

Horiba Particle size analyzer

Purpose and Scope:

This document describes the procedures and policies for using the MSE Horiba Particle Size Analyzer. The scope of this document is to establish user procedures. Instrument maintenance and repair are outside the scope of this document.



Fig. 1 - Horiba LA-950 Particle Size Analyzer

Responsibilities

This document is maintained by the department Lab manager. The Lab Manager is responsible for general maintenance and for arranging repair when necessary. If you feel that the instrument is in need of repair or is not operating correctly please notify the Lab Manager immediately. The Lab Manger will operate the instruments according to the procedures set down in this document and will provide instruction and training to users within the department. Users are responsible for using the instrument described according to these procedures. These procedures assume that the user has had at least one training session.

Precautions

Before beginning, make sure that there is plenty of clean di-water for the measurement. Approximately 200mL is needed for each measurement and/or rinse. Check the water level after every measurement or rinse. If the water level is too low and the pump is pulling in air, it can damage the pump. If you need to use a different analysis fluid please see the Lab Manager.

Before beginning. Note the density, mass, and index of refraction of your material.

- Turn on the instrument
- Open the Horiba software
- There are a number of icons on the tool bar. Hover the cursor over the icons to see their titles. The most common used functions are the Measurement window and the Conditions view,(third and fourth from the left)

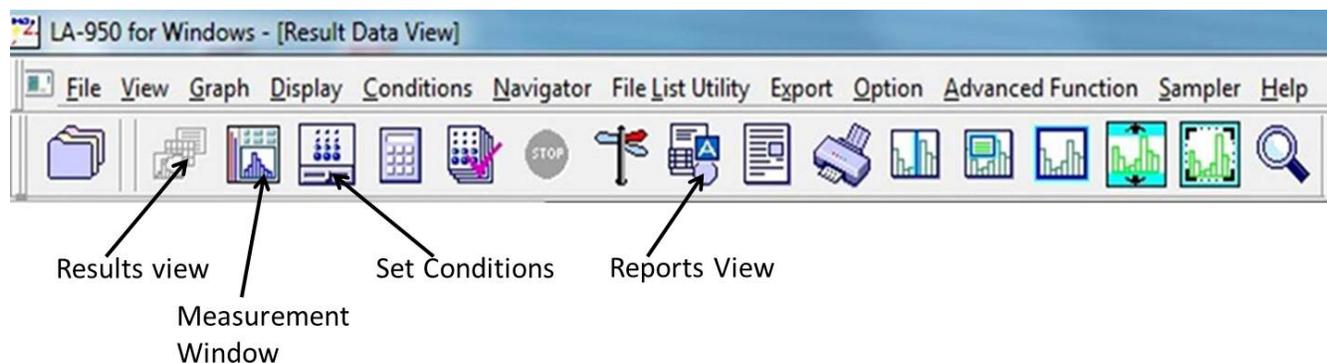


Fig. 2 Horiba LA-950V2 tool bar

- Select 'measurement window'. This is the window from which all of the operation of the instrument occurs.
- Open the set conditions window and set the conditions for measurement, including agitation, circulation speeds and fill level. This is also where you will define your materials and the dispersion fluid. You may have as many (or as few) condition files as you like. It is important to have the correct values for the index of refraction of your material.
- Select feed.
- Select 'alignment' on the main measurement window.
- When the alignment has finished, select 'rinse'
- After the rinse has finished, 'fill' the chamber. (Feed)
- Go back to the measurement page and be sure that the conditions for your measurement are set.
- Select 'de-bubble' and observe the chamber. If there are still a lot of bubbles, select de-bubble again.
- When the chamber fluid is clear and bubble free, select 'blank'.
- When the chamber fluid is de-bubbled, the lasers aligned, and the channels blanked, you are ready to add the sample.
- The sample can be a powder or suspension. If suspension, it may be necessary to use the sonic probe to break up agglomerates. (see next procedure)
- Put enough sample in to reduce the transmission intensity by 70 – 90 %, depending on the estimated particle size distribution, more for larger sizes, less for smaller (+/- 10 um). Note: Usually the transmission intensity does not need to be attenuated by more than 5 – 10 %.
- When the correct amount has been reached, do one more de-bubble if necessary then select 'measure'.
- When the measurement is finished, sonicate then de-bubble and repeat for two more measurements.
- When all measurements have been completed, do two rinse cycles.
- Log out of the application.
- Turn off the instrument.

**When you have completed your measurement please make sure to close out the CORAL session!
 Failure to do so may incur extra costs.**