

# Millennium<sup>32</sup> 4.00 Simplified Step by Step

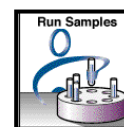
## To Acquisition & Processing (regulated)

**Purpose:** This procedure will guide you through the steps necessary to create methods that will acquire, process and report LC data using Millennium<sup>32</sup> version 4.00.

### Starting Millennium<sup>32</sup>

1. From the **Start** menu bar, click **Start - Programs - Millennium<sup>32</sup> - Millennium<sup>32</sup> Login**.
2. In the User Name area enter in **XXXXXX**, and the Password **XXXXX** and click **OK**. You will be logged into Millennium<sup>32</sup> and all screens will be active.

### Running Samples - Creating the Instrument Method and Method Set

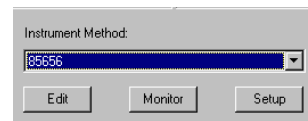


1. From the Millennium<sup>32</sup> main window, double click on the **Run Samples** icon (or **right mouse click** and select the system you prefer).
2. In the Run Samples dialog box, click to select the system desired to collect data, then click **OK**. The system will be connected to the **Bus Lace** and the Run Samples window will be displayed.
3. If **you already have a Method Set**, then proceed to step 10, **File – Load Sample Set Method**.
4. In the **menu bar of the Run Samples window** select **Edit – New Method Set**. Select **Yes to Use the Wizard to Create this Method Set**.
5. In the Select Instrument Method dialog box click on "**Create New**" to develop a new instrument method.
6. Click on each instrument and edit each instrument's parameters. **File - Save**. Enter in the **Name** and description of the instrument method, and click **Save**. Enter in a comment, or select from the comment drop down list. Select **File - Exit**.
7. In the **Select Instrument Method** dialog box, highlight the desired method. Click **Next**.
8. Select a **Processing Method** from the Processing Method from the drop down list. If desired, select a **Report Method**. Click **Next**.
9. In the **Name Method Set** dialog box, modify or enter in a name for the **Method Set**. Enter in a comment in the Method Comments, or one from the drop down list, then Click **Finish**.
10. In the Samples Table fill out the information for each row, including the sample name, the **Method Set** to use, the **Sample Function** (Inject Samples, Inject Standards, etc), injection volume, run time, etc.
11. To enter amounts, click the **Amounts** icon. Enter in a component name, concentration, and units for each standard vial. Select **File – Exit** after entering concentrations.



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12. Make sure the **Run Mode** is set to **Run and Process** or **Run and Report**.
13. From the Menu Bar select **File - Save Sample Set Method**. Enter in a comment. This will be saved as a template for future acquisition of samples. In the future you may use File \_ load Sample set Method.
14. To setup your instruments before acquisition: Click in the Instrument drop-down box to select your instrument Method and click **Setup**.



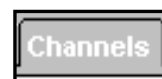
15. To acquire Samples click the 4<sup>th</sup> icon (**Green light**).



16. Select a Printer to use. Click **OK**.
17. Enter in a name for the Sample Set. Click the Run Samples button.
18. After all acquisition has occurred, select **File - Exit** to exit out of Run Samples.

### Developing a Processing Method in Review

1. In the Millennium<sup>32</sup> Main window select browse project, and select the desired project.
2. In the Millennium<sup>32</sup> project window select the **Channels** tab.
3. Highlight a standard channel and click the **Review** icon or right mouse click and highlight **Review**.
4. Click the **Processing Method Wizard** icon on the left-hand side of the Review window icon display, or from the menu bar select **File – New Method**.
5. Select **Create a New Processing Method** and Select **OK**. Select **LC** from the Processing Type drop down list and click in the **Use Processing Method Wizard** box, then click **OK**.
6. Follow the wizard template by: Use the mouse to box and zoom in on the narrowest peak of interest, and the **Peak Width** will be automatically set based upon the boxed area.




