

**sepmag®**

## Monitor v3.2

Biomagnetic Separation Monitoring  
& Management Software

### Quick Guide

Rev 20201118

November 18th, 2020

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## What happens during your biomagnetic separation processes?

- When you use biomagnetic separation many factors affect the suspension's behavior.
- Comparing different samples and/or conditions is complicated when you only check the final result.
- If you use a classical magnetic separator (or a simple magnet), the force will be strongly dependent on the distance from the magnet wall



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## Introduction



- The **Monitor** software measures the light transmitted through the tube.
- At the start of the process, when the suspension is homogenous, the opacity is maximal.
- When separation is complete, and the remaining suspension is clear, the opacity is minimal.

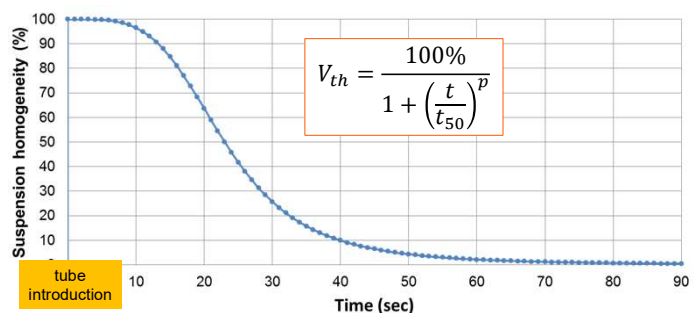
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## Processes while the vessel is inside a Sepmag

- If the magnetic force is homogenous, like in **Sepmag** systems, all the beads experience the same force.
- Since the force does not depend on the position, the changes are easy to link to the suspension.
- **Monitor** software fits the experimental values to a sigmoidal curve determining  $t_{50}$  and the exponent  $p$ .



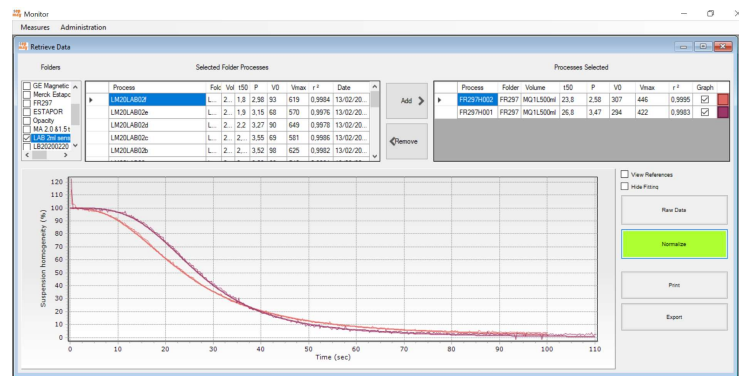
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## $t_{50}$ and $p$ data

- Different processes can be compared and quantitative differences on the fitting parameters  $t_{50}$  and  $p$  can be used to optimize them.



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## Content:

- Installation
- Measurement
- Comparing different steps



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## Installation:

- Download the installer
- Run the installer (\*.exe)
- Click on the '**Sepmag**' button that appears on your Desktop
- The default **username** is admin
- The default **password** is admin

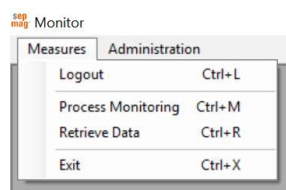
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## Measurement (1/4)

- Make sure that the **Sepmag** is connected to the USB port of the computer running the software.
- Log into the program.
- Click on **Measures/‘Process Monitoring’**

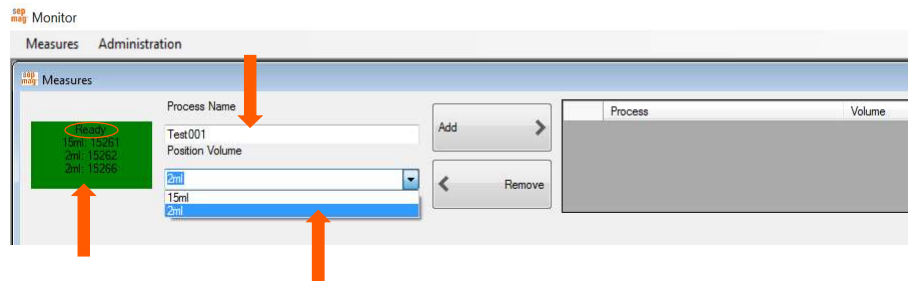


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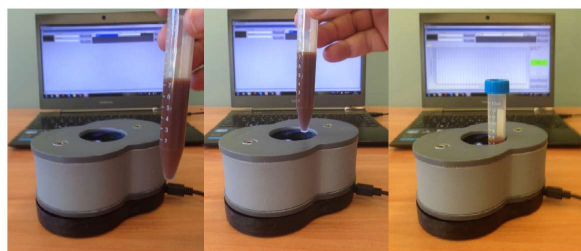
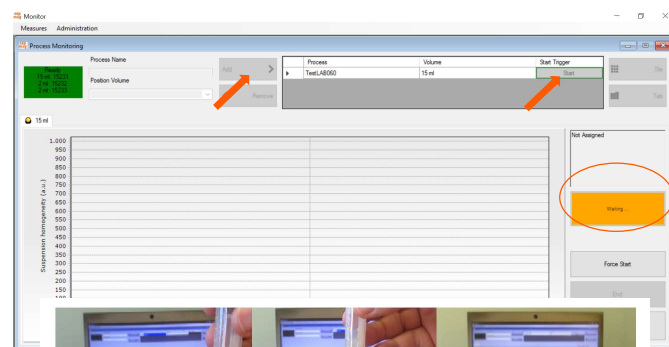
## Measurement (2/4)



