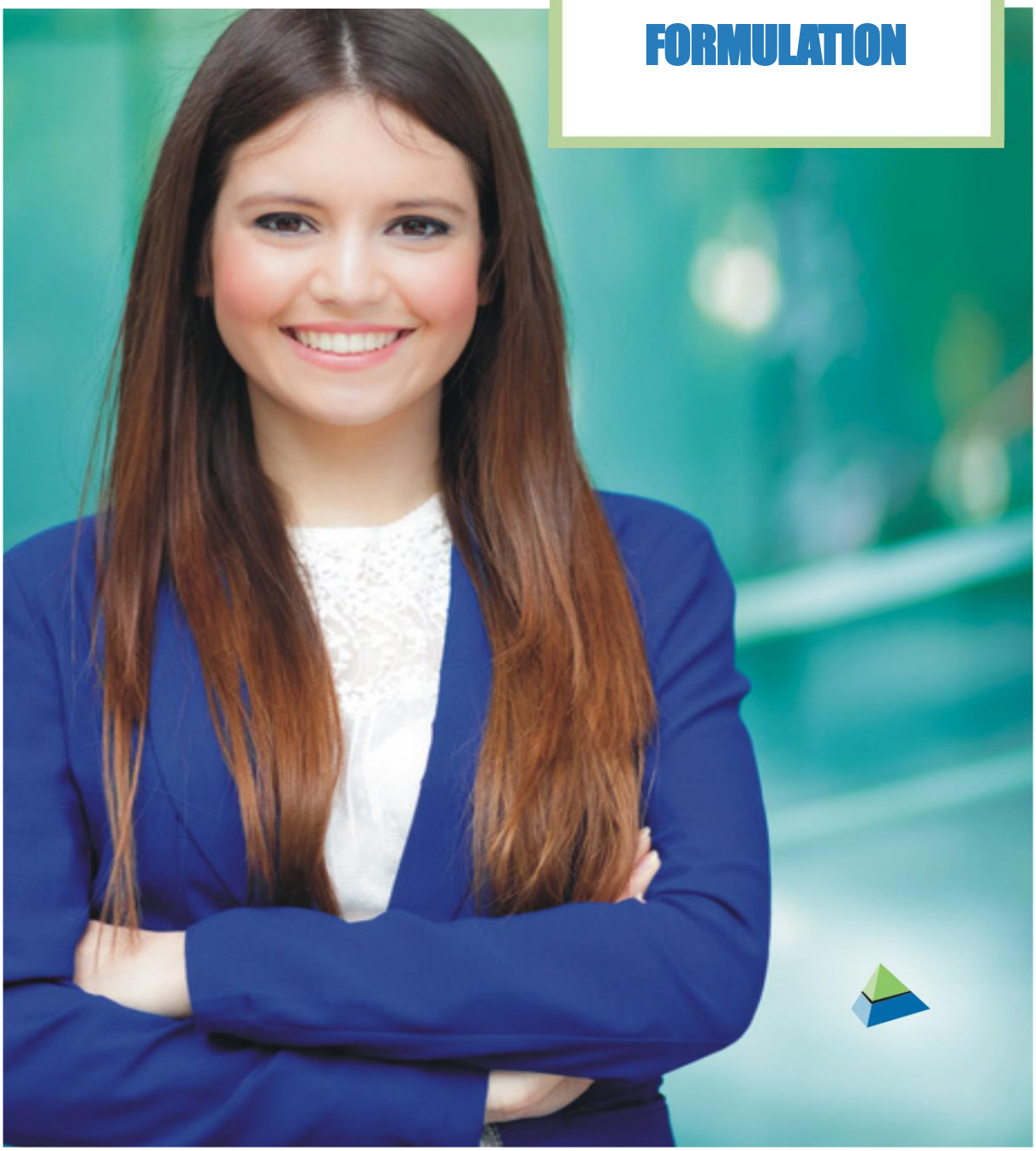
BATCHMASTER® ERP 18.2

User Guide

BatchMaster ERP with SAP Business One

BatchMaster Solutions
for Process Manufacturers

FORMULATION



Copyright and Legal Information

About the Manual

Symbols & Conventions

Symbol	Description
	Note
	Mandatory setting
	Tips

Convention	Description
Italicized (*Sales Order Entry*)	Module name, screen name & components
" " ("BatchMaster ERP with SAP Business One Hardware and Software Requirements Document")	Reference document

Abbreviation	Description
APS	Advanced Production Scheduling
ERP	Enterprise Resource Planning
HMIS	Health Management Information System
INCI	International Nomenclature of Cosmetic Ingredients
MPS	Master Production Scheduling
MRP	Material Requirements Planning
QC	Quality Control
UOM	Unit of Measure
WIP	Work in Process (or Work in Progress)

Contents

1 DOCUMENT OVERVIEW

This document gives an overview of the Formulation Module and how BatchMaster ERP with SAP Business One (BatchMaster ERP) can help process manufacturers. It explains system features in conversational language using general and industry-specific examples. After reading this you should be able to use the module in at least a basic way.

1.1 What's New In This Release?

- Backflush feature on Formula Entry.

1.2 What Is This Document All About?

BatchMaster provides formulation management with multiple features to suit your business requirements. Each formula created using this module is treated as a unique identity. The system maintains strict version control so you can revise formulas without negatively impacting production. Other key features include:

- Optional approval process for formulas.
- User-defined formula classes and policies.
- In-process quality control (QC) for formula monitoring.
- Material assessment in multiple units of measure (UOMs).
- Material substitution, consumables and by-product capabilities.
- Fixed, variable, and set-up costs can be tied to a formula.
- Hazmat and safety-related requirements can be tied to a formula.
- Ability to link formulas to process cells for capacity and scheduling purposes.

1.3 Who Should Read This Document?

This document is intended for anyone who is implementing the software, learning how to use it, or training another person.

1.4 Objectives

This document is intended to help the reader:

- Identify the purpose and functioning of the features in BatchMaster.
- Identify the industry-specific utility of each feature.
- Record data in the system and perform transactions.
- Explain the purpose of features to others using examples.
- Identify the business uses for reports and inquiries.

2 SETUP

This section describes the settings and defaults that must be defined prior to using the system. Some of these settings can be modified later and some are “one time only” choices.

2.1 Formula Class

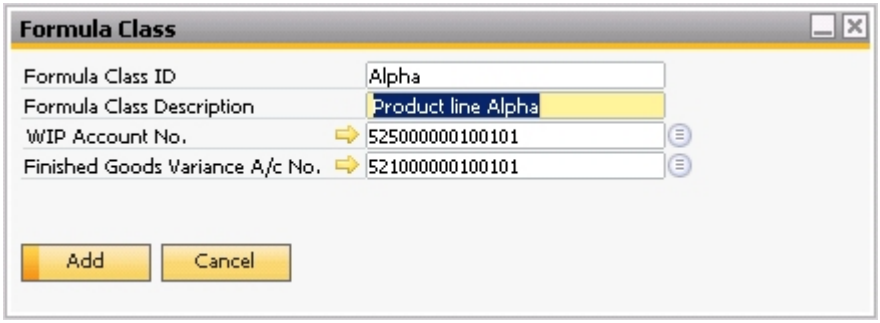
Formula classes are used to group formulas by product family. For example, in the paint industry you might define distempers, emulsions, and oil paints as classes. If you are in the bakery industry, you might define white bread, wheat bread, and dinner rolls as classes. The primary purpose is to segregate the Work in Progress (WIP) and variance accounts used to track manufacturing costs. Reports and inquiries can also be defined and sorted using formula classes.

When a production batch is created, a WIP account for the formula class is used to store all WIP journal entries for each batch.

Pre-requisite: A Chart of Accounts must be set up with WIP and Finished Goods Variance accounts.

Go To: Administration → Setup → Formula → Formula Class.

Press Ctrl+A to switch to ‘Add’ mode.



Formula Class ID: The unique identification key for a formula class.

Formula Class Description: A name or a description for the formula class.

WIP Account No.: The WIP account number for the formula class. Click the lookup button next to the field to open the *Chart of Accounts* window.

Finished Goods Variance A/c No.: The variance account number for the formula class. This account is used to post variances in finished goods costs at the time of batch close.

Add/Update: Click the *Add/Update* button to save the record.

Cancel: Click the *Cancel* button to close the screen without saving your changes.

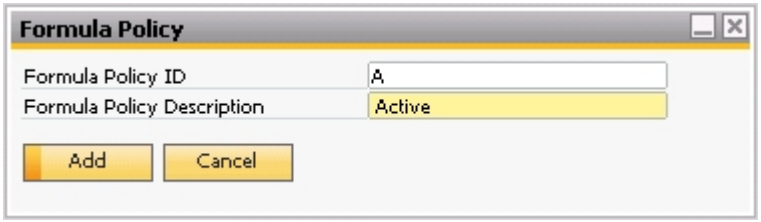
2.1.1 Creating a Formula Class

1. Open the Formula Class screen.
2. Click the *Add* button on the toolbar or press Ctrl + A on the keyboard to open the screen in the *Add* mode.
3. Specify a unique identification key for the formula class in the *Formula Class ID* field.
4. Enter a name or description for the formula class in the *Formula Class Description* field.
5. Select the WIP account number by typing or by using the lookup next to the *WIP Account No.* field.
6. Select the finished good variance account number by typing or by using the lookup next to the *Finished Goods Variance A/c No.* field.
7. Click the *Add* button to save the record.

2.2 Formula Policy

The *Formula Policy* screen is used to determine which formulas are displayed during physical property analysis, formula costing, and production. A few commonly used policies are *Active*, *Inactive*, and *Obsolete*.

Go To: Administration → Setup → Formula → Formula Policy.
Press Ctrl+A to enter 'Add' mode.



Formula Policy ID: The unique policy identifier (maximum of 2 alpha-numeric characters).

Formula Policy Description: The name or a description of the formula policy.

Add/Update: Click the *Add/Update* button to save the record.

Cancel: Click the *Cancel* button to close the screen without saving the record.

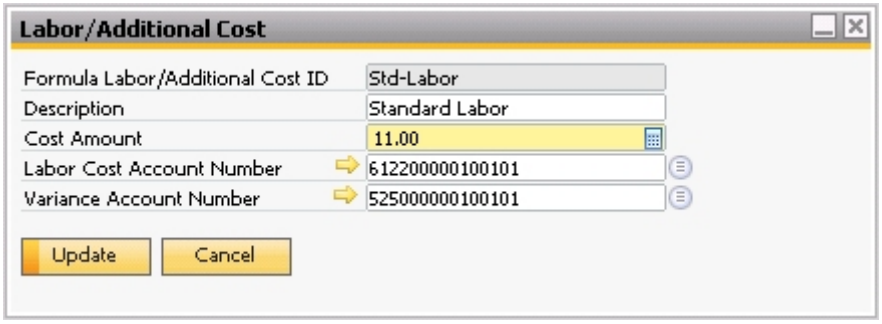
2.2.1 Creating a Formula Policy

1. Open the *Formula Policy* screen.
2. Click the *Add* button on the toolbar or press **Ctrl + A** to open the screen in *Add* mode.
3. In the *Formula Policy ID* field, enter a unique identification key for the formula policy.
4. Enter the name or a description of the formula policy in the *Formula Policy Description* field.
5. Click the *Add* button to save the record.

2.3 Labor/Additional Cost

Labor/Additional Costs are direct manufacturing costs that you choose to include in the cost of the formula. They could include things such as wages paid to production employees or expenses that are incurred only when the formula is produced (for example, electricity or steam).

