PerkinElmer’s E-Notebook Formulation Module provides a complete toolkit for formulation scientists working in pharmaceutics, chemical, flavor and fragrance, food and beverage and other industries to effectively document their experiments and exploit the knowledge gained from previous work. Specialized tools include:

• Pre-defined and user-definable calculations and units, such as %w/w and mg/ml, used by formulation scientists

• Quick access to commonly used excipients and other ingredient databases

• Multi-step formulations

• Screening experiments with quick set-up of multiple formulations in a single experiment

Formulation scientists can use a customizable spreadsheet to set up multiple steps in a single view, expand and collapse steps, and calculate non-granular excipients needed to complete a formulation. Other formulations can be included as ingredients while still calculating the amounts of primary ingredients.
Another time-saving feature is an autotext write-up capability for scientists to insert pre-defined and user-definable common phrases, including numbers linked to information in the data tables. Any changes made in these data are reflected immediately in the autotext. Spectra and other analytical data may be easily linked with the formulation composition. This makes recording of the total experiment quick for the author and easy to follow for colleagues.

Integral to formulation science is the need to alter one or more independent variables in a series of related formulations in order to best understand the impact of these changes on relevant dependent variables. For example, a scientist might vary one or more ingredients in a formulation series to determine the effect on a property of the formulation. For these purposes, a powerful summary spreadsheet is provided so that a formulation scientist can set up multiple formulations in one experiment.

Moreover, scientists may drill-down to the underlying formulation to record information, including analytical data per formulation, in as much detail as if the experiment were carried out individually. This capability even extends to multistep formulations.

Directly integrated with the formulation set-up functions are powerful aggregation, reporting, and analysis features. Scientists may group experiments together by searching for related experiments, identifying experiments of interest, or by working on experiments in series as described above. Once the experiments have been identified, powerful data pivot tools are available with integrated graphing. Critical variables are easily isolated using drag and drop. Relationships with other variables are quickly visualized using the integrated graphing capabilities. An integrated reporting module with a simple, user-definable report writer can output data pivot analyses for automatic inclusion in reports.

**Conclusion**

The E-Notebook Formulation module provides formulation scientists with all the tools they need to record experiments, organize information, and quickly analyze results. All these capabilities are provided within the core E-Notebook framework, ensuring that requirements for intellectual property protection and 21 CFR Part 11 compliance are satisfied.

The combination of detailed workflow support, including specialized calculations and units, along with analysis, reporting, and general ELN capabilities result in dramatic productivity and compliance benefits compared with using paper or Microsoft® Excel.

For more information on our Formulations Module in the E-Notebook, visit the product page at [www.cambridgesoft.com/ensemble_for_formulations/enotebookforformulations/default.aspx](http://www.cambridgesoft.com/ensemble_for_formulations/enotebookforformulations/default.aspx)