

EasyMatch® QC Lesson 8

Using Custom Data and Formula Fields

Suppose you are measuring liquids with your spectrophotometer to assess color, and you also use a pH meter to assess the pH of each liquid. It would be wonderful if you could show the color values and the pH for each sample on one printout. In this lesson, we will configure a custom data field and enter a pH value for one of the samples as an example. Your supervisor has also asked for a special calculation to be performed on these samples, called pH Lightness, which is equivalent to the entered pH + L* value for each sample using the C/2 illuminant/observer. In the second half of this lesson, we will add a custom formula field to calculate and display pH Lightness.

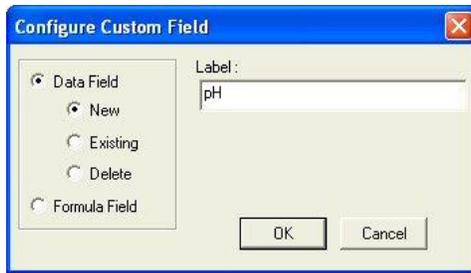
1. **Open a Job.** Open the desired job and place a Color Data Table in it.
2. **Configure the Color Data Table** as follows. Refer to Lesson 1 if you need help. Do not close the Color Data Table Configuration screen after selecting these parameters.

- | | |
|------------------------------|-----------|
| a) Scales | CIELAB |
| b) Differences | None |
| c) Indices | None |
| d) Text Fields | None |
| e) Illuminant/Observers | C/2 |
| f) Statistics | None |
| g) Display Latest Data First | Unchecked |
| h) Data Orientation | Row Major |
| i) Digits Beyond Default | 2 |
| j) Font Size | 8 |
| k) Auto Size Cells | Checked |

- a. Click the **Insert Custom Field** button. The Configure Custom Field box appears.



- b. Click the radio button next to Data Field and then the radio button next to New. Type “pH” into the Label box.



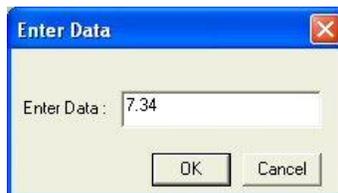
- c. Click **OK**.
- d. Add the “Data Fields” Text Field to the display and then **OK** from the Color Data Table Configuration screen. Note that the pH field has been added to the Color Data Table.

	L*	a*	b*	pH
Standard 2	92.6600	-0.9076	0.9850	

3. **Read or recall some samples and standards** into the job if there aren't already some present.
4. Select one item in the Job Tree and right-click on it. From the menu that appears, choose **Enter pH Data**. The Enter Data screen will be shown.



- a. Enter the pH value for the selected sample or standard into the box.



- b. Click **OK**. The entered data will be shown in the Color Data Table.

	L*	a*	b*	pH
Standard 2	92.6600	-0.9076	0.9850	7.34

c. Enter pH values for more samples and standards if you wish.

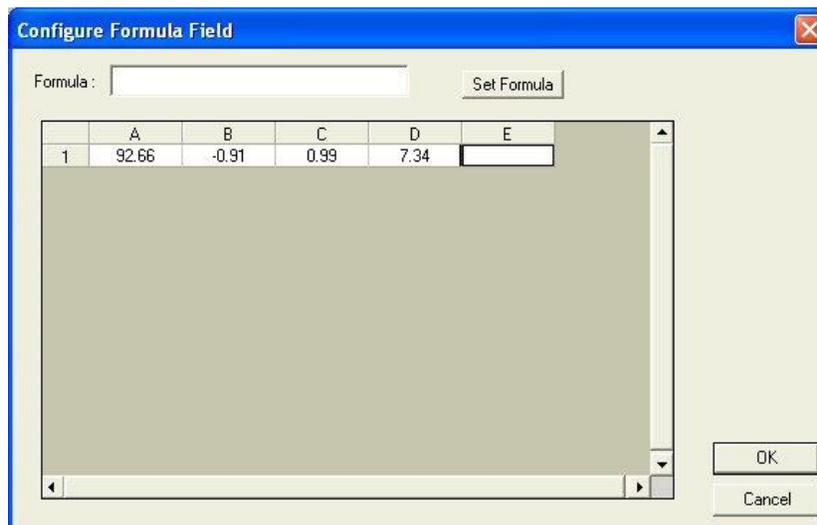
5. **Right-click in the Color Data Table** and return to the Color Data Table Configuration screen.

- Click the **Insert Custom Field** button. The Configure Custom Field box appears.
- Click the radio button next to Formula Field. Type “pH Lightness” into the Label box.



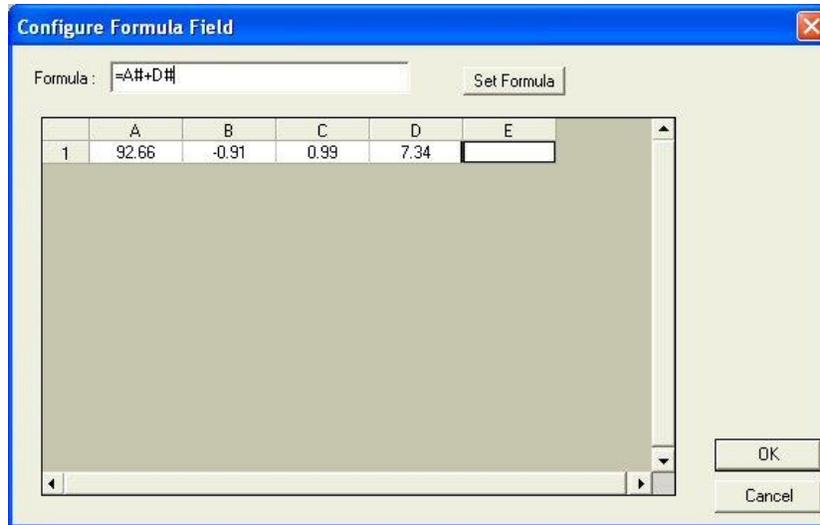
The dialog box titled "Configure Custom Field" has two radio buttons: "Data Field" (unselected) and "Formula Field" (selected). To the right, there is a "Label:" text box containing the text "pH Lightness". At the bottom right are "OK" and "Cancel" buttons.

c. Click **OK**. The Configure Formula Field box is shown.



The dialog box titled "Configure Formula Field" features a "Formula:" text box with a "Set Formula" button to its right. Below this is a spreadsheet-like table with columns labeled A, B, C, D, and E, and a row labeled 1. The values in the table are: A: 92.66, B: -0.91, C: 0.99, D: 7.34, and E: (empty). At the bottom right are "OK" and "Cancel" buttons.

- d. Your custom formula will be inserted in column E, to the right of the pH you just entered. Place your cursor in the Formula box and type “=A#+D#” (without quotation marks). This indicates that the value in column E will be set to the value in column A (L*) plus the value in column D (pH).



- e. Click **Set Formula**, then **OK**.
- f. Add the “pH Lightness” Text Field to the display, then click **OK**. The formula fills the pH Lightness column for each displayed sample and standard.

	L*	a*	b*	pH	pH Lightness
Standard 1	45.1413	44.0860	23.9363	7.0000	52.1413
+Tolerances	0.0000	0.0000	0.0000		
-Tolerances	0.0000	0.0000	0.0000		
Sample 1	45.1296	44.0934	23.9514	7.3400	52.4696

The table shows the calculated 'pH Lightness' values for Standard 1 and Sample 1, which are the sum of the L* and pH values from the previous step.