Go To: Administration → Setup → Product Costing → Labor/Additional Cost.
Press Ctrl+A to switch to 'Add' mode.



Formula Labor/Additional ID: The unique identification code for the labor/additional cost (maximum 20 alpha-numeric characters).

Description (optional)**:** A brief description of the labor/additional cost.

Cost Amount: The cost per unit (hour, kilowatt hour [KWH], etc.).

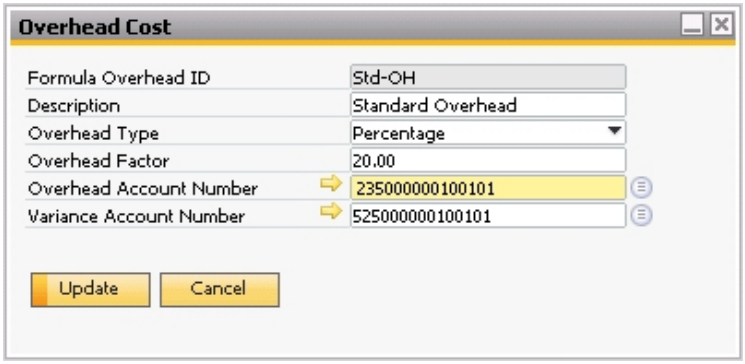
Account Numbers: Select General Ledger accounts to ensure proper accounting for the overhead costs associated with your individual formulas. Click the lookup button to the right of the field to open the *Chart of Accounts* window. (Refer to the *BME-B1 18.2 Production User Guide* for details.)

2.4 Overhead Cost

Overhead Costs are indirect or manufacturing support costs that you choose to include in the cost of the formula. They could include such things as facility utilities, maintenance and repair of machines, or wages paid to workers in support functions (for example, the inventory clerk).

Go To: Administration → Setup → Product Costing → Overhead Cost.

Press Ctrl + A to switch to 'Add' mode.



Formula Overhead ID: The unique code for the overhead cost (maximum 20 alpha-numeric characters.)

Description (optional)**:** A brief description of the overhead cost.

Overhead Type: Available options are *Currency Amount* or *Percentage*.

Overhead Factor: A dollar value or a percentage value.

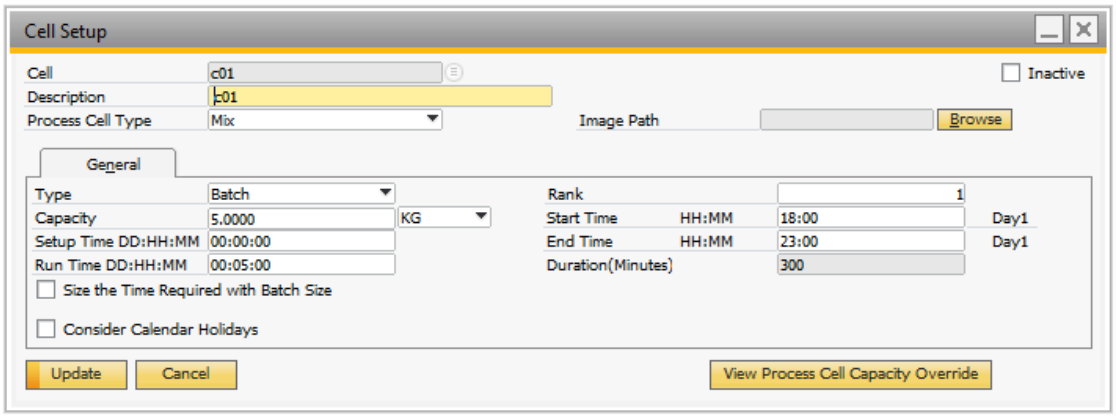
If the Overhead Type is set to *Currency Amount*, the Factor would be a fixed currency value regardless of line item quantities. If the Overhead Type is set to *Percentage*, the Factor would be a percentage value that will be multiplied by the line value to which it is attached. For example, if the line is a labor line of 3 hours x $10.00, and the *Percentage* is 5%, the value would be calculated as 3 x $10 x 5% = $1.50. Overheads can also be attached to material lines.

Account Numbers: Select General Ledger accounts to ensure proper accounting for the overhead costs associated with your individual formulas. Click the lookup button to the right of the field to open the *Chart of Accounts* window.

2.5 Cell Setup

The *Cell Setup* screen allows you to define either a machine or a group of machines as a work center. Within the process cell, goods are manufactured in batches.

Go To: Administration→Setup → Formula → Cell Setup.



Cell: The unique identifier for a process cell.

Inactive: Mark this checkbox to set the record as inactive.

Description: The name or a description of the process cell.

Process Cell Type: Available options are *Mix, Fill,* and *Assembly*. (This field is informational only.)

Warehouse: Specify the warehouse of the process cell.

Staging Bin Group/Stage Bin: The Staging Bin Group field is displayed if you implemented the Advanced picking system by checking the *Use Enhanced Picking System* checkbox on the *Production Default* Screen. Here you can specify the staging bin group of the warehouse. In a staging bin group, multiple bins can be selected to stage the item. If you left the *Use Enhanced Picking System* checkbox unchecked then this field is displayed as S*tage Bin* to specify the bin to stage the item.

Image Path: Use the *Browse* button to specify the location of the process cell image.

Type: The operational characteristic of the process cell, explained as:

- ***Batch*:** This type of cell does not run continuously.
- **Continuous Machine:** This type of cell runs continuously.

Capacity: Maximum amount the process cell can contain and the unit of measure. (This field is informational only.)

Setup Time: The length of time needed to set up the process cell. For instance, the machine in the process cell might require cleaning for 30 minutes before it can be operated. The value defined here is added by default when the cell is attached to a formula, bill of material (BOM), or batch. Format = DD: HH: MM. (This field is informational only). For a normal Batch of type Process Cell, the system will consider the Setup up time individually for each batch. For a Super Batch of type Batch with Runs the system will consider the setup up time only once all the batches have been created for the different runs of the Super Batch.

Run Time: The normal run time for one load; in other words, the length of time the process cell would operate. Format = DD: HH: MM. (This field is informational only.)

Rank: When multiple process cells are assigned to an item, the process cell rank decides which cell will be preferred in production activities. This is used while assigning process cells in MPS.

Start Time: (Only for Batch-type cell.) The time at which the process cell will start operating.

End Time: (Only for Batch-type cell.) The end time of the shift when the process cell will stop operating.

The Start Time and End time will work in a 24 hour clock. If you enter 9:00 as the Start time and 17:00 as the end time the system will consider the start time and end time as both being on the same day, and display it as “Day1”. If you enter 20:00 as the start time and 4:00 as the end time it will consider the start time for “Day 1” and the end time for the next day (“Day 2”).

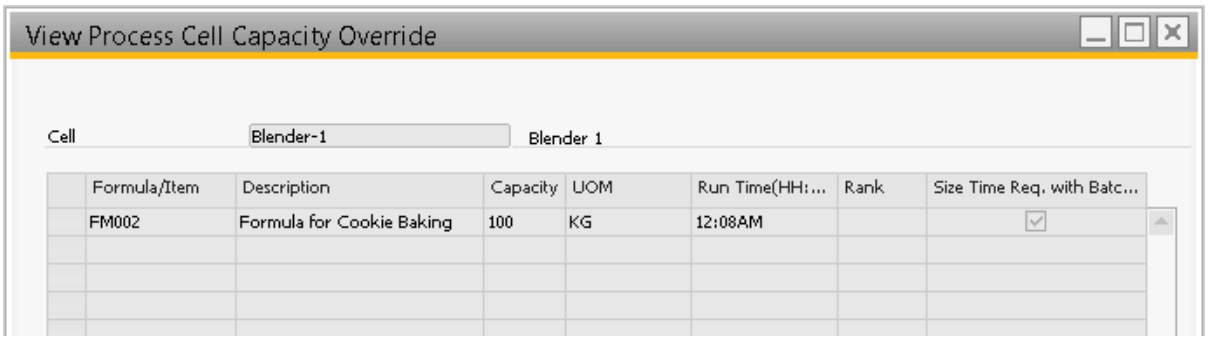
Size the time required with Batch size: Check this option if you wish to size the process cell time according to the size of the production batch. Let’s say, for the Process cell *Blender-1, it* requires 2 hrs to complete 100 Kg of batch, assuming that the process cell capacity is 100 Kg.

For a 150 Kg batch size:

- if you select this option, the batch will be completed in 3 hrs,
- If you leave this checkbox unchecked then the time required to finish the batch will be 4 hrs**.**

Consider Calendar Holidays: If you check this option then while suggesting MPS Production Orders, the system will exclude holidays and would plan only for the working days.

View Process Cell Capacity Override: Click this button to display the *Process Cell Capacity Override Entry* screen to identify that the respective process cell is linked to a Formula, Finished Good, or Assembly item.



Add/Update: Click the *Add/Update* button to apply the settings made on the screen.

Cancel: Click the *Cancel* button to close the screen without saving the changes.

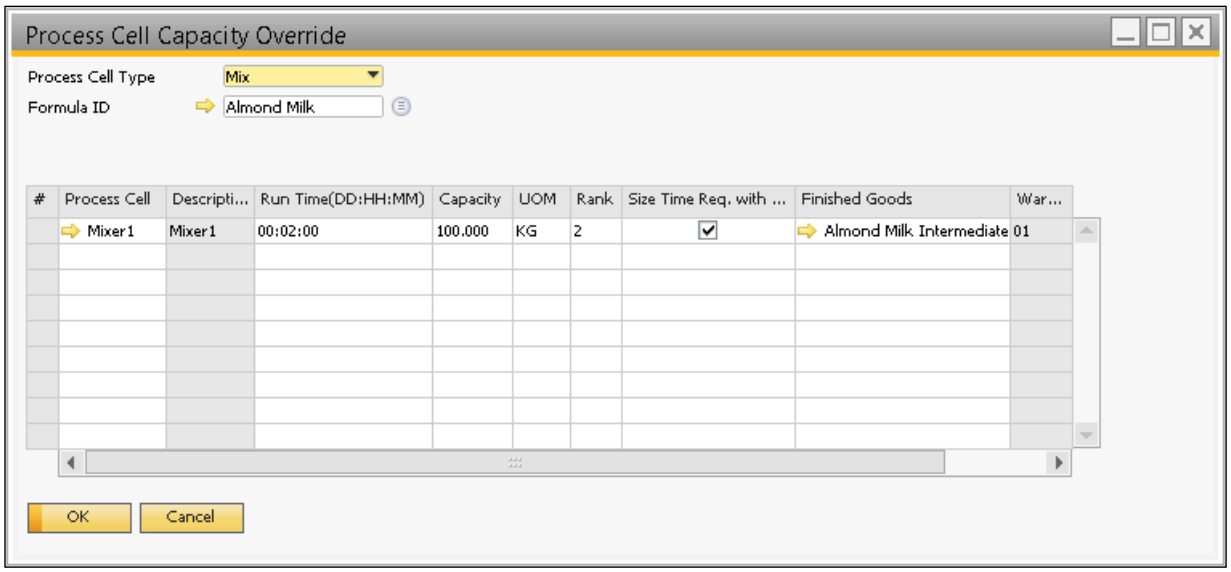
Refer to the ***BME-B1 18.2 Formulation User Guide*** for more details.

2.6 Process Cell Capacity Override

Use this screen to link a formula, finished good, or assembly item to one or more process cells.