- Note: To unzoom, **Right Click**-then select **Full view** from the selection list. Click **Next** button to continue.
7. Use the mouse to box and zoom in on the highest baseline noise area without peaks and the **Threshold** will be set based upon the boxed area.
  8. Use the mouse to box and zoom in on the area of the chromatogram that you want integration and peak detection to occur. This will automatically inhibit integration for all peaks not shown in the boxed area. Click the **Next** button to continue.
  9. Optionally: select **Minimum area** or **Minimum height** by clicking inside the smallest peak of interest and clicking minimum height. Repeat this step for minimum area if needed. Click **Next**.
  10. Click in the "**quantitate by**" drop down box to select **area** or **height**. Click in the

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amount – concentration drop down box to select **concentration** or **amount**. Click in the calibration fit type to select the type of calibration curve used (default to **linear**). Click **Next**.

11. If using a standard, **click the drop down box to select the peak name**. If using an unknown, enter in the compound names and make sure they match the component name entered in the **Amounts** from **Run Samples**.
12. Enter in an amount for single point calibration for each peak (if multiple points are to be entered, just click next). To copy down duplicate information for units and amounts use **Ctrl – D**. Click **Next**. Multiple component amounts are entered in **Run Samples, Processing Method or Alter Sample**.
13. Select the **Type of Calibration** (if desired – click **Next** if not calibrating). Click **Next**.
14. Enter in a name for the processing method. Enter in a comment or select from the drop down box.. To undo a name, use the right mouse click and click **Undo**. Click **Finish**.
15. The chromatogram will be integrated and peaks identified according to the processing method just created.
16. To enter in multiple concentrations of a component in the processing method, or add advanced integration to the processing method, select from the menu bar **View - Processing Method Layout**.
17. To save the processing method to the Method set select from the menu bar, **File - Save As Method Set**. Enter in the name for the Method Set and the processing method will be added to the method set. Note: Comments must be entered.



18. Manually Process by clicking on the **Integrate, Calibrate, and Quantitate** Icons.
19. To view results from manual processing, click the **Peaks** tab at the **bottom** of the Review window.  
A screenshot of the Review window showing two tabs: '2D Channels' and 'Peaks'. The 'Peaks' tab is currently selected.
20. To save **manual processing**, select from the menu bar of the Review window **File - Save Results**. Enter in a **comment** and then select **Ok**.
21. To **exit** review, select from the menu bar of the Review window **File - Exit**.

## Batch Processing Data using the Process and Report Tool

1. In the project window, click the **Sample Sets** tab, or click the desired channels sample set and use the **Right Mouse click** to view as **Channels** - or click on the **Channels** tab.
2. Highlight all standards and unknowns to be processed – making sure that standards are selected before unknowns, and click on the **Process**



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icon or use the Right mouse button and highlight **Process**

3. In the Processing area, click on the **Use Method Set** radio button. Click in the **Specified Method Set** drop down box to select the method set you created. Click the Clear Calibration button if recalibration is needed, and make sure that that **How: is selected to Calibrate and Quantitate**.
4. In the Reporting area check the **Reporting** box, and click on the Use **Specified Report** button. Click in the Specified Reporting Method drop down box to select the reporting method you selected (use Default as a basic report).
5. Click OK and the data will be processed and reported.

## Reviewing Results

1. All results will be displayed in the Results view.
2. To review results, highlight the desired results, and click on the Review icon, or right mouse click and select Review.
3. In the Review window, the data will be displayed with component names. Click the Peaks tab below the chromatogram to view peak information for each component.
4. To view the calibration curve, select from the menu bar Window - Calibration. To view all details of the results, select Window- Results.



5. To Print Results, click the Results tab of the project window, and click to select the desired results. Click on the Print icon, or use the Right mouse click and click Print. Select the desired Report to use and click OK. Your reports will be printed out on your printer.
6. To Preview or change a report before printing out a Result, click the Results tab of the project window, and click to select the desired results. Click on the Preview/Publisher icon, or use the Right mouse click and click Print/Publisher. Select "Use a Report Method that was appropriate for the selected data". The result will be displayed in the Preview window.



7. Print the Report by using the Print icon, save the report as a PDF file by using Save Report Icon, or email the Report using the Send Mail icon.

