-MR-pow**



20g PL Iron MR N°1 (Plpow20IronMR1)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml unfiltered sample water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Add 1 x 0.05mL (measuring spoon) PL Iron MR 1 powder to the sample water in the cuvette. |
| 8 | Screw the lid back on the cuvette. |
| 9 | Gently swirl the cuvette to mix the liquid well. |
| 10 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 11 | Tap TEST to start a 03:00 minutes countdown. |
| 12 | After the lapse of a 03:00 minute(s) countdown the determined result is displayed. |

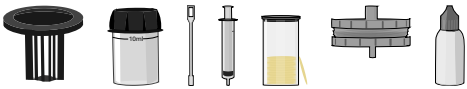
## Notes:

- Special accessories required / not included as standard equipment!
- If the sample needs to be filtered (undissolved iron) it must be ensured that after filtration there are no more undissolved iron parts in the sample. If you are unsure, please repeat the filtration.
- Very alkaline and acidic water samples must be adjusted to a pH value between 3 and 5 before commencing the measurement.
- The measurement is not influenced by undissolved powder.
- If your sample contains visible rust, extend countdown to 05:00 minutes manually by waiting 02:00 minutes before pressing TEST.

# (30) Iron (HR) (dissolved) Liquid

**0 - 30** mg/l (Fe2+/3+)

**Internal Name: 30-Iron-HR-liq**



65ml PL Iron HR N°1 (PL65IronHR1)
PL Iron HR 2 (PL65IronHR2)

## Measurement procedure:

| | |
|---|---|
| 1 | Separate the two halves of the filter holder. |
| 2 | Insert a 25mm (0.45 micron) filter. Screw the filter holder back together, making sure that the O-ring is correctly seated. |
| 3 | Fill a 20ml syringe with 14ml sample water. |
| 4 | Connect the filter syringe to the filter holder. |
| 5 | Empty the syringe with the filter up to the 10ml-mark. |
| 6 | Press 10ml of the remaining sample water in the filter syringe through the filter adapter into a clean 24mm cuvette. |
| 7 | Screw the lid back on the cuvette. |
| 8 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 9 | Start ZERO measurement. |
| 10 | Remove the cuvette again. |
| 11 | Unscrew the lid from the cuvette. |
| 12 | Add 10 drops of PL Iron HR 1 into the cuvette. |
| 13 | Screw the lid back on the cuvette. |
| 14 | Gently swirl the cuvette to mix the liquid well. |
| 15 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 16 | Tap TEST to perform the measurement. |
| 17 | After the lapse of a 05:00 minute(s) countdown the determined result is displayed. |

## Notes:

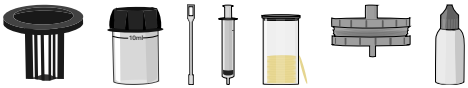
- Special accessories required / not included as standard equipment!
- If the sample needs to be filtered (undissolved iron) it must be ensured that after filtration there are no more undissolved iron parts in the sample. If you are unsure, please repeat the filtration.

- High nitrite values in the sample water can influence the measurement. If the sample water turns to red or pink after adding "PL Iron HR 1" drops, a new sample needs to be taken with 0.1 g "TN1" powder added to it. After adding the powder wait for 2 minutes and then start the measurement procedure as described on the front page.

# (30) Iron (HR) (total) Liquid

## 0 - 30 mg/l (Fe2+/3+)

**Internal Name: 30-Iron-HR-liq**



65ml PL Iron HR N°1 (PL65IronHR1)
PL Iron HR 2 (PL65IronHR2)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml unfiltered sample water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Add 2 drops of PL Iron HR 2 into the cuvette. |
| 8 | Screw the lid back on the cuvette. |
| 9 | Gently swirl the cuvette to mix the liquid well. |
| 10 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 11 | Tap TEST to perform the measurement. |
| 12 | Wait until the 02:00 minute countdown ran out. |
| 13 | Remove the cuvette again. |
| 14 | Unscrew the lid from the cuvette. |
| 15 | Add 15 drops of PL Iron HR 1 into the cuvette. |
| 16 | Screw the lid back on the cuvette. |
| 17 | Gently swirl the cuvette to mix the liquid well. |
| 18 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 19 | Tap TEST to start a 05:00 minutes countdown. |
| 20 | After the lapse of a 05:00 minute(s) countdown the determined result is displayed. |

## Notes:

- Special accessories required / not included as standard equipment!
- If the sample needs to be filtered (undissolved iron) it must be ensured that after filtration there are no more undissolved iron parts in the sample. If you are unsure, please repeat the filtration.

- High nitrite values in the sample water can influence the measurement. If the sample water turns to red or pink after adding "PL Iron HR 1" drops, a new sample needs to be taken with 0.1 g "TN1" powder added to it. After adding the powder wait for 2 minutes and then start the measurement procedure as described on the front page.

# (88) Isothiazolinone Liquid

## 0 - 10 mg/l (C3H3NOS)

**Internal Name: 88-Isothiazol-liq**

30ml PL Isothiazolinone N°1 (PL30Isoz1)
65ml PL Isothiazolinone N°2 (PL65Isoz2)
65ml PL Isothiazolinone N°3 (PL65Isoz3)
65ml PL Isothiazolinone N°4 (PL65Isoz4)
30ml PL Isothiazolinone N°5 (PL30Isoz5)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Add 4 drops of PL Isothiazolinone 1 into the cuvette. |
| 8 | Screw the lid back on the cuvette. |
| 9 | Gently swirl the cuvette to mix the liquid well. |
| 10 | Add 15 drops of PL Isothiazolinone 2 into the cuvette. |
| 11 | Screw the lid back on the cuvette. |
| 12 | Gently swirl the cuvette to mix the liquid well. |
| 13 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 14 | Tap TEST to start a 01:00 minutes countdown. |
| 15 | Remove the cuvette again. |
| 16 | Unscrew the lid from the cuvette. |
| 17 | Add 17 drops of PL Isothiazolinone 3 into the cuvette. |
| 18 | Screw the lid back on the cuvette. |
| 19 | Gently swirl the cuvette to mix the liquid well. |
| 20 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 21 | Tap TEST to start a 01:00 minutes countdown. |
| 22 | Remove the cuvette again. |
| 23 | Unscrew the lid from the cuvette. |
| 24 | Add 10 drops of PL Isothiazolinone 4 into the cuvette. |
| 25 | Screw the lid back on the cuvette. |
| 26 | Gently swirl the cuvette to mix the liquid well. |
| 27 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |

| | |
|---|---|
| **28** | Tap TEST to start a 02:00 minutes countdown. |
| **29** | Remove the cuvette again. |
| **30** | Unscrew the lid from the cuvette. |
| **31** | Add 3 drops of PL Isothiazolinone 5 into the cuvette. |
| **32** | Screw the lid back on the cuvette. |
| **33** | Gently swirl the cuvette to mix the liquid well. |
| **34** | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| **35** | Tap TEST to start a 02:00 minutes countdown. |
| **36** | After the lapse of a 02:00 minute(s) countdown the determined result is displayed. |

# (147) Legionella (Countdown + Test) Reagent-Kit

**60 - 1000000 cfu/test**

**(Leg)**

**Internal Name: 147-Legionella-liq (Countdown + Test)**

Legipid Kit 10 (LGP-10)

## Measurement procedure:

| | |
|---|---|
| 1 | Perform the measuring procedure according to the Biótica instructions. |
| 2 | Eluate filtered particles by shaking for02:00 minutes. |
| 3 | Tap TEST to start a 02:00 minutes countdown. |
| 4 | Tap TEST to start a 15:00 minutes countdown. |
| 5 | Tap TEST to start a 05:00 minutes countdown. |
| 6 | Tap TEST to start a 03:00 minutes countdown. |
| 7 | Tap TEST to start a 10:00 minutes countdown. |
| 8 | Tap TEST to start a 03:00 minutes countdown. |
| 9 | Tap TEST to start a 03:00 minutes countdown. |
| 10 | Tap TEST to start a 03:00 minutes countdown. |
| 11 | Tap TEST to start a 03:00 minutes countdown. |
| 12 | Tap TEST to start a 02:00 minutes countdown. |
| 13 | Tap TEST to start a 05:00 minutes countdown. |
| 14 | Insert the filled 1ml LG-CB cuvette into the PrimeLab. |
| 15 | Put on the lightshield. |
| 16 | Start ZERO measurement. |
| 17 | Insert the filled 1ml LG-CB cuvette into the PrimeLab. |
| 18 | Put on the lightshield. |
| 19 | Tap TEST to perform the measurement. |
| 20 | The determined result is immediately displayed. |

## Notes:

- Result is displayed as “cfu/l” which is related to filtration of 1 liter of your sample.
- If less than 1 liter is filtered, e.g. only 500ml, results needs to be read as “cfu/..” (e.g. cfu/500ml).
- Once reagents are received, kit MUST be stored between +2 °C and +8 °C, preferrably at +4 °C.
- Expiry date of the reagents is 3 months from production date on.
- Avoid contact with eyes. Wear protective gloves.
- Certain isolates cannot be detected below 106 cfu.
- Disposal of product according to local regulations. Products are stable and unlikely to react in a hazardous manner under normal conditions of use.
- Do NOT re-use small 1ml vials (LG-CB).
- Leave at least 12 cm space between multiple LG-MH (magnetic holders).
- Reagents are supplied in excess. Do NOT re-use any leftover amounts of reagents.
- When emptying cuvettes LG-MHCB, always do so to the BACK and never in front (magnet)!
- Please follow the test procedure properly to avoid misreadings.
- Once lids of LG-MHCB are removed and to discarded, do NOT use them for any of the following test steps.
- If you do more than 1 test at the same time, only one blanc/ZERO vial is needed.
- We propose to use LG-MP4 automatic agitator plate to place up to 20 LG-MHCB cuvettes in case you do multiple tests at one time.
- Measurement has to be performed immediately after the last step (countdown), as the color reaction might continue.
- Leaving reagents at room temperature for 30 minutes before starting the test is essential.
- When using larger units of reagents, immediately restore in fridge after use.
- Depending on the water quality of the test water, the pre-filter have to be changed during the filter process, if it is too dirty.

# (147) Legionella (ZERO + Test) Reagent-Kit

**60 - 1000000 cfu/test**

(Leg)

**Internal Name: 147-Legionella-liq (ZERO + Test)**

Legipid Kit 10 (LGP-10)

## Measurement procedure:

| | |
|---|---|
| 1 | Insert the filled 1ml LG-CB cuvette into the PrimeLab. |
| 2 | Put on the lightshield. |
| 3 | Start ZERO measurement. |
| 4 | Insert the filled 1ml LG-CB cuvette into the PrimeLab. |
| 5 | Put on the lightshield. |
| 6 | Tap TEST to perform the measurement. |
| 7 | The determined result is immediately displayed. |

# (93) Magnesium Tablet

## 0 - 100 mg/l (Mg)

**Internal Name: 93-Magnesium-tab**

Magnesium Photometer (TbsPMag)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 9ml distilled water in a clean 24mm cuvette. |
| 2 | Fill 1ml sample water in the same cuvette. |
| 3 | Screw the lid back on the cuvette. |
| 4 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 5 | Start ZERO measurement. |
| 6 | Remove the cuvette again. |
| 7 | Unscrew the lid from the cuvette. |
| 8 | Add 1 Magnesium Photometer tablet(s) to the test water in the cuvette. |
| 9 | Crush the tablet with a clean stirring rod. |
| 10 | Screw the lid back on the cuvette. |
| 11 | Gently swirl the cuvette to mix the liquid well. |
| 12 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 13 | Tap TEST to perform the measurement. |
| 14 | After the lapse of a 05:00 minute(s) countdown the determined result is displayed. |

## Notes:

- The test result can be converted into the following unit(s): mg/l CaCO3 (Magnesium Hardness).

# (161) Manganese (VLR) Tablet

## 0 - 0.03 mg/l (Mn)

**Internal Name: 161-Manganese-VLR**

Manganese VLR N°1 Photometer (TbsHMagVLR1)
Manganese VLR N°2 Photometer (TbsPMagVLR2)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Add 1 Manganese VLR N°1 tablet(s) to the test water in the cuvette. |
| 8 | Crush the tablet with a clean stirring rod. |
| 9 | Add 1 Manganese VLR N°2 tablet(s) to the test water in the cuvette. |
| 10 | Crush the tablet with a clean stirring rod. |
| 11 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 12 | Screw the lid back on the cuvette. |
| 13 | Gently swirl the cuvette to mix the liquid well. |
| 14 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 15 | Tap TEST to start a 20:00 minutes countdown. |
| 16 | After the lapse of a 20:00 minute(s) countdown the determined result is displayed. |

## Notes:

- Colour formation is extremely temperature sensitive. A temperature of 20 °C +/- 1 °C gives the optimum test results.
- For optimum test results, the sample needs a standing period of 20 min +/- 1 minute. Further colour change and colour development after this time should be ignored.

# (31) Manganese Powder Pack

## 0.2 - 5 mg/l (Mn)

**Internal Name: 31-Manganes-LR-tab**

Manganese LR N°1 Photometer (PPHMGNSLR1)
Manganese LR N°2 Photometer (PPPMGNSLR2)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Add 1 Manganese LR N°1 Photometer powder pillow(s) to the sample water in the cuvette. |
| 8 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 10 | Add 1 Manganese LR N°2 Photometer powder pillow(s) to the sample water in the cuvette. |
| 11 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 12 | Screw the lid back on the cuvette. |
| 13 | Gently swirl the cuvette to mix the liquid well. |
| 14 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 15 | Tap TEST to start a 05:00 minutes countdown. |
| 16 | After the lapse of a 05:00 minute(s) countdown the determined result is displayed. |

## Notes:

- The test result can be converted into the following unit(s): mg/l MnO4-, mg/l KMnO4.

# (134) Molybdate (HR) Powder

**0 - 40** mg/l (O2)

Internal Name: 134-Molybd-HR-pp

MolyVer 1 (PP) (ppMolyVer1)
MolyVer 2 (PP) (ppMolyVer2)
MolyVer 3 (PP) (ppMolyVer3)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Add 1 MolyVer 1 powder pillow(s) to the sample water in the cuvette. |
| 8 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 9 | Add 1 MolyVer 2 powder pillow(s) to the sample water in the cuvette. |
| 10 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 11 | Add 1 MolyVer 3 powder pillow(s) to the sample water in the cuvette. |
| 12 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 13 | Screw the lid back on the cuvette. |
| 14 | Gently swirl the cuvette to mix the liquid well. |
| 15 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 16 | Tap TEST to start a 05:00 minutes countdown. |
| 17 | After the lapse of a 05:00 minute(s) countdown the determined result is displayed. |

## Notes:

- The following substances interfere with the measurement: Aluminium (> 50 mg/l), chromium (> 1000 mg/l), iron (> 50 mg/l), nickel (> 50 mg/l), nitrite (> 2000 mg/l as NO2; can be eliminated by adding one sulfamic acid powder pillow to the sample).
- In case sample contains > 10 mg/l copper, increases positive reading if test is not performed quickly enough before pressing TEST.
- Highly buffered samples or samples with extreme pH levels may require pre- treatment.

# (32) Molybdate Tablet

## 1 - 100 mg/l (MoO4)

**Internal Name: 32-Molybdat-HR-tab**

Molybdate N°1 HR Photometer (TbsHMDH1)
Molybdate N°2 HR Photometer (TbsPMDH2)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Add 1 Molybdate HR N°1 Photometer tablet(s) to the test water in the cuvette. |
| 8 | Crush the tablet with a clean stirring rod. |
| 9 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 10 | Add 1 Molybdate HR N°2 Photometer tablet(s) to the test water in the cuvette. |
| 11 | Crush the tablet with a clean stirring rod. |
| 12 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 13 | Screw the lid back on the cuvette. |
| 14 | Gently swirl the cuvette to mix the liquid well. |
| 15 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 16 | Tap TEST to perform the measurement. |
| 17 | The determined result is immediately displayed. |

## Notes:

- The test result can be converted into the following unit(s): mg/l Mo, mg/l Na2MoO4.

# (33) Molybdate (HR) Liquid

## 5 - 200 mg/l (MoO4)

**Internal Name: 33-Molybdat-HR-liq**

65ml PL Molybdate N°1 (PL65Moly1)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Add 10 drops of PL Molybdate 1 into the cuvette. |
| 8 | Screw the lid back on the cuvette. |
| 9 | Gently swirl the cuvette to mix the liquid well. |
| 10 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 11 | Tap TEST to perform the measurement. |
| 12 | The determined result is immediately displayed. |

## Notes:

- The test result can be converted into the following unit(s): mg/l Mo, mg/l Na2MoO4.
- Extend the listed measurement range from 5 - 200 mg/l, to 10 - 400 mg/l by diluting your water sample as follows: Add 5 ml of sample water plus 5 ml of molybdate-free water and continue with the test procedure. To account for the dilution, the test result displayed on the screen needs to be multiplied by 2.

# (96) Molybdat (LR) Tablet

## 0 - 15 mg/l (MoO4)

**Internal Name: 96-Molybd-LR-tab**

Molybdate LR N°1 Photometer (TbsHMDL1)
Molybdate LR N°2 Photometer (TbsPMDL2)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Add 1 Molybdate LR N° 1 tablet(s) to the test water in the cuvette. |
| 8 | Crush the tablet with a clean stirring rod. |
| 9 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 10 | Add 1 Molybdate LR N° 2 tablet(s) to the test water in the cuvette. |
| 11 | Crush the tablet with a clean stirring rod. |
| 12 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 13 | Screw the lid back on the cuvette. |
| 14 | Gently swirl the cuvette to mix the liquid well. |
| 15 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 16 | Tap TEST to start a 02:00 minutes countdown. |
| 17 | After the lapse of a 02:00 minute(s) countdown the determined result is displayed. |

## Notes:

- The test result can be converted into the following unit(s): mg/l Mo, mg/l Na2MoO4.
- Filter sample if neccessary to test a clear sample.

# (100) Nickel (HR) Liquid

## 0 - 10 mg/l (Ni)

**Internal Name: 100-Nickel-HR-liq**

65ml PL Nickel HR N°1 (PL65NickHR1)
30ml PL Nickel HR N°2 (PL30NickHR2)
30ml PL Nickel HR N°3 (PL30NickHR3)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Add 0.5 ml of PL Nickel HR 1 to the sample in the cuvette. |
| 8 | Screw the lid back on the cuvette. |
| 9 | Gently swirl the cuvette to mix the liquid well. |
| 10 | Tap TEST to start a 01:00 minutes countdown. |
| 11 | Unscrew the lid from the cuvette. |
| 12 | Add 5 drops of PL Nickel HR 2 into the cuvette. |
| 13 | Screw the lid back on the cuvette. |
| 14 | Gently swirl the cuvette to mix the liquid well. |
| 15 | Unscrew the lid from the cuvette. |
| 16 | Add 5 drops of PL Nickel HR 3 into the cuvette. |
| 17 | Screw the lid back on the cuvette. |
| 18 | Gently swirl the cuvette to mix the liquid well. |
| 19 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 20 | Tap TEST to perform the measurement. |
| 21 | After the lapse of a 15:00 minute(s) countdown the determined result is displayed. |

## Notes:

- Ferrous Iron will interfere with this test and can influence the readings.
- EDTA levels above 25 mg/l will interfere with this test and can influence the reading (low reading).

- Cobalt levels above > 0.5 mg/l will interfere with this test and can influence the reading (high reading).
- Polyphosphates in the sample do not influence the reading.

# (90) Nickel (HR) Tablet

## 0 - 7 mg/l (Ni)

**Internal Name: 90-Nickel-HR-tab**

Nickel HR N°1 Photometer (TbsHNickHR1)
Nickel HR N°2 Photometer (TbsPNickHR2)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Add 1 Nickel HR N° 1 tablet(s) to the test water in the cuvette. |
| 8 | Crush the tablet with a clean stirring rod. |
| 9 | Add 1 Nickel HR N° 2 tablet(s) to the test water in the cuvette. |
| 10 | Crush the tablet with a clean stirring rod. |
| 11 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 12 | Screw the lid back on the cuvette. |
| 13 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 14 | Tap TEST to start a 02:00 minutes countdown. |
| 15 | After the lapse of a 02:00 minute(s) countdown the determined result is displayed. |

## Notes:

- Ferrous Iron will interfere with this test and can influence the readings.
- EDTA levels above 25 mg/l will interfere with this test and can influence the reading (low reading).
- Cobalt levels above > 0.5 mg/l will interfere with this test and can influence the reading (high reading).

# (169) Nitrate (HR) Powder Pack

## 1 - 100 mg/l (NO3)

**Internal Name: 169-Nitrate-HR-pp**

Nitrate N°1 Photometer (PPHNitra1)
Nitrate N°2 Photometer (PPPNitra2)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette from the PrimeLab and set it aside. It is no longer required for this test. |
| 6 | Fill 20ml sample water in a testing tube. |
| 7 | Add a Nirate No. 1 powderpillow to the testing tube. |
| 8 | Then add a Nitrate No. 2 powderpillow to the testing tube. |
| 9 | Screw the lid back on the tube. |
| 10 | Shake the tube heavily for 00:15 minutes. |
| 11 | Tap TEST to start a 10:00 minutes countdown. |
| 12 | Wait until the 10:00 minute countdown ran out. |
| 13 | Remove 10ml from the tube by using a syringe. |
| 14 | Empty the 10ml from the previous step in a clean 24mm cuvette. |
| 15 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 16 | Tap TEST to perform the measurement. |
| 17 | The determined result is immediately displayed. |

## Notes:

- In the event that the original sample contains nitrite, it may be possible to measure excessively high nitrate levels. For correction, subtract the nitrite nitrogen (N) from the content of the nitrate-nitrogen (N). For this, the measurement results of the nitrate or nitrite measurement must be calculated in unit N (nitrogen).
- Too short or too weak shaking of the sample may result in lower nitrate levels.
- If an uneven color distribution in the shaker is observed within the waiting time, it should be reversed again. The current countdown remains unaffected.