Go To: Formulation→Process Cell Capacity Override

Process Cell Type: The type of the process cell. The drop-down menu next to the field is used to determine that the process cell will be used for Mix, Fill, or Assembly type batches. According to the type you select here, the lower field captions will be changed. **For a Mix-type process cell,** the *Formula ID* field will be displayed. Select the formula to be linked with one or more process cells.



Process Cell: Unique identifier of the process cell, linked with formula/item.

Description: Displays the name or description of the process cell.

Run Time: Specify the time required to finish one complete load in HH:MM format (i.e., the length of time the process cell would operate for this formula).

Capacity: The maximum amount the process cell can contain. Defaults from the cell master record and can be changed on a formula basis. In our example, the capacity of the second cell was reduced from 500 Liters to 450 Liters.

UOM: The unit in which the cell's capacity is measured.

Rank: Used by MPS/MRP for scheduling purposes.

Size time Req with Batch Size: Check this option to size the process cell time according to the size of the production batch.

Finished Good: For Fill and Mix types of process cell you can define the capcacity of the process cell based on different Finished Goods. Say you have two different finished goods, FG_1_Litre bottle and FG_500_ml bottle. In a grid, you can define the capacity of the process cell seperately for both these Finished goods, such that the Process Cell will take 2 hours to fill 100 liters of FG_1_Liter bottle and the same process cell takes 3 hours to fill 100 liters of FG_500_ml bottle.

Warehouse: Displays the warehouse of the selected Finished Good.

Add/Update: Click the *Add/Update* button to save your changes.

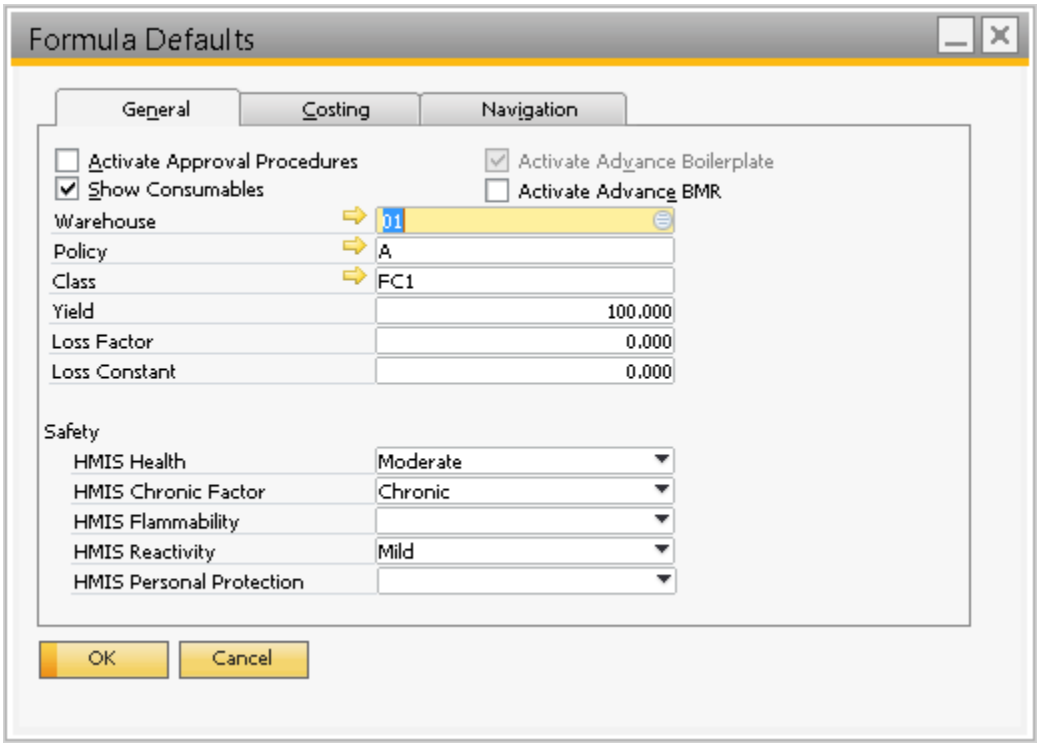
2.7 Formula Defaults

Establishing defaults will improve the speed and accuracy of data entry when entering new formulas. The system suggests values for things like warehouse, formula class, yield and loss factors, Hazardous Materials Identification System (HMIS) ratings, and price lists. These values can be over-ridden on specific formulas when required.

The following records must be maintained before *Formula Defaults* can be defined:

- Warehouse.
- Labor/Additional Costs.
- Formula Policies.
- Overhead Costs.
- Formula Classes.

Go To: Administration→Setup→Formula→Formula Defaults.



2.7.1 General Tab

Activate Approval Procedures: Determines whether approval procedures will be used in the system. Approval routings can be set up based on who originates the formula. See the "BatchMaster ERP with SAP Business One 18.2 – Approval Procedures User Guide" for details.

Once approval procedures have been implemented, you cannot remove the selection for this checkbox unless all pending approvals have been processed (either approved or rejected).

Show Consumables: If this box is checked, the *Consumables* tab will display on the *Formula Entry* screen. Consumables are inventory items that are used in formula processing but are not a direct part of the ingredients (for example, an expensive filter that must be changed at the start of each batch or shift). While consumables may be set to scale with the batch size, they do not add to either the input or output weight of the formula.

Activate Advance Boilerplate: Select this checkbox to implement the Advance Boilerplate feature.

Activate Advance BMR: Check it to activate the Advance BMR.

Warehouse: The default warehouse to be used in formulation. This warehouse code gets defaulted when a new formula record is created. You can change the default warehouse in the *Formula Entry*

screen, if required. The drop-down menu next to this field lists all warehouses that are not designated as drop ship warehouses.

Policy: The default policy code to be inserted while creating a new formula. Policy codes are used to govern formula usage in production. The drop-down menu next to this field lists all the defined formula policies.

Class: The default formula class to be inserted while creating a new formula record. The drop-down menu next to this field lists all the formula classes.

The formula class provides a WIP account for use in production of items that use the specific formula.

Yield: The usually expected weight of finished goods, which is expressed as a percentage of input weight. The value entered is closest to what you typically expect over the majority of your products. For example, if the input weight of raw materials or ingredients is 100 pounds, and you typically expect 90 pounds of finished goods and a by-product output, then the yield would be 90 percent.

Loss Factor: The default value of the loss factor to be inserted when a new formula is created. The value in this field can range between 0 and 100.

Loss Constant: The default value of the loss constant to be inserted when a new formula is created. Loss constant is measured in the system weight unit.

Loss constant represents the loss that always occurs when a formula is used. For example, five pounds of product may remain in a feeder tube after production.

Safety Grid

HMIS Health: The HMIS rating for the health hazard associated with the formula.

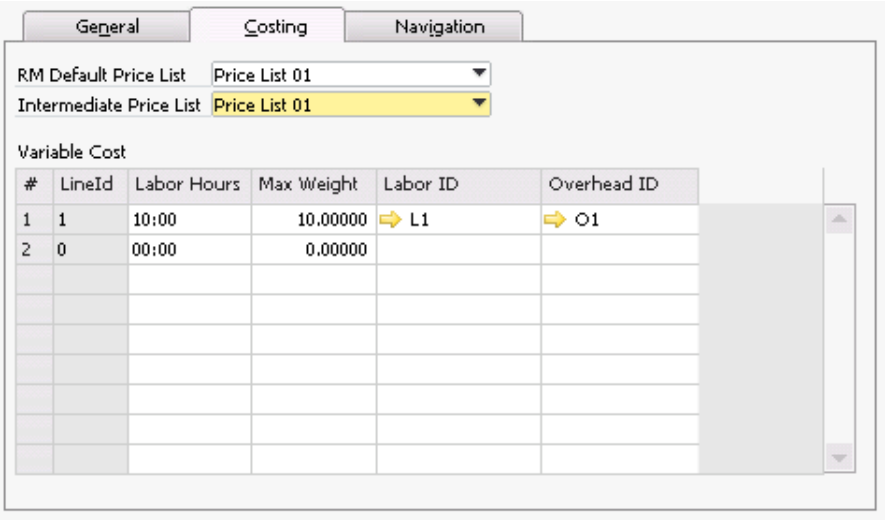
HMIS Chronic Factor: Specify how chronic the product associated with the formula is.

HMIS Flammability: The HMIS rating for flammability associated with the product manufactured using the formula.

HMIS Reactivity: The HMIS rating for reactivity associated with the formula.

HMIS Personal Protection: The personal protection materials or equipment recommended by HMIS while working with the formula.

2.7.2 Costing Tab



RM Default Price List: The price list from which raw material prices will be defaulted in the *Formula Entry* screen.

Intermediate Price List: The price list from which intermediate prices will be defaulted in the *Formula Entry*, *Product Costing Analysis*, and *Physical Property Analysis* screens.

Variable Cost Grid

LineId: This system-generated field displays the variable cost line sequence.

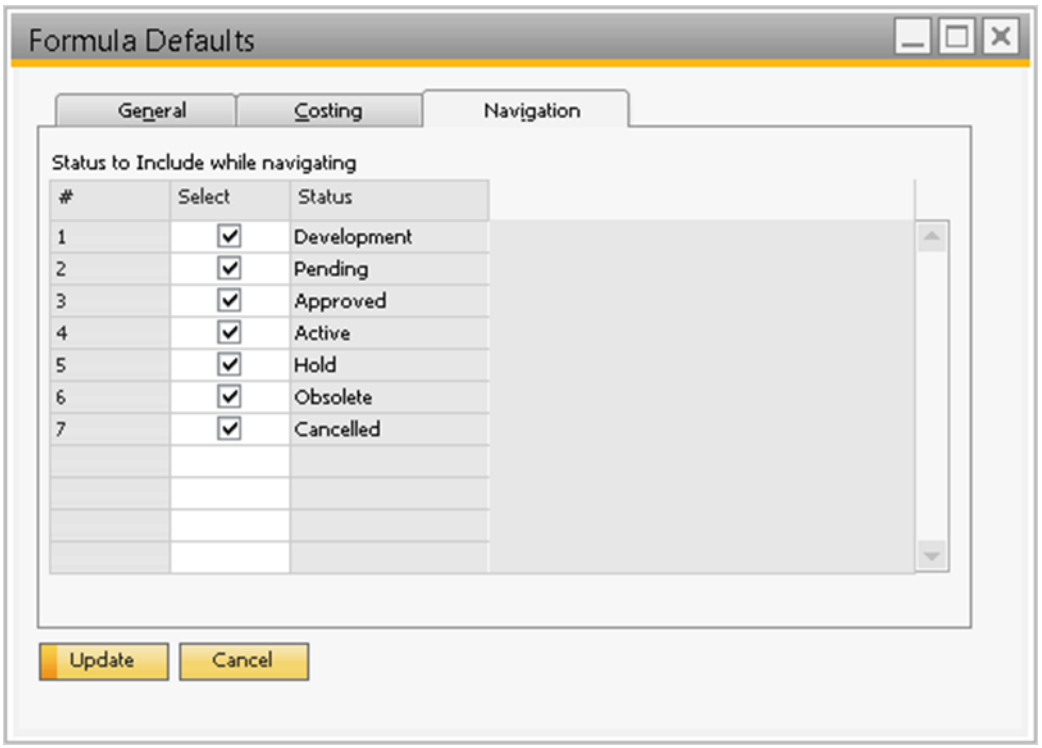
Labor Hours: The number of labor hours required as specified at the *Labor Hours* column.

Max Weight: The upper value of the batch weight range for which labor and overhead key records are to be picked. Thus, the system defaults the labor key and overhead key from this matrix by comparing the batch weight and max weight.

Labor ID: The default labor ID to be applied to the formula.

