PALS Software
Quick Start Guide

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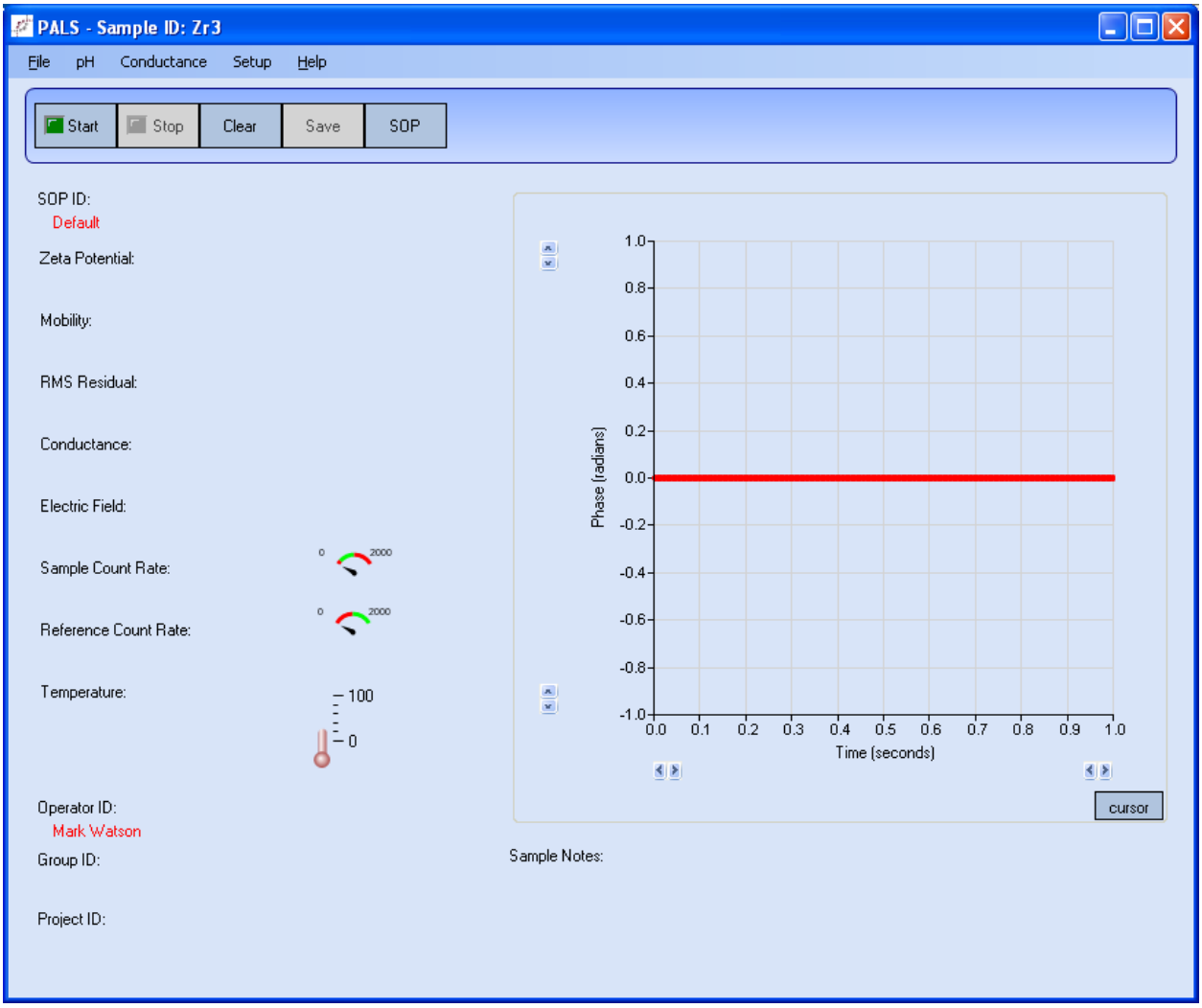
PALS New Measurement Window



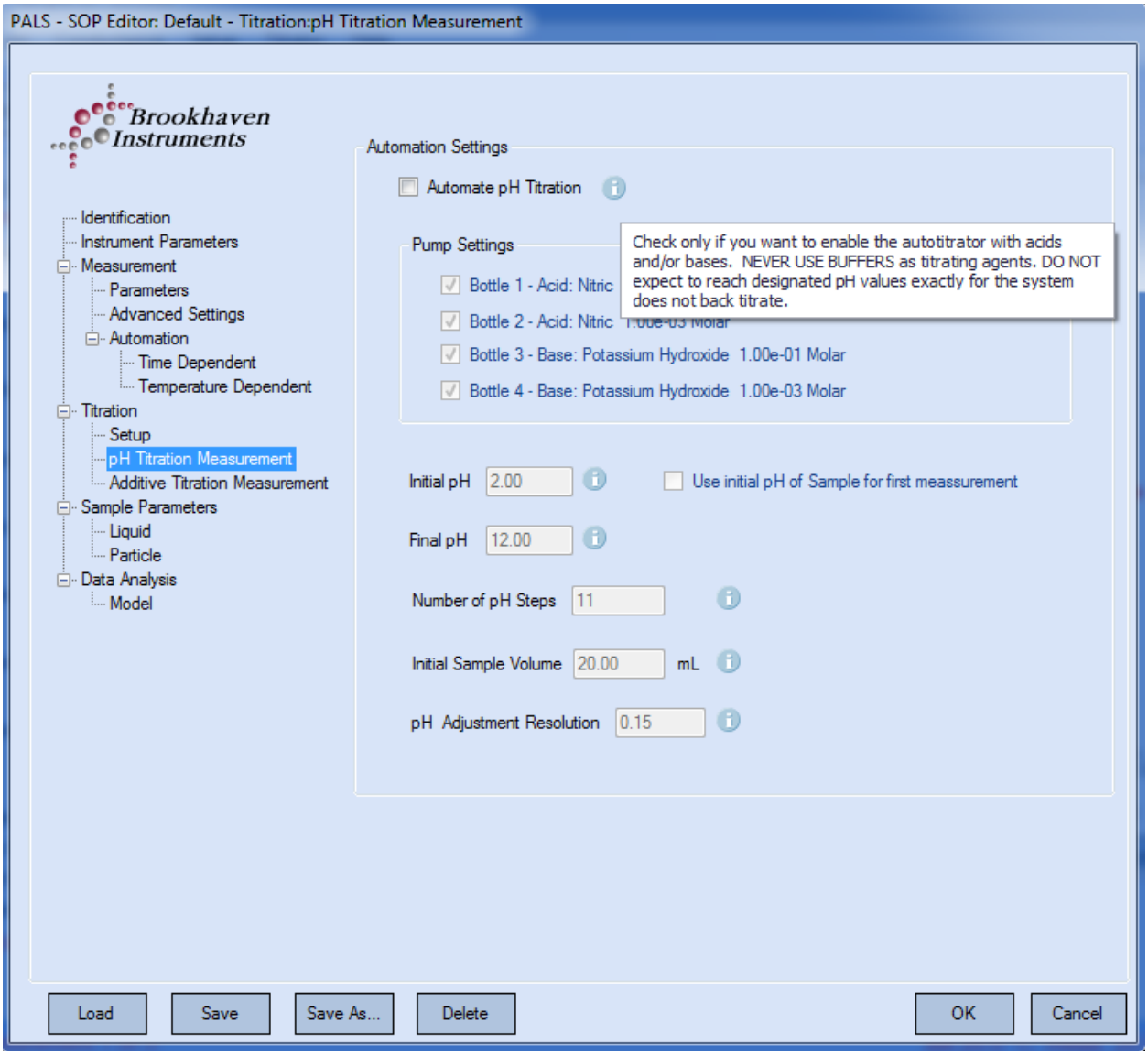
The PALS measurement window is used to collect new measurements.

The Start and Stop buttons are used to initiate and pause a measurement's progress. When Start is pressed, a sequence of one or more measurements will be collected as defined in the measurement SOP.

The Clear button can be used to clear the current measurement. Once a measurement sequence is completed, the final measurement from the sequence will be visible. It must be cleared before an operator can begin a new measurement sequence.

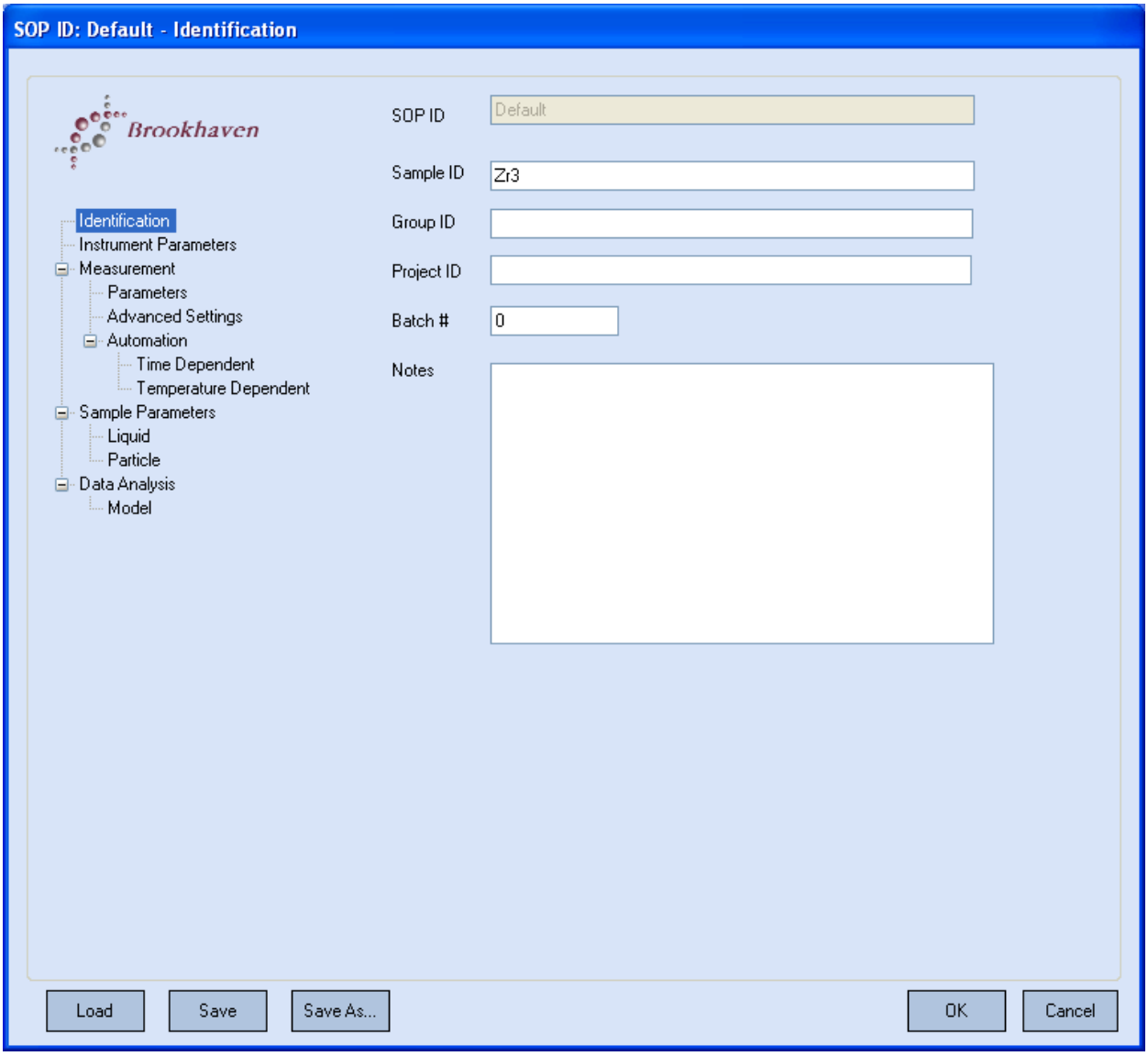
You may choose to view either size distribution results or raw correlation function data on the right side of the window.

