

heliOS RELEASE
INFORMATION

heliOS 2022.2: Release Information Sheet

The **2022.2** release comes with a range of powerful features that require some major changes. A new set of **methods** has been developed that comprises and supports **enhanced fluidics**, optimized **sample tracking**, shorter **run times**, two separate **running buffers**, and **buffer volume prediction**. Furthermore, these methods are optimized for and require the new **maintenance buffer** (TE40) and they come along with a surface regeneration without the need of the **heliX[®] EDTA solution**.

However, there are limitations regarding the **backwards compatibility** to older methods and more importantly, a **downgrade** to older versions after the installation of the 2022.2 version is not recommended, since this may lead to a corruption of your database.

Therefore, we recommend to only use the **latest methods**. In addition, the latest **heliX[®]** firmware version is required to run assays from **heliOS 2022.2** ([download center](#)).

Please carefully read and follow the instructions below before updating your system.

Consumables

These additional reagents and consumables are required for running assays from **heliOS 2022.2**

- TE40 buffer (10x Buffer TE40 pH 7.4, Order No. [BU-TE-40-10](#)),
- Regeneration solution (Order No. [SOL-REG-1-5](#)).

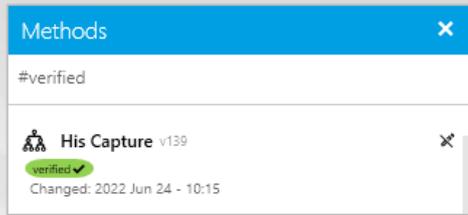
Note: The **heliX[®]** Regeneration kit (HK-REG-1) contains both, regeneration solution and **heliX[®]** EDTA solution. Since the EDTA solution is not required anymore when using the latest methods, regeneration solution can be ordered separately ([SOL-REG-1-5](#)).

Methods and Assays workspaces

1. Download and import the new methods into your database as described in the [install instructions](#).

Attention: heliOS 2022.2 requires the **.NET 6 Desktop Runtime** (see [.NET 6 install instructions](#))

2. After the import you can identify the new methods in the list by a **green “verified” tag**.
Tip: You can filter your **Methods** list for verified methods by entering **#verified** into the search bar on top of the list.



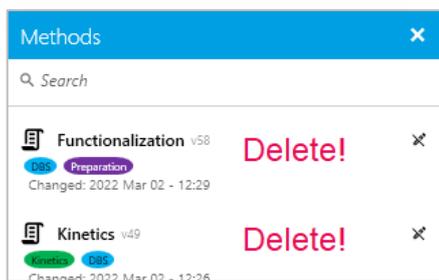
- Use verified methods to either create your own **custom composed methods** or to directly generate **custom assays** (see *helix[®] Quick Start Guide 4.1* for further information).

Our recommendation: Use only **verified methods** for your custom assays!

Attention: Verified methods are not compatible with **helios** versions <2022.2 (e.g. 1.7.4) and **helix[®]** firmware versions <5.255.6.1766.

- Deprecated methods:** Methods without a green “verified” tag are **deprecated** (including the “DBS”-tagged methods). They are only partially compatible with the 2022.2 version of **helios** and they lack the features described at the beginning.

Our recommendation: **Stop** using “DBS”-tagged and other **deprecated methods** (all methods without a “verified” tag) and their **correspondent assays**, and to delete them from the **Methods** and **Assays** lists (select the method or assay in the list and press the *Delete* key).