- If the **Sepmag** is connected, **Ready** will be displayed on the screen.
- Write the name of the Process.
- Select the volume of the housing (only the available positions will show)

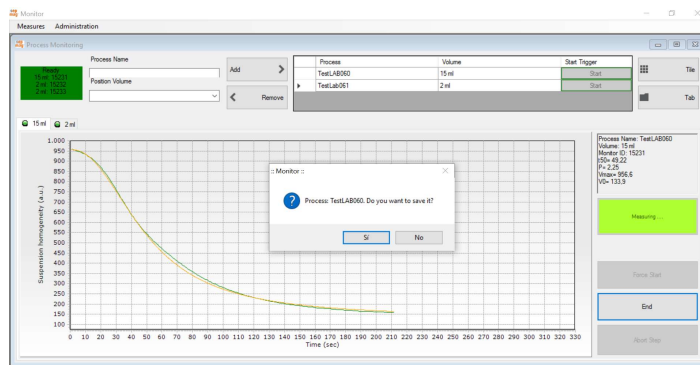
## Measurement (3/4)

- Press **'Add'** and the process will appear at the table on the right, with a green **'Start'** if everything is OK.
- Click **'Start'** and a **'Waiting'** flashing message will appear.
- The system will start the measure when the tube is placed on the housing



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## Measurement (4/4)



- Inserting the tube the measurement will start automatically once the tube is inserted.
- When you press 'End', the measurement will stop.
- If the **Sepmag** has multiple housings, several measures can be run simultaneously

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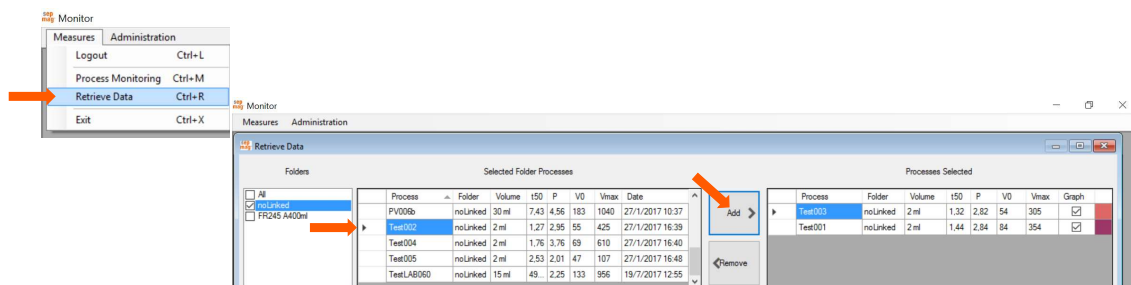
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## Comparing different processes (1/2)

- When developing new processes, you may want to compare different processes.
- Go to 'Retrieve Data' screen
- Select the desired process and click 'Add' to load the left table



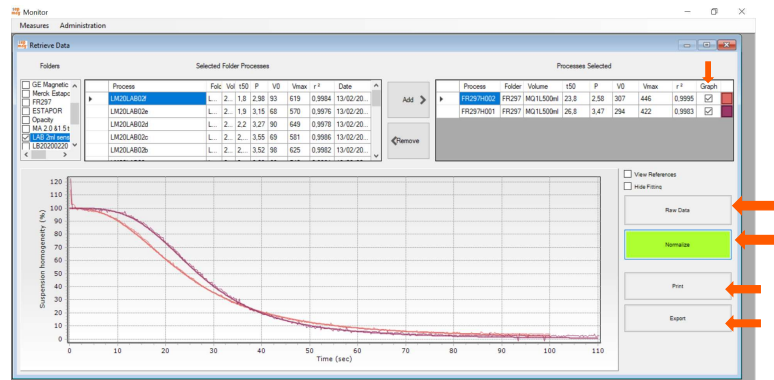
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## Comparing different processes (2/2)

- The graphs can be 'selected'/'unselected' at the table.
- Normalized or Raw Data** curves can be shown
- 'Print' will generate a 'printer friendly report'
- 'Export' will export the data to a file for external analysis



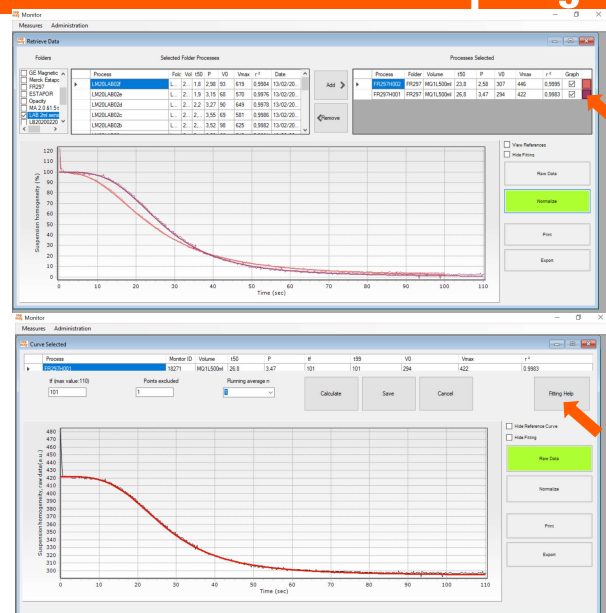
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## Improving the data fitting

- If  $r^2 < 0.99$ , the obtained fitting values ( $t50$ ,  $p$ ,  $V0$ ,  $Vmax$ ,  $t99$ ) should be critically revised.
- In **Monitor**, you may modify the fitting parameters by clicking the right square indicating the color of the curve.
- You will access to a new window where you may play with the parameters.
- The '**Fitting Help**' provides an additional explanation about how the different parameters may be used to improve the fitting quality



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