PALS SOP Help



Click on the information icon to see the description of the setting in pop out dialog.

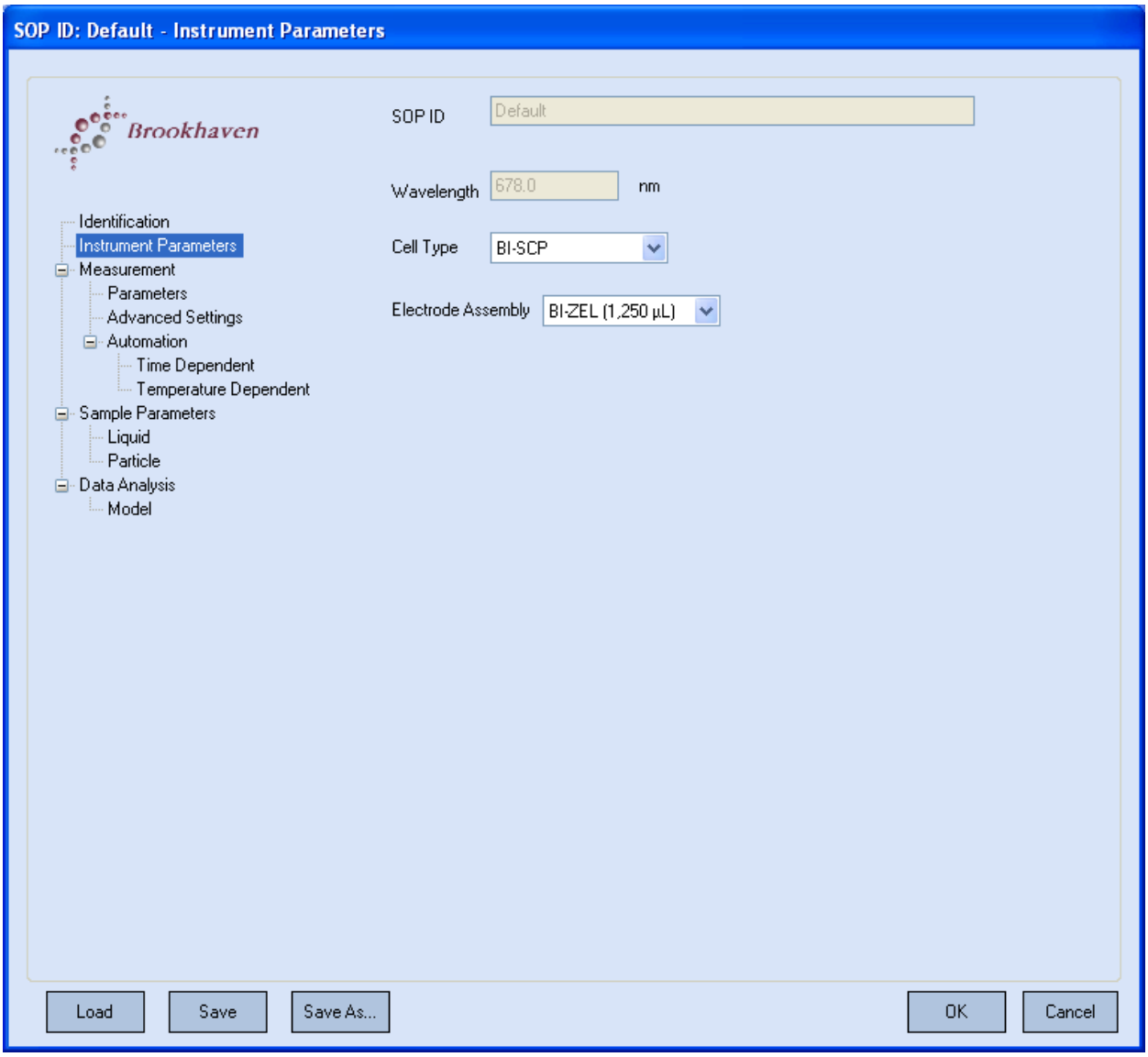
PALS SOP Identification Window



Measurement Identification parameters are indicated in the identification window.

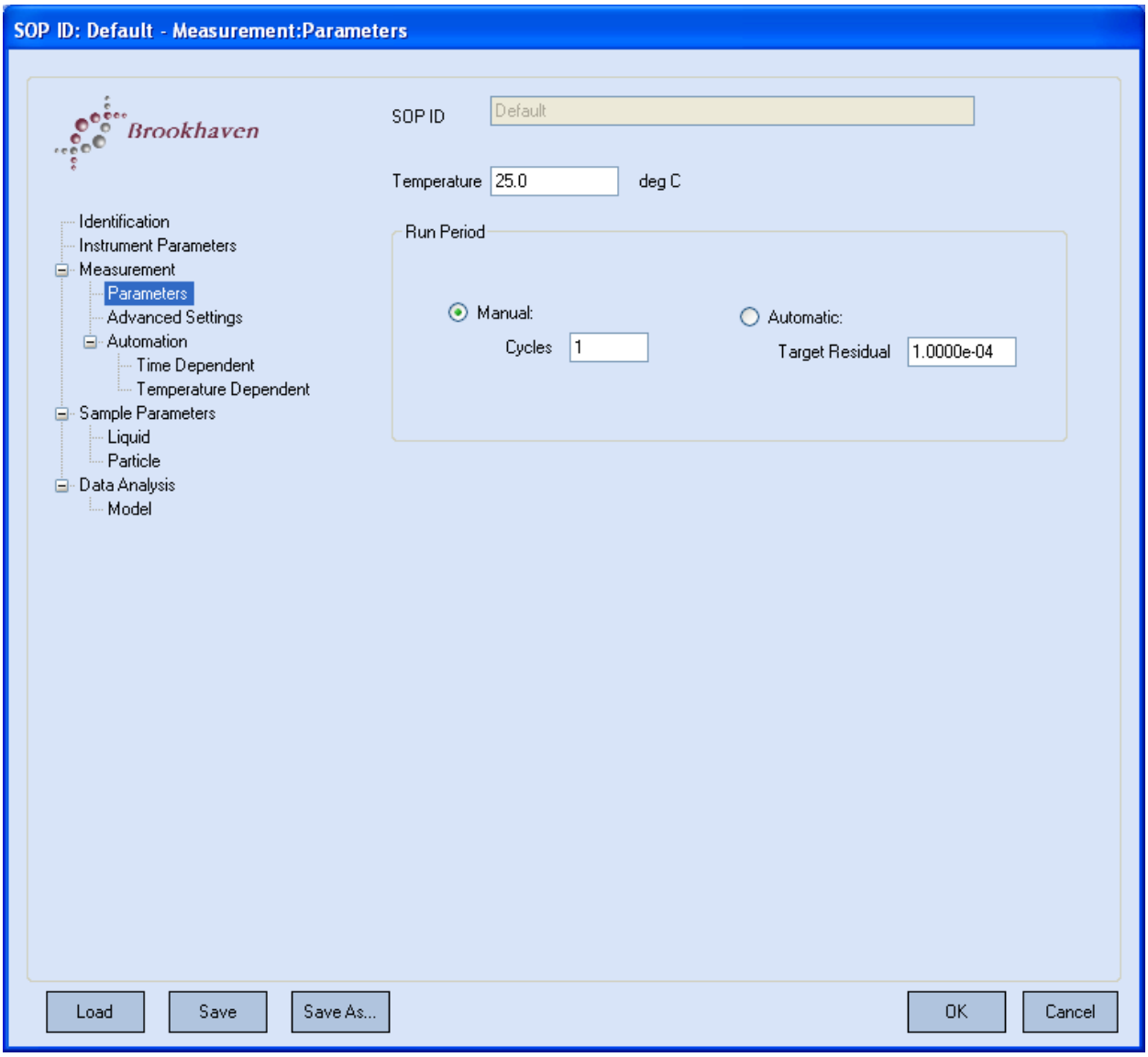
The SOP ID is the name of the SOP file that is currently in effect. You may load and save SOP files as needed before a measurement sequence is started. Once started, you may not change the SOP to a different file.

PALS SOP Instrument Parameters



Instrument parameters are indicated in this window.