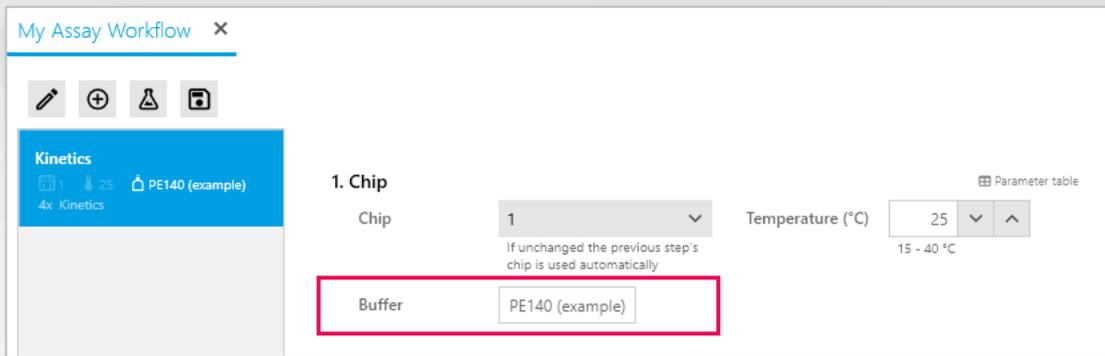


Preparing the device for a run

- Before starting an assay, connect a bottle filled with **TE40** buffer (**maintenance buffer**) to buffer **tube 3**. The maintenance buffer is a defined switchSENSE-compatible buffer that is used in surface functionalization and passivation steps as well as chip status measurements (TE40 Order No. [BU-TE-40-10](#)). **TE40, attached to buffer tube 3, must be present in the instrument throughout all measurements.**

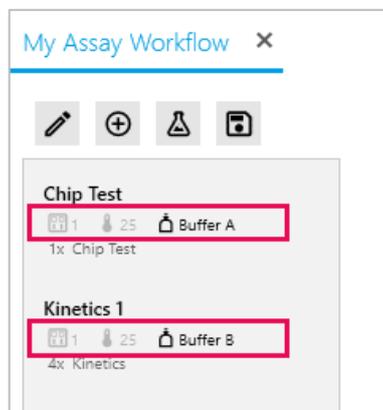
Attention: Prevent a contact between buffer tube 3 and running buffer! Buffer tube 3 should only be connected to the maintenance buffer. Please follow the instructions in the assay start wizard.

- Define a **running buffer** of your choice in the **heliOS** assay settings. Therefore, add an assay to your assay workflow and specify the name of your running buffer in the input field **Buffer**, right below the chip selection (e.g. PE140).

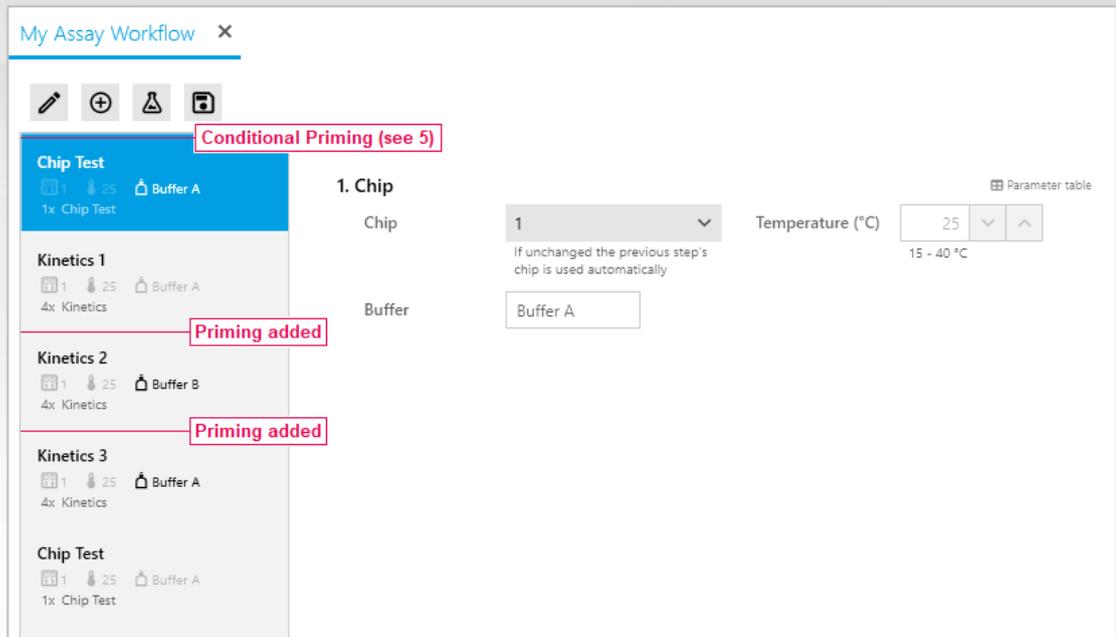


- You can use an optional **second running buffer** for a different assay in the same assay workflow. Connect the running buffer(s) to the buffer tube(s) (**tube 1** and optionally **tube 2**). **heliOS** shows which buffers and how much volume is needed, also the buffer tubes they need to be connected to. Please follow the instructions in the assay start wizard.