Overhead ID: The default overhead ID to be applied to the formula.

2.7.3 Navigation Tab



Select: Check the boxes in this field to select the corresponding statuses in the *Status* column.

Status: The options selected in this column determine what type of formulas should be included while navigating through formula records. You can select one or more statuses by checking the corresponding options. As a result, when you navigate through formula records in the *Formula Entry* screen, the system will display only those formula records that belong to any of the selected statuses. Available options are displayed in the screen shot above.

At least one status must be selected for navigation. The *Development* option is selected by default.

OK (not shown): Click the *OK* button to apply the setting selections made on the *Formula Defaults* screen to the respective screens.

Cancel (not shown): Click the *Cancel* button to close the *Formula Defaults* screen without saving your changes.

3 FORMULATION

Formulas (or recipes) are the life-blood of a process manufacturer. They must be accurate, consistent, and controlled, yet easy to review and maintain. To this end, the system assigns and tracks the status of each formula revision in your database. This ensures that a revision has been approved by the right person(s), it is not released for production until the appropriate time, and obsolete revisions are never used in production. The approval process for formula revisions is optional.

Formula revision statuses are described below:

1. **Development:** The formula is in the creation (or adjustment) process. Any time a new revision is created, its status is Development. Updates can be made to a Development revision, and it can be deleted. Development formula revisions cannot be used in production. If the approval process has been activated in the *Formula Defaults*, the revision must be 'sent for approval.'

2. **Pending:** This status is set by the system when a formula revision has been sent for approval. No changes can be made to Pending formulas, and they cannot be used in production. If the approval process has not been activated in the *Formula Defaults*, this status does not apply.

3. **Approved:** The formula has been approved completely through all stages of an approval process and is waiting to be set to Active status. If a formula is approved, the system would make it Active based on the value of the *Effective From* field. If the *Effective From* field is left blank, the system will make the formula Active immediately after approval. One or more versions of a formula can be "Approved" at a given time, with different Effective Dates. If the approval process has not been activated in the *Formula Defaults*, this status does not apply.

4. **Active:** The formula revision is final and available in the system for production. There can be only one Active revision of a formula at a time. In Active status, only the *Description*, *Owner*, *Remarks*, *Policy*, *Class*, *Revision Notes*, *Safety*, and *QC Tests* fields are editable without initiating a new revision.

   If the approval process has been activated, the system will compare the Effective Date of Approved formula revisions to the current system date. If the Effective Date is equal to or earlier than the current system date, the Approved revision will be promoted to Active status. At that point the status of the Active revision being replaced will change to Obsolete.

   If the approval process has not been activated, the revision must be changed to Active status in the *Formula Entry* screen. At that point the Active revision being replaced will have its status changed to Obsolete.

5. **Hold:** This status means that a formula revision is temporarily not available for production. Holds are placed on "Active" formulas for business reasons. No changes can be made to a revision that is 'on hold.' A revision will stay 'on hold' until released by a user. Your business rules should address how long a hold can be left in place.

6. **Obsolete:** A formula revision is no longer available for production. If the *Valid Until* date has passed, the system will automatically make the revision Obsolete. A user can also make a revision Obsolete using the *Formula Entry* screen.

7. **Canceled:** A formula revision was rejected by someone in the approval process. This revision is not available for production. No changes can be made to a Canceled revision. If the approval process has not been activated in Formula Defaults, this status does not apply.

A formula can also be created or modified from the *Product Cost Analysis* screen (in the *Costing Module*) and from the *Physical Property Analysis* screen (in the *Laboratory Module*). Formulas edited on these screens can only be in Experimental or Development status. If the approval process has been activated in *Formula Defaults*, the formula can be sent for approval from these screens.

Prior to creating a formula, you must have maintained some mandatory data on the following screens:

- Item Master
- Item Location
- Formula Class
- Unit Conversion
- Formula Policy

This section presents information regarding the master and transaction screens for the *Formulation Module*. These screens help create and transact information.

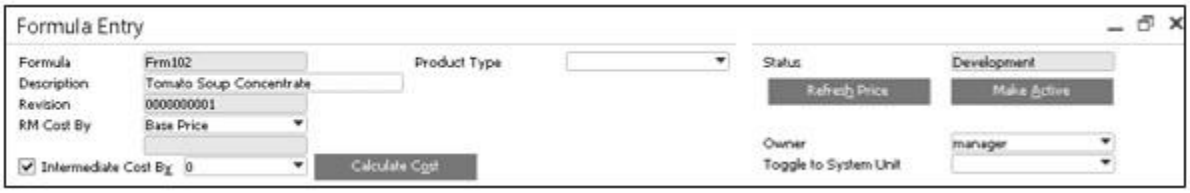
3.1 Formula Entry

This screen is used to define or edit a specific formula. Whenever a new development version of the formula is added, the formula revision number is auto-incremented. Whether a formula can be used in production is controlled by the revision status.

3.1.1 Header Information

Go To: Formulation → Formula Entry.

The screen defaults to "Find" mode. Press Ctrl+A to enter 'Add' mode.



Formula: The unique identification key for the formula (maximum of 20 alpha-numeric characters).

Description: A description of the formula.

Revision: This is a system-maintained field.

Multiple Revisions: This icon is only displayed for formulas that have multiple revisions on record.

RM Cost By: The desired price list for raw materials. Can be selected using the drop-down menu next to the *RM Cost By* field. This price list will be applied for new line items, by default.

If the price list selected in this field is the same one defined in the *Item Master Data* screen, then the system will apply this price for the items in the grid. Alternatively, you can use the *Item Cost* or *Default Item Vendor Price* options along with other price lists available in this field.

The drop-down menu next to the *RM Cost By* field will list all the system-defined price lists, including the *User Defined Cost* option which lets you enter costs without using a price list.

Intermediate Cost By: This checkbox determines how the formula cost will be calculated.

- When this option is checked, the system will use the intermediate cost stored in the price list chosen from the drop-down menu. No roll-up of the intermediate's ingredients will be done.
- When this option is not checked, the system will roll up the cost of all raw materials, based on the price list for each line item, to determine the formula cost. It will also update the cost of the intermediate stored in the default price list (see *Formula Defaults*).

Only when this field is selected will you be allowed to choose an intermediate price list for costing.

Calculate Cost: Click the *Calculate Cost* button to display the cost of the formula (based on the choices made above.)

Status: A system-maintained field that stores the current status of the formula.

Refresh Price: If the price list associated with the formula items and consumables is modified, click this button to view the updated cost.

Make Active/Send for Approval: If the approval procedure is not implemented for the *Formulation Module*, the *Make Active* button would be displayed for the Development status of a formula. Click this button to change the status of the formula from Development to Active so it can be used in production activities.

If the approval procedure is implemented for the *Formulation Module*, the *Send for Approval* button will display. Click this button to initiate the approval procedure for the formula. The status will change to 'pending' and the next designated approver will receive a message indicating there is work in his queue.

Owner: The user who owns the formula. The drop-down menu next to the *Owner* field lists all the valid users.

Toggle to System Unit: This field contains two options, *Weight* and *Volume*. You can use this field to convert to the other UOM.

If you right-click in the *Formula Entry* screen, a menu with useful shortcuts will appear. These shortcuts include:

- Duplicate Formula
- Put on Hold

- Product Cost Analysis
- Make Obsolete
- Formula Comparison
- Revise Formula

Active Ingredient: If the *Use Lot of Active Ingredient* option is selected on the *Production Defaults* Screen then, using this lookup button, you can specify an active component for the formula. For a fill type of batch, the system will map the lot of the active ingredient of the formula to the batch and thus the lot number of the active component will be used in production.

Remarks: Any extra remarks or comments related to the formula can be entered in this field.

Material Cost: The sum of extended costs of the material-type lines.

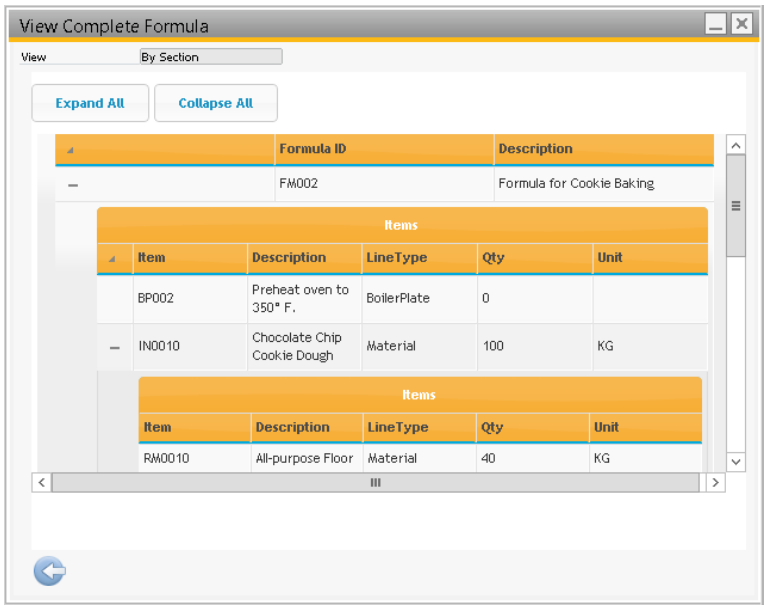
Labor Cost: The sum of extended costs of the labor lines.

Total: The sum total of the weight or volume of all the lines, in the System UOM.

Cost per: The cost of one unit of the formula.

3.1.1.1 View Complete Formula

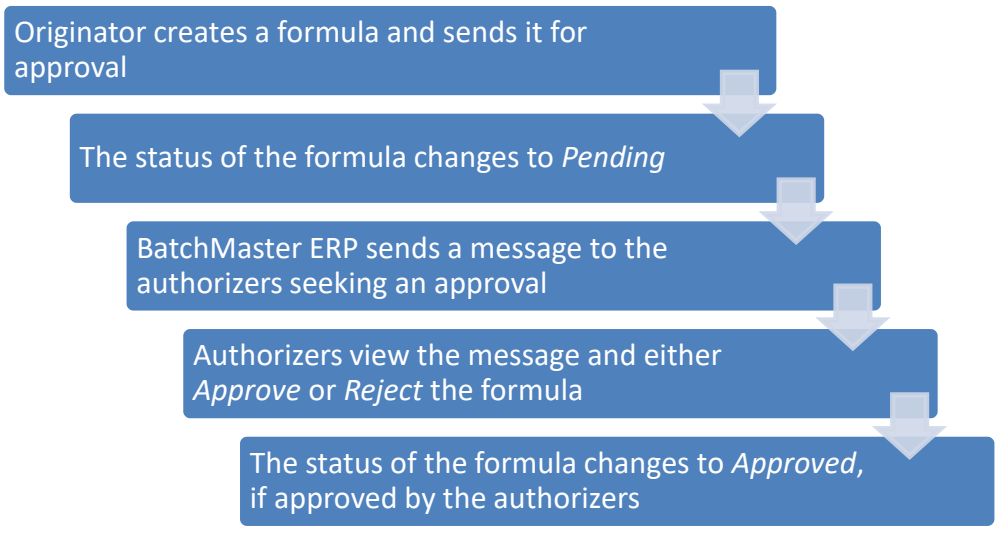
Choose this option to display the View Complete Formula screen with a graphical layout, which gives you the ability to drill into intermediates and match items to processes. The Expand and Collapse buttons will expand or collapse any item or process that has indented information.