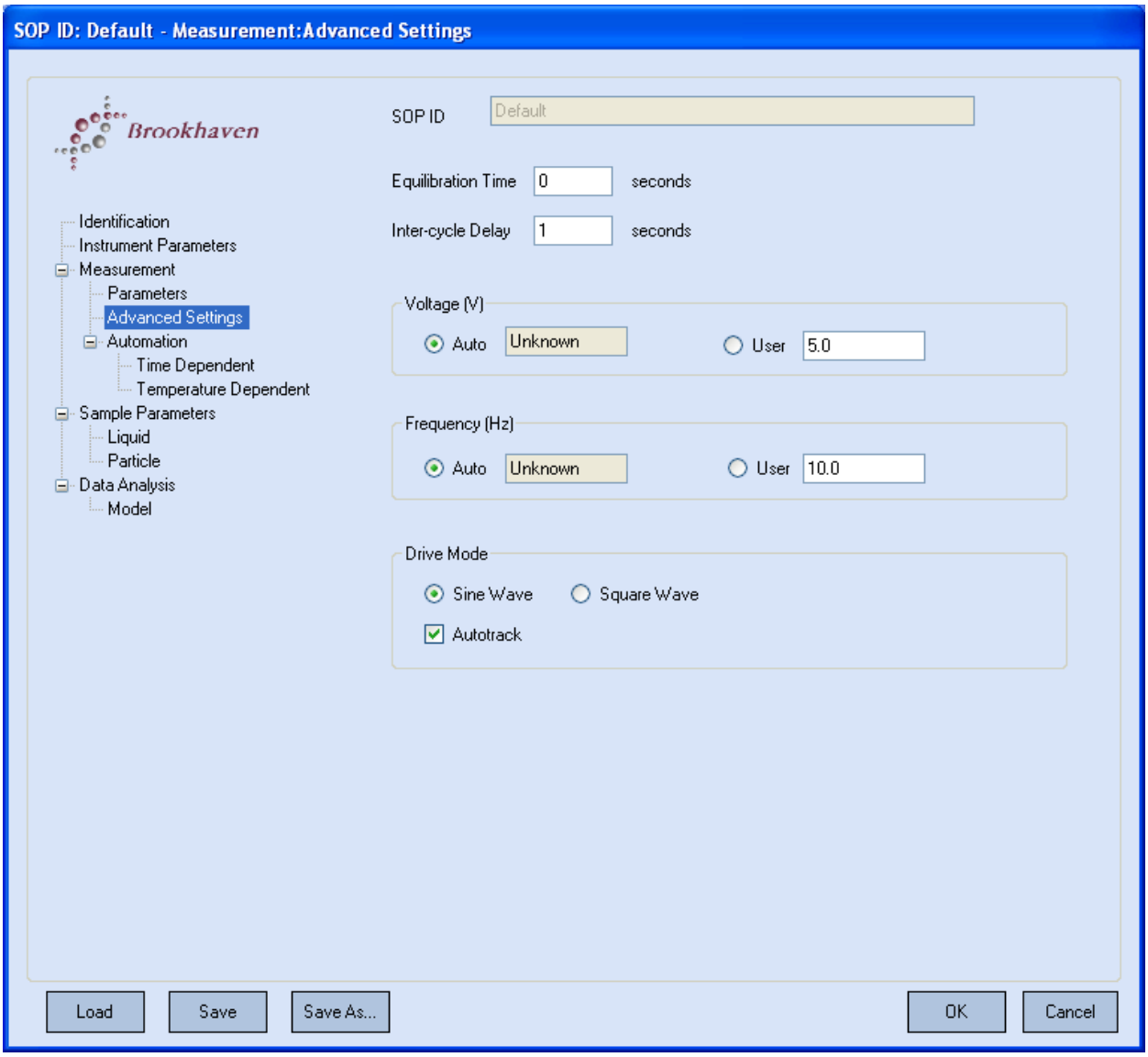
PALS SOP Measurement : Parameters Window



Use the Run Period settings to control the duration of the measurement.

Once a measurement sequence is started, many of the SOP parameters, such as measurement run period, cannot be changed and are used for the entire measurement sequence.

PALS SOP Measurement : Advanced Settings Window

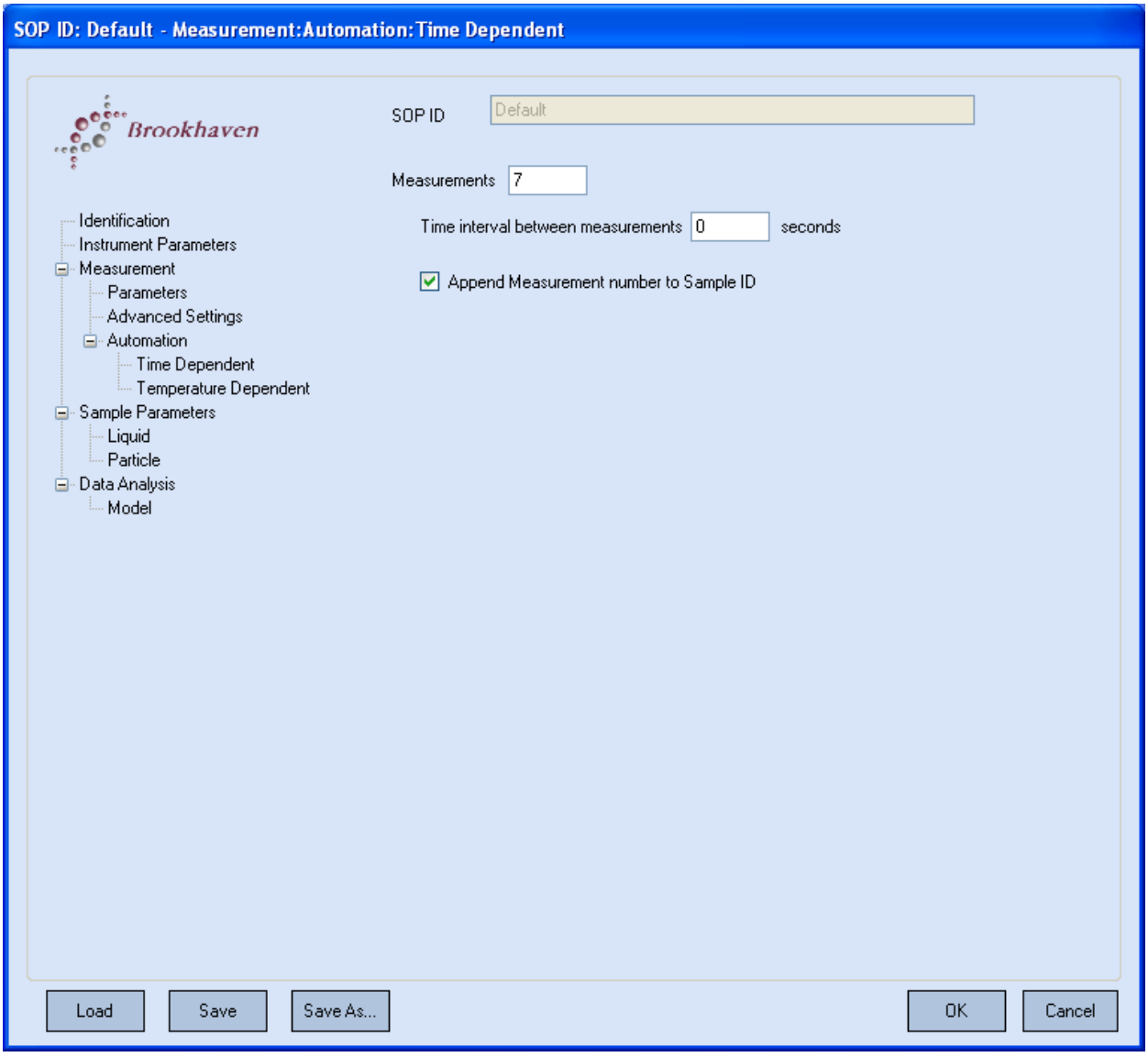


You may use the Advanced Settings Widow to alter the measurement conditions.

The Equilibration Time may be used to invoke a delay after the temperature has been stabilized, before the actual measurement data acquisition begins.

The Inter-cycle Delay may be used to invoke a delay between the application of the electric field during cycle acquisition.

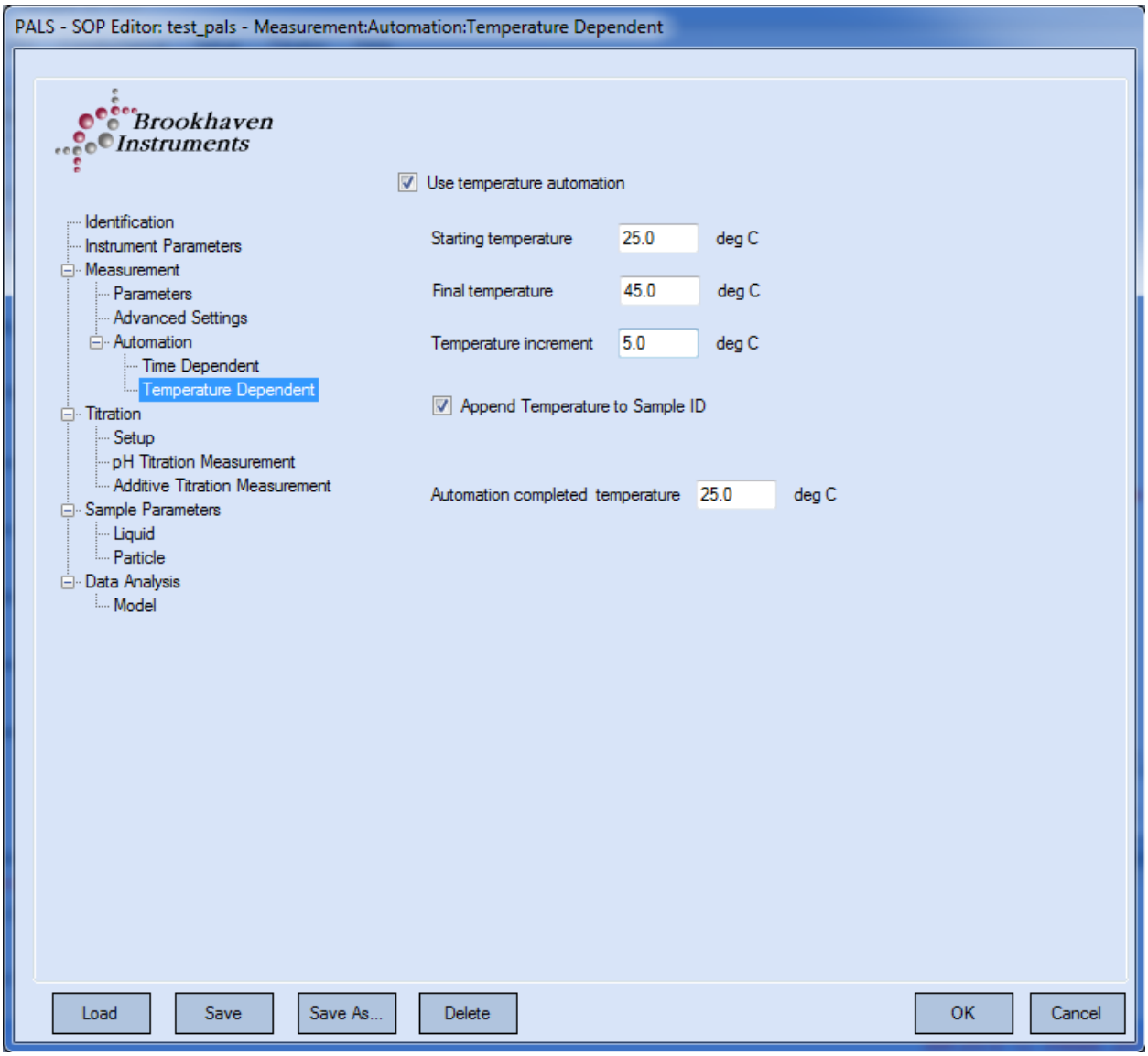
PALS SOP Measurement : Automation : Time Dependent Window



In this window, you may indicate the number of measurements to make using Total Measurements.