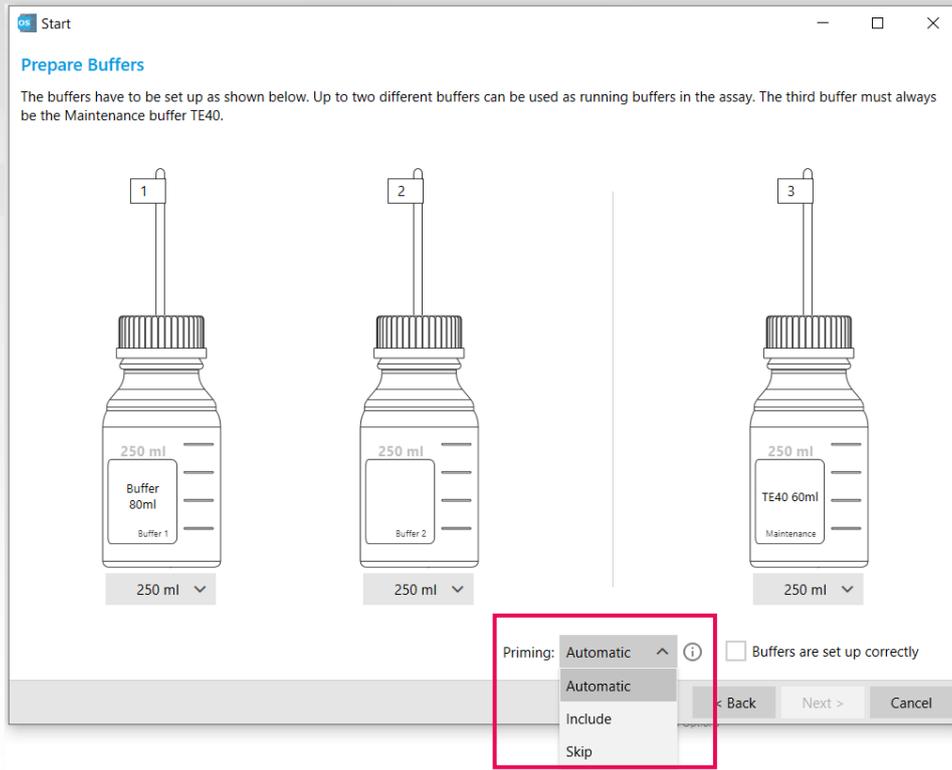
Tip: Before starting the assay wizard (*Run* button) you can check the chip position, chip temperature and running buffer as small icons in each assay “tile” in the *Assay Workflow*. The icons appear in light grey if the parameters have not been changed manually.



- In case of two running buffers, a **priming** step (former *change buffer*) is added **automatically** between two assays whenever running buffers are switched.



- The **assay start wizard** has been optimized. All three buffer tubes connected to the corresponding buffer bottles are schematically drawn in the **Prepare Buffers** window. Attach the displayed **amount of buffers** (mL) to the tubes. A blank bottle label means no buffer needs to be attached. The initial priming step before the first assay (conditional priming) can be controlled by the dropdown-menu next to **Priming**:



- **Automatic:** The system remembers the last used buffer. If the buffer (name entered in the assay input field) stays the same priming is automatically skipped. If a different buffer is entered in the assay the priming will be automatically performed.
- **Include:** Use this option if you want to force a priming, or if you are unsure about the state of the fluidics system.
- **Skip:** Select this option from the dropdown-menu if you want to skip the priming.

Recommendation: Include a priming in the first assay after a Clean & Sleep routine was performed.

6. For surface regeneration, the requirement for an extra vial containing **heliX[®] EDTA** solution was eliminated and thus, not shown in the sample tray. Regeneration solution is still needed for surface regeneration and can be ordered apart from EDTA solution (Order No. [SOL-REG-1-5](#)).

Attention: **heliX[®] EDTA** solution is still needed if you are using old custom assays that are built from methods lacking the “verified”-tag. However, using old custom assays is not recommended. Please re-build your assays using verified methods instead.

heliX[®] Maintenance

1. For a **Clean & Sleep** run place the cleaning chip on **chip tray position 5** (former: position 1). Please follow the instructions in the Clean & Sleep wizard.