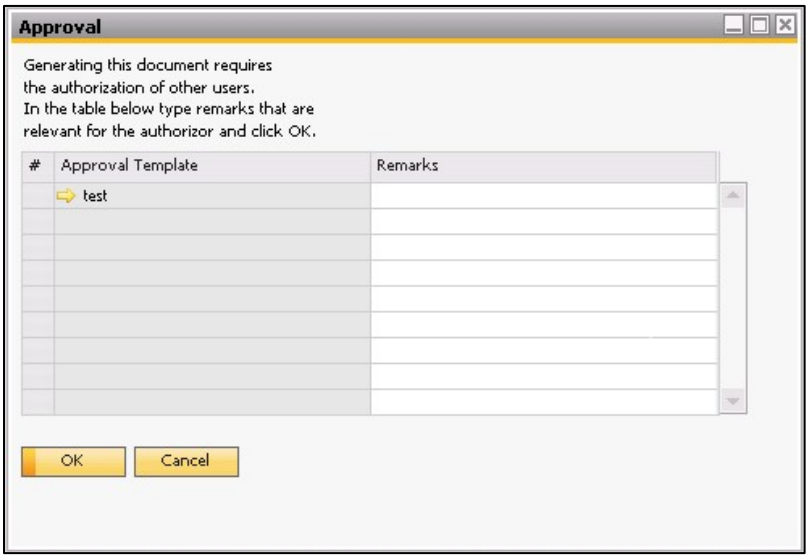
Add/Update: Click this button to save the record.

Cancel: Click the *Cancel* button to close the screen without saving your changes.

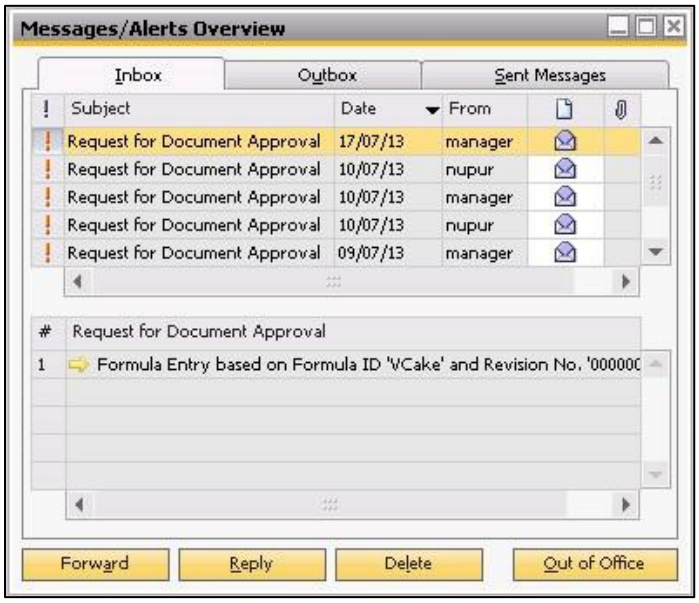
3.1.1.2 The Approval Process (optional)



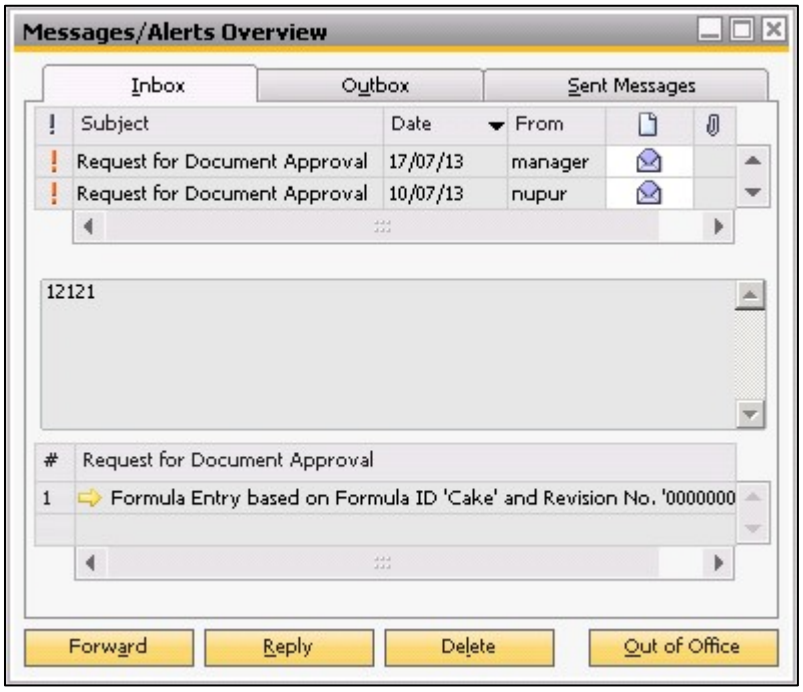
1. If formula approval is implemented for the user who has created the formula (originator), then the *Approval* screen will appear when you click the *Send For Approval* button.



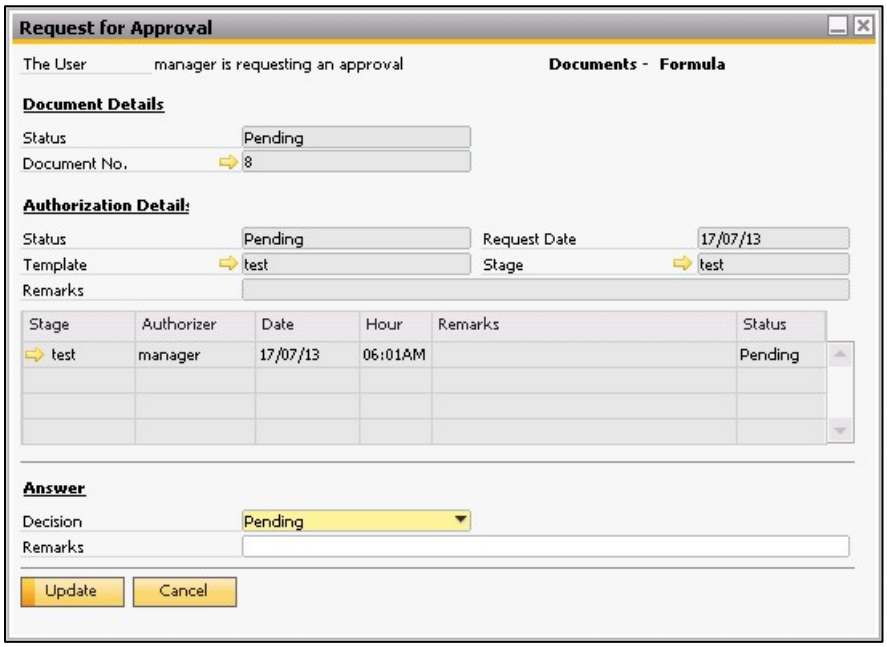
2. Once a formula is sent for approval, its status changes to Pending. This indicates that the document requires authorization.
3. Using the *Remarks* column, the originator can add any notes regarding the formula for authorizers. Clicking the *OK* button closes the screen.
4. When an originator creates a document (formula) that needs approval, BatchMaster sends a message to one or more authorizers who can approve the document. (A series of approvals could be required.)
5. An authorizer can approve or reject the document using the *Messages/Alert Overview* window. The pending messages or alerts appear when the user logs in.



6. Further, the authorizer can double-click on the request in the *Messages/Alerts Overview* window to view the details of the document, which is pending for approval.



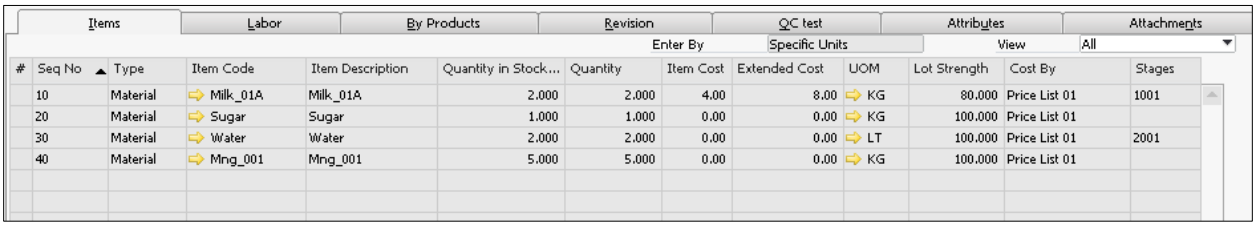
7. The *Messages/Alerts Overview* window provides search capabilities. Clicking the right-arrow key in the *Request for Document Approval* grid displays the *Request for Approval* screen.



8. The authorizer can view document and authorization details with remarks entered by the originator. Using the *Answer* section, the authorizer can either approve or reject the document. Available options for the *Decision* field are *Approved*, *Pending*, or *Rejected*.

9. After approval from all the required users, the status of the formula is changed to *Approved*.

3.1.2 Items Tab



Enter By: The drop-down menu next to the *Enter By* field provides the following options:

- **Specific Units:** Enter absolute quantities of raw materials in item-specific UoMs.
- **Weight %:** Enter raw materials as a weight percentage of total formula weight in the *System Weight Unit*.
- **Volume %:** Enter raw materials as a volume percentage of total formula volume in the *System Volume Unit*.

View: You can filter the data in the *Items* grid by *Item Type*. Available options for this field are *All*, *Material*, *Text*, and *Boilerplate*.

#: The sequence number of the line. You may right-click in this column to select and delete the entire row.

Seq No: In this field, the system by default auto generates the row number for each line item in multiples of 10. If needed you can modify this sequence number. Further, on the basis of this Item sequence number, the system lists the items on the *Batch Ticket* and *Formula reports* screen.

Type: Select the required line type. Available options are *Materials*, *Boilerplate*, and *Text*.

Item Code: To get a lookup while in the *Items* grid, put your cursor in the cell and press the 'Tab' key. If there is already a value in the cell, click the golden arrow.

- If you picked Material line type, select an *Item ID* and enter the quantity required in either the *Wt %*, *Vol %*, or *Quantity* columns (only one column will be available, based on the choice made in the *Enter By* field).

- If you picked Boilerplate line type, select the *Boilerplate Instruction ID*.
- If you picked Text line type, type your text in the *Description* field.

You can enter an item that is not in the Item Master as an ingredient for creating the formula, but the formula cannot become Active until that item has been created in the Item Master.

Quantity in Stock UoM: This field is auto-populated depending on the value entered in the *Quantity* field.

Item Cost: The cost of the material. Defaults from the price list and can be changed.

Extended Cost: The extended cost of the material (quantity x unit cost) calculated by the system.

UoM: If the *Material* option is selected in the *Type* column, then this field would store the display UOM of the item. If the item is not defined in the Item Master, the system would default this field with the system UOM (in weight). The drop-down menu next to the *UoM* field lists all the defined units of measure for the selected item.

Toggle to UoM: Use this field to toggle the quantity entered in different units. When you specify the desired unit in this column, the system automatically converts the quantity in that unit.

Warehouse: The warehouse where the material is kept.

Overhead ID (not shown, optional)**:** An overhead ID code to be applied for the line.

Loss (not shown, optional)**:** Defines the loss incurred in handling of the material. The value of this field ranges from 0 to 99.99 percent. The system automatically adds extra raw material during a production batch based on this value.

Lot Strength: Enter the lot strength of the item, as required. If the strength is less than 100 percent, the system will suggest a larger quantity of the item during production.

Cost By (not shown): The source of the cost. The drop-down menu next to the *Cost By* field lists all pre-defined price lists and options, along with the *User Defined Cost* option. The value set on the header is retrieved by default, but can be overridden if required.

Stage (not shown)**:** The name of the stage in which the material will be processed. Appears only if stages are enabled during system set-up.