You may also indicate a time interval between measurements. The interval will set the delay between the start of a new measurement and the end of the prior measurement.

PALS SOP Measurement : Automation : Temperature Dependent Window

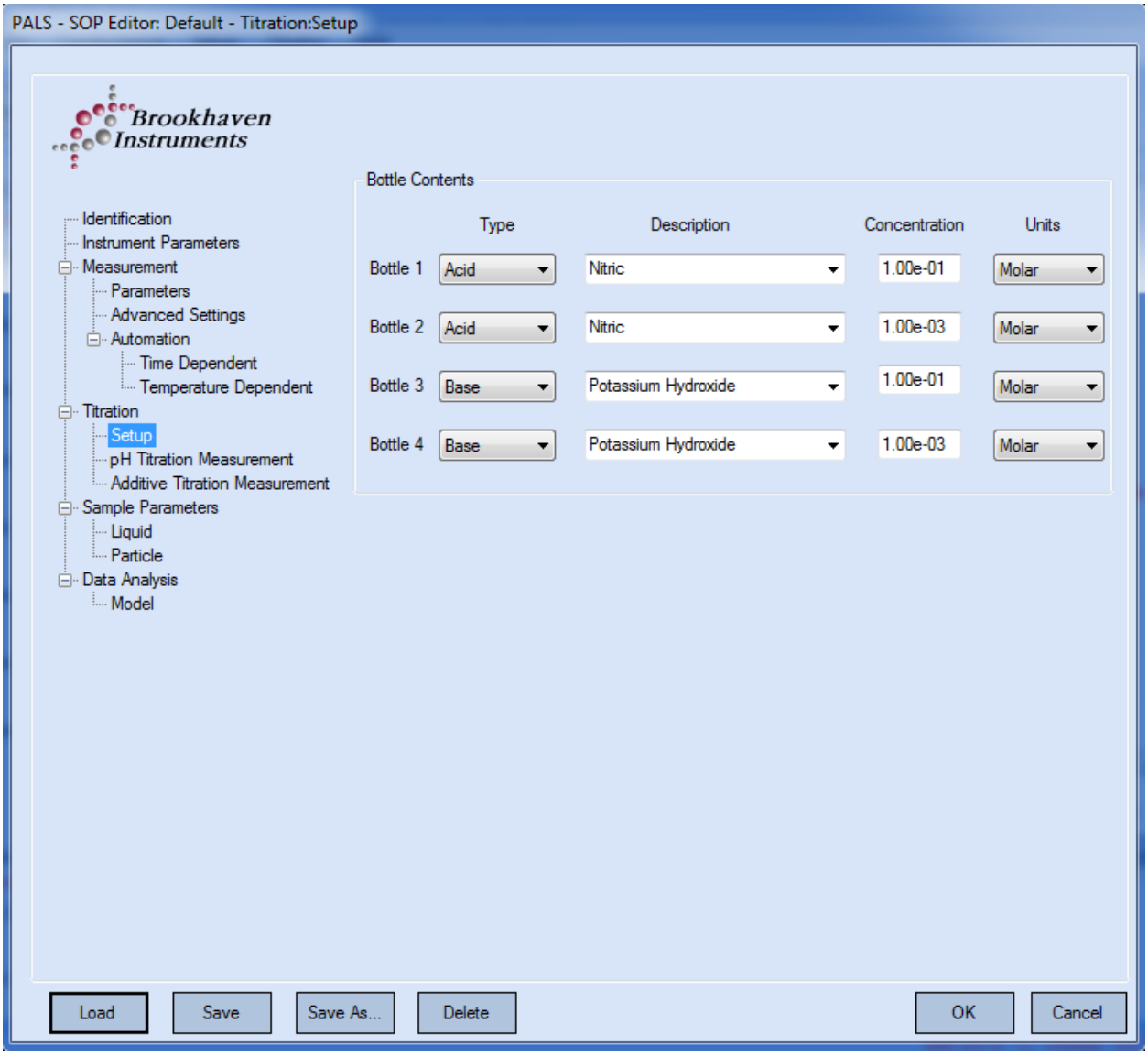


In this window, you may indicate a temperature automation sequence. You must indicate a start, final temperature and a temperature increment. The Use temperature automation checkbox must also be checked in order to use the temperature automation settings in the measurement sequence.

Note that the number of measurements requested in the Measurement Automation : Time Dependent Window will be made for each temperature in the temperature automation sequence.

The final temperature that the instrument should return to at the end of the measurement sequence is also shown on this page.

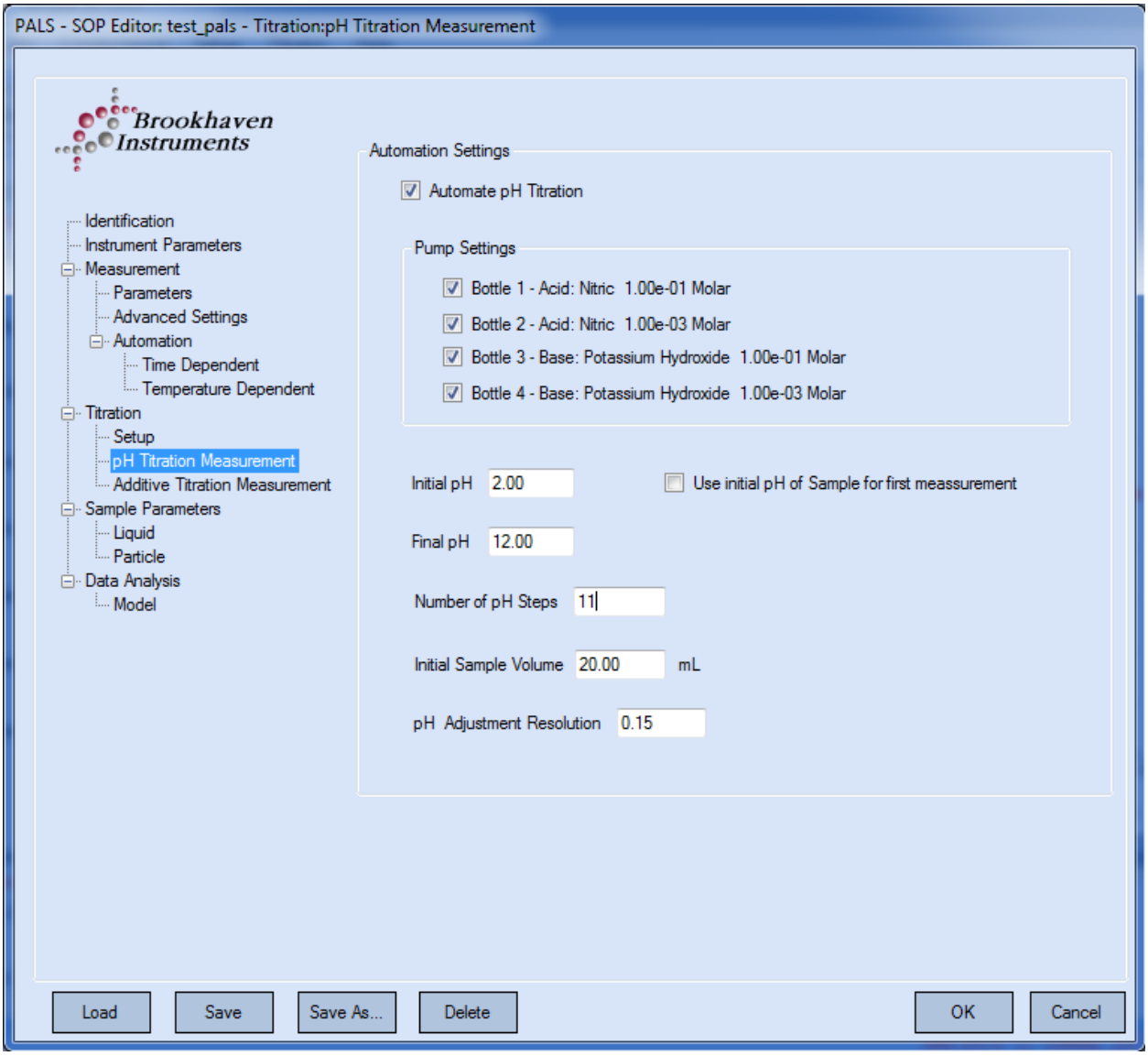
PALS SOP Titration : Setup



In this window, you may setup the type, description, concentration and units of the acid and base solutions used for the titration.