- A small amount of solid may remain undissolved in the shaker and should not be transferred to the cuvette.
- The reaction is designed for a sample temperature of 20 °C, at lower temperatures it may result in less detection.

# (34) Nitrate 0 - 11 mg/l (N) Powder Can + Liquid

**Internal Name: 34-Nitrate-pow**

20g PL Nitrate N°1 (PLpow20Nitra1)
65ml PL Nitrate N°2 (PL65Nitra2)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Add 1 scoop of 0.05mL PL Nitrate 1 powder to the sample water in the cuvette |
| 8 | Screw the lid back on the cuvette. |
| 9 | Swirl the cuvette for 00:15 minute(s). |
| 10 | Unscrew the lid from the cuvette. |
| 11 | Add 10 drops of PL Nitrate 2 into the cuvette. |
| 12 | Screw the lid back on the cuvette. |
| 13 | Gently swirl the cuvette to mix the liquid well. |
| 14 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 15 | Tap TEST to start a 15:00 minutes countdown. |
| 16 | After the lapse of a 15:00 minute(s) countdown the determined result is displayed. |

## Notes:

- The test result can be converted into the following unit(s): mg/l NO3-.
- Make sure that the sample contains no air bubbles in the measurement. If this is the case, remove the air bubbles by tapping it with the cuvette.
- Extend the listed measurement range to 0 - 110 mg/l (N) by taking 1 ml of sample water plus 9 ml of distilled water. The test result displayed on the screen needs to be multiplied by 10.
- Best results are achieved between 0 – 6 mg/l (N) / 0 – 25 mg/l (NO3-). If your water sample is likely to contain more nitrate, dilute the sample to bring it into the above mentioned measurement range. You can do so, by diluting 5 ml sample water plus 5 ml deionized water, measure as usual, multiply result by 2.

# (101) Nitrite (HR) Liquid

## 0 - 3000 mg/l (NaNO2)

**Internal Name: 101-Nitrite-HR-liq**

65ml PL Nitrite HR N°2 (PL65NitriteHR2)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 9ml distilled water in a clean 24mm cuvette. |
| 2 | Fill 1ml sample water in the same cuvette. |
| 3 | Screw the lid back on the cuvette. |
| 4 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 5 | Start ZERO measurement. |
| 6 | Remove the cuvette again. |
| 7 | Unscrew the lid from the cuvette. |
| 8 | Add 15 drops of PL Nitrite HR 2 into the cuvette. |
| 9 | Screw the lid back on the cuvette. |
| 10 | Gently swirl the cuvette to mix the liquid well. |
| 11 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 12 | Tap TEST to perform the measurement. |
| 13 | After the lapse of a 10:00 minute(s) countdown the determined result is displayed. |

## Notes:

- The test result can be converted into the following unit(s): mg/l N, mg/l NO2

# (35) Nitrite (LR) Powder Pack

**0 - 0.5 mg/l (N)**

**Internal Name: 35-Nitrite-LR-tab**

Nitrite LR Photometer (PPPNiLR)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Add 1 Nitrite LR Photometer powder pillow(s) to the sample water in the cuvette. |
| 8 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 9 | Screw the lid back on the cuvette. |
| 10 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 11 | Tap TEST to start a 10:00 minutes countdown. |
| 12 | After the lapse of a 10:00 minute(s) countdown the determined result is displayed. |

## Notes:

- The test result can be converted into the following unit(s): mg/l $NaNO_2$, mg/l $NO_2$.

# (36) Nitrite (HR) Powder

## 5 - 200 mg/l (NaNO2)

**Internal Name: 36-Nitrite-HR-pow**

PL Nitrite HR 1 (PLpow40Nitra1)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Add 1 scoop of 0.05mL PL Nitrite HR 1 powder to the sample water in the cuvette |
| 8 | Screw the lid back on the cuvette. |
| 9 | Gently swirl the cuvette to mix the liquid well. |
| 10 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 11 | Tap TEST to start a 10:00 minutes countdown. |
| 12 | After the lapse of a 10:00 minute(s) countdown the determined result is displayed. |

## Notes:

- The test result can be converted into the following unit(s): mg/l N, mg/l NO2.
- To extend the test range to 10-400 mg/l, the sample needs to be diluted as follows: 5 ml sample water plus 5 ml nitrite-free water. The result displayed on the screen needs to be multiplied by 2.
- To extend the test range to 50 - 2000 mg/l, the sample needs to be diluted as follows: 1 ml sample water plus 9 ml nitrite-free water. The result displayed on the screen needs to be multiplied by 10.

# (97) Nitrite (HR) Tablet

**0 - 1500** mg/l ($NaNO_2$)

Internal Name: 97-Nitrite-HR-tab

Nitrite HR N°1 Photometer (TbsHNiHR1)
Nitrite HR N°2 Photometer (TbsPNiHR2)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 9ml distilled water in a clean 24mm cuvette. |
| 2 | Fill 1ml sample water in the same cuvette. |
| 3 | Screw the lid back on the cuvette. |
| 4 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 5 | Start ZERO measurement. |
| 6 | Remove the cuvette again. |
| 7 | Unscrew the lid from the cuvette. |
| 8 | Add 1 Nitrite HR N° 1 tablet(s) to the test water in the cuvette. |
| 9 | Crush the tablet with a clean stirring rod. |
| 10 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 11 | Add 1 Nitrite HR N° 2 tablet(s) to the test water in the cuvette. |
| 12 | Crush the tablet with a clean stirring rod. |
| 13 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 14 | Screw the lid back on the cuvette. |
| 15 | Gently swirl the cuvette to mix the liquid well. |
| 16 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 17 | Tap TEST to start a 02:00 minutes countdown. |
| 18 | After the lapse of a 02:00 minute(s) countdown the determined result is displayed. |

## Notes:

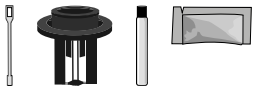
- Filter sample if neccessary to test a clear sample.
- Make sure the temperature of the sample does not exceed 30 °C.
- Chlorine levels above 30 mg/l interfere with this test and can influence the reading.
- The test needs to be performed without a delay. Place the vial into the PrimeLab right after reagents have dissolved and lid is closed. Immediately press TEST. It is essential for the accuracy of this test to keep the countdown of 05:00 minutes right after dissolving the tablets/closing the lid/placing the vial into the PrimeLab.

- DO NEVER SHAKE THE VIAL!
- For expected values below 400 mg/l it is strongly recommended - to achieve the most accurate result - to better use ID 36 (Nitrite with powder reagents 0 - 200 mg/l; extended range 0 - 400 mg/l by 1:1 dilution).

# (151) Nitrogen-Total (LR) Reagent-Kit

0.5 - 25 mg/l (N)

**Internal Name: 151-NitroTotLR-pre**



Nitrogen LR Kit (PL151-Kit)

## Measurement procedure:

| | |
|---|---|
| 1 | Provide 2 Hydroxide LR cuvettes (16mm). Label one as a ZERO cuvette. |
| 2 | Add 1 x Persulfate powder pillow(s) into both cuvettes. |
| 3 | Open the first cuvette (Zero cuvette) and add 2ml destilled water. |
| 4 | Open the second cuvette (Zero cuvette) and add 2ml sample water. |
| 5 | Screw the lid immediately back onto both cuvettes. |
| 6 | Shake the vials vigorously for 00:30 minutes |
| 7 | Tap TEST to start a 00:30 minutes countdown. |
| 8 | Place cuvettes for 30 minutes at 100°C in the preheated thermoreactor. |
| 9 | Tap TEST to start a 30:00 minutes countdown. |
| 10 | CAUTION: Cuvettes are hot! |
| 11 | Remove the cuvettes from the thermoreactor. |
| 12 | Let the cuvettes cool down to at least 25°C. |
| 13 | Add 1 x Reagent A powder pillow(s) into both cuvettes. |
| 14 | Screw the lid immediately back onto both cuvettes. |
| 15 | Shake the vials vigorously for 00:20 minutes |
| 16 | Tap TEST to start a 00:20 minutes countdown. |
| 17 | The reagents should now react. |
| 18 | Tap TEST to start a 03:00 minutes countdown. |
| 19 | Add 1 x Reagent B powder pillow(s) into both cuvettes. |
| 20 | Screw the lid back on both cuvettes. |
| 21 | Shake the vials vigorously for 00:20 minutes |
| 22 | Tap TEST to start a 00:20 minutes countdown. |
| 23 | The reagents should now react. |
| 24 | Tap TEST to start a 02:00 minutes countdown. |
| 25 | Open 1 Acid LR/HR cuvette and add 2ml sample water from the previous zero cuvette. This is your new zero cuvette. |

| | |
|---|---|
| 26 | Add 2ml from the previous test cuvette into a new cuvette. This is your new test cuvette. |
| 27 | Screw the lid back on both cuvettes. |
| 28 | Gently swirl both cuvettes to mix the liquids well. Caution, heat development! |
| 29 | Place the 16mm adapter in the PrimeLab. |
| 30 | Place the ZERO cuvette in the PrimeLab. |
| 31 | Put on the lightshield. |
| 32 | Start ZERO measurement. |
| 33 | Remove the cuvette again. |
| 34 | Insert the sample cuvette in the PrimeLab. |
| 35 | Put on the lightshield. |
| 36 | Tap TEST to perform the measurement. |
| 37 | The determined result is immediately displayed. |

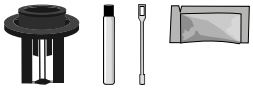
## Notes:

- If you intend to use last ZERO, please ignore steps where you are asked to prepare a ZERO vial.
- The test result can be converted into the following unit(s): mg/l NH3, mg/l NH4-
- This test can be used for water, wastewater and seawater.
- Remove powder from vial edges, lid and tube threads after adding powder (PL Phosphorus 2)
- Use volumetric pipettes to dose exactly 2ml of the Acid LR/HR reagent
- Reagents might not dissolve entirely
- Incubation time shall NOT exceed 30 minutes!
- Step 20 to be performed by turning vial upside down and back, waiting for the solution to entirely flow down. Inverse 10 times
- Zero vial can be stored and used for max. 7 days if stored in the dark
- Sample needs to be diluted and measurement needs to be repeated if large quantities of nitrogen free, organic compounds are present, as they may interfere and reduce the effectiveness of the digestion
- Bromide concentration > 60 mg/l and chloride concentration > 1000 mg/l interfer and change result (increased by 10 %).

# (151) Nitrogen-Total (LR) (Only ZERO and TEST) Reagent-Kit

**0.5 - 25 mg/l (N)**

**Internal Name: 151-NitroTotLR-pre**



Nitrogen LR Kit (PL151-Kit)

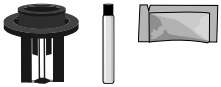
## Measurement procedure:

| | |
|---|---|
| **1** | Place the 16mm adapter in the PrimeLab. |
| **2** | Place the ZERO cuvette in the PrimeLab. |
| **3** | Put on the lightshield. |
| **4** | Start ZERO measurement. |
| **5** | Remove the cuvette again. |
| **6** | Insert the sample cuvette in the PrimeLab. |
| **7** | Put on the lightshield. |
| **8** | Tap TEST to perform the measurement. |

# (152) Nitrogen-Total (HR) (All Steps) Reagent-Kit

5 - 150 mg/l (N)

**Internal Name: 152-NitroTotHR-pre**



Nitrogen HR Kit (PL152-Kit)

## Measurement procedure:

| | |
|---|---|
| 1 | Provide 2 Hydroxide LR cuvettes (16mm). Label one as a ZERO cuvette. |
| 2 | Add 1 x Persulfate powder pillow(s) into both cuvettes. |
| 3 | Open the first cuvette (ZERO cuvette). |
| 4 | Fill 0,5ml destilled water in the cuvette. |
| 5 | Open the second vial (sample vial). |
| 6 | Fill 0,5ml sample water in the cuvette. |
| 7 | Screw the lid back on the cuvette IMMEDIATELY. |
| 8 | Shake the vials vigorously for 00:30 minutes |
| 9 | Tap TEST to start a 00:30 minutes countdown. |
| 10 | Place cuvettes for 30 minutes at 100°C in the preheated thermoreactor. |
| 11 | Tap TEST to start a 30:00 minutes countdown. |
| 12 | CAUTION: Cuvettes are hot! |
| 13 | Remove the cuvettes from the thermoreactor. |
| 14 | Let the cuvettes cool down to at least 25°C. |
| 15 | Add 1 x Reagent A powder pillow(s) into both cuvettes. |
| 16 | Screw the lid back on the cuvette IMMEDIATELY. |
| 17 | Shake the vials vigorously for 00:20 minutes |
| 18 | Tap TEST to start a 00:20 minutes countdown. |
| 19 | The reagents should now react. |
| 20 | Tap TEST to start a 03:00 minutes countdown. |
| 21 | Add 1 x Reagent B powder pillow(s) into both cuvettes. |
| 22 | Screw the lid back on the cuvette IMMEDIATELY. |
| 23 | Shake the vials vigorously for 00:20 minutes |
| 24 | Tap TEST to start a 00:20 minutes countdown. |
| 25 | The reagents should now react. |

| | |
|---|---|
| **26** | Tap TEST to start a 02:00 minutes countdown. |
| **27** | Open 2 Acid LR/HR cuvette and add 2ml sample water from the previous zero cuvette. This is your new zero cuvette. |
| **28** | Add 2ml from the previous test cuvette into a new cuvette. This is your new test cuvette. |
| **29** | Screw the lid back on both cuvettes. |
| **30** | Gently swirl both cuvettes to mix the liquids well. Caution, heat development! |
| **31** | Place the 16mm adapter in the PrimeLab. |
| **32** | Place the ZERO cuvette in the PrimeLab. |
| **33** | Put on the lightshield. |
| **34** | Start ZERO measurement. |
| **35** | Remove the cuvette again. |
| **36** | Insert the sample cuvette in the PrimeLab. |
| **37** | Put on the lightshield. |
| **38** | Tap TEST to perform the measurement. |

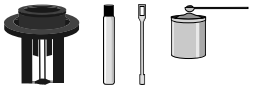
## Notes:

- If you intend to use last ZERO, please ignore steps where you are asked to prepare a ZERO vial.
- The test result can be converted into the following unit(s): mg/l NH3, mg/l NH4-
- This test can be used for water, wastewater and seawater.
- Remove powder from vial edges, lid and tube threads after adding powder (PL Phosphorus 2)
- Use volumetric pipettes to dose exactly 2ml of the Acid LR/HR reagent
- Reagents might not dissolve entirely
- Incubation time shall NOT exceed 30 minutes!
- Step 20 to be performed by turning vial upside down and back, waiting for the solution to entirely flow down. Inverse 10 times
- Zero vial can be stored and used for max. 7 days if stored in the dark
- Sample needs to be diluted and measurement needs to be repeated if large quantities of nitrogen free, organic compounds are present, as they may interfere and reduce the effectiveness of the digestion
- Bromide concentration > 60 mg/l and chloride concentration > 1000 mg/l interfer and change result (increased by 10 %).

# (152) Nitrogen-Total (HR) (Only ZERO and TEST) Reagent-Kit

**5 - 150 mg/l (N)**

**Internal Name: 152-NitroTotHR-pre**



Nitrogen HR Kit (PL152-Kit)

## Measurement procedure:

| | |
|---|---|
| **1** | Place the 16mm adapter in the PrimeLab. |
| **2** | Place the ZERO cuvette in the PrimeLab. |
| **3** | Put on the lightshield. |
| **4** | Start ZERO measurement. |
| **5** | Remove the cuvette again. |
| **6** | Insert the sample cuvette in the PrimeLab. |
| **7** | Put on the lightshield. |
| **8** | Tap TEST to perform the measurement. |

# (168) BN LUX Liquid

**Internal Name: 168-BN-LUX**

TM-reagent-S (TM149reagS)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 2 ml of reagent S into a clean 3ml vial. |
| 2 | Place the Eppendorf adapter in the PrimeLab. |
| 3 | Put on the lightshield. |
| 4 | Start ZERO measurement. |
| 5 | Remove the lightshield. |
| 6 | Remove the cuvette again. |
| 7 | Handle the sample according to the BN LUX procedure. |
| 8 | Tap 01 to start a 00: minutes countdown. |
| 9 | Fill a clean 3ml vial with 2ml of the yellow filtrated aqueous solution. |
| 10 | Place the Eppendorf adapter in the PrimeLab. |
| 11 | Insert the cuvette into the PrimeLab. |
| 12 | Put on the lightshield. |
| 13 | Tap TEST to perform the measurement. |

## Notes:

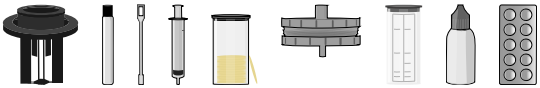
- The test result can be converted into the following unit(s): °dH, °eH, °fH.
- If your reading is towards the upper limit of the test a dilution is recommended.
- If your sample water is very alkaline or acidic it should be brought within the pH range between 4 and 10 by adding 1 mol/l acetic acid or resp. 1 mol/l caustic soda.
- Ensure that you are using exactly 10 ml sample water volume.
- Disturbance values in this measurement value: Magnesium (> 200 mg/l CaCO3), zinc (> 5 mg/l), iron (> 10 mg/l).

# (171) Iron in Oil

Liquid

## 20 - 450 mg/l (Fe2+)

**Internal Name: 171-IronInOil-tab**



TM-reagent-S (TM149reagS)
TM-reagent-E (TM149reagE)
TM-reagent-I (TM149reagI)

# (21) DEHA Liquid

## 20 - 1000 ppb (DEHA)

**Internal Name: 21-DEHA-liq**

PL Oxygen Scavenger 1 (PL65OxyScav1)
PL Oxygen Scavenger 2 (PL65OxyScav2)

## Measurement procedure:

| | |
|---|---|
| **1** | Fill 10ml test water into a clean 24mm cuvette. |
| **2** | Screw the lid back on the cuvette. |
| **3** | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| **4** | Start ZERO measurement. |
| **5** | Remove the cuvette again. |
| **6** | Unscrew the lid from the cuvette. |
| **7** | Add 6 drops of PL Oxygen Scavenger 1 into the cuvette. |
| **8** | Gently swirl the cuvette to mix the liquid well. |
| **9** | Add 25 drops of PL Oxygen Scavenger 2 into the cuvette. |
| **10** | Screw the lid back on the cuvette. |
| **11** | Gently swirl the cuvette to mix the liquid well. |
| **12** | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| **13** | Tap TEST to start a 10:00 minutes countdown. |
| **14** | After the lapse of a 10:00 minute(s) countdown the determined result is displayed. |

## Notes:

- Ferrous iron will interfere with this test and can influence the readings. To determine the Ferrous Iron concentration for correction purposes repeat the test without adding PL Oxygen Scavenger N °1. If the result is above 0.05mg/l subtract this value from the DEHA result.
- During the 10 minute development period ensure the sample is kept in the dark.

# (26) Hydroquinone Liquid

## 0 - 2.5 mg/l (C6H6O2)

**Internal Name: 26-Hydroquinon-liq**

PL Oxygen Scavenger 1 (PL65OxyScav1)
PL Oxygen Scavenger 2 (PL65OxyScav2)

## Measurement procedure:

| | |
|---|---|
| **1** | Fill 10ml test water into a clean 24mm cuvette. |
| **2** | Screw the lid back on the cuvette. |
| **3** | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| **4** | Start ZERO measurement. |
| **5** | Remove the cuvette again. |
| **6** | Unscrew the lid from the cuvette. |
| **7** | Add 6 drops of PL Oxygen Scavenger 1 into the cuvette. |
| **8** | Gently swirl the cuvette to mix the liquid well. |
| **9** | Add 25 drops of PL Oxygen Scavenger 2 into the cuvette. |
| **10** | Screw the lid back on the cuvette. |
| **11** | Gently swirl the cuvette to mix the liquid well. |
| **12** | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| **13** | Tap TEST to start a 10:00 minutes countdown. |
| **14** | After the lapse of a 10:00 minute(s) countdown the determined result is displayed. |

# (69) Methylethylk - etoxime - Liquid

**0 - 4.1** mg/l ($C_4H_9NO$)

**Internal Name: 69-Methylethyl-liq**

PL Oxygen Scavenger 1 (PL65OxyScav1)
PL Oxygen Scavenger 2 (PL65OxyScav2)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Add 6 drops of PL Oxygen Scavenger 1 into the cuvette. |
| 8 | Add 25 drops of PL Oxygen Scavenger 2 into the cuvette. |
| 9 | Screw the lid back on the cuvette. |
| 10 | Gently swirl the cuvette to mix the liquid well. |
| 11 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 12 | Tap TEST to perform the measurement. |
| 13 | After the lapse of a 10:00 minute(s) countdown the determined result is displayed. |

# (70) Erythorbic Acid Liquid

**0 - 3.5 mg/l (EA)**

**Internal Name: 70-Erythorbic-Acid**

PL Oxygen Scavenger 1 (PL65OxyScav1)
PL Oxygen Scavenger 2 (PL65OxyScav2)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Add 6 drops of PL Oxygen Scavenger 1 into the cuvette. |
| 8 | Add 25 drops of PL Oxygen Scavenger 2 into the cuvette. |
| 9 | Screw the lid back on the cuvette. |
| 10 | Gently swirl the cuvette to mix the liquid well. |
| 11 | Tap TEST to perform the measurement. |
| 12 | After the lapse of a 10:00 minute(s) countdown the determined result is displayed. |

# (71) Carbohydrazide Liquid

**0 - 1.3 mg/l**

**Internal Name: 71-Carbohydra-liq**

PL Oxygen Scavenger 1 (PL65OxyScav1)
PL Oxygen Scavenger 2 (PL65OxyScav2)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Add 6 drops of PL Oxygen Scavenger 1 into the cuvette. |
| 8 | Add 25 drops of PL Oxygen Scavenger 2 into the cuvette. |
| 9 | Screw the lid back on the cuvette. |
| 10 | Gently swirl the cuvette to mix the liquid well. |
| 11 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 12 | Tap TEST to perform the measurement. |
| 13 | After the lapse of a 10:00 minute(s) countdown the determined result is displayed. |

# (37) Ozone (with chlorine) Tablet

## 0 - 5.4 mg/l (O3)

**Internal Name: 37-Ozone-tab**

DPD N°1 Photometer (TbsPD1)
DPD N°2 Photometer (TbsPD2)
Glycine (TbsHGC)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Empty the cuvette to a few drops. |
| 8 | Add 1 DPD N° 1 Photometer tablet(s) to the test water in the cuvette. |
| 9 | Crush the tablet with a clean stirring rod. |
| 10 | Fill the cuvette to 10ml with the sample water. |
| 11 | Add 1 DPD N° 3 Photometer tablet(s) to the test water in the cuvette. |
| 12 | Crush the tablet with a clean stirring rod. |
| 13 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 14 | Screw the lid back on the cuvette. |
| 15 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 16 | Tap TEST to start a 02:00 minutes countdown. |
| 17 | Remove the cuvette again. |
| 18 | Clean the cuvette. |
| 19 | Fill 10ml test water into a clean 24mm cuvette. |
| 20 | Add 1 Glycine tablet(s) to the test water in the cuvette. |
| 21 | Crush the tablet with a clean stirring rod. |
| 22 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 23 | Add 1 DPD N° 1 Photomoter tablet(s) to the cleaned cuvette. |
| 24 | Add 1 DPD N° 3 Photometer tablet(s) to the cleaned cuvette. |
| 25 | Crush the tablet with a clean stirring rod. |

26 Fill the cuvette with content of the treated sample water from the first cuvette.

27 Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved.