At any point during entry on the *Items* tab (or entry on the other tabs) you can click the *Add* or *Update* button to save your work.

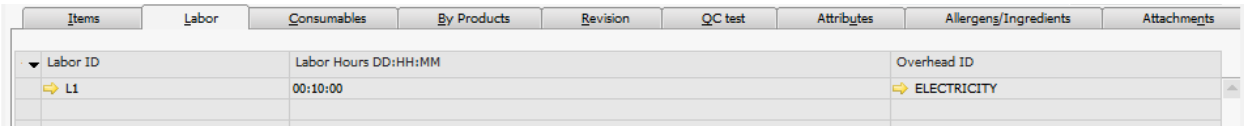
Backflush: If you mark Backflush checkbox on the *Formula Entry* screen, then the system displays auto marked Backflush checkbox for the respective item on the *Batch Ticket* screen as well. When adding raw materials to the formula, the system automatically retrieves the backflush value from the *Item Master Details* screen by default. You can modify this value if needed.

Lower Tolerance %: You can enable this field from the *Form Settings*. Here you can specify the minimum acceptance percentage value allowed to be issued below the *Quantity Required* of the material line.

Upper Tolerance %: You can enable this field from the *Form Settings*. Here you can specify the maximum acceptance percentage value allowed to be issued above the *Quantity Required* of the material line.

3.1.3 Labor Tab

Under this tab, you can enter the labor key(s) that apply to the formula and specify the time consumed in labor activities. This allows you to track direct costs incurred during production of the formula.



#: The sequence number of the line. You can right-click on this number to delete the line.

Labor ID: The desired labor key.

Labor Hours: The time labor needs to work for the formula.

Overhead ID: The desired overhead key. Overhead costs are indirect or manufacturing support costs that you choose to include in the cost of the formula. They can be either a fixed amount or a percentage of labor cost.

Add/Update: After completing the details on the *Labor* tab, click the *Add/Update* button to save your work. To ignore your changes, click the *Cancel* button.

3.1.4 Consumables Tab

Consumables are inventory items that are used in formula processing but are not part of the ingredients, e.g. an expensive filter that must be changed at the start of each batch or shift. These items affect the cost of production but are not directly proportionate to the primary ingredients, nor do they add to the input weight of the batch.

#: The sequence number of the line. You can right-click on this number to delete the line.

Seq No: Items are shown in this sequence in the *Formulation* and *Production Modules*.

Item Code: Entering the *Item Code* pulls the Description, UoM, and Item Cost from the *Item Master*.

Warehouse: The warehouse where the material is kept.

Qty in Stock UoM: The system auto-fills this field based on the value entered in the *Quantity* field.

Quantity: The quantity of the consumable item used for the formula.

Size with Batch: Choose *Yes* if the quantity of the consumable used increases as batch size increases. The system will round up a calculated decimal quantity to the next higher integer. Accept the default *No* if the consumable quantity remains static.

Cost By: The cost source (price list or user defined cost) for the consumable item.

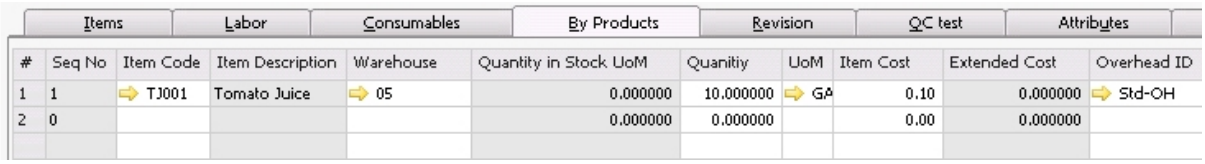
Re-sequence Button: Use this button to change the order of the lines or rows in the screen. To change the sequence, select a line and then click the up or down arrow to move it to the desired location.

Add/Update: After completing the details on the *Consumable*s tab, click the *Add/Update* button to save your work. To ignore your changes, click the *Cancel* button.

Backflush: If you mark Backflush checkbox on the *Formula Entry* screen, then the system displays auto marked Backflush checkbox for the respective item on the *Batch Ticket* screen as well. When adding raw materials to the formula, the system automatically retrieves the backflush value from the *Item Master Details* screen by default. You can modify this value if needed.

3.1.5 By-Products Tab

A by-product is a material of value produced as a residual of or incidental to the production process. To track by-products, they must be entered in the *Item Master* and set to Standard Cost. Entering the Item Code pulls the Description, UoM, and Item Cost from the table.



The field descriptions are the same as applied on other tabs.

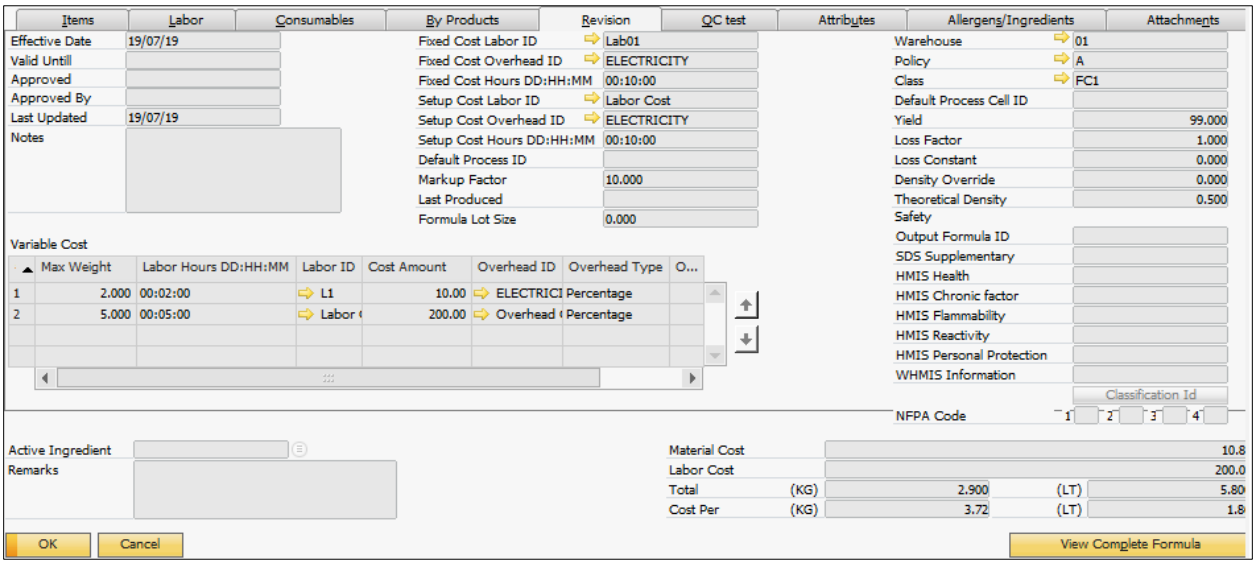
Enter the quantity of the by-product produced per batch. You can list as many by-product records as are applicable. You can also apply overhead to the by-products. By-product weight is deducted from the input weight of materials, and by-product value is deducted from the input costs applied to the finished goods.

Exception: Overhead cost applied to a by-product is added to the input costs applied to the finished goods.

Waste products can also be accommodated on this screen. They would have a Standard Cost of zero, and an Overhead ID would be assigned that accounts for the disposal of the waste item.

Add/Update: After completing the details on the *By-Products* tab, click the *Add/Update* button to save your work. To ignore your changes, click the *Cancel* button.

3.1.6 Revision Tab



Effective Date: The date from which the formula can be Active (i.e., the date from which it can be used in production). When the system date reaches the Effective Date, this revision will become Active and any previous Active revision will become Obsolete. If this field is left blank, the formula will be Active as

soon as you click the *Make Active* button (or as soon as it is approved, if the approval process is turned on).

Valid Until: The date until which the formula revision is Active. After this date, the system will automatically make the revision Obsolete. If this field is left blank, the revision will remain Active until a user creates and activates a newer version.

These dates can only be changed if the revision is in *Development* status.

Approved: The date on which the formula was approved. This is a system-maintained field.

Approved By: The user who approved the formula.

Last Updated: The date on which the formula was last modified.

Notes: Use this field to enter special comments/reminders for a formula.

Fixed Cost Labor ID (optional)**:** Any fixed labor or additional cost that must be added to the batch.

Fixed Cost Overhead ID (optional)**:** Any overhead cost that must be added to the batch.

Fixed Cost Hours (optional)**:** The fixed cost hours associated with the formula.

Repeat these steps for the setup-related fields (optional).

Default Process Stage ID: The default process stage ID for the formula. Refer to the *BME-B1 18.2 Production User Guide* for details.

Markup Factor: A factor used in the Product Costing module to compute the sales price of finished goods and intermediates.

Formula Lot Size: If you have opted the *Enable Formula based Lot size method* checkbox at the *Costing Defaults* screen then the size you specify here will be considered as a lot size of the formula intermediate.

Warehouse: The warehouse for which the formula will be produced. This field can be edited as needed. Any warehouse except one designated as a drop-ship warehouse can be used.

Policy: Controls which formulas are displayed during physical property analysis, formula costing, and production set-up.

Class: The Formula Class to which this formula belongs. This assigns the General Ledger (GL) account numbers for WIP and production variances.

Default Process Cell ID: The cell in which the formula will normally be produced. Used by MPS and the production scheduling functions.

Yield: The amount of good product you expect at the end of a production batch from a given input weight, expressed as a percentage. For example, if the expected output is 90 pounds from an input of 100 pounds, then the yield is 90 percent.

Loss Factor: The quantity of input material lost during manufacture over the whole formula, expressed as a percentage of the input weight. The system will calculate the Loss Factor based on the Yield entered in the previous field.

Loss Constant: A fixed amount of loss regardless of the batch size, measured in the System Weight Unit. For example, 5 pounds of product may be left in the mixer at the end of the run.

Density Override: The system divides Total Weight by Total Volume to compute the theoretical density of the formula. The system will use the value supplied here to compute the formula volume. In some cases (for example, after a chemical reaction) the actual density of the end product is different. In such cases you must specify the actual density.

Last Produced: The date the formula revision was last used in production. (This is a system-maintained field.)

Theoretical Density: The total formula weight divided by the total formula volume. (This is a system-maintained field.)

Output Formula ID: The system uses raw material information from the formula to print a Safety Data Sheet (SDS). In certain cases, say after a chemical reaction, the characteristics of the intermediate or finished good can be quite different from those of the individual ingredients.

For example, the reaction of hydrogen gas and chlorine gas produces hydrochloric acid (HCl). The SDS for HCl cannot be prepared based on the properties of hydrogen gas and chlorine gas, since the properties of HCl are very different from the properties of either of the ingredients. A separate output formula for HCl should be created and inserted in the *Output Formula ID* field. For SDS purposes, the formula may list HCl itself as the ingredient, together with its material properties and health and safety information.

SDS Supplementary File: The default *SDS Template* associated with a formula that is used for printing an SDS for the formula.

HMIS: Insert a value for each of the Hazardous Materials Identification System (HMIS) classifications using the drop-down menu on each field.

WHMIS: Enter appropriate data.

Classification ID: Used in conjunction with optional SDS function.

NFPA Codes: Enter appropriate National Fire Protection Association (NFPA) data.

Variable Cost Grid

Variable Cost

#	Max Weight	Labor Hours	Labor ID	Cost Am...	Overhead ID	Overhead Type	Overhead Factor
1	100.000000	08:00	Std-Labor	8.00	Std-OH	Currency Amoun	20.00
2	200.000000	09:00	Std-Labor	8.00	Std-OH	Currency Amoun	20.00
3	0.000000			0.00			0.00

#: The sequence number of the line.