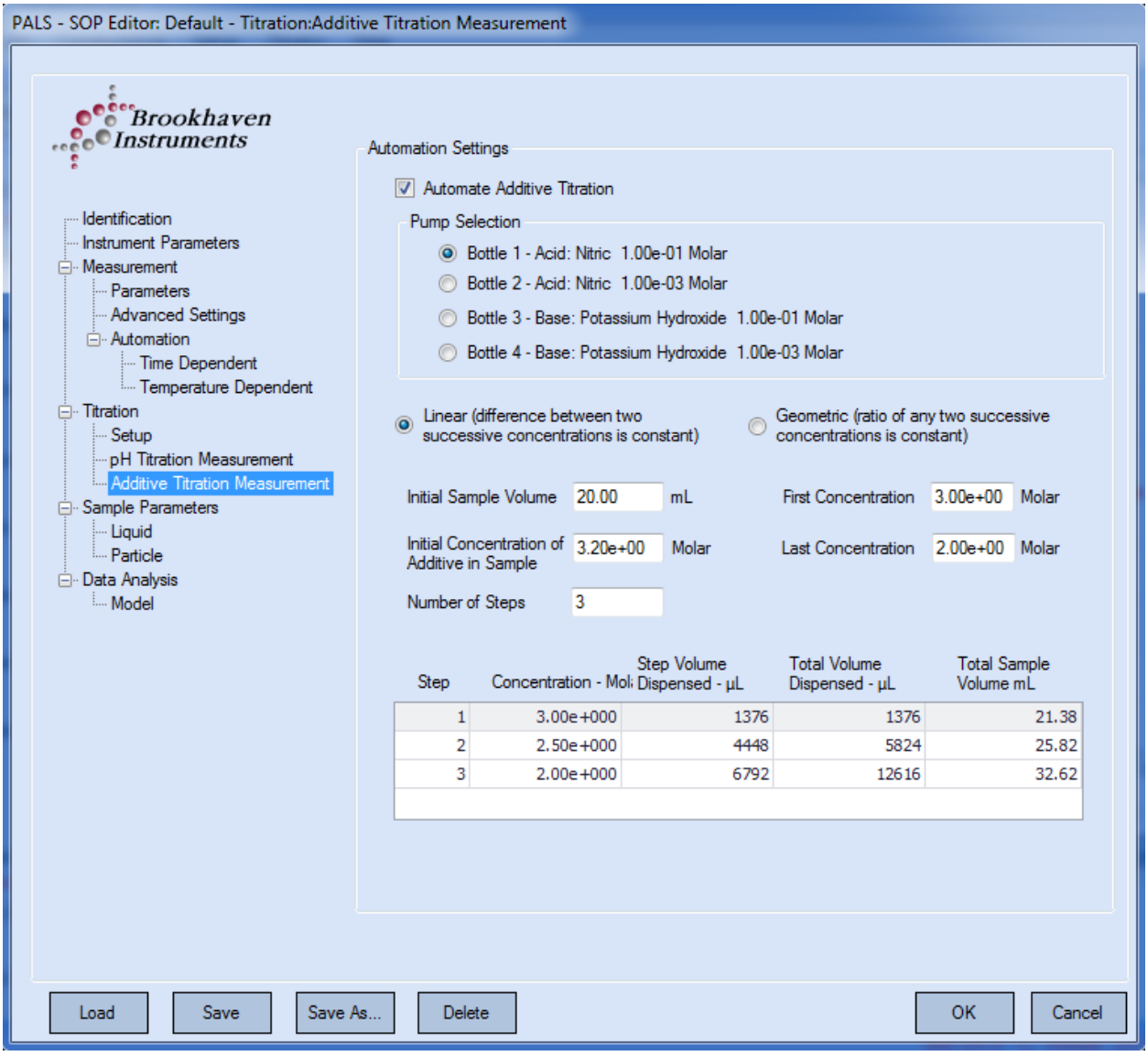
Up to four bottles of reagents are available corresponding to the four pumps. A reagent is either an acid, base, or additive. Select which one under Type. Under Description, use the pull down box for choices. For acids, select the recommended HNO3 or type in the name under Unspecified. For bases, select NaOH, KOH, or type in the name under Unspecified. For additives, there is a long list of salts, surfactants, wetting, and dispersing agents, or type in a more specific name under Unspecified. Enter the concentration in either decimal or scientific notation. Finally, select the units. For acids and bases, choose either Molar or Millimolar. For additives, there is a long list including % w/w, v/v, w/v, mg/mL, mg/L, Molar, or Millimolar.

PALS SOP Titration : pH Titration Measurement



Check Automate pH Titration to enable this feature. Check any of the pumps with the bottles you want to use in the titration. The description and concentrations are shown as you filled them in under Titration/Setup. Enter the Initial pH or check the box labeled “Use the initial pH of Sample for the first measurement”. Enter the Final pH. Enter the Number of pH Steps. The larger the number, the longer the measurement. Unit or half unit pH steps is sufficient for most purposes. Enter the Initial Sample Volume in mL. WARNING: An accurate value is required to calculate the amount of each additive to dispense. Enter “pH Adjustment Resolution”. A value of 0.2 is recommended. A smaller value increases significantly the time to make the measurement.

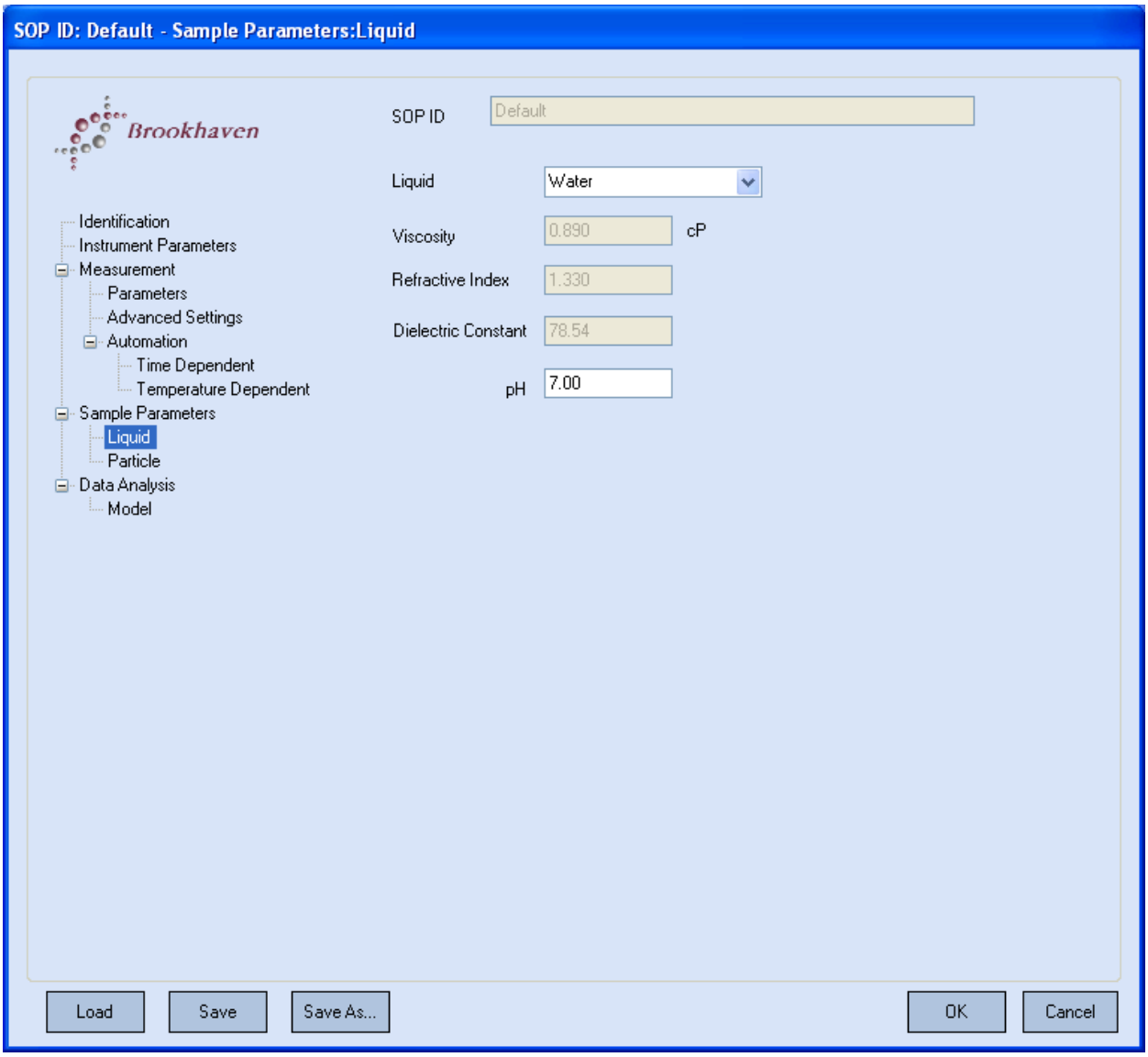
PALS SOP Titration : Additive Titration Measurement



Check Automate Additive Titration Titration to enable this feature. Check only one of the pumps, the one with the additive you wish to titrate with. The description, concentration, and units are shown as you filled them in under Titration/Setup. These same units are used later.

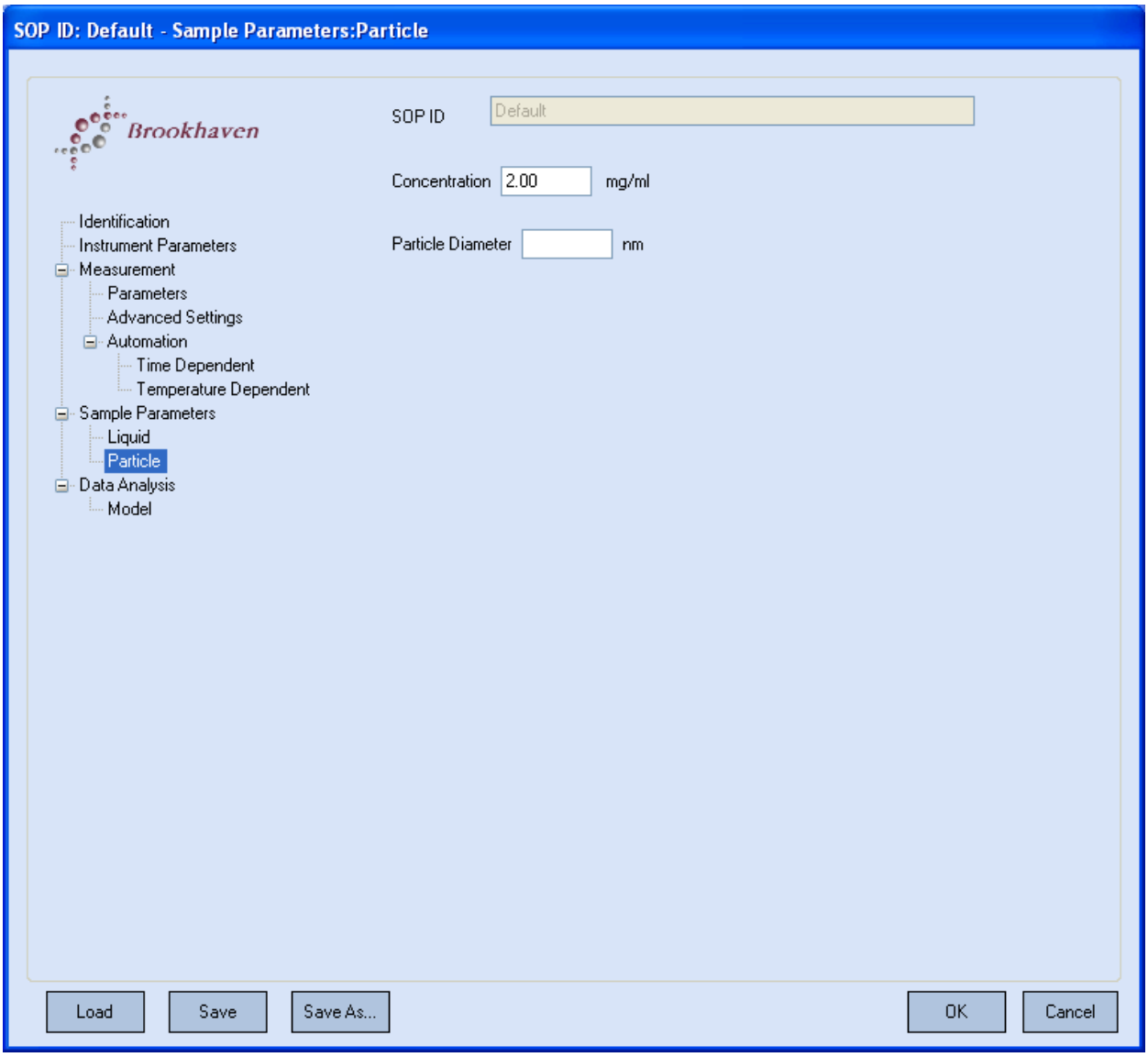
Enter the Initial Sample Volume in mL. Enter the Initial Concentration of Additive in Sample. Enter the First Concentration using the same units used in the pump selection section. Enter the Last Concentration in the same units. Enter the Number of Steps in the titration. A large number requires a long run and may add too much volume to the sample cup.