28 Screw the lid back on the cuvette.

29 Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette.

30 Tap TEST to start a 02:00 minutes countdown.

31 After the lapse of a 02:00 minute(s) countdown the total result is displayed, divided in O3 = "Ozone“ and tCl = "total chlorine“.

## Notes:

- If the measuring water contains further oxidizing chemicals (e.g. active oxygen, chlorine, bromine etc.) this will also be detected and is part of the result.
- When preparing the measurement procedure it is important to avoid any chlorine escaping, which can happen during pipetting and shaking the sample. The measurement should be performed directly after sampling.
- It is important that the measurement devices to be used have not been cleaned with household detergent, as this would greatly influence the measurement. To prevent any contamination of the cuvette, the cuvette lid and the stirrer should be stored in a 0.1 % sodium hypochlorite solution for one hour and then thoroughly rinsed with distilled water.
- The DPD reagent used in this procedure buffers the pH value of the sample water in a range of 6.2 to 6.5 pH. If your sample water is very alkaline or acidic it must be adjusted to a pH range between 6 and 7 by adding 0.5 mol/l sulphuric acid or respectively 1 mol/l caustic soda.

# (37) Ozone (without Chlorine) Tablet

**0 - 5.4** mg/l (O3)

**Internal Name: 37-Ozone-tab**

DPD N°1 Photometer (TbsPD1)
DPD N°3 Photometer (TbsPD3)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Empty the cuvette to a few drops. |
| 8 | Add 1 DPD N° 1 Photometer tablet(s) to the test water in the cuvette. |
| 9 | Crush the tablet with a clean stirring rod. |
| 10 | Fill the cuvette to 10ml with the sample water. |
| 11 | Add 1 DPD N° 3 Photometer tablet(s) to the test water in the cuvette. |
| 12 | Crush the tablet with a clean stirring rod. |
| 13 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 14 | Screw the lid back on the cuvette. |
| 15 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 16 | Tap TEST to start a 02:00 minutes countdown. |
| 17 | After the lapse of a 02:00 minute(s) countdown the determined result is displayed. |

## Notes:

- If the measuring water contains further oxidizing chemicals (e.g. active oxygen, chlorine, bromine etc.) this will also be detected and is part of the result.
- When preparing the measurement procedure it is important to avoid any chlorine escaping, which can happen during pipetting and shaking the sample. The measurement should be performed directly after sampling.

- The DPD reagent used in this procedure buffers the pH value of the sample water in the range between 6.2 and 6.5 pH. If your sample water is very alkaline or acidic this must be adjusted to a pH range between 6 and 7 by the addition of 0.5 mol/l sulphuric acid or resp. 1 mol/l caustic soda before the DPD reagent is added.

# (92) Ozone (with chlorine) Liquid

**0 - 5.4** mg/l (O3)

**Internal Name: 92-Ozone-liq**

30ml PL DPD 1 A (PL30DPD1A)
30ml PL DPD 1 B (PL30DPD1B)
30ml PL DPD 3 C (PL30DPD3C)
30ml PL DPD Glycine (PL30DPDGlycine)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Empty the cuvette to a few drops. |
| 8 | Add 3 drops of PL DPD 1 A into the cuvette. |
| 9 | Add 3 drops of PL DPD 1 B into the cuvette. |
| 10 | Add 3 drops of PL DPD 3 C into the cuvette. |
| 11 | Fill the cuvette to 10ml with the sample water. |
| 12 | Screw the lid back on the cuvette. |
| 13 | Gently swirl the cuvette to mix the liquid well. |
| 14 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 15 | Tap TEST to start a 02:00 minutes countdown. |
| 16 | Wait until the 02:00 minute countdown ran out. |
| 17 | Unscrew the lid from the cuvette. |
| 18 | Empty the cuvette. |
| 19 | Clean the cuvette. |
| 20 | Fill 10ml sample water into a second clean 24mm cuvette. |
| 21 | Add 3 drops of PL DPD Glycine into the cuvette. |
| 22 | Add 3 drops of PL DPD 1 A into a second clean 24mm cuvette. |
| 23 | Add 3 drops of PL DPD 1 B into the cuvette. |
| 24 | Fill the cuvette with the treated sample of the first cuvette. |
| 25 | Screw the lid back on the cuvette. |

26 Gently swirl the cuvette to mix the liquid well.

27 Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette.

28 Tap TEST to start a 02:00 minutes countdown.

29 After the lapse of a 02:00 minute(s) countdown the determined result is displayed.

## Notes:

- DPD 1 A and DPD 1 B reagent MUST be added to the vial BEFORE water sample is added to avoid misreadings!
- If the measuring water contains further oxidizing chemicals (e.g. active oxygen, chlorine, bromine etc.) this will also be detected and is part of the result.
- When preparing the measurement procedure it is important to avoid any ozone escaping. This is done by means of using a pipette and shaking the sample water. The measurement procedure must be performed directly after sampling.
- Use of this test procedure and reagent on water samples with pH value outside of the 4-11 range can lead to incorrect test results. If you are not sure we recommend a control measurement using e.g. an electronic meter (pH 0-14). For measuring higher ozone values please choose the respective matching measurement procedure.

# (92) Ozone (without Chlorine) Liquid

**0 - 5.4** mg/l (O3)

**Internal Name: 92-Ozone-liq**

30ml PL DPD 1 A (PL30DPD1A)
30ml PL DPD 1 B (PL30DPD1B)
30ml PL DPD 3 C (PL30DPD3C)
30ml PL DPD Glycine (PL30DPDGlycine)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Empty the cuvette to a few drops. |
| 8 | Add 3 drops of PL DPD 1 A into the cuvette. |
| 9 | Add 3 drops of PL DPD 1 B into the cuvette. |
| 10 | Add 3 drops of PL DPD 3 C into the cuvette. |
| 11 | Then fill 10ml of the sample water in the cuvette. |
| 12 | Screw the lid back on the cuvette. |
| 13 | Gently swirl the cuvette to mix the liquid well. |
| 14 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 15 | Tap TEST to start a 02:00 minutes countdown. |
| 16 | Wait until the 02:00 minute countdown ran out. |

## Notes:

- DPD 1 A and DPD 1 B reagent MUST be added to the vial BEFORE water sample is added to avoid misreadings!
- If the measuring water contains further oxidizing chemicals (e.g. active oxygen, chlorine, bromine etc.) this will also be detected and is part of the result.
- When preparing the measurement procedure it is important to avoid any ozone escaping. This is done by means of using a pipette and shaking the sample water. The measurement procedure must be performed directly after sampling.

- Use of this test procedure and reagent on water samples with pH value outside of the 4-11 range can lead to incorrect test results. If you are not sure we recommend a control measurement using e.g. an electronic meter (pH 0-14). For measuring higher ozone values please choose the respective matching measurement procedure.

# (43) PHMB Tablet

## 2 - 60 mg/l (PHMB)

**Internal Name: 43-PHMB-tab**

PHMB Photometer (TbsPPB)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Add 1 PHMB Photometer tablet(s) to the test water in the cuvette. |
| 8 | Crush the tablet with a clean stirring rod. |
| 9 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 10 | Screw the lid back on the cuvette. |
| 11 | Gently swirl the cuvette to mix the liquid well. |
| 12 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 13 | Tap TEST to perform the measurement. |
| 14 | The determined result is immediately displayed. |

## Notes:

- It is important that all equipment coming in contact with sample water containing a reagent (cuvette, lid, stirrer) is cleaned using a brush, clear water and then distilled water, as otherwise the test kit will discolour over time.
- Clean the vials with a brush immediately after analysis or let the vial rest until blue precipitate has formed.
- Vials and stirring rod may be stained by blue colour after use. In this case clean vials and stirring rods with ethanol (96 %) or detergent if needed. Rinse vials and rods thoroughly with tap water and then with deionized water.
- The test result is influenced by total alkalinity and hardness. The calibration of this method was performed by using water with the following characteristics: i) Calcium hardness: 200 mg/l CaCO3, ii) Total alkalinity: 120 mg/l CaCO3.

# (111) PTSA

## 0 - 1000 ppb (PTSA)

Internal Name: 111-PTSA-Ad

## Measurement procedure:

1. Fill 10ml test water into a clean 24mm cuvette.
2. Screw the lid back on the cuvette.
3. Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette.
4. Tap TEST to perform the measurement.
5. The determined result is immediately displayed.

## Notes:

- Do ONLY use the cuvette which has been used to do calibration for this parameter! Use 10 ml pipette to always properly dose exactly 10 ml!
- Turbidity in samples may affect the PTSA result. Filter any turbid samples using GF/C filter paper before commencing PTSA measurement.
- Ensure that all parts are clean, dry and free of grease and the adapter must be placed firmly until it stops.
- Because the bottom of the cells can vary greatly it is imperative to always use the cell with which this parameter was also calibrated. It is essential to always ensure the correct amount of water in the cell, which is why exactly 10 ml of liquid should be taken by the pipette for the subsequent sample measurement. Please change or clean the tip of the pipette after each measurement/ calibration.
- Calibrate this parameter via the calibration SET if you use another cell or you have the feel that the measurement result is inaccurate.
- One of the following reasons can lead into receiving an error message: i) Cuvette-hole (PrimeLab) might be dirty (check the two windows), ii) Water sample might be too dark / not enough light can pass water sample to reach the sensor.

# (156) Watch Products

## 0 - 1000 ppb (Watch)

**Internal Name: 156-Watch-Ad**

## Measurement procedure:

| | |
|---|---|
| 1 | Rinse the cuvette several times with the sample water. |
| 1 | Rinse a dosing syringe several times with the sample water. |
| 2 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Fill 10ml test water into a clean 24mm cuvette. |
| 3 | Screw the lid back on the cuvette. |
| 3 | Screw the lid back on the cuvette. |
| 4 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 5 | Tap TEST to perform the measurement. |
| 5 | Tap TEST to perform the measurement. |

## Notes:

- Because the bottom of the cells can vary greatly it is imperative to always use the cell with which this parameter was also calibrated. It is essential to always ensure the correct amount of water in the cell, which is why exactly 10 ml of liquid should be taken by the pipette for the subsequent sample measurement. Please change or clean the tip of the pipette after each measurement/ calibration.
- Calibrate this parameter via the calibration SET if you use another cell or you have the feel that the measurement result is inaccurate.

# (157) TRACER

## 0 - 1000 ppb (TraceR)

**Internal Name: 157-TraceR-Ad**

## Measurement procedure:

1. Rinse the cuvette several times with the sample water.
2. Fill 10ml test water into a clean 24mm cuvette.
3. Screw the lid back on the cuvette.
4. Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette.
5. Tap TEST to perform the measurement.

## Notes:

- Because the bottom of the cells can vary greatly it is imperative to always use the cell with which this parameter was also calibrated. It is essential to always ensure the correct amount of water in the cell, which is why exactly 10 ml of liquid should be taken by the pipette for the subsequent sample measurement. Please change or clean the tip of the pipette after each measurement/ calibration.
- Calibrate this parameter via the calibration SET if you use another cell or you have the feel that the measurement result is inaccurate.

# (164) Peracetic Acid (LR) Tablet

## 0 - 10 mg/l (PAA)

**Internal Name: 164-Peracetic-Acid-LR**

DPD N°4 Photometer (TbsPD4)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Add 1 DPD N°4 tablet(s) to the test water in the cuvette. |
| 8 | Crush the tablet with a clean stirring rod. |
| 9 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 10 | Screw the lid back on the cuvette. |
| 11 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 12 | Tap TEST to perform the measurement. |
| 13 | The determined result is immediately displayed. |

## Notes:

- Please use caution to not extend the countdown time.
- Using the repeat button to repeat the test with the same sample will bring different results as the reagents will keep reacting.
- If the measuring water contains further oxidizing chemicals (e.g. active oxygen, chlorine, bromine etc.) this will also be detected and is part of the result.

# (165) Peracetic Acid (HR) Tablet + Powder Pack

**0 - 300** mg/l (PAA)

**Internal Name: 165-Peracetic-Acid-HR**

Chlorine HR (KI) Photometer (TbsPClhr)
Acidifying GP (PPHAFG)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Add 1 Chlorine HR (KI) Photometer tablet(s) to the test water in the cuvette. |
| 8 | Crush the tablet with a clean stirring rod. |
| 9 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 10 | Add 1 Acidifying GP tablet(s) to the test water in the cuvette. |
| 11 | Crush the tablet with a clean stirring rod. |
| 12 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 13 | Screw the lid back on the cuvette. |
| 14 | Gently swirl the cuvette to mix the liquid well. |
| 15 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 16 | Tap TEST to perform the measurement. |
| 17 | The determined result is immediately displayed. |

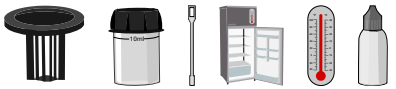
## Notes:

- Please use caution to not extend the countdown time.
- Using the repeat button to repeat the test with the same sample will bring different results as the reagents will keep reacting.
- If the measuring water contains further oxidizing chemicals (e.g. active oxygen, chlorine, bromine etc.) this will also be detected and is part of the result.

# (159) Permanganate Time Test Tablet

## 0 - 100 %A (PTT)

**Internal Name: 159-PTT-tab**



Potassium Photometer (TbsPPTST)

## Measurement procedure:

| | |
|---|---|
| 1 | Set the refrigerator to 15°C using the thermostat and according to the instructions. |
| 2 | Fill 10ml test water into a clean 24mm cuvette. |
| 3 | Screw the lid back on the cuvette. |
| 4 | Place the cuvette in the refrigerator for 20 minutes. |
| 5 | Place the sealed "Methanol ZERO" cuvette in the PrimeLab. |
| 6 | Start ZERO measurement. |
| 7 | Remove the cuvette from the PrimeLab and set it aside. It is no longer required for this test. |
| 8 | Remove the cuvette from the refrigerator. |
| 9 | Add exactly 35µ of Potassium Permanganate Solution to the sample water into the same cuvette. Use a 10-100µ pipette. |
| 10 | Screw the lid back on the cuvette. |
| 11 | Place the cuvette in the refrigerator for 10 minutes. |
| 12 | Tap TEST to start a 10:00 minutes countdown. |
| 13 | Remove the cuvette from the refrigerator. |
| 14 | Wipe the condensation water from the cuvette with a dry cloth. |
| 15 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 16 | Tap TEST to perform the measurement. |

## Notes:

- After adding the PTT-liquid, sample is highly sensitive to light, air and temperature. Do NOT open the vial after PTT-liquid has been added and lid got screwed on and keep it at constant temperature of 15 °C.
- Interferences: turbid and/or colored water samples (before adding PTT-liquid)

# (98) Phenol Tablet

## 0 - 5 mg/l (C6H5OH)

**Internal Name: 98-Phenol-tab**

Phenol N°1 Photometer (TbsHPhen1)
Phenol N°2 Photometer (TbsPPhen2)
Phenol N°3 Photometer (TbsPPhen3)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Add 1 Phenol N° 1 tablet(s) to the test water in the cuvette. |
| 8 | Crush the tablet with a clean stirring rod. |
| 9 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 10 | Add 1 Phenol N° 2 tablet(s) to the test water in the cuvette. |
| 11 | Crush the tablet with a clean stirring rod. |
| 12 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 13 | Screw the lid back on the cuvette. |
| 14 | Gently swirl the cuvette to mix the liquid well. |
| 15 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 16 | Tap TEST to start a 10:00 minutes countdown. |
| 17 | After the lapse of a 10:00 minute(s) countdown the determined result is displayed. |

## Notes:

- If your sample does contain copper, zinc, iron or manganese ions (up to 350 mg/l) add one Phenol CR tablet after ZERO. Crush and mix to dissolve.
- Level of > 20 mg/l hydrogen peroxide interfere with this test and can influence the reading.
- High (free) chlorine levels (> 10 mg/l) interfere with this test and can influence the reading.
- Alkalinity above 150 mg/l CaCO3 as well as sulphite above 10 mg/l or more than 2 mg/l sulphide will interfere with this test and can influence the reading.
- Some organic keto-enol compounds can lead to high readings.

# (44) Phosphate -ortho- (LR) 0 - 4 mg/l (PO4)

**Powder Pack + Tablet**

**Internal Name: 44-Phosphat-LR-tab**

Phosphate LR N°1 Photometer (PPHPPLR1)
Phosphate LR N°2 Photometer (TbsPPPLR2)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Add 1 Phosphate LR N°1 Photometer powder pillow to the sample water in the cuvette. |
| 8 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 9 | Add 1 Phosphate LR N°2 Photometer tablet(s) to the test water in the cuvette. |
| 10 | Crush the tablet with a clean stirring rod. |
| 11 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 12 | Screw the lid back on the cuvette. |
| 13 | Gently swirl the cuvette to mix the liquid well. |
| 14 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 15 | Tap TEST to start a 10:00 minutes countdown. |
| 16 | After the lapse of a 10:00 minute(s) countdown the determined result is displayed. |

## Notes:

- The test result can be converted into the following unit(s): mg/l P, mg/l P2O5.
- With this procedure ortho-phosphate ions are detected. Other phosphates must therefore be converted into ortho-phosphates before the test is begun.
- The pH value of the sample water should be between 6 and 7.
- The following contents of substances in the sample water can - at the respective concentration - falsify the measurement results: Chromium (> 100 mg/l), copper (> 10 mg/l), iron (> 100 mg/l), nickel (> 300 mg/l), zinc (> 80 mg/l).

# (45) Phosphate -ortho- (LR) Liquid + Powder

**0 - 4** mg/l (PO4)

**Internal Name: 45-Phosphat-LR-liq**

65ml PL Phosphate LR N°1 (PL65PPLR1)
PL Phosphate LR 2 (PLpow20PPLR2)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Add 25 drops of PL Phosphate LR 1 into the cuvette. |
| 8 | Add 1 x 0.05mL (measuring spoon) PL Phosphate LR 2 powder to the sample water in the cuvette. |
| 9 | Screw the lid back on the cuvette. |
| 10 | Gently swirl the cuvette to mix the liquid well. |
| 11 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 12 | Tap TEST to perform the measurement. |
| 13 | After the lapse of a 10:00 minute(s) countdown the determined result is displayed. |

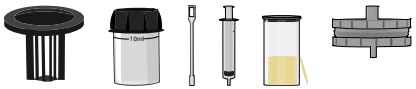
## Notes:

- The test result can be converted into the following unit(s): mg/l P, mg/l P2O5.
- With this procedure ortho-phosphate ions are detected. Other phosphates must therefore be converted into ortho-phosphates before the test is begun.
- The pH value of the sample water should be between 6 and 7.
- The following contents of substances in the sample water can - at the respective concentration - falsify the measurement results: Chromium (> 100 mg/l), copper (> 10 mg/l), iron (> 100 mg/l), nickel (> 300 mg/l), zinc (> 80 mg/l).

# (46) Phosphate -ortho- (HR) Powder Pack + Tablet

## 0 - 80 mg/l (PO4)

**Internal Name: 46-Phosphat-HR-tab**



Phosphate HR N°1 Photometer (PPHPPHR1)
Phosphate HR N°2 Photometer (TbsPPPHR2)

## Measurement procedure:

| | |
|---|---|
| 1 | Separate the two halves of the filter holder. |
| 2 | Insert a 25mm (GF / C) filter. Screw the filter holder back together, making sure that the O-ring is correctly seated. |
| 3 | Fill a 20ml syringe with 14ml sample water. |
| 4 | Connect the filter syringe to the filter holder. |
| 5 | Empty the syringe with the filter up to the 10ml-mark. |
| 6 | Fill the remaining 10ml filtered sample water into a clean 24mm cuvette. |
| 7 | Screw the lid back on the cuvette. |
| 8 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 9 | Start ZERO measurement. |
| 10 | Remove the cuvette again. |
| 11 | Unscrew the lid from the cuvette. |
| 12 | Add 1 Phosphate HR N°1 Photometer" powder pillow to the sample water in the cuvette. |
| 13 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 14 | Add 1 Phosphate HR N°2 Photometer tablet(s) to the test water in the cuvette. |
| 15 | Crush the tablet with a clean stirring rod. |
| 16 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 17 | Screw the lid back on the cuvette. |
| 18 | Gently swirl the cuvette to mix the liquid well. |
| 19 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 20 | Tap TEST to perform the measurement. |
| 21 | After the lapse of a 10:00 minute(s) countdown the determined result is displayed. |

## Notes:

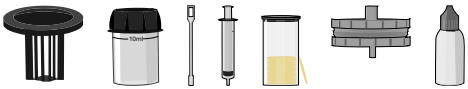
- Special accessories required / not included as standard equipment!