Max Weight: The maximum (not-to-exceed) batch weight for which the labor/additional cost is applicable.

The variable labor cost is dependent on two factors: the total batch weight, and the applicable labor rate for that batch weight. The variable labor cost is defined for a particular range of batch weight. The Max Weight is the upper limit of the weight range to which a particular row of the variable cost is applicable. The lower limit of a batch weight range is determined based on the Max Weight of the preceding row. For example, suppose that the Max Weight for the first row is 100, and the Max Weight for the second row is 200. In such a case, the variable cost will be calculated according to the first row if the batch weight is between 0 and 100, and according to the second row if the batch weight is between 100.01 and 200, as explained below.

- If a batch weight is 100 pounds or less, it will take 8 hours to complete the batch (regardless of the actual weight), so the cost assigned to a batch is 8 hours * $20.00 (the cost amount), plus any overhead assigned to that line.
- If the batch weight is between 100.0000001 and 200 pounds, it will take 9 hours to complete the batch (regardless of the actual weight), so the cost assigned to a batch is 9 hours * $20.00 (the cost amount), plus any overhead assigned to that line. Since 200 pounds is the largest Max Weight defined, any batches with a batch weight of more than 200 pounds will also use the 200 pound calculations.

The actual variable cost in production is determined by adding together the following:

- The batch weight (in system weight unit) multiplied by the amount of the Labor Key of the applicable row.

- If the Overhead Key is '$' type, then the batch weight (in System Weight Unit) multiplied by the factor of the Overhead Key of the applicable row.
- If the Overhead Key is '%' type, then the batch weight (in System Weight Unit) multiplied by the amount of the Labor Key of the applicable row multiplied by the factor of the Overhead Key of the same row.

Labor Hours: The number of hours consumed in labor activities.

Labor ID: The labor key of the variable costs associated with the formula. This value is used for cost analysis in the *Costing Module* as well as to calculate the costs associated with production of the end item using the formula.

Cost Amount: The cost associated with the formula labor/additional key of the variable costs for the formula. This value is used for cost analysis in the *Costing Module* as well as to calculate the costs associated with production of the end item using the formula.

Overhead ID: The overhead key associated with the variable costs for the formula. This value is used for cost analysis in the *Costing Module* as well as to calculate the costs associated with production of the end item using the formula.

Overhead Type and Overhead Factor: These are system-maintained fields. See Section 2.4.

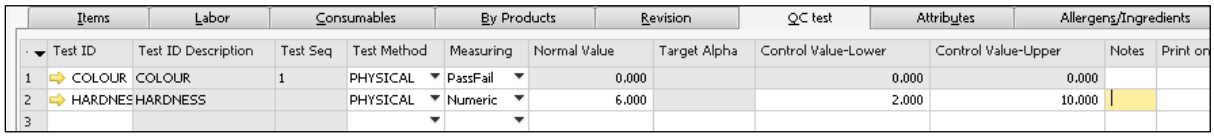
3.1.6.1 Maintaining Revision Tab Information

1. Enter the relevant information in the *Effective Date* and *Valid Until* fields if you want the system to determine when the revision will be Active.
2. Enter any notes or remarks in their associated fields.
3. In the *Fixed Cost Labor ID* field, choose the Labor Key to calculate the fixed labor cost.
4. In the *Fixed Cost Overhead ID* field, select the Overhead Key associated with the fixed labor activities specified above.
5. In the *Fixed Cost Hours* field, enter the Fixed Labor time to complete the batch.
6. In the *Setup Cost Labor ID* field, enter the Labor Key associated with batch setup activities.
7. Enter the Overhead Key that applies to the set-up activities in the *Setup Cost Overhead ID* field.
8. Enter the number of hours consumed in set-up activities for the batch in the *Setup Cost Hours* field.

9. Use the lookup next to the *Default Process Stage ID* field to select the Default Process Stage ID.
10. Enter the factor that will be used to compute the sales price of finished goods and intermediates in the *Markup Factor* field.
11. Specify the Lot Size of the formula intermediate here. It will be used to calculate an accurate rollup cost of the on the basis of lot size of sub level FG and intermediates.
12. Enter the applicable warehouse location for the formula item in the *Warehouse* field.
13. Use the lookup next to the *Policy* field to choose the policy applicable for the formula.
14. Use the lookup next to the *Class* field to select the formula class applicable for the formula.
15. Assign the default process cell to the formula in the *Default Process Cell ID* field.
16. Specify the target yield of the formula in the *Yield* field.
17. Enter the fixed loss of the product during the manufacturing process in the *Loss Constant* field.
18. In the *Density Override* field, enter a value to override the density calculated by the system.
19. Enter the details in the *Variable Cost* grid:
    a) In the *Max Weight* field, enter the maximum weight of the product weight range for which the variable costs specified in the respective row is applicable.
    b) Enter the Labor Key of the variable costs for the formula in the *Labor ID* field.
    c) Select the Overhead Key associated with the variable costs in the *Overhead ID* field.
20. Enter the details in the *Safety* section:
    a) In the *Output Formula ID* field, choose the Formula Key for the product manufactured using this formula.
    b) In the *SDS Supplementary* field, select the appropriate supplementary file that can be used while printing the SDS.
    c) Specify the appropriate HMIS rating for each parameter using the drop-down menus.
    d) In the *WHMIS Information* field, enter WHMIS information for people working with the formula.
    e) Enter appropriate SDS and NFPA data.

21. Click the *Update* button to save the record.

3.1.7 QC Test Tab



Test ID: The identification code for a QC test. For a lookup, press the *Tab* key in an empty cell or click on the golden arrow, if present. (Tests and their properties are defined in the *Quality Control Module*. See the "BatchMaster ERP with SAP Business One 18.2 – Quality Control User Guide" for more information.)

Test ID Description: Displays the description of the QC test.

Test Seq: Defines the order in which test(s) must be performed. To re-sequence, select a line and use the up/down arrow buttons to the right of the grid.

Test Method: Select an appropriate test method.

Measuring: Available options are *Pass/Fail*, *Numeric*, and *Alpha-numeric*.

Normal Value: If the measuring type is Numeric, enter the normal or standard test result.

Target Alpha: If the measuring type is Alpha-numeric, enter the desired test result.

Control Values: If the measuring type is Numeric, enter the lower and upper limits of acceptable test results.

Notes: Used to store notes for this test on this formula only.

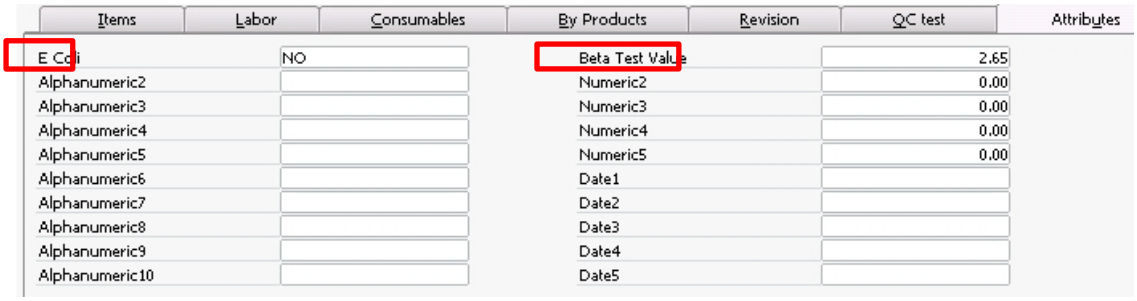
Print on COA: Defines whether the results of the test are to be printed on the Certificate of Analysis (COA). If this field is left blank, the system will use the default value of No.

Re-sequence Button: Click this button to change the order of the lines or rows in the screen. To change the sequence, select a line and then click the up or down arrow to move it to the desired location.

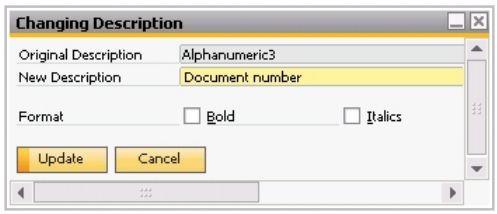
Add: After completing the details on the *QC Test* tab, click the *Add* button to save your work. To ignore your changes, click the *Cancel* button.

3.1.8 Attributes Tab

The *Attributes* tab is used to specify the custom field values that can be used for reporting purposes. You can include the fields on reports in any combination of Alphanumeric, Numeric, or Date type.



The field labels can be customized by hovering over the label, pressing **Shift + Ctrl**, and then double-clicking. Above we see 'E Coli' and 'Beta Test Value' as examples. Field labels apply to all formulas, not just the one you are currently editing.



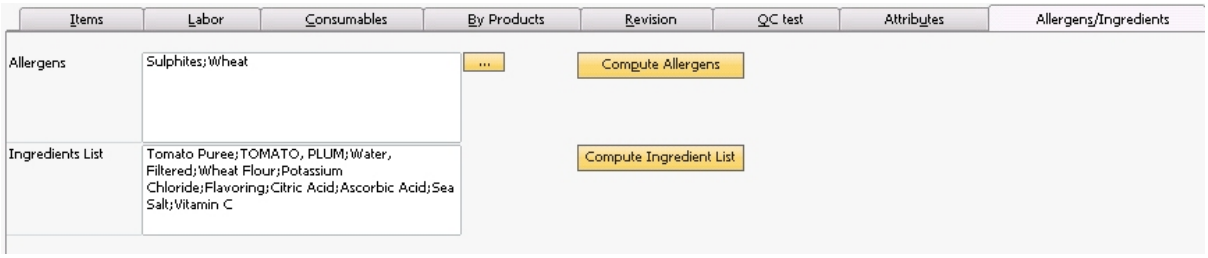
Alphanumeric (1...10): A field value composed of a combination of alphabetic characters and numeric values. You can enter a field value using alphabetic characters (A through Z), numeric values (0 through 9), and the underscore character (_).

Numeric (1...5): A field value composed of numeric characters.

Date (1...5): A field value following the convention MM/DD/YY. A calendar function is available.

Add: After completing the details on the *Attributes* tab, click the *Add* button to save your work. To ignore your changes, click the *Cancel* button.

3.1.9 Allergens/Ingredients Tab



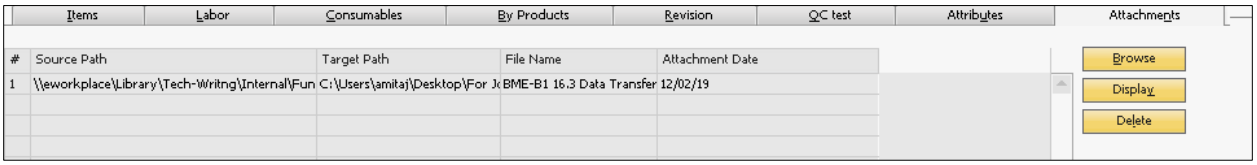
Allergens: The allergen(s) present in the formula. Use the lookup  to see a list of allergens from which you can select, or click the *Compute Allergens* button to list allergens in the formula based on the allergens in the raw materials or intermediates.

Ingredients List: The ingredients in the formula.

Compute Ingredient List: Click the *Compute Ingredient List* button to compute ingredients in the formula based on ingredients in the raw materials or intermediates.

All the preceding data can be printed on product labels and custom reports.

3.1.10 Attachments Tab



Source Path: Displays a network location for the attached document.

Target Path: Displays the directory where you want to store the attached file. This is the path you specified at the *Attachment Folder* in the SAP *General Settings* screen.