PALS SOP Sample Parameters : Liquid Window



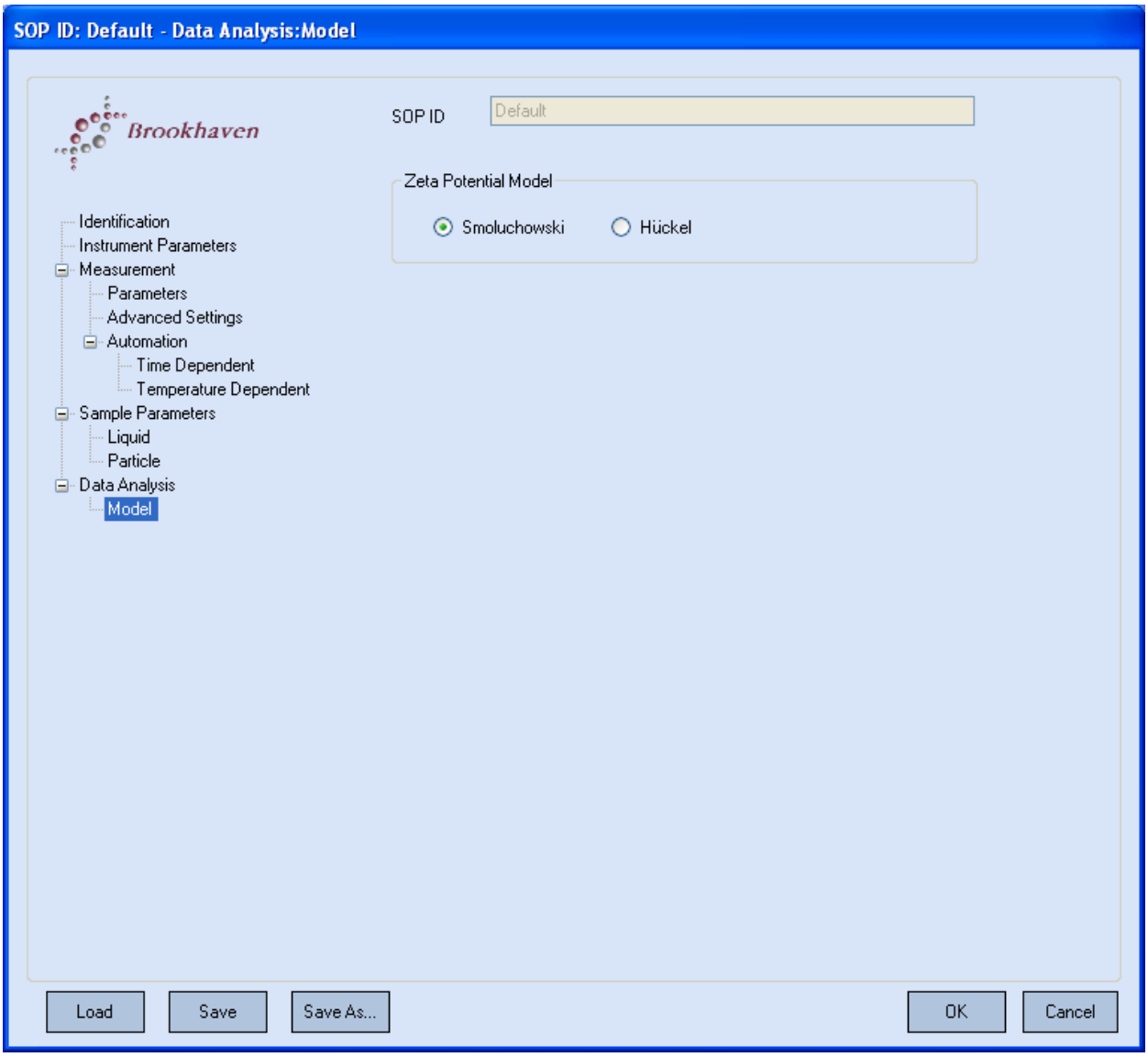
In this window the sample liquid properties are indicated.

PALS SOP Sample Parameters : Particle Window



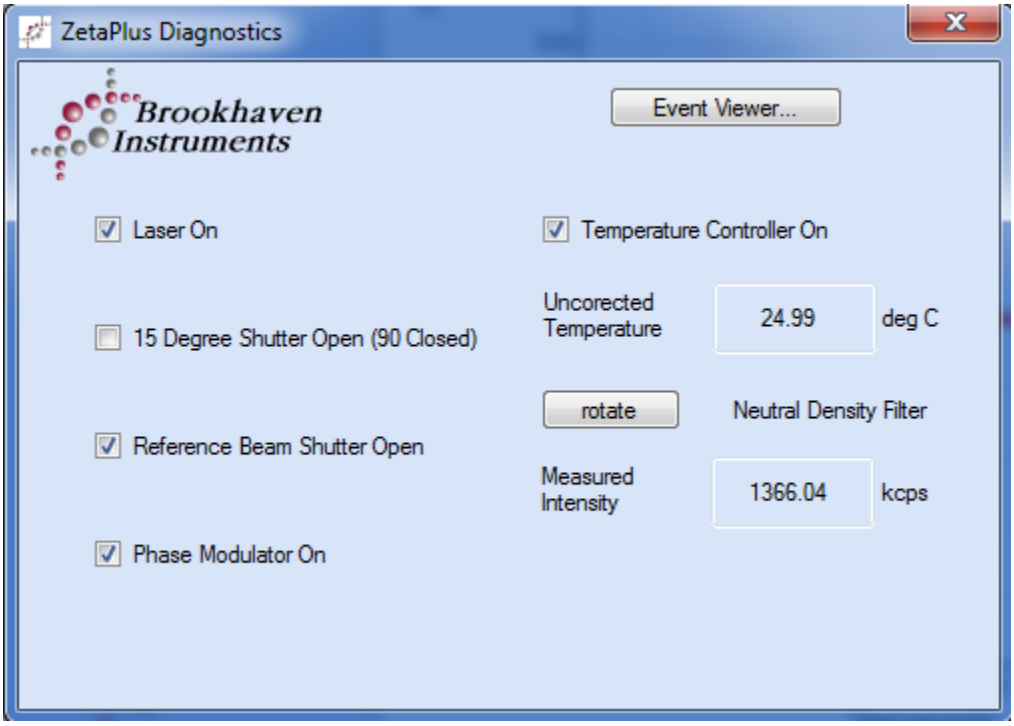
In this window, particle characteristics are defined. You may enter a particle size for your sample, but it is not required, and you may leave it blank if it is value is unknown.

PALS SOP Data Analysis : Model



In this window the zeta potential model is indicated.

