PRODUCT EXAMPLE

REVERSE ENGINEER AN ICE CREAM FORMULA

Pam is a product development specialist. Today, she is developing a prototype ice cream formula based on a competitor’s existing formula. Before her company started using TechWizard™ it would take several days or longer to reverse engineer a product. Using TechWizard™ she will be able to develop a comparable product in a fraction of the time. Pam would like to do the following:

- Create a comparable ice cream formula based on information from a competitor’s nutrition facts panel and ingredient listing.
- Compare the original formula’s nutrition facts information to the new formula.
- Make a sample of her new formula and compare it to the original

Enter Information and Create Comparable Formula

Pam starts by entering the nutrition facts information into TechWizard™ for the product she wishes to reverse engineer. The screen below shows where this information is entered in TechWizard™. She enters the serving size (A) and the Calories per serving (B) in the spaces shown below. She continues entering the information from the nutrition facts panel. TechWizard™ estimates the actual composition based on the rounding rules for reporting data in a nutrition facts panel (C).
TechWizard™ transfers the estimated composition obtained from the nutrition facts panel to the Formula Development section (D). Pam has added a few other properties she would like to follow (E). Pam adds ingredients to the formula based on the ice cream ingredient listing (F). She sets limits on two ingredients that are used in very small amounts (G) and presses the Formulate button (H). This instructs TechWizard™ to find the best combination of ingredients to meet all of Pam’s compositional requirements.

Below we see the recipe that TechWizard™ came up with (I) and the composition of the formula (J). Pam can now compare the composition of her new formula with that of her original.
Pam goes back to the screen where she entered the nutrition facts panel data for the ice cream she is reverse engineering. She did this so she can compare the original information with the data from her new formula. The information for her new formula is displayed on right portion of the screen (K) the original data on the left (J).

Pam finds that all the numbers compare well with each other.

She has decided to export her information to an Excel bar chart to make the comparison easier (shown on right). There are slight differences in calories and some of the others properties which could easily be accounted for by the rounding that occurs when creating a nutrition facts panel or variation in composition data for the ingredients.

At this point Pam feels confident that TechWizard™ has succeeded in providing a prototype formula that closely matches the original ice cream. She saves all her work so she can access it later.
Prepare Batch Sheet

TechWizard™ data show that this formula is slightly sweeter than a typical ice cream although the freezing properties appear to be acceptable. At this point, Pam would like to make a sample of this ice cream and compare it to the original formula. Pam uses the report features in TechWizard™ to create a 1 Liter batch (shown below). TechWizard™ calculated that the overrun of the original formula was 81%. Pam will make sure her finished ice cream sample has the same overrun.

![Recipe Formulation Table]

Versatility

TechWizard™ is a very versatile tool. If she wants, Pam can have chemical analyses done on the ice cream and add that information to TechWizard™ to improve her formula. She can determine raw ingredient costs for a production run. She can create a nutrition facts panel and ingredient listing for her new formula and compare it with information from the original product. She can determine the freezing properties of the new ice cream and estimate how well it will stand up to temperature changes that occur during shipping and handling. Contact us today to find out what TechWizard™ can do for you.