- The test result can be converted into the following unit(s): mg/l P, mg/l P2O5.
- Filter process is only needed in case of any suspended insoluble phosphate expected in your water sample (applicable for boiler water testing)
- With this procedure ortho-phosphate ions are detected. Other phosphates must therefore be converted into ortho-phosphates before the test is begun.
- The pH value of the sample water should be between 6 and 7.
- The following contents of substances in the sample water can - at the respective concentration - falsify the measurement results: Chromium (> 100 mg/l), copper (> 10 mg/l), iron (> 100 mg/l), nickel (> 300 mg/l), zinc (> 80 mg/l).

# (47) Phosphate -ortho- (HR) Liquid

## 0 - 100 mg/l (PO4)

**Internal Name: 47-Phosphat-HR-liq**



65ml PL Phosphate HR N°1 (PL65PPHR1)
65ml PL Phosphate HR N°2 (PL65PPHR2)

## Measurement procedure:

| | |
|---|---|
| 1 | Separate the two halves of the filter holder. |
| 2 | Insert a 25mm (GF / C) filter. Screw the filter holder back together, making sure that the O-ring is correctly seated. |
| 3 | Fill a 20ml syringe with 14ml sample water. |
| 4 | Connect the filter syringe to the filter holder. |
| 5 | Empty the syringe with the filter up to the 10ml-mark. |
| 6 | Fill the remaining 10ml filtered sample water into a clean 24mm cuvette. |
| 7 | Screw the lid back on the cuvette. |
| 8 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 9 | Start ZERO measurement. |
| 10 | Remove the cuvette again. |
| 11 | Unscrew the lid from the cuvette. |
| 12 | Add 25 (1ml) drops of PL Phosphate HR 1 into the cuvette. |
| 13 | Add 25 (1ml) drops of PL Phosphate HR 2 into the cuvette. |
| 14 | Screw the lid back on the cuvette. |
| 15 | Gently swirl the cuvette to mix the liquid well. |
| 16 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 17 | Tap TEST to perform the measurement. |
| 18 | After the lapse of a 10:00 minute(s) countdown the determined result is displayed. |

## Notes:

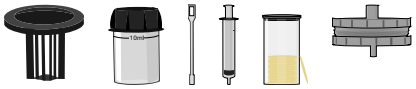
- Special accessories required / not included as standard equipment!
- The test result can be converted into the following unit(s): mg/l P, mg/l P2O5.
- Filter process is only needed in case of any suspended insoluble phosphate expected in your water sample (applicable for boiler water testing)

- With this procedure ortho-phosphate ions are detected. Other phosphates must therefore be converted into ortho-phosphates before the test is begun.
- The pH value of the sample water should be between 6 and 7.
- The following contents of substances in the sample water can - at the respective concentration - falsify the measurement results: Chromium (> 100 mg/l), copper (> 10 mg/l), iron (> 100 mg/l), nickel (> 300 mg/l), zinc (> 80 mg/l).

# (110) Phsphonate Tablet

## 0 - 20 mg/l (PO4)

**Internal Name: 110-Phosphon-tab**



Oxidising OP Photometer (TbsHOXOP)
OP-A Photometer (TbsPOPA)
OP-B Photometer (TbsPOPB)
OP-AX Photometer (TbsHOPAX)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 8ml of destilled water into a clean 24mm cuvette. |
| 2 | Add exactly 2ml sample water to the same cuvette. |
| 3 | Screw the lid back on the cuvette. |
| 4 | Swirl the cuvette back and forth for 5 times. |
| 5 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 6 | Start ZERO measurement. |
| 7 | Remove the cuvette again. |
| 8 | Unscrew the lid from the cuvette. |
| 9 | Add 1 OrgaPhos-OX tablet(s) to the test water in the cuvette. |
| 10 | Crush the tablet with a clean stirring rod. |
| 11 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 12 | Screw the lid back on the cuvette. |
| 13 | Gently swirl the cuvette to mix the liquid well. |
| 14 | Tap TEST to start a 05:00 minutes countdown. |
| 15 | The cuvette must not be placed in the device during this time. |
| 16 | Remove the cuvette again. |
| 17 | Unscrew the lid from the cuvette. |
| 18 | Add 1 OrgaPhos No.1 tablet(s) to the test water in the cuvette. |
| 19 | Crush the tablet with a clean stirring rod. |
| 20 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 21 | Screw the lid back on the cuvette. |
| 22 | Gently swirl the cuvette to mix the liquid well. |
| 23 | Tap TEST to start a 02:00 minutes countdown. |
| 24 | The cuvette must not be placed in the device during this time. |
| 25 | Remove the cuvette again. |
| 26 | Unscrew the lid from the cuvette. |

| | |
|---|---|
| 27 | Fill the 20 ml filter syringe (clean and residue-free) with the sample water from the cuvette just used. |
| 28 | Separate the two halves of the filter holder. |
| 29 | Insert a  filter. Screw the filter holder back together, making sure that the O-ring is correctly seated. |
| 30 | Screw the filter adapter prepared by steps 28 and 29 onto the syringe. |
| 31 | Press the 10ml prepared sample liquid in the filter syringe through the filter adapter into a clean 24mm cuvette. |
| 32 | Add 1 OrgaPhos No.2 tablet(s) to the test water in the cuvette. |
| 33 | Crush the tablet with a clean stirring rod. |
| 34 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 35 | Screw the lid back on the cuvette. |
| 36 | Gently swirl the cuvette to mix the liquid well. |
| 37 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 38 | Tap TEST to start a 05:00 minutes countdown. |
| 39 | After the lapse of a 05:00 minute(s) countdown the total result is displayed, divided in tPO4 (Organophosphonate and Phosphate as PO4). |
| 40 | Remove the cuvette from the PrimeLab and set it aside. It is no longer required for this test. |
| 41 | Fill 8ml of destilled water into a clean 24mm cuvette. |
| 42 | Add exactly 2ml sample water to the same cuvette. |
| 43 | Add 1 OrgaPhos No.3 tablet(s) to the test water in the cuvette. |
| 44 | Crush the tablet with a clean stirring rod. |
| 45 | Add 1 OrgaPhos No.2 tablet(s) to the test water in the cuvette. |
| 46 | Crush the tablet with a clean stirring rod. |
| 47 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 48 | Screw the lid back on the cuvette. |
| 49 | Gently swirl the cuvette to mix the liquid well. |
| 50 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 51 | Tap TEST to start a 05:00 minutes countdown. |
| 52 | After the lapse of a 05:00 minute(s) countdown the total result is displayed, divided in tPO4 = "Organophosphonate + Phosphate as PO4" ; PO4 = "Phosphate as PO4" ; PO4 org. = "Organophosphonate as PO4". |

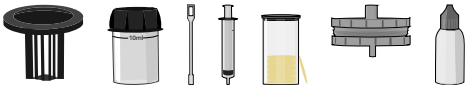
## Notes:

- Special accessories required / not included as standard equipment!
- The test result can be displayed as PBTC, NTP, HEDPA, EDTMPA, HMDTMPA, DETPMPA, HPA.
- With this procedure ortho-phosphate ions are detected. Other phosphates must therefore be converted into ortho-phosphates before the test is begun.

- The pH value of the sample water should be between 6 and 7.

# (87) Phsphonate 0 - 20 mg/l (PO4) Powder Can + Liquid

**Internal Name: 87-Phosphonate-liq**



20g PL Phosphonate N°1 (PLpow20PPHON1)
20g PL Phosphonate N°2 (PLpow20PPHON2)
65ml PL Phosphonate N°3 (PL65PPHON3)
20g PL Phosphonate N°4 (PLpow20PPHON4)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 8ml of destilled water into a clean 24mm cuvette. |
| 2 | Add exactly 2ml sample water to the same cuvette. |
| 3 | Screw the lid back on the cuvette. |
| 4 | Swirl the cuvette back and forth for 5 times. |
| 5 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 6 | Start ZERO measurement. |
| 7 | Remove the cuvette again. |
| 8 | Unscrew the lid from the cuvette. |
| 9 | Add 1 x 0.05mL (measuring spoon) PL Phosphonate 1 powder to the sample water in the cuvette. |
| 10 | Screw the lid back on the cuvette. |
| 11 | Gently swirl the cuvette to mix the liquid well. |
| 12 | Tap TEST to start a 05:00 minutes countdown. |
| 13 | The cuvette must not be placed in the device during this time. |
| 14 | Remove the cuvette again. |
| 15 | Unscrew the lid from the cuvette. |
| 16 | Add 1 x 0.05 (measuring spoon) PL Phosphonate 2 powder to the sample water in the cuvette. |
| 17 | Screw the lid back on the cuvette. |
| 18 | Gently swirl the cuvette to mix the liquid well. |
| 19 | Tap TEST to start a 02:00 minutes countdown. |
| 20 | The cuvette must not be placed in the device during this time. |
| 21 | Remove the cuvette again. |
| 22 | Unscrew the lid from the cuvette. |
| 23 | Fill the 20 ml filter syringe (clean and residue-free) with the sample water from the cuvette just used. |
| 24 | Separate the two halves of the filter holder. |

| | |
|---|---|
| 25 | Insert a (GF/C) filter. Screw the filter holder back together, making sure that the O-ring is correctly seated. |
| 26 | Screw the filter adapter prepared by steps 1 and 2 onto the syringe. |
| 27 | Press the 10ml prepared sample liquid in the filter syringe through the filter adapter into a clean 24mm cuvette. |
| 28 | Add 10 drops of PL Phosphonate 3 into the cuvette. |
| 29 | Screw the lid back on the cuvette. |
| 30 | Gently swirl the cuvette to mix the liquid well. |
| 31 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 32 | Tap TEST to perform the measurement. |
| 33 | The determined result for tPO4 (Organophosphnates and phosphates as PO4) is immediately displayed. |
| 34 | Remove the cuvette from the PrimeLab and set it aside. It is no longer required for this test. |
| 35 | Fill 8ml of destilled water into a clean 24mm cuvette. |
| 36 | Add exactly 2ml sample water to the same cuvette. |
| 37 | Screw the lid back on the cuvette. |
| 38 | Swirl the cuvette back and forth for 5 times. |
| 39 | Unscrew the lid from the cuvette. |
| 40 | Add 10 drops of PL Phosphonate 3 into the cuvette. |
| 41 | Add 1 x 0.05 (measuring spoon) PL Phosphonate 4 powder to the sample water in the cuvette. |
| 42 | Screw the lid back on the cuvette. |
| 43 | Gently swirl the cuvette to mix the liquid well. |
| 44 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 45 | Tap TEST to start a 10:00 minutes countdown. |
| 46 | After the lapse of a 10:00 minute(s) countdown the total result is displayed, divided in tPO4 = "Organophosphonate + Phosphate as PO4" ; PO4 = "Phosphate as PO4" ; PO4 org. = "Organophosphonate as PO4". |

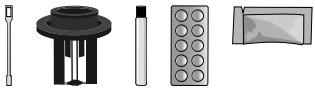
## Notes:

- Special accessories required / not included as standard equipment!
- The test result can be displayed as PBTC, NTP, HEDPA, EDTMPA, HMDTMPA, DETPMPA, HPA.
- With this procedure ortho-phosphate ions are detected. Other phosphates must therefore be converted into ortho-phosphates before the test is begun.
- The pH value of the sample water should be between 6 and 7.

# (153) Phosphorus - - Total - (LR) 0 - 2.6 mg/l (P)

Powder Pack + Tablet

**Internal Name: 153-PsphrTotLR-tab**



Phosphate LR N°1 Photometer (PPHPPLR1)
Phosphate LR N°2 Photometer (TbsPPPLR2)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 5ml sample water in a new, clean Phosphorus LR cuvette. |
| 2 | Add 2 x 0.05 ml PL Phosphorus 2 to the test water in the cuvette. |
| 3 | Screw the lid back on the cuvette IMMEDIATELY. |
| 4 | Shake the cell vigorously for 00:20 minutes. |
| 5 | Tap TEST to start a 00:20 minutes countdown. |
| 6 | Place cuvettes for 30 minutes at 150°C in the preheated thermoreactor. |
| 7 | Tap TEST to start a 30:00 minutes countdown. |
| 8 | CAUTION: Cuvettes are hot! |
| 9 | Remove the cuvettes from the thermoreactor. |
| 10 | Let the cuvettes cool down to at least 60°C. |
| 11 | Add 10 drops of PL Phosphorus LR1 into the cuvette. |
| 12 | Screw the lid back on the cuvette. |
| 13 | Gently swirl the cuvette to mix the liquid with the reagent. |
| 14 | Place the 16mm adapter in the PrimeLab. |
| 15 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 16 | Start ZERO measurement. |
| 17 | Remove the cuvette again. |
| 18 | Unscrew the lid from the cuvette. |
| 19 | Add 1 Phosphate LR 1 powder pillow(s) to the sample water in the cuvette. |
| 20 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 21 | Add 1 Phosphate LR 2 tablet(s) to the test water in the cuvette. |
| 22 | Crush the tablet with a clean stirring rod. |
| 23 | Screw the lid back on the cuvette. |
| 24 | Gently swirl the cuvette to mix the liquid well. |
| 25 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |

**26** Tap TEST to perform the measurement.

## Notes:

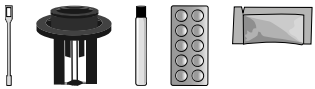
- The test result can be converted into the following unit(s): mg/l PO43-.
- Remove powder from vial edges, lid and tube threads after adding powder (PL Phosphorus 2)
- The pH value of the sample water should be between 6 and 7.
- The following contents of substances in the sample water can - at the respective concentration - falsify the measurement results: Chromium (> 100 mg/l), copper (> 10 mg/l), iron (> 100 mg/l), nickel (> 300 mg/l), zinc (> 80 mg/l).

# (154) Phosphorus - - Total - (HR)

**0 - 52 mg/l (P)**

**Powder Pack + Tablet**

**Internal Name: 154-PsphrTotHR-tab**



Phosphate HR N°1 Photometer (PPHPPHR1)
Phosphate HR N°2 Photometer (TbsPPPHR2)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 5ml sample water in a new, clean Phosphorus HR cuvette. |
| 2 | Add 2 x 0.05 ml PL Phosphorus 2 to the test water in the cuvette. |
| 3 | Screw the lid back on the cuvette IMMEDIATELY. |
| 4 | Shake the cell vigorously for 00:20 minutes. |
| 5 | Tap TEST to start a 00:20 minutes countdown. |
| 6 | Place cuvettes for 30 minutes at 150°C in the preheated thermoreactor. |
| 7 | Tap TEST to start a 30:00 minutes countdown. |
| 8 | CAUTION: Cuvettes are hot! |
| 9 | Remove the cuvettes from the thermoreactor. |
| 10 | Let the cuvettes cool down to at least 60°C. |
| 11 | Add 10 drops of PL Phosphorus HR1 into the cuvette. |
| 12 | Screw the lid back on the cuvette. |
| 13 | Gently swirl the cuvette to mix the liquid with the reagent. |
| 14 | Place the 16mm adapter in the PrimeLab. |
| 15 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 16 | Start ZERO measurement. |
| 17 | Remove the cuvette again. |
| 18 | Unscrew the lid from the cuvette. |
| 19 | Add 1 Phosphate HR 1 powder pillow(s) to the sample water in the cuvette. |
| 20 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 21 | Add 1 Phosphate HR 2 tablet(s) to the test water in the cuvette. |
| 22 | Crush the tablet with a clean stirring rod. |
| 23 | Screw the lid back on the cuvette. |
| 24 | Gently swirl the cuvette to mix the liquid well. |
| 25 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |

**26** Tap TEST to perform the measurement.

## Notes:

- The test result can be converted into the following unit(s): mg/l PO43-.
- Remove powder from vial edges, lid and tube threads after adding powder (PL Phosphorus 2)
- The pH value of the sample water should be between 6 and 7.
- The following contents of substances in the sample water can - at the respective concentration - falsify the measurement results: Chromium (> 100 mg/l), copper (> 10 mg/l), iron (> 100 mg/l), nickel (> 300 mg/l), zinc (> 80 mg/l).

# (85) Polyacrylate Liquid

1 - 30 mg/l

(Polyac.Ac.)

Internal Name: 85-Polyacryl-liq

65ml PL Polyacrylate N°1 (PL65PLYA1)
65ml PL Polyacrylate N°2 (PL65PLYA2)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Add 25 drops of PL Polyacrylate 1 into the cuvette. |
| 8 | Screw the lid back on the cuvette. |
| 9 | Gently swirl the cuvette to mix the liquid well. |
| 10 | Unscrew the lid from the cuvette. |
| 11 | Add 25 drops of PL Polyacrylate 2 into the cuvette. |
| 12 | Screw the lid back on the cuvette. |
| 13 | Gently swirl the cuvette to mix the liquid well. |
| 14 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 15 | Tap TEST to perform the measurement. |
| 16 | After the lapse of a 10:00 minute(s) countdown the determined result is displayed. |

## Notes:

- If the water sample has little or no turbidity after correctly adding the reagents, the water sample must be treated specially. Ask the supplier of this set for detailed instructions for pretreatment of the sample.
- If unexpected / inconsistent test results appear, this can be due to a contamination of the sample or to confounding factors in the sample water. Ask the suppliers of this set for a detailed statement to eliminate interference factors in the water sample.

# (48) Potassium Tablet

0.7 - 12 mg/l (K)

**Internal Name: 48-Potassium-tab**

Potassium Photometer (TbsPPTST)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Add 1 Potassium Photometer tablet(s) to the test water in the cuvette. |
| 8 | Crush the tablet with a clean stirring rod. |
| 9 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 10 | Screw the lid back on the cuvette. |
| 11 | Gently swirl the cuvette to mix the liquid well. |
| 12 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 13 | Tap TEST to perform the measurement. |
| 14 | The determined result is immediately displayed. |

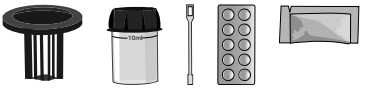
## Notes:

- By adding the "Potassium Photometer" tablet you get a cloudy solution.

# (83) QAC Powder Pack + Tablet

## 25 - 150 mg/l (QAC)

**Internal Name: 83-QAC-tab**



Acidifying GP (PPHAFG)
QAC HR Photometer (TbsPQAC)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Add 1 Acidifying GP powder pillow(s) to the sample water in the cuvette. |
| 8 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 9 | Add 1 QAC HR Photometer tablet(s) to the test water in the cuvette. |
| 10 | Crush the tablet with a clean stirring rod. |
| 11 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 12 | Screw the lid back on the cuvette. |
| 13 | Gently swirl the cuvette to mix the liquid well. |
| 14 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 15 | Tap TEST to perform the measurement. |
| 16 | The determined result is immediately displayed. |

# (49) Silica (LR) 0 - 5 mg/l (SiO2) Liquid + Powder Can

**Internal Name: 49-Silica-LR-liq**

65ml PL Silica LR N°1 (PL65SiLR1)
65ml PL Silica LR N°2 (PL65SiLR2)
40g PL Silica LR N°3 (PLpow40SiLR3)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Add 10 drops of PL Silica LR 1 into the cuvette. |
| 8 | Screw the lid back on the cuvette. |
| 9 | Gently swirl the cuvette to mix the liquid well. |
| 10 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 11 | Tap TEST to perform the measurement. |
| 12 | Wait until the 05:00 minute countdown ran out. |
| 13 | Remove the cuvette again. |
| 14 | Unscrew the lid from the cuvette. |
| 15 | Add 10 drops of PL Silica LR 2 into the cuvette. |
| 16 | Add 3 x 0.05 mL (measuring spoon) PL Silica LR 3 powder to the sample water in the cuvette. |
| 17 | Screw the lid back on the cuvette. |
| 18 | Gently swirl the cuvette to mix the liquid well. |
| 19 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 20 | Tap TEST to start a 10:00 minutes countdown. |
| 21 | After the lapse of a 10:00 minute(s) countdown the determined result is displayed. |

## Notes:

- The test result can be converted into the following unit(s): mg/l Si
- The temperature of the water sample must be between 20 °C and 30 °C to ensure precise measurements.

# (50) Silica (HR) Powder Can

## 0 - 100 mg/l (SiO2)

**Internal Name: 50-Silica-HR-pow**

20g PL Silica HR N°1 (PLpow20SilHR1)
60g PL Silica HR N°2 (PLpow60SilHR2)
10g PL Silica HR N°3 (PLpow10SilHR3)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Add 2 x 0.05 mL (measuring spoon) PL Silica HR 1 powder to the sample water in the cuvette. |
| 8 | Add 4 x 0.05 mL (measuring spoon) PL Silica HR 2 powder to the sample water in the cuvette. |
| 9 | Screw the lid back on the cuvette. |
| 10 | Gently swirl the cuvette to mix the liquid well. |
| 11 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 12 | Tap TEST to start a 10:00 minutes countdown. |
| 13 | Wait until the 10:00 minute countdown ran out. |
| 14 | Remove the cuvette again. |
| 15 | Unscrew the lid from the cuvette. |
| 16 | Add 1 x 0.05 mL (measuring spoon) PL Silica HR 3 powder to the sample water in the cuvette. |
| 17 | Screw the lid back on the cuvette. |
| 18 | Gently swirl the cuvette to mix the liquid well. |
| 19 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 20 | Tap TEST to perform the measurement. |
| 21 | After the lapse of a 02:00 minute(s) countdown the determined result is displayed. |

## Notes:

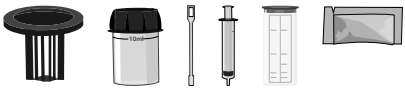
- The test result can be converted into the following unit(s): mg/l Si
- The temperature of the water sample must be between 15 °C and 25 °C to ensure precise measurements.

- Sulfide in the water sample will influence the measurement result.
- Larger amounts of iron falsify the measurement result.
- Phosphate content in the water higher that 60 mg/l will falsify the measurement result.