PALS Setup : Diagnostics : Instrument Hardware Test

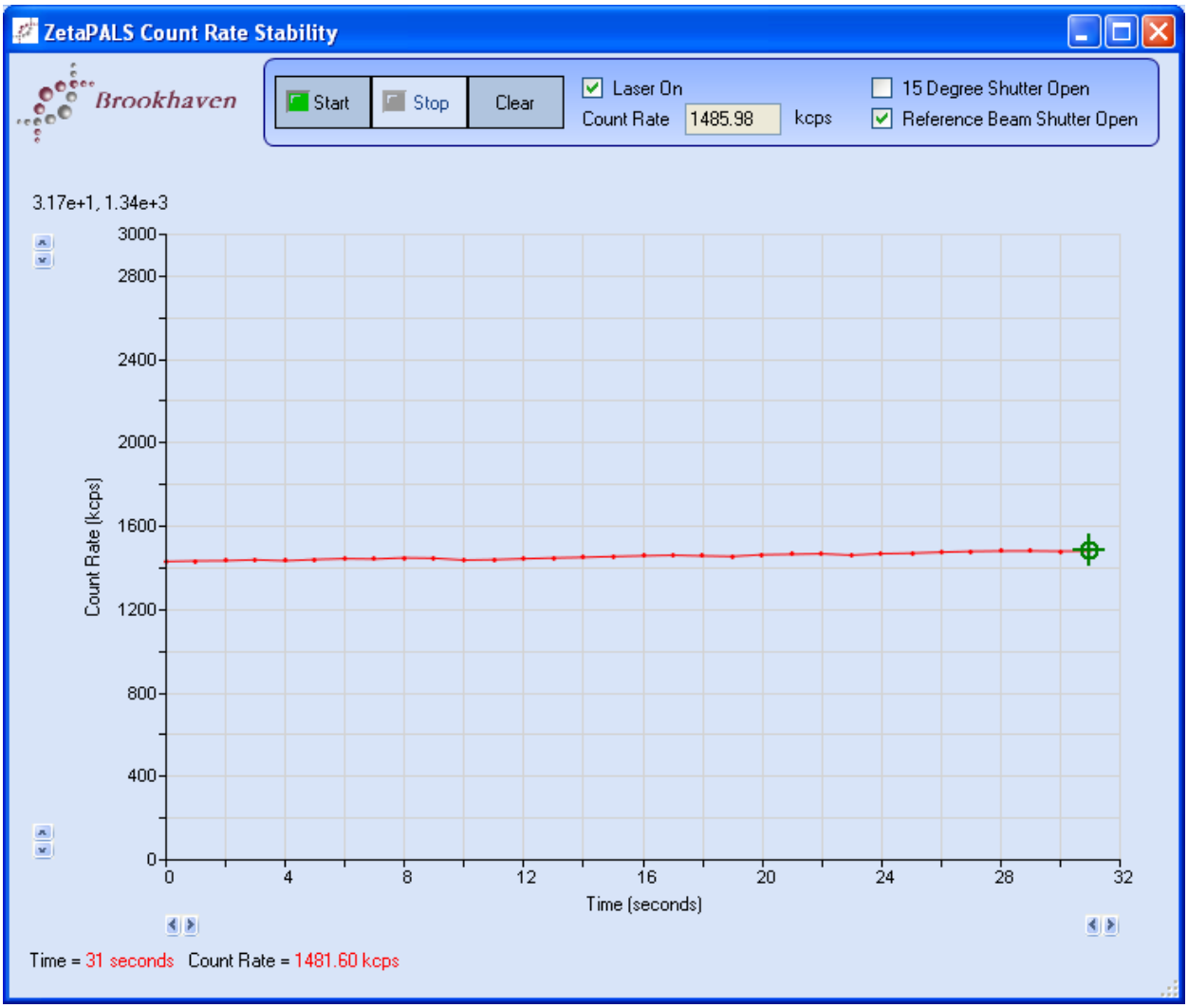


The PALS software has a diagnostic window that can be accessed from the application's main window by selecting Setup\Diagnostics\Instrument Hardware Test from the window's main menu.

This window provides direct access to the instrument hardware for diagnostic purposes.

The Event Viewer button brings up the Windows Event Viewer which can be used to display serial communication error messages.

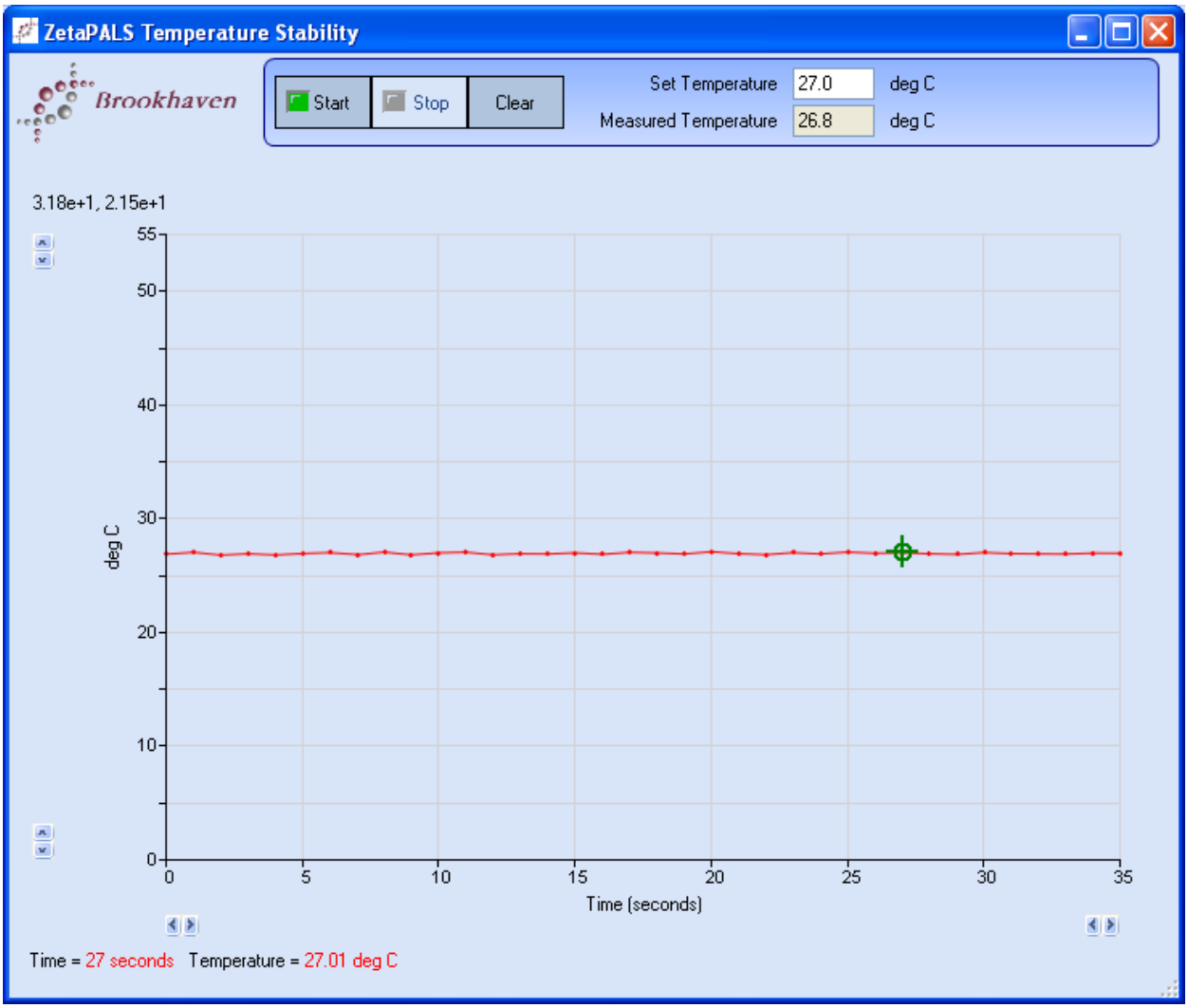
PALS Setup : Diagnostics : Count Rate Stability



The PALS software has a count rate stability window that can be accessed from the application's main window by selecting Setup\Diagnostics\Count Rate Stability Graph from the window's main menu.

This window provides direct access to the instrument hardware for diagnostic purposes.

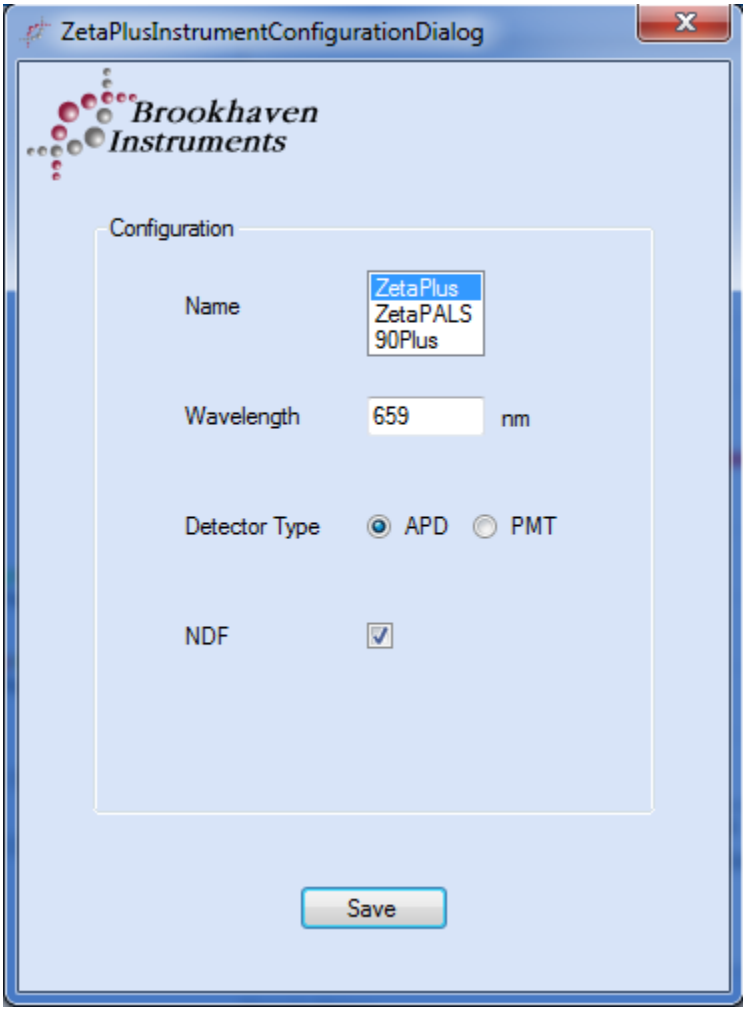
PALS Setup : Diagnostics : Temperature Stability



The PALS software has a temperature stability window that can be accessed from the application's main window by selecting Setup\Diagnostics\Temperature Stability Graph from the window's main menu.

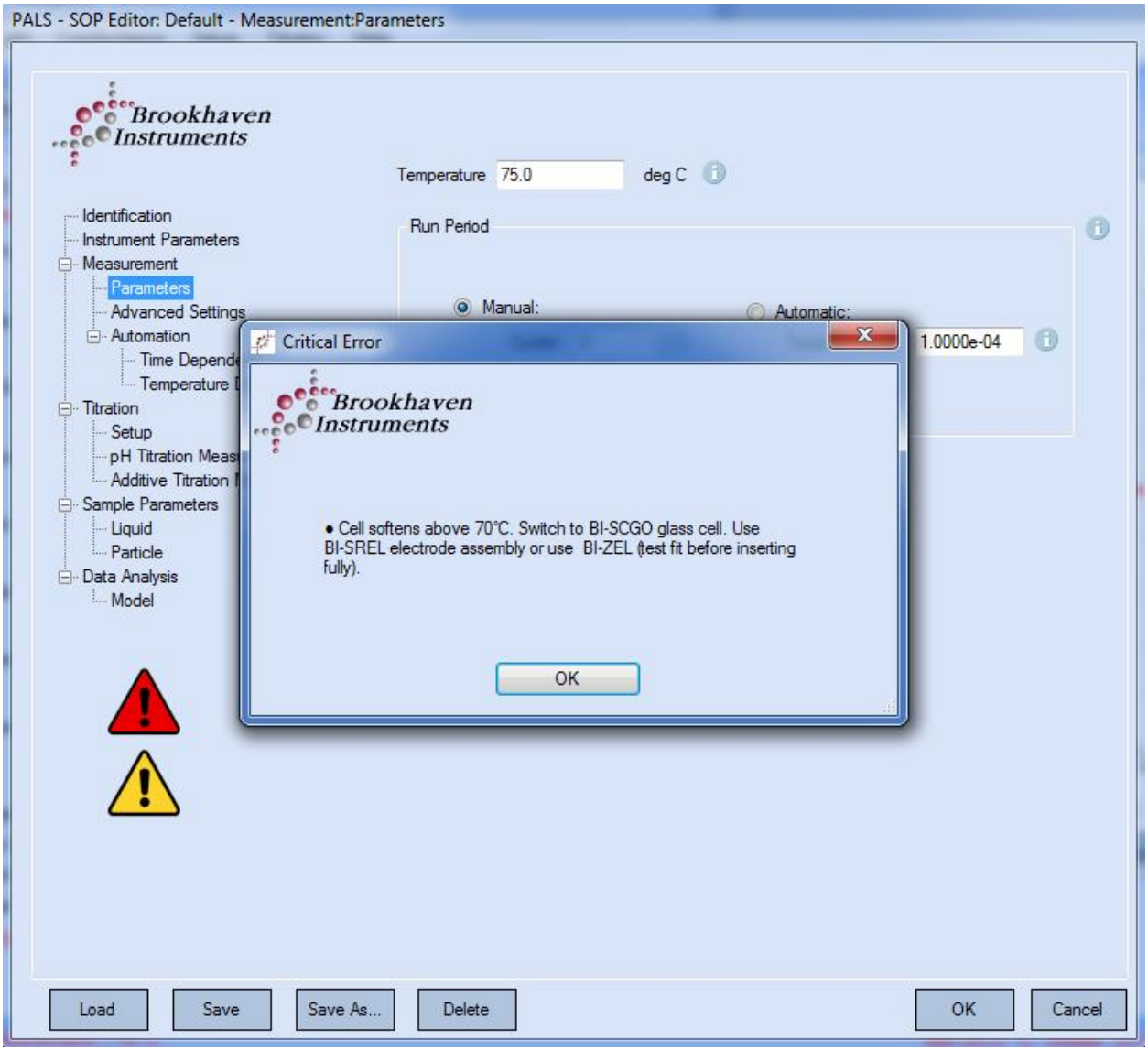
This window provides direct access to the instrument hardware for diagnostic purposes.

