PRODUCT EXAMPLE
ICE CREAM

William works for Blandings Specialty Foods as a product development specialist. Today, he is developing an ice cream formula using TechWizard™. William would like to do the following:

- Create a vanilla ice cream recipe that contains 12 % milk fat, 11 % MSNF (milk solids not fat), between 40 and 41 % total solids, 14% sucrose solids, 3 % corn syrup solids, 0.35% stabilizer solids, and 0.15% emulsifier.
- Determine the overrun required for a ½ gallon of ice cream to weigh 2.35 lbs.
- Determine the total ingredient amounts to make 10,000 gal. of finished ice cream.
- Create a batch sheet for 100 gal. of mix.
- Create a nutrition facts panel and ingredient list.

Create Recipe

William starts by entering the composition he requires. He selects the desired properties, milk fat (also referred to as butterfat), MSNF, sucrose solids, corn syrup solids, stabilizer solids, and emulsifier (A). Next, he enters his desired composition (B).

William selects the ingredients he will used to make the formula. As he selects each ingredient, the ingredient description (C), price (D), and composition (not shown) are automatically retrieved from the ingredient file. William needs to lock in the amount of vanilla flavoring that is used in this formula. He uses the recipe entry feature (not shown) to set the usage level to 20 fl. oz. per 100 gallon of mix. This corresponds to 0.125 % vanilla (E).
William presses the **Formulate** button (F). This instructs TechWizard™ to find the best combination of ingredients to meet all his composition requirements while minimizing cost. The percent of each ingredient to use (G) is calculated and the formula cost per pound and per kilogram are reported (H).

### Determine Overrun, Total Amount, and Costs

To assist with scheduling the production of this ice cream, William needs to determine the total ingredient amounts for making 20,000 ½ gallon containers of ice cream or 10,000 gallons of finished ice cream. He also needs to determine the overrun required for a ½ gallon container of ice cream to weigh 2.35 lbs.

William determines the overrun first. He clicks the **Overrun Calculator** option (I) and the Overrun Calculator window appears. He enters 2.35 lbs. per 0.5 gal. (J) and presses the **Calculate** button (K). TechWizard™ calculates his overrun value, 95.362 % (L). This is the overrun necessary to make a 0.5 gallon container of his vanilla ice cream weigh 2.35 lbs.
To determine the total ingredient amounts necessary to make 10,000 gallons of ice cream, William clicks the Batch button (M). He enters the overrun (N) he just calculated (95.362 %), the total amount (O) of finished ice cream (10,000 gal.), and clicks the **Include Overrun** check box (P). The total amount of each ingredient (Q), the total pounds (R), and the total ingredient cost (S) are displayed.

This formula uses 3.5 bags of stabilizer (Q). William would like to know what the batch size would have to be to use an even 4 bags of stabilizer. He clicks on the **Use It Up** feature (T) and the Use It Up window appears. He selects the stabilizer ingredient and enters the amount he would like use, 4 bags (U). He clicks the **Calculate** button (V) and the answer is displayed (W). He would have to make roughly 11,428 gallons of finished ice cream to use 4 bags of stabilizer.
Create Batch Sheet

William needs to make a batch sheet for 100 gallons of ice cream mix. Before he can create his batch sheet, he needs to update the Cream and Milk composition. His changes are just needed to create the batch so William will make temporary changes in the formula instead of modifying the ingredient file. William clicks the Composition option (X) and enters his new values in the space provided (Y).

He formulates again to update the recipe with this new information and creates his batch sheet based on one of the many templates available (shown below).
Create Ingredient Statement and Nutrition Facts Panel

William needs to make a label for his ice cream. He uses TechWizard™ labeling features to create a nutrition facts panel and an ingredient list.

![Nutrition Facts Image]

**INGREDIENTS:** CONDENSED SKIM MILK, CREAM, SUGAR, MILK, CORN SYRUP, GUAR AND LOCUST BEAN GUM, MONO- AND DIGLYCERIDES, VANILLA EXTRACT.

**Versatility**

TechWizard™ is a very versatile tool. If William thinks the formula should be sweeter or needs to use different ingredients he will simply tell TechWizard™ what he wants. TechWizard™ will reformulate the recipe to meet his requirements. TechWizard™ can choose from a selection of candidate ingredients to develop a less expensive recipe that meets all his requirements. If he needs to add new ingredients to the ingredient file, he can easily do so.