# (51) Sodium Hypochlorite 0.2 - 40 % (NaOCl)

**Tablet + Powder Pack**

**Internal Name: 51-Sodium-Hypo-tab**



Chlorine HR (KI) Photometer (TbsPClhr)
Acidifying GP (PPHAFG)

## Measurement procedure:

| | |
|---|---|
| 1 | Rinse a dosing syringe several times with the sample water. |
| 2 | Fill 5ml into a clean measuring cup (100ml). |
| 3 | Fill 95ml distilled water in the same measuring cup. |
| 4 | Stir with a clean stirring rod. |
| 5 | Rinse a clean syringe several times with the sample water. |
| 6 | Fill 1ml sample from the previous step in a second, clean measuring cup. |
| 7 | Fill 99ml distilled water in the second measuring cup. |
| 8 | Stir with a clean stirring rod. |
| 9 | Empty the 10ml from the previous step in a clean 24mm cuvette. |
| 10 | Screw the lid back on the cuvette. |
| 11 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 12 | Start ZERO measurement. |
| 13 | Remove the cuvette again. |
| 14 | Unscrew the lid from the cuvette. |
| 15 | Add 1 Chlorine HR (KI) Photometer tablet(s) to the test water in the cuvette. |
| 16 | Crush the tablet with a clean stirring rod. |
| 17 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 18 | Add 1 Acidifying GP powder pillow to the sample water in the cuvette. |
| 19 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 20 | Screw the lid back on the cuvette. |
| 21 | Gently swirl the cuvette to mix the liquid well. |
| 22 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 23 | Tap TEST to perform the measurement. |
| 24 | After the lapse of a 00:10 minute(s) countdown the determined result is displayed. |

## Notes:

- The precision of the test results depends upon the precision of the diluting procedure.

# (68) Sodium Hypochlorite Liquid

## 0.2 - 40 % (NaOCl)

**Internal Name: 68-Sodium-Hypo-liq**

65ml PL Chlorine HR N°1 (PL65ClHR1)
65ml PL Chlorine HR N°2 (PL65ClHR2)

## Measurement procedure:

| | |
|---|---|
| 1 | Rinse a dosing syringe several times with the sample water. |
| 2 | Fill 5ml into a clean measuring cup (100ml). |
| 3 | Fill 95ml distilled water in the same measuring cup. |
| 4 | Stir with a clean stirring rod. |
| 5 | Rinse dosing syringe repeatedly with solution from step 3. |
| 6 | Remove exactly 1ml of the sample water. |
| 7 | Fill 1 ml sample of step 3 into a clean measuring cup (100ml). |
| 8 | Fill 99 ml distilled water in the second measuring cup. |
| 9 | Stir with a clean stirring rod. |
| 10 | Fill 10ml sample water from step 8 into a clean 24mm cuvette. |
| 11 | Screw the lid back on the cuvette. |
| 12 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 13 | Start ZERO measurement. |
| 14 | Remove the cuvette again. |
| 15 | Unscrew the lid from the cuvette. |
| 16 | Add 3 drops of PL Chlorine HR 1 into the cuvette. |
| 17 | Add 3 drops of PL Chlorine HR 2 into the cuvette. |
| 18 | Screw the lid back on the cuvette. |
| 19 | Gently swirl the cuvette to mix the liquid well. |
| 20 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 21 | Tap TEST to perform the measurement. |
| 22 | The determined result is immediately displayed. |

## Notes:

- The precision of the test results depends upon the precision of the diluting procedure.

# (54) Sulphate Powder Pack

## 5 - 100 mg/l (SO4)

**Internal Name: 54-Sulphate-tab**

Sulphate Photometer (PPPSULP)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Add 1 Sulphate Photometer powder pillow to the sample water in the cuvette. |
| 8 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 9 | Screw the lid back on the cuvette. |
| 10 | Gently swirl the cuvette to mix the liquid well. |
| 11 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 12 | Tap TEST to perform the measurement. |
| 13 | The determined result is immediately displayed. |

## Notes:

- Extend the listed measurement range from 5 - 100 mg/l, to 10 - 200 mg/l by diluting the water sample as follows: Add 5 ml of sample water plus 5 ml of sulphate-free water and continue with the test procedure. To account for the dilution, the test result displayed on the screen needs to be multiplied by 2.

# (55) Sulphate Powder Can

## 5 - 100 mg/l (SO4)

**Internal Name: 55-Sulphate-pow**

10g PL Sulphate N°1 (PLpow10SULPHA1)

## Measurement procedure:

| | |
|---|---|
| **1** | Fill 10ml test water into a clean 24mm cuvette. |
| **2** | Screw the lid back on the cuvette. |
| **3** | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| **4** | Start ZERO measurement. |
| **5** | Remove the cuvette again. |
| **6** | Unscrew the lid from the cuvette. |
| **7** | Add 1 x 0.05 ml (measuring spoon) PL Sulphate 1 powder to the sample water in the cuvette. |
| **8** | Screw the lid back on the cuvette. |
| **9** | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| **10** | Tap TEST to perform the measurement. |
| **11** | After the lapse of a 05:00 minute(s) countdown the determined result is displayed. |

# (140) Sulphide Liquid

**0 - 0.7** mg/l (S)

**Internal Name: 140-Sulphide-Ha**

Sulfide 1 (HaSulfide1)
Sulfide 2 (HaSulfide2)

## Measurement procedure:

| | |
|---|---|
| **1** | Fill 10ml test water into a clean 24mm cuvette. |
| **2** | Screw the lid back on the cuvette. |
| **3** | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| **4** | Start ZERO measurement. |
| **5** | Remove the cuvette again. |
| **6** | Unscrew the lid from the cuvette. |
| **7** | Empty the cuvette. |
| **8** | Fill 10 ml of sample water into a 100 ml measuring cup |
| **9** | Add 1 ml of Sulfide 1 to the sample water in the beaker. |
| **10** | Swirl the measuring cup to mix the liquid well. |
| **11** | Add 1 ml of Sulfide 2 to the sample water in the beaker. |
| **12** | Tap TEST to start a 05:00 minutes countdown. |
| **13** | Fill 10ml sample water from step 11 into a clean 24mm cuvette. |
| **14** | Screw the lid back on the cuvette. |
| **15** | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| **16** | Tap TEST to start a 05:00 minutes countdown. |
| **17** | After the lapse of a 05:00 minute(s) countdown the determined result is displayed. |

## Notes:

- The test result can be converted into the following unit(s): mg/l H2S
- The temperature of the water sample must be 20 °C to avoid inaccurate measurements.

# (52) Sulphide Tablet

**0.04 - 0.5** mg/l (S)

Internal Name: 52-Sulphide-tab

Sulphide N°1 Photometer (TbsHSULFD1)
Sulphide N°2 Photometer (TbsPSULFD2)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Add 1 Sulphide N° 1 Photometer tablet(s) to the test water in the cuvette. |
| 8 | Crush the tablet with a clean stirring rod. |
| 9 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 10 | Add 1 Sulphide N° 2 Photometer tablet(s) to the test water in the cuvette. |
| 11 | Crush the tablet with a clean stirring rod. |
| 12 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 13 | Screw the lid back on the cuvette. |
| 14 | Gently swirl the cuvette to mix the liquid well. |
| 15 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 16 | Tap TEST to start a 10:00 minutes countdown. |
| 17 | After the lapse of a 10:00 minute(s) countdown the determined result is displayed. |

## Notes:

- The test result can be converted into the following unit(s): mg/l H2S
- The temperature of the water sample must be 20 °C to avoid inaccurate measurements.

# (105) Sulphite (HR) Tablet

## 0 - 300 mg/l (Na2SO3)

**Internal Name: 105-Sulphite-HR-tab**

Sulphite HR N°1 Photometer (TbsHSULFHR1)
Sulphite HR N°2 Photometer (TbsPSULFHR2)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Add 1 Sulphite HR N°1 photometer tablet(s) to the test water in the cuvette. |
| 8 | Crush the tablet with a clean stirring rod. |
| 9 | Add 1 Sulphite HR N°2 photometer tablet(s) to the test water in the cuvette. |
| 10 | Crush the tablet with a clean stirring rod. |
| 11 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 11 | Screw the lid back on the cuvette. |
| 12 | Gently swirl the cuvette to mix the liquid well. |
| 13 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 14 | Tap TEST to start a 02:00 minutes countdown. |
| 15 | After the lapse of a 02:00 minute(s) countdown the determined result is displayed. |

## Notes:

- The test result can be converted into the following unit(s): mg/l SO3
- Filter sample if neccessary to test a clear sample.
- Cell, lid and stirring rod need to be cleaned immediately after to prevent staining.
- Expect low results if tannin or tannic acid is present.
- Following substances cause interferences: Chlorine (> 250 mg/l), nitrite (> 200 mg/l), iron (> 20 mg/l), sulphide (> 10 mg/l).

# (53) Sulphite (LR) Tablet

## 0 - 10 mg/l (SO3)

**Internal Name: 53-Sulphite-LR-tab**

Sulphite LR Photometer (TbsPSULFTLR)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Add 1 Sulphite LR Photometer tablet(s) to the test water in the cuvette. |
| 8 | Crush the tablet with a clean stirring rod. |
| 9 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 10 | Screw the lid back on the cuvette. |
| 11 | Gently swirl the cuvette to mix the liquid well. |
| 12 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 13 | Tap TEST to perform the measurement. |
| 14 | After the lapse of a 05:00 minute(s) countdown the determined result is displayed. |

## Notes:

- The test result can be converted into the following unit(s): mg/l Na2SO3

# (81) Suspended solids

**0 - 750** mg/l (TSS)

Internal Name: 81-Suspended-Sol

## Measurement procedure:

| | |
|---|---|
| 1 | Mix a larger amount of test water (>0.5 liter) in a mixer at the highest level for at least 2 minutes. |
| 2 | Fill 10ml distilled water in a clean 24mm cuvette. |
| 3 | Screw the lid back on the cuvette. |
| 4 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 5 | Start ZERO measurement. |
| 6 | Remove the cuvette again. |
| 7 | Unscrew the lid from the cuvette. |
| 8 | Empty the cuvette. |
| 9 | Mix the sample thoroughly. |
| 10 | Rinse the cuvette several times with the sample water. |
| 11 | Then fill 10ml of the sample water in the cuvette. |
| 12 | Screw the lid back on the cuvette. |
| 13 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 14 | Tap TEST to perform the measurement. |
| 15 | The determined result is immediately displayed. |

## Notes:

- To get a more accurate indication of the measured value, a gravimetrical determination of the water sample is necessary. Here, the water sample is filtered and the residue evaporated at about 100 °C and weighed to the dried residue.
- Make sure that the temperature of the water sample for measurement is equal to the temperature of the water sample with extraction of the water sample, otherwise measuring errors can occur.
- In the best case do the measurement of the water sample immediately after extraction of the water sample. Otherwise, keep seven days in a closed glass or plastic container at max. 4 °C.
- Make sure that the sample contains no air bubbles in the measurement. If this is the case, remove the air bubbles by tapping it with the cuvette.

# (91) Tannic acid Liquid

## 0 - 150 mg/l (Tan. Ac.)

**Internal Name: 91-Tannic-acid-liq**

65ml PL Tannin N°1 (PL65Tannin1)
30ml PL Tannin N°2 (PL30Tannin2)

## Measurement procedure:

| | |
|---|---|
| **1** | Fill 9 ml distilled water in a clean 24mm cuvette. |
| **2** | Fill 1 ml sample water in the same cuvette. |
| **3** | Screw the lid back on the cuvette. |
| **4** | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| **5** | Start ZERO measurement. |
| **6** | Remove the cuvette again. |
| **7** | Unscrew the lid from the cuvette. |
| **8** | Add 25 drops of PL Tannin 1 into the cuvette. |
| **9** | Add 6 drops of PL Tannin 2 into the cuvette. |
| **10** | Screw the lid back on the cuvette. |
| **11** | Gently swirl the cuvette to mix the liquid well. |
| **12** | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| **13** | Tap TEST to perform the measurement. |
| **14** | After the lapse of a 20:00 minute(s) countdown the determined result is displayed. |

# (05) Alkalinity-M Tablet

## 0 - 200 mg/l (CaCO3)

**Internal Name: 05-Alkalinit-M-tab**

Alkalinity-M Photometer (TbsPTA)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Add 1 Alkalinity-M Photometer tablet(s) to the test water in the cuvette. |
| 8 | Crush the tablet with a clean stirring rod. |
| 9 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 10 | Screw the lid back on the cuvette. |
| 11 | Gently swirl the cuvette to mix the liquid well. |
| 12 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 13 | Tap TEST to start a 00:25 minutes countdown. |
| 14 | After the lapse of a 00:25 minute(s) countdown the determined result is displayed. |

## Notes:

- The test result can be converted into the following unit(s): mg/l HCO3-, °dH, °eH, °fH, mmol (KS4.3), mval.
- In order to obtain a result as precise as possible, it is essential that the water sample has a volume of exactly 10ml.

# (06) Alkalinity-P Tablet

## 5 - 300 mg/l (CaCO3)

**Internal Name: 06-Alkalinit-P-tab**

Alkalinity-P Photometer (TbsPAP)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Add 1 Alkalinity-P Photometer tablet(s) to the test water in the cuvette. |
| 8 | Crush the tablet with a clean stirring rod. |
| 9 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 10 | Screw the lid back on the cuvette. |
| 11 | Gently swirl the cuvette to mix the liquid well. |
| 12 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 13 | Tap TEST to start a 05:00 minutes countdown. |
| 14 | After the lapse of a 05:00 minute(s) countdown the determined result is displayed. |

## Notes:

- The test result can be converted into the following unit(s): °dH, °eH, °fH, mmol (KS4.3), mval.
- In order to obtain a result as precise as possible, it is essential that the water sample has a volume of exactly 10ml.

# (121) Alkalinity-M HR Tablet

## 0 - 200 mg/l ($CaCO_3$)

**Internal Name: 121-Alka-M-HR-tab**

Alkalinity-M HR Photometer (TbsPTAHR)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Add 1 Alkalinity-M HR Photometer tablet(s) to the test water in the cuvette. |
| 8 | Crush the tablet with a clean stirring rod. |
| 9 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 10 | Screw the lid back on the cuvette. |
| 11 | Gently swirl the cuvette to mix the liquid well. |
| 12 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 13 | Tap TEST to start a 01:00 minutes countdown. |
| 14 | After the lapse of a 01:00 minute(s) countdown the determined result is displayed. |

## Notes:

- The test result can be converted into the following unit(s): mg/l $HCO_3^-$, °dH, °eH, °fH, mmol (KS4.3), mval.
- In order to obtain a result as precise as possible, it is essential that the water sample has a volume of exactly 10ml.
- Extend the listed measurement range to 400 - 1000 mg/l by diluting your water sample as follows: Add 5 ml of sample water plus 5 ml of distilled water and continue with the test procedure. The test result displayed on the screen needs to be multiplied by 2.

# (170) Transmission

## 0 - 100 % (Trnsm)

**Internal Name: 170-Transmission**

## Measurement procedure:

| | |
|---|---|
| 1 | Select the desired wavelength. |
| 2 | Fill 10ml test water into a clean 24mm cuvette. |
| 3 | Screw the lid back on the cuvette. |
| 4 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 5 | Start ZERO measurement. |
| 6 | Remove the cuvette again. |
| 7 | Treat the water sample according to the chosen procedure. |
| 8 | Fill 10ml of the treated water sample into a clean 24mm cuvette. |
| 9 | Screw the lid back on the cuvette. |
| 10 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 11 | Tap TEST to perform the measurement. |
| 12 | The determined result is immediately displayed. |

## Notes:

- With this method you can create your own parameters, use reagents from other manufacturers and/or perform processes with the PrimeLab that are included in the offered IDs/parameters. This requires that you familiarize yourself with the colorimetry of the water sample AFTER addition of the reagent that you want to use. Select the wavelength of your sample after addition of the reagent to be used by selecting the closest colour match (see also www.primelab.org). At the end of measurement you will receive a value for the "Transmission". "Transmission" in % means how much light reaches the sensor (in %), compared to ZERO measurement (T = 100%). After adding a colouring reagent, transmission will decrease. Simply measure several water samples with different concentrations of the parameter of interest on one wavelength, to record your own values using the determined transmission results.

# (112) Turbidity-NTU

## 0.02 - 1100 NTU (Turb)

Internal Name: 112-Turbidity-NTU

## Measurement procedure:

| | |
|---|---|
| 1 | Mix the sample thoroughly. |
| 2 | Rinse the cuvette several times with the sample water. |
| 3 | Then fill 10ml of the sample water in the cuvette. |
| 4 | Screw the lid back on the cuvette. |
| 5 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 6 | Tap TEST to perform the measurement. |
| 7 | The determined result is immediately displayed. |

## Notes:

- If low values (< 20 NTU) are expected, we recommend to let the water sample (in the vial) rest for at least 05:00 minutes before pressing TEST. As an alternative, you can also continue to repeat measurement in steps of 01:00 minute. The lowest value displayed can be taken as a result.
- The test result can be converted into the following unit(s): FTU / FNU
- Ensure that all parts are clean, dry and free of grease and the adapter must be placed firmly until it stops.
- Exactly 10 ml of liquid need to be used which can be achieved by using the pipette provided with each kit. Please change or clean the tip of the pipette after each measurement/calibration by using destilled water.
- If your PrimeLab was delivered with activated ID 112 (means you have NOT activated it afterwards), the device is already calibrated. You only have to make a new calibration again if you feel that results obtained are inaccurate. The calibration process is under SET - described > calibration.
- The following factors affect the accuracy of the measurement result : • a cell not thoroughly cleaned / residue from previous measurements • scratches/water bubbles on the cell inner wall • finger prints on the cell • environmental influences, such as different or extreme temperatures, humidity or strong sunlight
- One of the following reasons can lead into receiving an error message: i) Cuvette-hole (PrimeLab) might be dirty (check the two windows), ii) Water sample might be too dark / not enough light can pass water sample to reach the sensor.
- The turbidity measurement method ID 112 uses, is based on the nephelometric principle, which is described in DIN EN ISO 7027.

# (59) Turbidity

## 20 - 1000 FAU (Turb)

**Internal Name: 59-Turbidity**

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml distilled water in a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Empty the cuvette. |
| 8 | Mix the sample thoroughly. |
| 9 | Rinse the cuvette several times with the sample water. |
| 10 | Then fill 10ml of the sample water in the cuvette. |
| 11 | Screw the lid back on the cuvette. |
| 12 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 13 | Tap TEST to perform the measurement. |
| 14 | The determined result is immediately displayed. |

## Notes:

- The test result can be converted into the following unit(s): FTU (same as FAU)
- FAU stands for Formazin Attenuation Units, different from the NTU (nephelometric) method.
- The measurement should be conducted immediately after sampling.
- Air bubbles will influence the measurement result.
- Tinted water samples influence the result. In this case do not use distilled water (step 1) but rather filtered sample water for the ZERO adjustment.

- The turbidity test measures the optical value of the sample which results from the scattering and absorption of light particles. The amount of turbidity depends on variables such as size, shape, colour and the refractive nature of the particles. This test is calibrated using Formazin Turbidity Standards and the readings are in terms of FAU (Formazin Attenuation Units). This test can be used for daily plant monitoring and 1 FAU is equivalent to 1 NTU (Nephelometric Turbidity Unit). This test is not suitable for USEPA reporting purposes as the optical method of measurement for FAU is very different than the NTU method. However 1 NTU = 1 FTU = 1 FAU when traced to formazin primary standards.

# (120) Urea

0.1 - 2.5 mg/l

((NH2)2CO)

Powder + Liquid

Internal Name: 120-Urea-tab-liq

Ammonia N°1 Photometer (PPHAM1)
Ammonia N°2 Photometer (PPPAM2)
30ml PL Urea N°1 (PL30Urea1)
10ml PL Urea N°1 (PL10Urea2)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Add 2 drops of PL Urea 1 into the cuvette. |
| 8 | Screw the lid back on the cuvette. |
| 9 | Gently swirl the cuvette to mix the liquid well. |
| 10 | Add 1 drops of PL Urea 2 into the cuvette. |
| 11 | Screw the lid back on the cuvette. |
| 12 | Gently swirl the cuvette to mix the liquid well. |
| 13 | Tap TEST to perform the measurement. |
| 14 | Wait until the 05:00 minute countdown ran out. |
| 15 | Add 1 Ammonia N° 1 Photometer powder pillow(s) to the sample water in the cuvette. |
| 16 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 17 | Add 1 Ammonia N° 2 Photometer powder pillow(s) to the sample water in the cuvette. |
| 18 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 19 | Screw the lid back on the cuvette. |
| 20 | Gently swirl the cuvette to mix the liquid well. |
| 21 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 22 | Tap TEST to start a 10:00 minutes countdown. |
| 23 | After the lapse of a 10:00 minute(s) countdown the determined result is displayed. |

## Notes:

- Ammonia N°1 will only dissolve completely after adding Ammonia N°2.
- Samples with concentrations above 2 mg/l urea may lead to results in between the measurement range. If so, please dilute sample with urea-free water and re-do the test.
- Ammonia and chloramines will be detected together. The result displayed will show the sum of both.
- The temperature of the water sample must be between 20 °C and 30 °C to ensure precise measurements.
- Test needs to be carried out not later than 1 hour after taking the sample.
- If seawater is tested, the sample needs to be pre-treated with special conditioning powder before Ammonia N°1 is added.
- Do not store PL Urea 1 below 10°C as it might granulate.
- PL Urea 2 needs to be stored between 4°C and 8°C.