PALS Setup : Instrument Configuration



This window lets you set up some basic settings instead of manually editing the ini file.

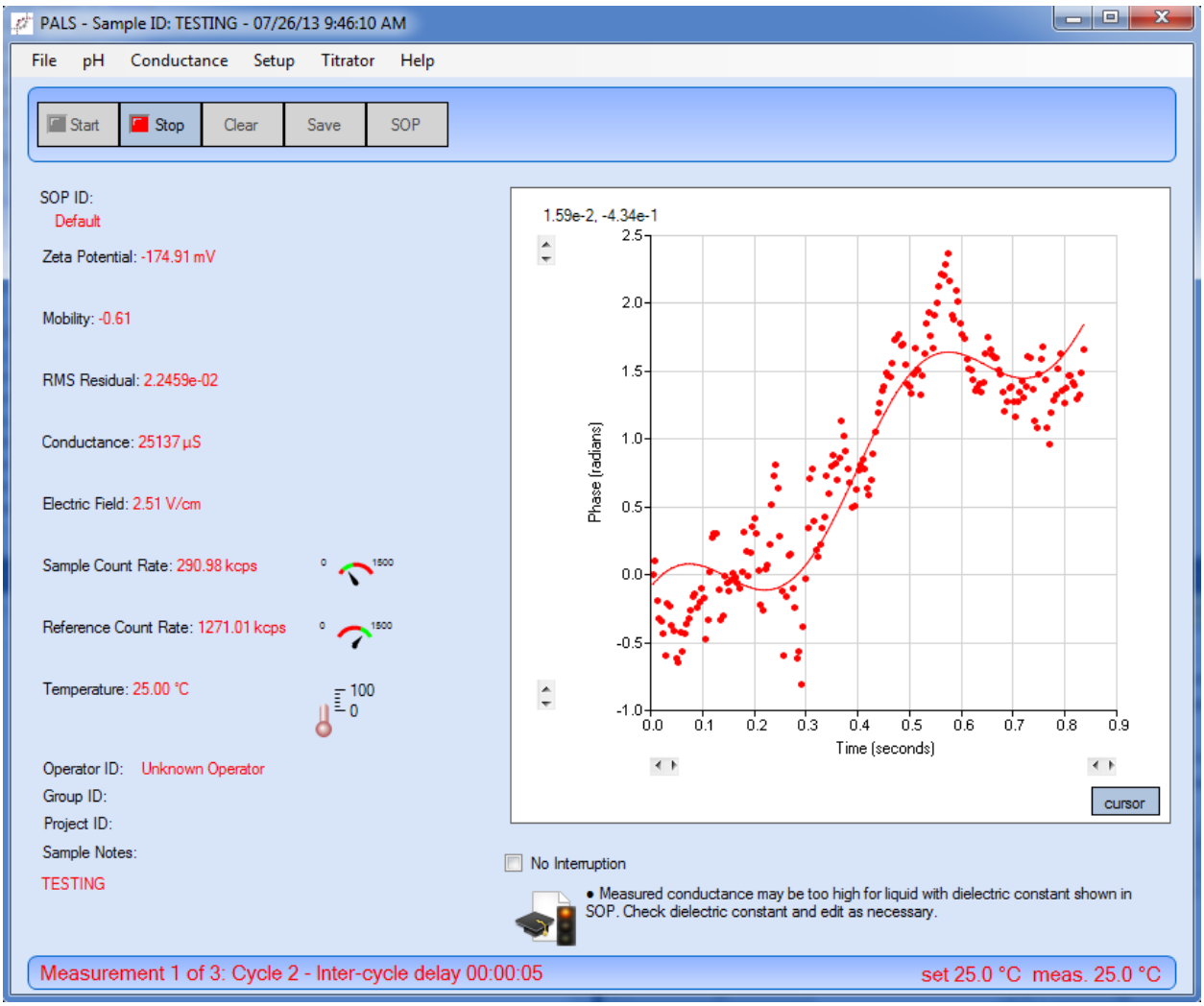
PALS Professional Recommendation



The exclamation icon will show up when setting conflicts are detected. Click on the exclamation icon to see the error or warning messages. For example, liquid Toluene and cell type BI-SCP (plastic cell) will generate a conflict.

The Red exclamation icon indicates critical error. Conflicts which cause critical errors must be resolved before proceeding to the measurement.

PALS Professional Recommendation During Measurement

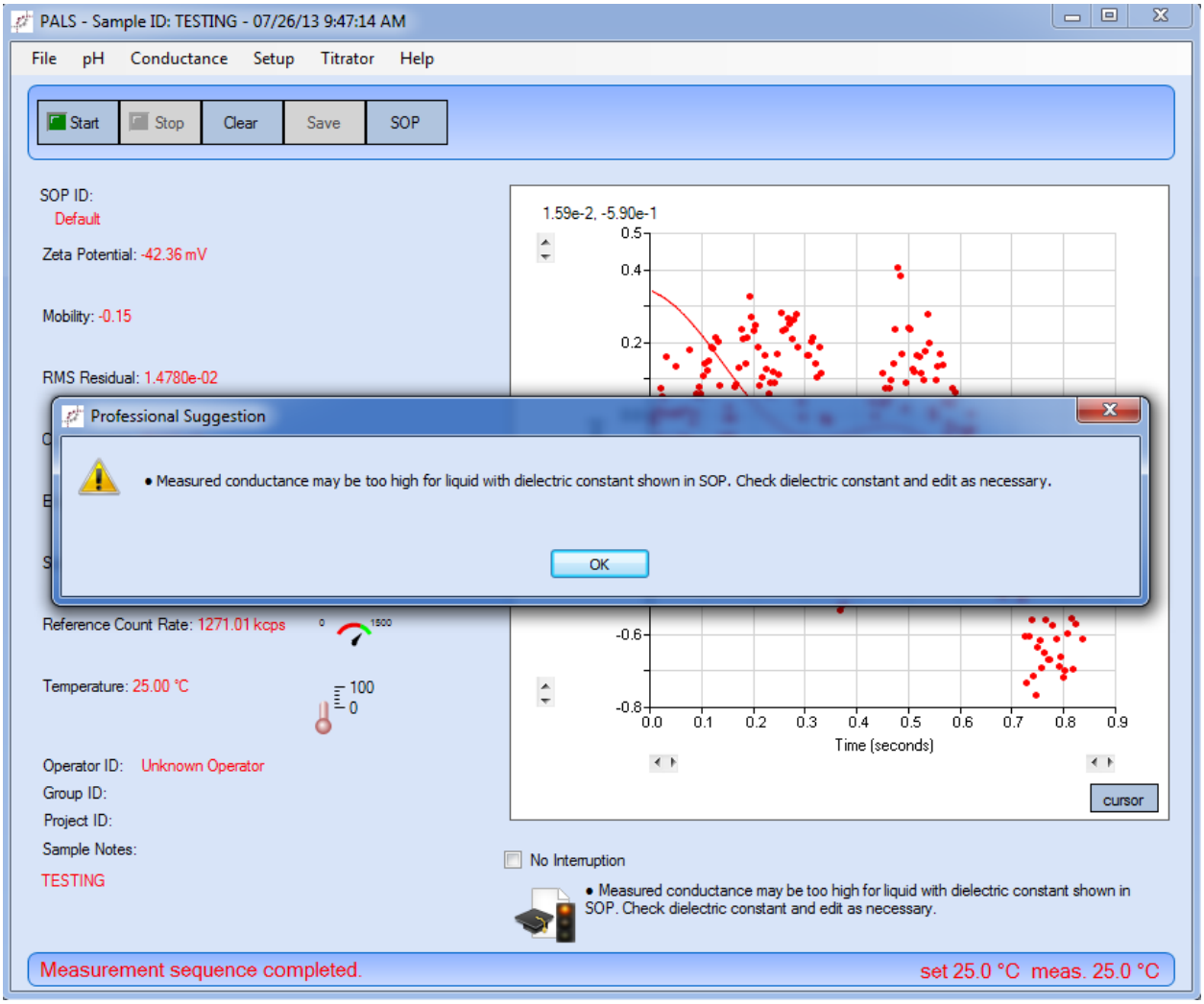


Warning messages may be shown during measurement, showing potential conflicts with SOP selections or possible reasons causing measurement results out of range.

Consider warning message, stop measurement if necessary and start a new measurement after making adjustments.

Measurement could be paused due to measured results. Make adjustments based on recommendation and start a new measurement or check “No Interruption” to continue the measurement.

PALS Professional Recommendation After Measurement



After the measurement is completed, warning icon may show up based on the measured results. Click on the icon to see Professional Recommendation, which will suggest solutions for getting better results in the future.