# (150) Urea (HR) 0.2 - 5 mg/l ((NH2)2CO) Powder + Liquid

**Internal Name: 150-UreaHR-tab-liq**

Ammonia N°1 Photometer (PPHAM1)
Ammonia N°2 Photometer (PPPAM2)
30ml PL Urea N°1 (PL30Urea1)
10ml PL Urea N°1 (PL10Urea2)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 5ml destilled water into a clean 24mm cuvette. |
| 2 | Add 5ml test water to the same cuvette. |
| 3 | Screw the lid back on the cuvette. |
| 4 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 5 | Start ZERO measurement. |
| 6 | Remove the cuvette again. |
| 7 | Unscrew the lid from the cuvette. |
| 8 | Add 2 drops of PL Urea 1 into the cuvette. |
| 9 | Screw the lid back on the cuvette. |
| 10 | Gently swirl the cuvette to mix the liquid well. |
| 11 | Add 1 drops of PL Urea 2 into the cuvette. |
| 12 | Screw the lid back on the cuvette. |
| 13 | Gently swirl the cuvette to mix the liquid well. |
| 14 | Tap TEST to start a 05:00 minutes countdown. |
| 15 | The cuvette must not be placed in the device during this time. |
| 16 | Add 1 Ammonia N° 1 Photometer powder pillow(s) to the sample water in the cuvette. |
| 17 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 18 | Add 1 Ammonia N° 2 Photometer powder pillow(s) to the sample water in the cuvette. |
| 19 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 20 | Screw the lid back on the cuvette. |
| 21 | Gently swirl the cuvette to mix the liquid well. |
| 22 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 23 | Tap TEST to start a 10:00 minutes countdown. |
| 24 | After the lapse of a 10:00 minute(s) countdown the determined result is displayed. |

## Notes:

- Ammonia N°1 will only dissolve completely after adding Ammonia N°2.
- Samples with concentrations above 2 mg/l urea may lead to results in between the measurement range. If so, please dilute sample with urea-free water and re-do the test.
- Ammonia and chloramines will be detected together. The result displayed will show the sum of both.
- The temperature of the water sample must be between 20 °C and 30 °C to ensure precise measurements.
- Test needs to be carried out not later than 1 hour after taking the sample.
- If seawater is tested, the sample needs to be pre-treated with special conditioning powder before Ammonia N°1 is added.
- Do not store PL Urea 1 below 10°C as it might granulate.
- PL Urea 2 needs to be stored between 4°C and 8°C.

# (62) Zinc (with chlorine) Tablet

**0 - 1** mg/l (Zn)

**Internal Name: 62-CoZinc-tab**

Copper/Zinc LR Photometer (TbsPCZ)
EDTA (TbsHED)
Dechlor (TbsHDC)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Add 1 Dechlor tablet(s) to the test water in the cuvette. |
| 8 | Crush the tablet with a clean stirring rod. |
| 9 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 10 | Add 1 Copper/Zinc LR tablet(s) to the test water in the cuvette. |
| 11 | Crush the tablet with a clean stirring rod. |
| 12 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 13 | Screw the lid back on the cuvette. |
| 14 | Gently swirl the cuvette to mix the liquid well. |
| 15 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 16 | Tap TEST to perform the measurement. |
| 17 | Remove the cuvette again. |
| 18 | Unscrew the lid from the cuvette. |
| 19 | Add 1 EDTA tablet(s) to the test water in the cuvette. |
| 20 | Crush the tablet with a clean stirring rod. |
| 21 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 22 | Screw the lid back on the cuvette. |
| 23 | Gently swirl the cuvette to mix the liquid well. |
| 24 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 25 | Tap TEST to perform the measurement. |

26 The determined result is immediately displayed.

# (62) Zinc (without chlorine) Tablet

**0 - 1** mg/l (Zn)

**Internal Name: 62-CoZinc-tab**

Copper/Zinc LR Photometer (TbsPCZ)
EDTA (TbsHED)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Add 1 Copper/Zinc LR tablet(s) to the test water in the cuvette. |
| 8 | Crush the tablet with a clean stirring rod. |
| 9 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 10 | Screw the lid back on the cuvette. |
| 11 | Gently swirl the cuvette to mix the liquid well. |
| 12 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 13 | Tap TEST to perform the measurement. |
| 14 | Remove the cuvette again. |
| 15 | Unscrew the lid from the cuvette. |
| 16 | Add 1 EDTA tablet(s) to the test water in the cuvette. |
| 17 | Crush the tablet with a clean stirring rod. |
| 18 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 19 | Screw the lid back on the cuvette. |
| 20 | Gently swirl the cuvette to mix the liquid well. |
| 21 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 22 | Tap TEST to perform the measurement. |
| 23 | The determined result is immediately displayed. |

# (38) pH-value (MR) Tablet

## 6.4 - 8.4 (pH)

**Internal Name: 38-pH-MR-tab**

Phenol Red Photometer (TbsPph)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Add 1 Phenol Red Photometer tablet(s) to the test water in the cuvette. |
| 8 | Crush the tablet with a clean stirring rod. |
| 9 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 10 | Screw the lid back on the cuvette. |
| 11 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 12 | Tap TEST to perform the measurement. |
| 13 | The determined result is immediately displayed. |

## Notes:

- Use of this test procedure and reagent on water samples with pH value outside of the 6.5 - 8.4 range can lead to incorrect test results. If you are not sure we recommend a control measurement using e.g. an electronic meter (pH 0-14).
- If the alkalinity level (or carbonate hardness) of your water sample is lower than KS4.3 = 0.07 mmol/l (= 35 mg/l CaCO3) the test results might be inaccurate.
- Depending on the salt content of the water sample, the measurement result must be manually corrected according to the following scheme: 1 molar = -0.21 pH; 2 molar = -0.26 pH; 3 molar = -0.29 pH with: 1 mol of salt (NaCl) = 5.8 % = 58.4 g/l.

# (39) pH-value (MR) Liquid

## 6.4 - 8.4 (pH)

**Internal Name: 39-pH-MR-liq**

65ml PL pH 6.5 - 8.4 (PL65PhenRed)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Add 6 drops of PL pH 6.4-8.4 into the cuvette. |
| 8 | Screw the lid back on the cuvette. |
| 9 | Gently swirl the cuvette to mix the liquid well. |
| 10 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 11 | Tap TEST to perform the measurement. |
| 12 | The determined result is immediately displayed. |

## Notes:

- Use of this test procedure and reagent on water samples with pH value outside of the 6.5 - 8.4 range can lead to incorrect test results. If you are not sure we recommend a control measurement using e.g. an electronic meter (pH 0-14).
- High chlorine values in the sample water can lead to incorrect test results. In this case add a small grain of the chlorine-destroying chemical sodium thiosulfate to your sample before adding the liquid reagent.
- Make sure the liquid reagent drops are of equal size.
- Liquid reagents should be stored below 10 °C and above 5 °C in securely closed bottles.

# (40) pH-value (LR) Tablet

## 5.2 - 6.8 (pH)

**Internal Name: 40-pH-LR-tab**

pH-LR Photometer (TbsPpHLR)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Add 1 pH-LR photometer tablet(s) to the test water in the cuvette. |
| 8 | Crush the tablet with a clean stirring rod. |
| 9 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 10 | Screw the lid back on the cuvette. |
| 11 | Gently swirl the cuvette to mix the liquid well. |
| 12 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 13 | Tap TEST to perform the measurement. |
| 14 | The determined result is immediately displayed. |

## Notes:

- Use of this test procedure and reagent on water samples with pH value outside of the 5.2 - 6.8 range can lead to incorrect test results. If you are not sure we recommend a control measurement using e.g. an electronic meter (pH 0-14).
- Depending on the salt content of the water sample, the measurement result must be manually corrected according to the following scheme: 1 molar = -0.26 pH; 2 molar = -0.33 pH; 3 molar = -0.31 pH with: 1 mol of salt (NaCl) = 5.8 % = 58.4 g/l.

# (41) pH-Universal Tablet

## 5 - 11 (pH Univ)

**Internal Name: 41-pH-univ-tab**

Universal pH Photometer (TbsPUPH)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Add 1 Universal pH photometer tablet(s) to the test water in the cuvette. |
| 8 | Crush the tablet with a clean stirring rod. |
| 9 | Stir with the stirring rod for about 20 seconds until the reagent is completely dissolved. |
| 10 | Gently swirl the cuvette to mix the liquid well. |
| 11 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 12 | Tap TEST to perform the measurement. |
| 13 | The determined result is immediately displayed. |

## Notes:

- Use of this test procedure and reagent on water samples with pH value outside of the 5-11 range can lead to incorrect test results. If you are not sure we recommend a control measurement using e.g. an electronic meter (pH 0-14).

# (42) pH-Universal Liquid

## 4 - 11 (pH Univ)

**Internal Name: 42-pH-univ-liq**

65ml PL pH 4-11 (PL65UnivpH)

## Measurement procedure:

| | |
|---|---|
| 1 | Fill 10ml test water into a clean 24mm cuvette. |
| 2 | Screw the lid back on the cuvette. |
| 3 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 4 | Start ZERO measurement. |
| 5 | Remove the cuvette again. |
| 6 | Unscrew the lid from the cuvette. |
| 7 | Add 10 drops of PL pH 4-11" into the cuvette. |
| 8 | Screw the lid back on the cuvette. |
| 9 | Gently swirl the cuvette to mix the liquid well. |
| 10 | Insert the cuvette into the PrimeLab. Pay attention to the arrow on the front of the cuvette. |
| 11 | Tap TEST to perform the measurement. |
| 12 | The determined result is immediately displayed. |

## Notes:

- Use of this test procedure and reagent on water samples with pH value outside of the 4-11 range can lead to incorrect test results. If you are not sure we recommend a control measurement using e.g. an electronic meter (pH 0-14).

EMPTY
due to technical reasons

# Favourites

Your PrimeLab 2.0 is a powerful measurement tool with many options to choose from. The ‘Favourites‘ menu is designed to make your life easier and to allow short-cuts to frequently performed measurement-constellations.

## Favourite´s test-setups

After selecting all information for a new measurement (account/parameter/ operator/dilution factor) under ‘TEST‘, you will have the option to save this constellation as a ‚Favourite‘, meaning that the account, parameter chosen and the dilution factor will be saved as an icon under ‚Favourites‘ for future quick access. You can give the ‘Favourite‘ its own name.

## Filter / search ‘Favourites‘

Tap on ‘Favourites‘ on the main menu.

• Tap on the 3-bar menu-button, followed by tapping on ‘Filter‘ and select an account and/or a parameter from the drop-down menu to filter the ‘Favourites‘ list

• Tap on the search button or on the 3-bar menu-button, followed by tapping on ‘Search‘ to enter a phrase which will be used to search a ‘Favourites‘ name.

## Use a ‚Favourite‘

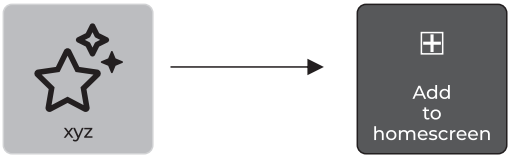
Tap on “Favourites” on the main menu.

• Tap on the ‘Favourite‘ you want to use

The ‘TEST‘ menu will instantly appear with fields pre-filled according to what is saved under this ‘Favourite‘.

## ‘Favourite‘ on home-screen

As with all icons of your PrimeLab 2.0, you can also create shortcuts of any ‘Favourite‘ by tap-hold on it and selecting ‘Add to home screen‘



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due to technical reasons

# Cloud

www.labcom.cloud

## General

One of the key-benefits of your PrimeLab 2.0 is its connectivity (Wi-Fi, USB, Bluetooth, GSM*) to enable you to share and synchronize all measurement results, connected to accounts (water-sites) which were tested.
By synchronizing with the LabCOM cloud, all data will be available (password protected) to be used with the LabCOM app (Android and iOS), the LabCOM software (Windows and Mac) and on www.labcom.cloud for instant access.

To link to the LabCOM cloud, your PrimeLab needs to have internet access!

## Sign up to the LabCOM cloud

To use the free LabCOM cloud service, all you need to do is to register.

Depending on your region, it might be necessary to select a cloud-server-region prior the following steps.

- Tap on 'Cloud' on the main menu
- Tap on 'Register'
- Enter your Email-Address and an at least 6-digit password you can easily remember.
- Tap on 'Confirm'

As long as your PrimeLab 2.0 can use a working internet-connection, e.g. through Wi-Fi, all your data (accounts, measurement record sets, individual chemistry) will be synchronized with the LabCOM cloud.
Just log-on to the cloud from the LabCOM app, software or web-application (www.labcom.cloud) to see and work with all data previously only stored on your PrimeLab. This option also suites for instant reporting to e.g. your headquarters or your customer(s).

## Log on to the LabCOM cloud

Once you registered a free LabCOM cloud account, all you need to do is to log-on by :

- tapping on 'Cloud' on the main menu
- entering your Email-address and the password you choose during the registration process
- choose to tick the box for 'Update local data?' (accounts, measurement results and individual chemicals stored on your PrimeLab 2.0 will be uploaded to your cloud-account).
- tap on 'Login'. Data will be synchronized in fix intervals. You can also manually refresh by tapping on the refresh-button.

## Log off from the LabCOM cloud

To sign out from the LabCOM cloud, tap on the icon on the right upper screen of the 'Cloud' menu.

*via USB Internet Stick / accessories / may be subject to costs for connection

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due to technical reasons

# Chemistry

## General

Under the ‘Chemistry‘ menu, your PrimeLab 2.0 offers you to perform index calculations, active chlorine calculation, hardness conversions and to store individual water treatment chemicals to let the PrimeLab 2.0 calculate a dosage recommendation, based on a test result obtained.

## Index calculation

To perform an index calculation, simply tap on the ‘Index‘ bar on the ‘Chemistry‘ menu and fill out the required fields. At the time of printing this user manual, RSI and LSI index as well as pH value will be calculated at the bottom of the screen, once all required parameters got entered.

## Active Chlorine calculation

To perform an Active Chlorine calculation, simply tap on the ‘Active Chlorine‘ bar on the ‘Chemistry‘ menu and fill out the required fields. The Active Chlorine value will be calculated at the bottom of the screen, once all required parameters got entered.

## Water Treatment Products

PrimeLab 2.0 offers you to store your individual water treatment products on the PrimeLab 2.0 database to use it for individual dosage recommendation (see: ‘Accounts‘ -> ‘Dosage recommendation‘).

Tap on ‘Water Treatment Products‘ on the ‘Chemistry‘ menu to:

- add individual water treatment products by either tapping on the ‘+‘ icon (upper right corner) or the 3-bar-menu, followed by a tap on ‘Add New‘.
A new window will open where you have to choose the parameter group from a drop-down menu, enter the name of the water treatment product you want to add and determine if it increases or decreases the value, followed by entering the effect-ratio.

- edit individual water treatment products by sliding an entry to the right, followed by tapping on the edit-button.

- deleting individual water treatment products by sliding an entry to the left, followed by tapping on the edit-button.
You can also tap-hold more than one entry and tap on the delete button at the lower end of the screen to delete multiple entries.

- searching for individual water treatment products by tapping on the 3-bar-menu button followed by tapping on ‘search‘ and entering phrases or fractions into the search field. The individual water treatment products list will then be filtered accordingly.

## Hardness Conversion

Hardness can be expressed in different units, such as ppm $CaCO_3$, °dH etc.
The ‘Hardness Conversion‘ menu under ‘Chemistry‘ offers you to cross-calculate such values.

# Software

## General

One of the benefits of your PrimeLab 2.0 is the option to upload all account data, test-data and individual water treatment products to the LabCOM cloud to have it available on the LabCOM app (Android and iOS), software (Windows and Mac) and website (www.labcom.cloud).

All LabCOM applications are free of charge. Whilst the web-application under www.labcom.cloud does not require any installation effort. The LabCOM app can be downloaded from the App Store and Google Play store, LabCOM software can be downloaded from the download-section under www.water-id.com.

LabCOM software, app and web are powerful tools with plenty of options offered. Our IT team is constantly developing new features, which makes it difficult to offer you full guidelines of these applications in this user manual.

Nevertheless, on the PrimeLab YouTube channel you can always find the latest tutorials, guiding you through the various features the app, software and web has to offer.

More info about the benefits of synchronizing your data with the LabCOM cloud can be found under the chapter ‘Cloud‘ as well as ‘Settings‘ -> ‘Connections‘ of this user manual.

In essence:
With the LabCOM applications you can:
- Synchronize your PrimeLab data to be available on almost any platform
- Run reports and statistics
- View test result-development as graphics
- Export test results to PDF and Excel
- Manage accounts (water-sites) and measurement data
- Create dosage recommendations
- Calculate indizes
- Define rules such as ‘needs to be tested daily at 9 am‘ or ‘needs to be in between 1 - 2 ppm‘.
- Grant access to your data to other users

and much more

**Watch tutorial videos and download the LabCOM app from your app store. LabCOM Windows and Mac software as downloads from www.water-id.com**

https://www.youtube.com/playlist?list=PLYmB3z45fpr2CdJrKIbwSVPtR-G9gt7dM

EMPTY
due to technical reasons

## Troubleshoot

Your PrimeLab 2.0 has been designed for daily use.
User guidance is intuitive to prevent mistakes in operation.
In exceptional cases, however, the following error messages might be displayed:

- **Invalid user name / password**

This error message appears when trying to log on to the LabCOM cloud or to a Wi-Fi network, with invalid username / password. Please make sure you use the correct login details. For LabCOM cloud, you can use the 'Password request' button to request a new password, if you can't remember the one used during the registration process.

- **Login failed:**

When logging on to an external network (e.g. via Wi-Fi) with correct username and password, this message might appear when your PrimeLab 2.0 discovers incompatibility issues. In this case, please contact the admin of the network you want to connect to.

- **Invalid data or format:**

If you type in text in a field which requires numbers, if you extend the maximum limit of characters for a field or if you enter 'ideal ranges' outside the measurement range of the specific parameter, this message will appear on the PrimeLab 2.0 screen.

- **Measurement invalid. Repeat test!**

During a test a result was calculated which does not make sense to the device (e.g. incorrect reagent / colour, severely soiled cuvette or soiled sampling chamber etc.). Please repeat the test.

- **Reagent Expired:**

You scanned a QR-code of a reagents pack of a batch which is expired.

- **Low battery power:**

The in-built battery of your PrimeLab 2.0 needs to be charged before you can proceed.

- **LED-failure:**

The LED light received cannot be evaluated. Repeat the step that has caused the error message. If the error message comes up again, your PrimeLab 2.0 needs to be sent in for inspection.

- **No calibration data:**

Your PrimeLab 2.0 is calibrated on the unique LEDs/sensors setup of your PrimeLab 2.0. If the internal calibration file is missing or corrupted, please perform a PrimeLab 2.0 calibration as described under 'Settings'.

Some parameters, such as 'NTU Turbidity' require a special calibration. If this special calibration has not been performed or if the calibration file is missing/corrupted, please perform the calibration for this specific parameter as described under 'Settings'.

Continued...

# Troubleshoot

**• Update incomplete / repeat update:**

Due to the ability to connect your PrimeLab 2.0 to the internet, you will be offered to download and install the latest update which could include additional parameters (require an activation code to be used), bug fixes or additional features. Updates will be prompted by a pop-up window. If your PrimeLab 2.0 faces issues during download or installation of the update, an ‘update incomplete‘ message will appear. A ‘Repeat update‘ button will allow you to repeat the update process. A ‘Restore‘ button will offer you to skip the update and to return to the last working version.
It is strongly recommended to download updates by using a fast Wi-Fi connection.

**• Invalid Code:**

You scanned a QR-code or barcode which cannot be recognized by your PrimeLab 2.0. Please make sure you are scanning a valid account- or reagents code and that the code itself is printed properly without damage.

**• Parameter not active**

If you scan a QR code of a reagent connected to (a) parameter(s) which are not activated on your PrimeLab 2.0, you will receive this error-message. In this case, proceed to the ‘Parameters‘ menu and request an activation code.

**• Overrange / Underrange**

Each parameter has test range limits, such as ‘Alkalinity 20 - 500 mg/l‘.
If the test result obtained is outside these limits, no test result but ‘Overrange‘ (higher than limit) or ‘Underrange‘ (lower than limit) is displayed.

**• Missing data (water volume/water treatment product)**

If you try to create a dosage recommendation but there is no ‘water volume‘ entered on the account information or there is no matching water treatment product entered, the PrimeLab 2.0 is unable to perform the calculation. Please make sure that the necessary data (water-site volume and water treatment chemicals) are entered before a dosage recommendation is launched.

**Screen stucks as a white screen with PrimeLab 2.0 logo**

A technical issue appeared. The device needs to be re-booted.
Press the on/off button for at least 10 seconds until the PrimeLab 2.0 shuts down entirely.
After that, press the on/off button for 3 seconds to switch the PrimeLab 2.0 on again.

**PrimeLab 2.0 start-up process becomes a “loop”**

The battery charge of your PrimeLab 2.0 is too low to complete the start-up process.
Plug the PrimeLab to the main power supply and wait for at least 1 hour until you switch the PrimeLab 2.0 on again.

# Update

## Always up to date

One of the benefits of being able to connect your PrimeLab 2.0 with the internet is that you can receive updates for your device.

Updates can be necessary to benefit from new test methods / parameters, new features or even to get rid of some bugs that have not been noticed when your device was manufactured.

By checking for updates and running them frequently, your PrimeLab will never be outdated but will always be up to date.

If an update is available, you will receive a message (pop up window) giving you the option to run or skip the update.

If an update is available, you will also be notified by an icon on the status bar.

Nevertheless, you can also actively check for updates.
Just tap on ‘Settings‘ followed by a tap on ‘Device Information‘ to find the ‘Check for Updates‘ button.

To enable the PrimeLab to check on available updates, an internet connection must be established. By updating your PrimeLab 2.0, you will always have the latest parameters, curves and features.

# Support

**We do our best to support you!**

Even if the PrimeLab 2.0 is designed intuitive, you might be faced with questions that cannot be answered by this user manual.

As a first step, please check if there is an update available for your PrimeLab 2.0. You might be dealing with a bug which already got fixed by an update. Tap on ‘Settings‘ followed by ‘Device Information‘. You will find a ‘Check for Updates‘ button. Click on it and perform the update in case it gets offered.

Due to updates with new features, your printed user manual might no longer be up to date. You can always download the latest user-manual from the download section under www.water-id.com.

Last but not least, the internet offers help as well.
Check out our PrimeLab and LabCOM YouTube channel under:
https://www.youtube.com/playlist?list=PLFmhYSWGqs-GhSsfINf9FCEYTD7n-dwNr

If nothing helps, feel free to drop us an email with your request by writing to support@primelab.org.

# News

## Keep yourself informed

As your PrimeLab 2.0 can be connected to the internet, you are able to receive the latest news, such as new parameter releases and new features.

You can disable the ‘News‘ option under ‘Settings‘ -> ‘Device‘ -> ‘News‘ but we strongly recommend to accept receiving news about your PrimeLab 2.0.

Once news are published, you will see an envelope on the status bar.

Tap on ‘Support‘ followed by a tap on ‘News‘ to open the ‘News‘ section which will show you the headlines of all ‘News‘ released.

Tap on the headline to see the full text.

Swipe the headline to the right to see the ‘delete‘ button or just tap-hold on the headline to select one or more headlines, followed by a tap on the ‘delete‘ button at the lower end of the screen or simply tap on the 3-bar-menu button, followed by a tap on ‘delete‘ to delete the selected ‘News‘.

# Cleaning the device

**Please keep your PrimeLab 2.0 clean!**

Do not use detergents to clean your PrimeLab 2.0 but solely use little water and a soft cloth.

Make sure the transparent part (behind the vial-adapter) is properly clean and the vials used are without fingerprints, dirt, scratches.
Always keep the sampling chamber (behind the vial adapter) clean. On 4 sides of the chamber, you will see small holes behind on a dark plastic part. The LEDs and sensors are located behind these. All transparent parts in front must be dry and clean.
Any soiling must be cleaned properly.

The PrimeLab beams light (LED) from one side of the measurement-chamber through the measurement chamber to the sensor(s) on the opposite or 90° side of the measurement chamber. Any interference (dirt, fingerprints, scratches) influence the light beam (less transmission) and will lead to wrong readings / wrong or failed calibration.

Do not exert any pressure when cleaning your PrimeLab 2.0, especially when cleaning the display.

Clean the plastic pane in front of the camera lens to ensure that QR-codes and barcodes can be recognized properly.

Avoid water entering the USB port of your PrimeLab 2.0.

# Technical Data

| | |
|---|---|
| **Dimensions:** | 10 x 25.5 x 5.9 cm |
| **Weight:** | 715g |
| **Spectral Range:** | 390nm - 950nm (parallel reading)<br>18 wavelength, peaks at 410/435/460/485/510/535/560/585/610/645/680/705/730/760/810/860/900/940nm<br>180° and 90° Setup for direct and indirect measurement |
| **Parameters:** | more than 140 parameters (flexible setup)<br>User defined parameter function |
| **Electrodes:** | USB-type-C connector for pH/EC/TDS/ORP/Temp-Probes |
| **Connectivity:** (technical) | Bluetooth® 4.2<br>WiFi<br>USB (type C)<br>4G* |
| **Connectivity:** (software) | LabCOM software (Windows / Mac)<br>LabCOM App (Android / iOS)<br>LabCOM Cloud (web-browser) |
| **Display:** | 5.5" Color-HD-Touch Display |
| **Camera:** | In-built barcode / QR-code scanner |
| **Calibration:** | Auto-calibration function with certificate (software) |
| **One-Time-Zero:** | Intelligent OTZ (One-Time-Zero) function<br>with recognition of ZERO types |
| **Internal Memory:** | >5,000 measurements |
| **Clock / Date:** | RTC (Real-Time-Clock) |
| **Auto-Off:** | Factory default setting = 30 minutes.<br>Individual adjustment possible |
| **Auto-Standby:** | Factory default setting = 10 minutes<br>Individual adjustment possible |
| **Menu guidance:** | Intuitive, display-controlled 4-button menu guidance;<br>test instructions during measurement process |
| **Power supply:** | 8,500 mA Li-Po-battery |
| **Languages:** | > 15 |
| **Environment:** | 5°C - 45°C / 30 - 90% rel. humidity |
| **Water-proof rating:** | PrimeLab 2.0 is splash-water-proof (IP 54) |
| **WiFi frequency:** | 2,4 GHz and 5 GHz |
| **Transmit power:** | max. 16 dBm. |
| **Reagents:** | The calibration curves are adjusted to the reagents offered by Water-i.d.<br>! Using reagents from other manufacturers may lead to wrong readings ! |

*via USB Internet Stick / accessories / may be subject to costs for connection

# Compliance Statement

## CERTIFICATE OF COMPLIANCE

We, Water-i.d. GmbH Germany, hereby certify that your device

**PrimeLab 2.0**

has passed intensive visual and technical checks as part of our Quality-Management documentation.

We confirm the device got factory-calibrated.

Water-i.d. GmbH (Germany)

Andreas Hock, Managing Director

Water-i.d. GmbH · Daimlerstr. 20 · D-76344 Eggenstein · Germany
www.water-id.com

**Water-i.d. is certified according to ISO 9001:2015**

# Guarantee Policy

## Guarantee Policy

For this product, if bought new from an authorized distributor of the manufacturer, we grant a two year warranty, as required by law, starting from the date of purchase as shown on the purchase receipt.

This guarantee does not cover any parts installed in the device that were not purchased from the manufacturer of the device.

In case of a defect during the guarantee period, the device needs to be returned to the manufacturer who, at its own discretion, may either repair the device free of charge or replace it, under the condition that the device has not been tampered with or been used improperly, and that no modifications or repairs have been carried out on the device without the explicit written permission by the manufacturer.

When returning the device, always include the original purchase receipt and a precise description of the claim. If the purchase receipt and / or fault description are not included, processing guarantee claims is not possible and the device will be shipped back to the sender on his/her expenses.

According to the legal requirements the device will, after guarantee services have been claimed, be subject to the guarantee conditions for the remaining duration of the original guarantee.

The manufacturer of the device is and shall not be liable for any damages or loss of revenue or savings as well as other consequent or collateral damages incurred in the past or the future by the user due to using or not being able to use the device.

The guarantee policy declared here is without prejudice to any further legal claims by the user versus the direct contractual partner.

The manufacturer guarantee for direct, indirect, special damages, consequential or collateral damages caused by the use of the device, its accompanying software or documentation, shall in no case whatsoever exceed the final price paid for the product.
The manufacturer does not offer any compensation upon return to the unit.

The manufacturer cannot be held responsible for damage due to improper handling of the device.
In case of improper handling of the device, user protection cannot be granted anymore.

All warranty claims become invalid, once the device was opened by the user or any other party, which has not been legitimized by the manufacturer.

# Safety Instructions

**Read the following safety instructions to prevent damage to yourself, others and to your device.**
This chapter contains general safety information for your PrimeLab 2.0, that you should know prior using the device. The term 'device' refers to the PrimeLab 2.0 and its battery, charger, the items supplied with the product, and any accessories which is used along with the product.

**Failure to comply with safety warnings and regulations can cause serious injury or death**

**Do not lick or eat reagents**
Doing so may cause deathly poisoning depending on the type of reagent.
Please read the warnings on the packaging/the MSDS and follow the instructions.

**Do not use damaged power cords or plugs, or loose electrical sockets**
Unsecured connections can cause electric shock or fire.

**Do not touch the device, power cords, plugs, or the electric socket with wet hands or other wet body parts**
Doing so may cause electric shock.

**Do not pull the power cord excessively when disconnecting it**
Doing so may cause electric shock or fire.

**Do not bend or damage the power cord**
Doing so may cause electric shock or fire.

**Do not use the device with wet hands while the device is charging**
Doing so may cause electric shock.

**Do not directly connect together the charger's positive and negative terminals**
Doing so may cause fire or serious injury.

**Do not use your device outdoor during a thunderstorm and/or rain**
Doing so may result in electric shock or device malfunction.

**Use manufacturer-approved chargers, accessories, and supplies**
· Using generic chargers may shorten the life of your device or cause the device to malfunction. They may also cause a fire or cause the battery to explode.
· Use only Water-i.d.-approved charger and cable specifically designed for your device. Incompatible charger and cable can cause serious injuries or damage to your device.
· Water-i.d. cannot be held responsible for the user's safety when using accessories or supplies that are not approved by Water-i.d.
Do not approach to heat sources like fire or heater.

**Do not carry your device in your back pockets or on your waist**
· The device may be damaged, explode, or result in a fire if too much pressure is applied to it.
· You may be injured if you are bumped or fall.

Continued...

# Safety Instructions

**Do not drop or cause excessive impact to the device**
· This may damage your device or battery, cause the device to malfunction, or shorten its lifespan.
· This may also cause overheating, combustion, fire, or other hazards.

**Handle and dispose of the device and charger with care**
· Never dispose of the battery or device in a fire. Never place the battery or device on or in heating devices, such as microwave ovens, stoves, or radiators. The device may explode when overheated. Follow all local regulations when disposing of used device.
· Never crush or puncture the device.
· Avoid exposing the device to high external pressure, which can lead to an internal short circuit and overheating.

**Protect the device, battery and charger from damage**
· Avoid exposing your device and battery to very cold or very hot temperatures.
· Extreme temperatures can damage the device and reduce the charging capacity and life of your device and battery.
· Do not directly connect together the battery's positive and negative terminals and prevent them from coming into contact with metal objects. Doing so may cause the battery to malfunction.
· Do not use a cable whose covering is peeled off or damaged, and do not use any charger or battery that is damaged or malfunctioning.

**Do not store your device near or in heaters, microwaves, hot cooking equipment, or high-pressure containers**
· The battery may leak.
· Your device may overheat and cause a fire.

**Do not use or store your device in areas with high concentrations of dust or airborne materials**
Dust or foreign materials can cause your device to malfunction and may result in fire or electric shock.

**Prevent the multipurpose jack and the small end of the charger from contact with conductive materials, such as liquids, dust, metal powders, and pencil leads. Do not touch the multipurpose jack with sharp tools or cause an impact to the multipurpose jack**
Conductive materials may cause a short circuit or corrosion of the terminals, which may result in an explosion or fire.

**Do not bite or suck the device or the battery**
· Doing so may damage the device or result in an explosion or fire.
· Children or animals can choke on small parts.
· If children use the device, make sure that they use the device properly.

**Do not insert the device or supplied accessories into the eyes, ears, or mouth**
Doing so may cause suffocation or serious injuries.

**Do not handle a damaged or leaking Lithium Ion (Li-Po) battery**
For safe disposal of your Li-Po battery, contact your nearest authorised service centre.

Continued...

# Safety Instructions

**Failure to comply with safety cautions and regulations can cause injury or property damage**

**Do not use your device near other electronic devices**
· Most electronic devices use radio frequency signals. Your device may interfere with other electronic devices.

**Do not use your device in a hospital, on an aircraft, or in an automotive equipment that can be interfered with by radio frequency**
· Avoid using your device within a 15 cm range of a pacemaker, if possible, as your device can interfere with the pacemaker.
· To minimise possible interference with a pacemaker, use your device only on the side of your body that is opposite the pacemaker.
· If you use medical equipment, contact the equipment manufacturer before using your device to determine whether the equipment will be affected by radio frequencies emitted by the device.
· On an aircraft, using electronic devices can interfere with the aircraft's electronic navigational instruments. Follow the regulations provided by the airline and the instructions of aircraft personnel. In cases where it is allowed to use the device, always use it with all radio-options switched off.
· Electronic devices in your car may malfunction, due to radio interference from your device. Switch off all radio function of your device to avoid interference.

**Do not expose the device to heavy smoke or fumes**
Doing so may damage the outside of the device or cause it to malfunction.

**If you use a hearing aid, contact the manufacturer for information about radio interference**
The radio frequency emitted by your device may interfere with some hearing aids. Before using your device, contact the manufacturer to determine whether your hearing aid will be affected by radio frequencies emitted by the device.

**Do not use your device near devices or apparatuses that emit radio frequencies, such as sound systems or radio towers**
Radio frequencies may cause your device to malfunction.

**Turn off the device in potentially explosive environments**
· Turn off your device in potentially explosive environments instead of removing the battery.
· Always comply with regulations, instructions and signs in potentially explosive environments.
· Do not use your device at refuelling points (petrol stations), near fuels or chemicals, or in blasting areas.
· Do not store or carry flammable liquids, gases, or explosive materials in the same compartment as the device, its parts, or accessories.

**If any part of the device is broken, smokes, or emits a burning odour, stop using the device immediately. Use the device again only after it has been repaired by the manufacturer or someone who was approved by the manufacturer.**

Continued...

# Safety Instructions

· Broken glass or acrylic could cause injury to your hands and face.
· When the device smokes or emits a burning odour, it may result in battery explosion or fire.

**Comply with all safety warnings and regulations regarding device usage while operating a vehicle**

While driving, safely operating the vehicle is your first responsibility. Never use your device while driving, if law prohibits it. For your safety and the safety of others, use your common sense and remember the following tips:
· Do not use your PrimeLab 2.0 while driving. You could be distracted from the road and cause a car accident.

**Care and use your device properly**

**Keep your device dry**

· Humidity and liquids may damage the parts or electronic circuits in your device.
· Do not turn on your device if it is wet. If your device is already on, turn it off (if the device will not turn off, leave it as-is). Then, dry the device with a towel and take it to a service centre.
· This device has internal liquid indicators fitted. Water damage to your device may void the manufacturer's warranty.

**Store your device only on flat surfaces**

If your device falls, it may be damaged.

· **Do not store your device in very hot areas such as inside a car in the summertime.** Doing so may cause the screen to malfunction, result in damage to the device, or cause the battery to explode.
· Do not expose your device to direct sunlight for extended periods (on the dashboard of a car, for example).

**Do not store your device with metal objects, such as coins, keys, and necklaces**

· Your device may be scratched or may malfunction.
· If the battery terminals come into contact with metal objects, this may cause a fire.

**Do not store your device near magnetic fields**

· Your device may malfunction or the battery may discharge from exposure to magnetic fields.
· Magnetic stripe cards, including credit cards, phone cards, passbooks, and boarding passes, may be damaged by magnetic field

**Avoid contact with device when it is overheating. Failure to do so may cause low temperature burns, redness and skin pigmentation**

· Be careful of overheating of the device when using it for extended periods and avoid prolonged skin contact.
· Do not sit on your device or make direct contact with your skin for extended periods when charging or connected to a power source.
· Tolerance to high temperature varies individually. Please take extra caution regarding the use of this device by children, elders and people with special conditions.

Continued...

# Safety Instructions

**Do not use your device with the back cover removed**
The battery may fall out of the device, which may result in damage or malfunction.

**Be careful not to expose the camera lens to a strong light source, such as direct sunlight**
If the camera lens is exposed to a strong light source, such as direct sunlight, the camera image sensor may be damaged. A damaged image sensor is irreparable and will cause dots or spots in pictures.

**Use caution when exposed to flashing lights**
· While using your device, leave some lights on in the room and do not hold the screen too close to your eyes.
· Seizures or blackouts can occur when you are exposed to flashing lights for extended periods. If you feel any discomfort, stop using the device immediately.
· If anyone related to you has experienced seizures or blackouts while using a similar device, consult a physician before using the device.
· If you feel discomfort, such as a muscle spasm, or disoriented, stop using the device immediately and consult a physician.
· To prevent eye strain, take frequent breaks while using the device.

**Reduce the risk of repetitive motion injuries**
When you repetitively perform actions you may experience occasional discomfort in your hands, neck, shoulders, or other parts of your body. When using your device for extended periods, hold the device with a relaxed grip, press the keys lightly, and take frequent breaks. If you continue to have discomfort during or after such use, stop using the device and consult a physician.

**Do not use the device while walking or moving**
The device should only be operated on a solid surface.

**Do not paint or put stickers on your device**
· Paint and stickers can prevent proper operation.
· If you are allergic to paint or metal parts of the device, you may experience itching, eczema, or swelling of the skin. When this happens, stop using the device and consult your physician.

**Install mobile devices and equipment with caution**
· Ensure that any mobile devices or related equipment installed in your device are securely mounted.

**Do not drop your device or cause impacts to your device**
· Your device may be damaged or may malfunction.
· If bent or deformed, your device may be damaged or parts may malfunction.

Continued...

# Safety Instructions

**Ensure maximum battery and charger life**
· Batteries may malfunction if they are not used for extended periods.
· Over time, unused device will discharge and must be recharged before use.
· Disconnect the charger from power sources when not in use.
· Use the battery only for their intended purposes.
· Follow all instructions in this manual to ensure the longest lifespan of your device and battery. Damages or poor performance caused by failure to follow warnings and instructions can void your manufacturer's warranty.
· Your device may wear out over time. Some parts and repairs are covered by the warranty within the validity period, but damages or deterioration caused by using unapproved accessories are not.

**When using the device, mind the following**
· For testing please place your PrimeLab 2.0 on a flat surface. Otherwise measurement results can be inaccurate or dangerous liquids could run over your skin.

**Do not disassemble, modify, or repair your device**
· Any changes or modifications to your device can void your manufacturer's warranty. If your device needs servicing, send your device to an authorized service centre.
· Do not disassemble or puncture the battery, as this can cause explosion or fire
· Do not disassemble or reuse the battery.
NEVER remove the battery!

**When cleaning your device, mind the following**
· Wipe your device or charger (disconnected) with a towel or an eraser.
· Do not use chemicals or detergents. Doing so may discolour or corrode the outside the device or may result in electric shock or fire.
· Prevent the device from being exposed to dust, sweat, ink, oil, and chemical products such as cosmetics, antibacterial spray, hand cleaner, detergent, and insecticides. The device's exterior and interior parts may be damaged or it could result in poor performance. If your device is exposed to any of the previously mentioned substances, use a lint-free, soft cloth to clean it.

**Do not use the device for anything other than its intended use**
Your device may malfunction. You might cause yourself or others serious injuries.

**Avoid disturbing others when using the device in public**
**Allow only qualified personnel to service your device**
Allowing unqualified personnel to service your device may result in damage to your device and will void your manufacturer's warranty.

**Handle cables with care**
· When connecting a cable to your device, make sure that the cable is connected to the proper side.
· Do not remove the cable while the device is transferring or accessing information, as this could result in loss of data and/or damage the device.
· Connecting a cable by force or improperly may result in damage to the multipurpose jack or other parts of the device.

Continued...

# Safety Instructions

**Protect your personal data and prevent leakage or misuse of sensitive information**

· While using your device, be sure to back up important data. Water-i.d. is not responsible for the loss of any data.

· When disposing of your device, back up all data and then reset your device to factory settings (‘Settings -> ‚Device‘) to prevent misuse of your personal information.

· Check your cloud-account regularly for unapproved or suspicious use. If you find any sign of misuse of your personal information, contact Water-i.d. to delete or change your account information.

**Do not distribute copyright-protected material**

Do not distribute copyright-protected material without the permission of the content owner. Doing so may violate copyright laws. The manufacturer is not liable for any legal issues caused by the user’s illegal use of copyrighted material.

**In order to guarantee an unrestricted and safe function of the device, no changes to the firmware may be made by the user himself as long as not indicated by the auto-updater of the device.**

For more information, visit: https://www.water-id.com

# Disposal

## Disposal (devices and batteries)

Disposal instructions according to
EU directive by the European Parliament and Council: 2002/96/EC
EU directive by the European Parliament and Council: 2006/66/EC

**Environmental protection information**
For the manufacture of your device, raw materials had to be produced and processed.
The product may there contain hazardous substances with a negative effect on the environment if the device is not disposed of properly.

**Disposal of the device**
So that these hazardous substances do not enter our environment and contribute to a depletion of raw material resources we ask you to use the corresponding return and recycling systems.

Return and recycling system can use or recycle most of the material contained in old electrical devices.

The symbol of the crossed-out waste bin indicates that you are asked to dispose of the device properly.

For further information about the collection, recycling and reprocessing systems please contact your local or regional waste disposal authority.

Users of the device located outside the Federal Republic of Germany are requested to return the device by fully stamped mail (!) to the following address:

Water-i.d. GmbH
Daimlerstrasse 20
D-76344 Eggenstein-Leopoldshafen
Germany

**Disposal of batteries**
EU directive 2006/66/EC prohibits the disposal of batteries through normal household waste because batteries and accumulators may contain hazardous substance dangerous for the groundwater quality.
The device purchased by you contains a Lithion-Ion-battery (in-built).
We are obliged by law to notify you that the batteries contained in the device must be disposed of properly at the special collection points or with the dealer where you have purchased the device.

PrimeLab 2.0 battery certifications and shipping conformity statements are available uon request (support@water-id.com).

# Certifications

## CE Conformity declaration (EG / EU / ECC)

According to directive 2014/53/EC of the European Parliament
and European Council of April 16, 2014.

The manufacturer Water-i.d. GmbH
Daimlerstr. 20
D-76344 Eggenstein-Leopoldshafen
Federal Republic of Germany

represented by the general manger
Dipl. Ec. Andreas Hock

herewith declares as follows:

**The product "PrimeLab 2.0"**
**complies with the requirements of the following standards for:**

- USB
- BT 4.2 (BLE) + BT 2.1
- EDR
- 802.11 a/b/g/n/ac

Band U-NII-1 (5.150-5.250GHz)
Band U-NII-2A (5.250-5.350GHz)
Band U-NII-2C (5.470-5.725GHz)
Band U-NII-3 (5.725-5.850GHz)

**ElectroMagnetic Compatibility (EMC) standards for radio equipment and services:**
EN 301 489-1 V2.2.3
EN 301 489-3 V2.1.1
EN 301 489-17 V3.2.4

| **Radio standards:** | **Frequency:** | **Power:** |
|---|---|---|
| ETSI EN 300 328 V2.2.2 | 2.400 - 2.4835 GHz | <100mW |
| ETSI EN 301893 V2.1.1 (incl. DFS testing) | 5.150 - 5.350/5.470 - 5.725 GHz | <200mW |
| ETSI EN 300440 V2.2.1 | 5.725 - 5.875 GHz | <25mW |

**Safety standard:**
EN 62368-1:2014+A11:2017

**SAR testing standard:**
EN 50566:2017
EN 62479:2010
EN 62311:2008

**Frequency bands and power:**
Maximum radio frequency power transmitted in the frequency bands in which the radio equipment operates: The maximum power for all bands is less than the highest limit value specified in the related Harmonized Standard.
The frequency bands and transmitting power (radiated and/or conducted) nominal limits applicable to this radio equipment are as follows: Wi-Fi 2.4G: 20 dBm, Bluetooth 2.4G: 20 dBm.

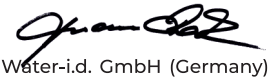
Water-i.d. GmbH (Germany)
Andreas Hock, Managing Director
Water-i.d. GmbH · Daimlerstr. 20 · D-76344 Eggenstein · Germany
www.water-id.com

# Certifications

## EU/EC regulatory conformance

**Body worn operation**
The device complies with RF specifications when used at a distance of 0 mm from your body. Ensure that the device accessories, such as a device case and device holster, are not composed of metal components. Keep the device away from your body to meet the distance requirement.

**Certification information (SAR)**
This device meets guidelines for exposure to radio waves. Your device is a low-power radio transmitter and receiver. As recommended by international guidelines, the device is designed not to exceed the limits for exposure to radio waves. These guidelines were developed by the International Commission on Non-Ionizing Radiation Protection (ICNIRP), an independent scientific organization, and include safety measures designed to ensure the safety of all users, regardless of age and health.
The Specific Absorption Rate (SAR) is the unit of measurement for the amount of radio frequency energy absorbed by the body when using a device. The SAR value is determined at the highest certified power level in laboratory conditions, but the actual SAR level during operation can be well below the value. This is because the device is designed to use the minimum power required to reach the network.
The SAR limit adopted by Europe is 2.0 W/kg averaged over 10 grams of tissue, and the highest SAR value for this device complies with this limit.
The highest SAR value reported for this device type when tested in portable exposure conditions is (pending at the time this user manual was printed) W/kg.



Water-i.d. GmbH (Germany)
Andreas Hock, Managing Director
Water-i.d. GmbH · Daimlerstr. 20 · D-76344 Eggenstein · Germany
www.water-id.com

# RoHS Declaration

## RoHS Declaration of Conformity

“Directive 2011/65/EU (the RoHS Directive) OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment” superseding “Directive 2002/95/EC (the RoHS Directive) OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 27 January 2003. The Certificate of Compliance includes Directive 2015/863 published in 2015 by the EU (often referred as RoHS 3) and Directive 2017/2102/EU published by the EU November 17, 2015.

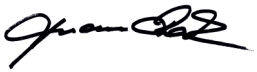
Based on the information provided by our supply lines, and our certain knowledge pertaining to our own processes, products supplied by Water-i.d. GmbH are RoHS compliant for orders placed on or after the January 1, 2006. Products supplied on or after January 3, 2013 are also RoHS compliant according the Directive 2011/65/EU, Directive 2015/863 and Directive 2017/2102/EU from the moment the respected directive came into force.

The confirmation of compliance status by our supply lines is granted for products which do not contain any of the restricted substances referred to in Annex VI in the RoHS Directive 2011/65/EU & Directive 2015/863 with a higher than maximum concentration values tolerated by weight in homogeneous materials.

Water-i.d. GmbH has taken all reasonable steps to verify the supply line information regarding the absence of restricted substances.

Eggenstein, Germany
December 2020

Water-i.d. GmbH



Andreas Hock
Managing Director

# Certifications

## FCC Part 15 compliance statement
## IC licence-exempt RSS compliance statement

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception which can be determined by turning the equipment off and on, the user is encouraged to try to correct interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Industry Canada Licence-Exempt Radio Apparatus
This device complies with Industry Canada licence-exempt RSS standard(s): ICES-003. Operation is subject to the following three conditions:
(1) this device may not cause interference, (2) this device must accept any interference, including interference that may cause undesired operation of the device and (3) Operation in the Band 5150-5250 MHz is only for indoor use to reproduce the potential for harmful interference to co-channel mobile satellite systems.

This equipment complies with Industry Canada's RSS for Licence-exempt Radio Equipment: ICES-003. Operation is permitted under the following three conditions: (1) the apparatus shall not cause interference, (2) the user of the apparatus shall accept any radio interference received, even if the interference may cause undesired operation, and (3) operation in the 5150-5250 MHz band is intended for indoor use only to reproduce the potential for harmful interference to mobile satellite systems in the same channel.

Radio Frequency (RF) Exposure Compliance of Radiocommunication ApparatusThis device complies with FCC and Industry Canada RF radiation exposure limits set forth for general population (uncontrolled exposure). This device must not be collocated or operating in conjunction with any other antenna or transmitter. This device complies with FCC and Industry Canada RF radiation exposure limits set forth for general population (Uncontrolled Environment).

Continued...

# Certifications

Cet émetteur ne doit pas être co-situé ou fonctionner conjointement avec une autre antenne ou un autre émetteur.

Changes or modifications not expressly approved by Water-i.d. GmbH could void the user's authority to operate the equipment.

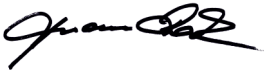
FCC ID: pending at the time this user manual got printed
IC: pending at the time this user manual got printed
Model: PrimeLab 2.0

The SAR limit adopted by USA and Canada is 1.6 watts/kilogram (W/kg) averaged over one gram of tissue. The highest SAR value reported to the Federal Communications Commission (FCC) and the Industry Canada (IC) for this device type when it is properly worn on the body is (pending at the time this user manual got printed)/kg.

The device complies with the RF specifications when the device is used near your distance of 0 mm from your body. Ensure that the device accessories such as a device case and a device holster are not composed of metal components. Keep your device 0 mm away from your body to meet the requirement earlier mentioned.

This device was tested for typical body-worn operations. To comply with RF exposure requirements, a minimum separation distance of 0 mm must be maintained between the user's body and the handset, including the antenna. Third-party belt-clips, holsters, and similar accessories used by this device should not contain any metallic components. Body worn accessories that do not meet these requirements may not comply with RF exposure requirements and should be avoided. Use only the supplied or an approved antenna.

Tested standards:
- FCC part 15.247
- FCC part 15.407
- KDB 90542 (DFS testing)
- FCC part 2.1093
- ANSI/IEEE C95.1
- ANSI/IEEE C95.3
- FCC part 15B
- RSS-247
- ICES-003



Water-i.d. GmbH (Germany)
Andreas Hock, Managing Director
Water-i.d. GmbH · Daimlerstr. 20 · D-76344 Eggenstein · Germany
www.water-id.com

# Certifications

## TELEC (MIC) / IMDA Declaration of Conformity (Japan / Singapore)

We, Water-i.d. GmbH Germany, hereby declare that the product/modelPrimeLab 2.0 was certified for type certification pursuant to Article 2, paragraph 1, item 19.

**Tests performed:**

- Band U-NII-2A (DFS testing)
- Band U-NII-2C (DFS testing)
- J 55032
- CE-RED

**Type of radio wave, frequency and antenna power:**

- USB
- BT 4.2 (BLE) + BT 2.1
- EDR
- 802.11 a/b/g/n/ac

Band U-NII-1 (5.150-5.250GHz)
Band U-NII-2A (5.250-5.350GHz)
Band U-NII-2C (5.470-5.725GHz)

**Type certification number:** pending at the time this user manual was printed

Andreas Hock, Managing Director
Water-i.d. GmbH · Daimlerstr. 20 · D-76344 Eggenstein · Germany
www.water-id.com

# Privacy Policy for LabCom

**Privacy Policy**
Last updated: December 14th, 2020

This Privacy Policy describes Our policies and procedures on the collection, use and disclosure of Your information when You use the Service and tells you about Your privacy rights and how the law protects You.

We use Your Personal data to provide and improve OUR Service. By using the Service, You agree to the collection and use of information in accordance with this Privacy Policy.

**Interpretation and Definitions**

The words of which the initial letter is capitalized have meanings defined under the following conditions. The following definitions shall have the same meaning regardless of whether they appear in singular or in plural.

**Definitions**
For the purposes of this Privacy Policy:

**Account** means a unique account created for You to access our Service or parts of our Service.

**Affiliate** means an entity that controls, is controlled by or is under common control with a party, where "control" means ownership of 50% or more of the shares, equity interest or other securities entitled to vote for election of directors or other managing authority.

**Application** means the software program provided by the Company downloaded by You on any electronic device or pre-installed on your PrimeLab 2.0, named LabCom or Cloud.

**Business** refers to the Company as the legal entity that collects Consumers' personal information and determines the purposes and means of the processing of Consumers' personal information, or on behalf of which such information is collected and that alone, or jointly with others, determines the purposes and means of the processing of consumers' personal information.

**Company** (referred to as either "the Company", "We", "Us" or "Our" in this Agreement) refers to Water-i.d. GmbH, Daimlerstraße 20, 76344 Eggenstein. For the purpose of the GDPR, the Company is the Data Controller.

**Consumer** means a natural person. A natural person, as defined by law.

**Country** refers to: Baden-Württemberg, Germany

**Data Controller**, for the purposes of the GDPR (General Data Protection Regulation), refers to the Company as the legal person which alone or jointly with others determines the purposes and means of the processing of Personal Data.

**Device** means any device that can access the Service such as a computer, a cell phone, a digital tablet or the PrimeLab 2.0 itself.

**Do Not Track (DNT)** is a concept that has been promoted by US regulatory authorities, in particular the U.S. Federal Trade Commission (FTC), for the Internet industry to develop and implement a mechanism for allowing internet users to control the tracking of their online activities across websites.

Continued...

# Privacy Policy for LabCom

**Personal Data** is any information that relates to an identified or identifiable individual.
For the purposes for GDPR, Personal Data means any information relating to You such as a name, an identification number, location data, online identifier or to one or more factors specific to the physical, physiological, genetic, mental, economic, cultural or social identity.
Personal Data means any information that identifies, relates to, describes or is capable of being associated with, or could reasonably be linked, directly or indirectly, with You.

**Sale** means selling, renting, releasing, disclosing, disseminating, making available, transferring, or otherwise communicating orally, in writing, or by electronic or other means, a Consumer's Personal information to another business or a third party for monetary or other valuable consideration.

**Service** refers to the Application.

**Service Provider** means any natural or legal person who processes the data on behalf of the Company. It refers to third-party companies or individuals employed by the Company to facilitate the Service, to provide the Service on behalf of the Company, to perform services related to the Service or to assist the Company in analysing how the Service is used. For the purpose of the GDPR, Service Providers are considered Data Processors.

**Third-party Social Media Service** refers to any website or any social network website through which a User can log in or create an account to use the Service.

**Usage Data** refers to data collected automatically, either generated by the use of the Service or from the Service infrastructure itself (for example, the duration of a page visit).

**You** means the individual accessing or using the Service, or the company, or other legal entity on behalf of which such individual is accessing or using the Service, as applicable.
Under GDPR (General Data Protection Regulation), You can be referred to as the Data Subject or as the User as you are the individual using the Service.

**Collecting and Using Your Personal Data**
**Types of Data Collected**

**Personal Data** While using Our Service, We may ask You to provide Us with certain personally identifiable information that can be used to contact or identify You. Personally identifiable information may include, but is not limited to:

- Email address
- First name and last name
- Phone number
- Address, State, Province, ZIP/Postal code, City, Country
- Usage Data

Continued...

# Privacy Policy for LabCom

**Usage Data**
Usage Data is collected automatically when using the Service.

Usage Data may include information such as Your Device's Internet Protocol address (e.g. IP address), browser type, browser version, the pages of our Service that You visit, the time and date of Your visit, the time spent on those pages, unique device identifiers and other diagnostic data.

When You access the Service by or through a mobile device, We may collect certain information automatically, including, but not limited to, the type of mobile device You use, Your mobile device unique ID, the IP address of Your mobile device, Your mobile operating system, the type of mobile Internet browser You use, unique device identifiers and other diagnostic data.

We may also collect information that Your browser sends whenever You visit our Service or when You access the Service by or through a mobile device.

**Information Collected while Using the Application**
While using Our Application, in order to provide features of Our Application, We may collect, with your prior permission:
Information regarding your location
Pictures and other information from your Device's camera and photo library

We use this information to provide features of Our Service, to improve and customize Our Service. The information may be uploaded to the Company's servers and/or a Service Provider's server or it be simply stored on Your device.

You can enable or disable access to this information at any time, through Your Device settings.

**Use of Your Personal Data**
The Company may use Personal Data for the following purposes:

· **To provide and maintain our Service**, including to monitor the usage of our Service.
· **To manage Your Account**: to manage Your registration as a user of the Service. The Personal Data You provide can give You access to different functionalities of the Service that are available to You as a registered user.
· **For the performance of a contract:** the development, compliance and undertaking of the purchase contract for the products, items or services You have purchased or of any other contract with Us through the Service.
· **To contact You**: To contact You by email, telephone calls, SMS, or other equivalent forms of electronic communication, such as a mobile application's push notifications regarding updates or informative communications related to the functionalities, products or contracted services, including the security updates, when necessary or reasonable for their implementation.
· **To provide You** with news, special offers and general information about other goods, services and events which we offer that are similar to those that you have already purchased or enquired about unless You have opted not to receive such information.

Continued...

# Privacy Policy for LabCom

·**To manage** Your requests: To attend and manage Your requests to Us.
We may share your personal information in the following situations:

· **With Service Providers**: We may share Your personal information with Service Providers to monitor and analyse the use of our Service, to contact You.
· **For Business transfers**: We may share or transfer Your personal information in connection with, or during negotiations of, any merger, sale of Company assets, financing, or acquisition of all or a portion of our business to another company.
· **With Affiliates**: We may share Your information with Our affiliates, in which case we will require those affiliates to honour this Privacy Policy. Affiliates include Our parent company and any other subsidiaries, joint venture partners or other companies that We control or that are under common control with Us.
· **With Business partners**: We may share Your information with Our business partners to offer You certain products, services or promotions.
· **With other users**: when You share personal information or otherwise interact in the public areas with other users, such information may be viewed by all users and may be publicly distributed outside. If You interact with other users or register through a Third-Party Social Media Service, Your contacts on the Third-Party Social Media Service may see Your name, profile, pictures and description of Your activity. Similarly, other users will be able to view descriptions of Your activity, communicate with You and view Your profile.

**Retention of Your Personal Data**
The Company will retain Your Personal Data only for as long as is necessary for the purposes set out in this Privacy Policy. We will retain and use Your Personal Data to the extent necessary to comply with our legal obligations (for example, if we are required to retain your data to comply with applicable laws), resolve disputes, and enforce our legal agreements and policies.

The Company will also retain Usage Data for internal analysis purposes. Usage Data is generally retained for a shorter period of time, except when this data is used to strengthen the security or to improve the functionality of Our Service, or We are legally obligated to retain this data for longer time periods.

**Transfer of Your Personal Data**
Your information, including Personal Data, is processed at the Company's operating offices and in any other places where the parties involved in the processing are located. It means that this information may be transferred to — and maintained on — computers located outside of Your state, province, country or other governmental jurisdiction where the data protection laws may differ than those from Your jurisdiction.

Your consent to this Privacy Policy followed by Your submission of such information represents Your agreement to that transfer.

The Company will take all steps reasonably necessary to ensure that Your data is treated securely and in accordance with this Privacy Policy and no transfer of Your Personal Data will take place to an organization or a country unless there are adequate controls in place including the security of Your data and other personal information.

Continued...

# Privacy Policy for LabCom

**Disclosure of Your Personal Data**

**Business Transactions**
If the Company is involved in a merger, acquisition or asset sale, Your Personal Data may be transferred. We will provide notice before Your Personal Data is transferred and becomes subject to a different Privacy Policy.

**Law enforcement**
Under certain circumstances, the Company may be required to disclose Your Personal Data if required to do so by law or in response to valid requests by public authorities (e.g. a court or a government agency).

**Other legal requirements**
The Company may disclose Your Personal Data in the good faith belief that such action is necessary to:

- Comply with a legal obligation
- Protect and defend the rights or property of the Company
- Prevent or investigate possible wrongdoing in connection with the Service
- Protect the personal safety of Users of the Service or the public
- Protect against legal liability

**Security of Your Personal Data**
The security of Your Personal Data is important to Us, but remember that no method of transmission over the Internet, or method of electronic storage is 100% secure. While We strive to use commercially acceptable means to protect Your Personal Data, We cannot guarantee its absolute security.

**GDPR Privacy**

**Legal Basis for Processing Personal Data under GDPR**
We may process Personal Data under the following conditions:

- **Consent:** You have given Your consent for processing Personal Data for one or more specific purposes.
- **Performance of a contract:** Provision of Personal Data is necessary for the performance of an agreement with You and/or for any pre-contractual obligations thereof.
- **Legal obligations:** Processing Personal Data is necessary for compliance with a legal obligation to which the Company is subject.
- **Vital interests:** Processing Personal Data is necessary in order to protect Your vital interests or of another natural person.
- **Public interests**: Processing Personal Data is related to a task that is carried out in the public interest or in the exercise of official authority vested in the Company.
- **Legitimate interests:** Processing Personal Data is necessary for the purposes of the legitimate interests pursued by the Company.

Continued...

In any case, the Company will gladly help to clarify the specific legal basis that applies to the processing, and in particular whether the provision of Personal Data is a statutory or contractual requirement, or a requirement necessary to enter into a contract.

**Your Rights under the GDPR**
The Company undertakes to respect the confidentiality of Your Personal Data and to guarantee You can exercise Your rights.

You have the right under this Privacy Policy, and by law if You are within the EU, to:

· **Request access to Your Personal Data**. The right to access, update or delete the information We have on You. Whenever made possible, you can access, update or request deletion of Your Personal Data directly within Your account settings section. If you are unable to perform these actions yourself, please contact Us to assist You. This also enables You to receive a copy of the Personal Data We hold about You.
· **Request correction of the Personal Data that We hold about You**. You have the right to have any incomplete or inaccurate information We hold about You corrected.
· **Object to processing of Your Personal Data**. This right exists where We are relying on a legitimate interest as the legal basis for Our processing and there is something about Your particular situation, which makes You want to object to our processing of Your Personal Data on this ground. You also have the right to object where We are processing Your Personal Data for direct marketing purposes.
· **Request erasure of Your Personal Data**. You have the right to ask Us to delete or remove Personal Data when there is no good reason for Us to continue processing it.
· **Request the transfer of Your Personal Data**. We will provide to You, or to a third-party You have chosen, Your Personal Data in a structured, commonly used, machine-readable format. Please note that this right only applies to automated information which You initially provided consent for Us to use or where We used the information to perform a contract with You.
· **Withdraw Your consent**. You have the right to withdraw Your consent on using your Personal Data. If You withdraw Your consent, We may not be able to provide You with access to certain specific functionalities of the Service.

**Exercising of Your GDPR Data Protection Rights**
You may exercise Your rights of access, rectification, cancellation and opposition by contacting Us. Please note that we may ask You to verify Your identity before responding to such requests. If You make a request, We will try our best to respond to You as soon as possible.

You have the right to complain to a Data Protection Authority about Our collection and use of Your Personal Data. For more information, if You are in the European Economic Area (EEA), please contact Your local data protection authority in the EEA.

Continued...

# Privacy Policy for LabCom

**CCPA Privacy**

**Your Rights under the CCPA**

Under this Privacy Policy, and by law if You are a resident of California, You have the following rights:

· **The right to notice**. You must be properly notified which categories of Personal Data are being collected and the purposes for which the Personal Data is being used.

· **The right to access / the right to request**. The CCPA permits You to request and obtain from the Company information regarding the disclosure of Your Personal Data that has been collected in the past 12 months by the Company or its subsidiaries to a third-party for the third party's direct marketing purposes.

· **The right to say no to the sale of Personal Data**. You also have the right to ask the Company not to sell Your Personal Data to third parties. You can submit such a request by visiting our "Do Not Sell My Personal Information" section or web page.

· **The right to know about Your Personal Data**. You have the right to request and obtain from the Company information regarding the disclosure of the following:

- The categories of Personal Data collected
- The sources from which the Personal Data was collected
- The business or commercial purpose for collecting or selling the Personal Data
- Categories of third parties with whom We share Personal Data
- The specific pieces of Personal Data we collected about You

· **The right to delete Personal Data**. You also have the right to request the deletion of Your Personal Data that have been collected in the past 12 months.

· **The right not to be discriminated against**. You have the right not to be discriminated against for exercising any of Your Consumer's rights, including by:

- Denying goods or services to You
- Charging different prices or rates for goods or services, including the use of discounts or other benefits or imposing penalties
- Providing a different level or quality of goods or services to You
- Suggesting that You will receive a different price or rate for goods or services or a different level or quality of goods or services.

**Exercising Your CCPA Data Protection Rights**

In order to exercise any of Your rights under the CCPA, and if you are a California resident, You can email or call us or visit our "Do Not Sell My Personal Information" section or web page.

The Company will disclose and deliver the required information free of charge within 45 days of receiving Your verifiable request. The time period to provide the required information may be extended once by an additional 45 days when reasonable necessary and with prior notice.

Continued...

# Privacy Policy for LabCom

**Do Not Sell My Personal Information**
We do not sell personal information. However, the Service Providers we partner with (for example, our advertising partners) may use technology on the Service that "sells" personal information as defined by the CCPA law.

If you wish to opt out of the use of your personal information for interest-based advertising purposes and these potential sales as defined under CCPA law, you may do so by following the instructions below.

Please note that any opt out is specific to the browser You use. You may need to opt out on every browser that you use.

**Website**
You can opt out of receiving ads that are personalized as served by our Service Providers by following our instructions presented on the Service:

- From Our "Cookie Consent" notice banner
- Or from Our "CCPA Opt-out" notice banner
- Or from Our "Do Not Sell My Personal Information" notice banner
- Or from Our "Do Not Sell My Personal Information" link

The opt out will place a cookie on Your computer that is unique to the browser You use to opt out. If you change browsers or delete the cookies saved by your browser, you will need to opt out again.

**Mobile Devices**
Your mobile device may give you the ability to opt out of the use of information about the apps you use in order to serve you ads that are targeted to your interests:

- "Opt out of Interest-Based Ads" or "Opt out of Ads Personalization" on Android devices
- "Limit Ad Tracking" on iOS devices

You can also stop the collection of location information from Your mobile device by changing the preferences on your mobile device.

**"Do Not Track" Policy as Required by California Online Privacy Protection Act (CalOPPA)**
Our Service does not respond to Do Not Track signals.

However, some third party websites do keep track of Your browsing activities. If You are visiting such websites, You can set Your preferences in Your web browser to inform websites that You do not want to be tracked. You can enable or disable DNT by visiting the preferences or settings page of Your web browser.