File Name: Displays the name of the file.

Attachment Date: Displays the date when the file is attached to the formula record.

Browse: Use this button to search and locate the path of the file needed to be attached. It should be a network location.

Display: Use this button to view the attached file.

Delete: Use this button to delete the selected attached file from the grid.

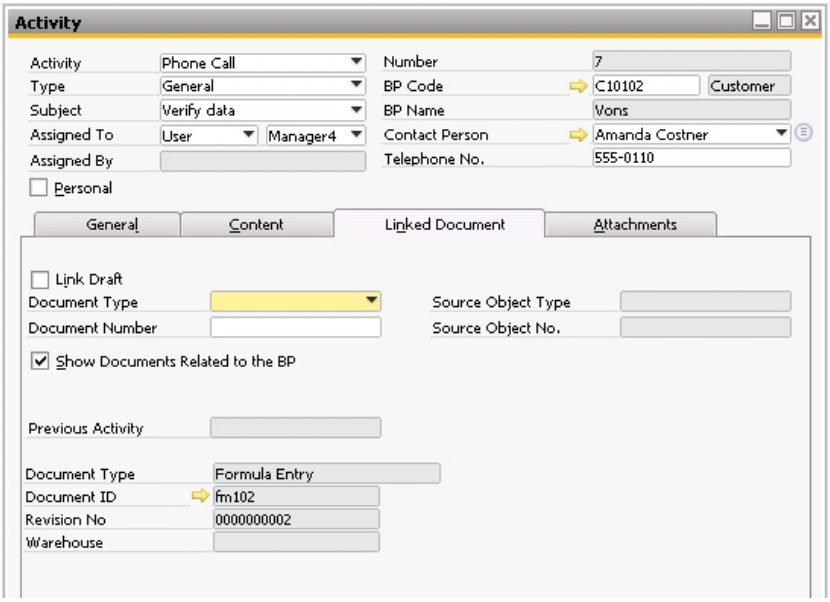
3.1.11 GoTo Options

3.1.11.1 Related Activities

Select the *Related Activities* option under the *GoTo* menu to access the *Activities Overview* window, which contains details for each activity.

3.1.11.2 New Activity

Select the *New Activity* option to go to the *Activity* screen, where you can create and associate activities.



When you access the *Activity* screen using the *GoTo Function* for this screen, the system auto-populates the values in the *Document Type* and *Document ID* fields.

3.1.11.3 Size Formula

Click this option to display the *Size Formula* screen, which provides the capability to determine the sizing requirements for a formula. The available options for sizing a formula are:

- **By Weight:** To resize the quantities of items by weight, the system performs the following steps:

  a) Calculate the *New Total System Weight* by converting the quantity into the system weight unit.

  b) Calculate the factor using this formula:

$$Factor = \frac{New\ Total\ System\ Weight}{Current\ Total\ RM\ Weight}$$

c) Calculate the new quantity using this formula:

$$New\ quantity\ (resized\ by\ weight) = Factor * Qty\ in\ display\ UOM$$

New quantities for by-products and consumables are calculated in a similar way.

- **By Volume:** To resize the quantities of items by volume, the system performs the following steps:

  a) Calculate the *New Total System Volume* by converting the quantity into the system volume unit.

  b) Calculate the factor using this formula:

$$Factor = \frac{New\ Total\ System\ Volume}{Current\ Total\ RM\ Volume}$$

  c) Calculate the new quantity using this formula:

$$New\ quantity\ (resized\ by\ volume)\ =\ Factor\ *\ Qty\ in\ display\ UOM$$

  New quantities for by-products and consumables are calculated in a similar way.

- **By Quantity of Material:** When this option is selected, only the *By Quantity of Material* and *Units* fields will be enabled. You need to enter an existing formula item, a new quantity, and a valid item unit (you can only enter items that are already present in the formula). The system will size the formula lines according to the quantity entered.

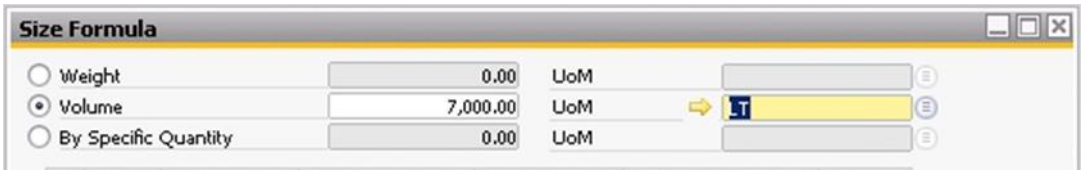
  a) Calculate the New Item Quantity in System Weight by converting the new quantity in the system weight unit.

  b) Calculate the factor using this formula:

$$Factor\ =\ New\ Item\ Quantity \frac{System\ Weight}{Current} Item\ Quantity\ (System\ Weight)$$

  c) Calculate the new quantity by multiplying all raw material quantities by the factor.

Select one of these options, enter a value, and click the *OK* button to resize the formula. The formula line items of Material type and any by-products will be sized accordingly. Click the *Update* button to save the sized formula.



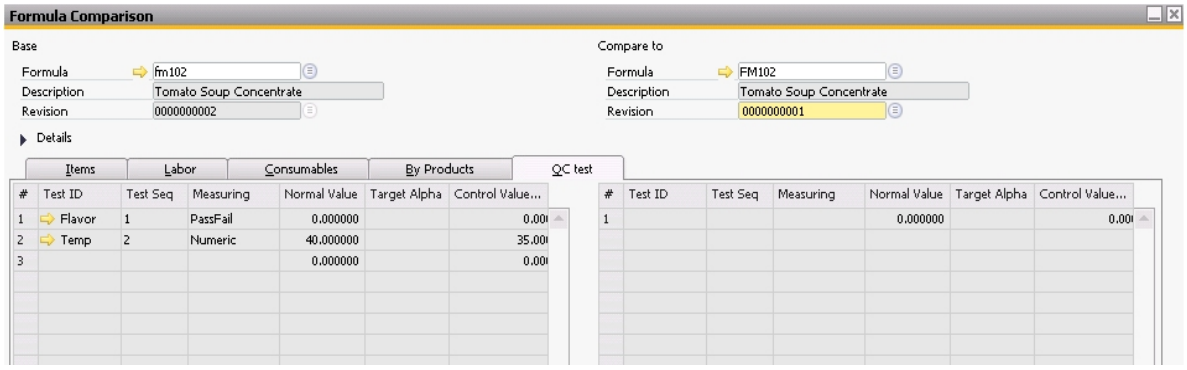
Sizing of a formula is allowed only when its status is Development.

3.1.11.4 Product Cost Analysis

Choose this option to take the current formula to the *Product Cost Analysis* screen. This allows you to perform an accurate cost analysis on one of the master formulas, and compare the cost of different-sized finished goods or different-sized containers filled with the formula. Refer to the *Product Costing User Guide* for more information.

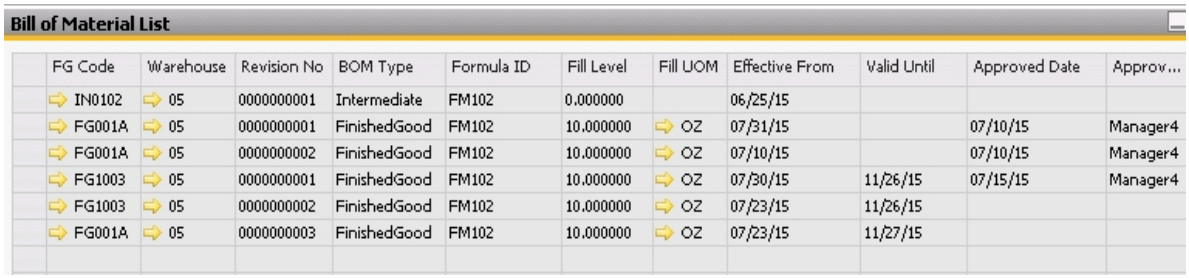
3.1.11.5 Formula Comparison

Select this option to display the *Formula Comparison* screen with the current formula. This screen provides the capability to select and compare two formulas. Information is displayed in the grids, which are read-only. See also Section 6.1.



3.1.11.6 Bill of Material List

Choose this option to display the *Bill of Material List* screen, which lists all the BOMs in which the formula is being used.



3.1.11.7 Put on Hold

Click the *Put on Hold* button to change the status of the formula from Active to Hold. The formula will not be available for production until its status changes back to Active.

3.1.11.8 Release Hold

Click the *Release Hold* button to change the status of the formula from Hold to Active.

3.1.11.9 Make Obsolete

Select the *Make Obsolete* function to change the status of the formula to Obsolete. This implies that the formula is no longer available for production.

3.1.11.10 Specifications

Use this option to specify the performance standards on which the quality tests are to be evaluated.

3.1.11.11 Print Specifications

You can print the specification in the screen of a report by using this option.

3.1.11.12 Build Intermediate

The *Items* grid of the *Formula Entry* screen allows you to select multiple items and then select the *Build Intermediate* option from the *GoTo* menu to create a new formula. Selecting one or more formula lines and clicking this option opens a new *Formula Entry* screen and copies the selected items to that screen. The *Formula Entry* screen is displayed in the 'Add' mode with the formula status as *Development*.

3.1.11.13 Open Intermediate

The *Open Intermediate* option is enabled only when a row displaying material is selected in the grid. If a valid formula exists for the intermediate, a new *Formula Entry* screen will be displayed. As an intermediate BOM may have multiple revisions, the system will give preference to a formula revision with Active status over a formula revision with Development status, and will display a message in the status bar if no formula is found. The system will open the BOM based on the warehouse defined at the line level. If the warehouse is not found, the system will use the default warehouse of the formula.

3.1.11.14 Refresh Quantities

Selecting this option will refresh the quantities maintained by the system on the *Formula Entry* screen, if any changes have been made to them. This functions the same as clicking the *Update* button.

3.1.11.15 Print Nutrition Label

Select this option to open Nutritional Labeling screen from where you can print nutrition labels in six different FDA formats. For more details refer to *BME-B1 18.2 Laboratory User Guide.*

3.1.11.16 Process Cell Capacity Override

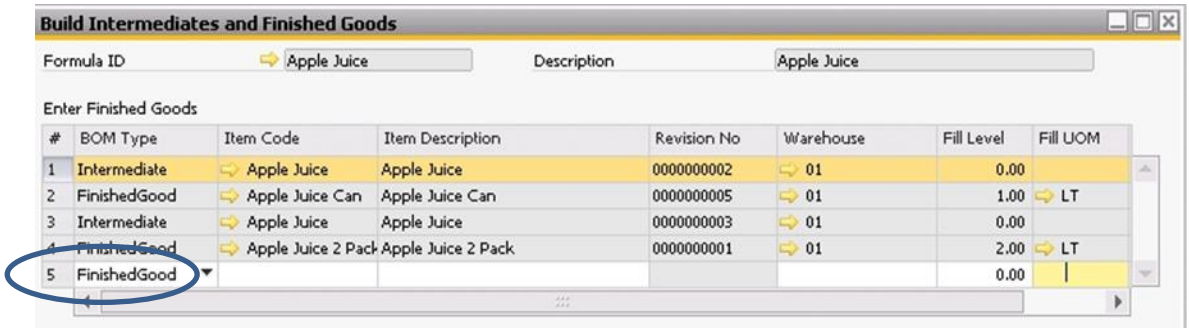
Choose this option to display Process Cell capacity override screen, to attach process cell with your formula/finished good/assembly item. See also Section 3.2.

3.1.11.17 Revise Formula

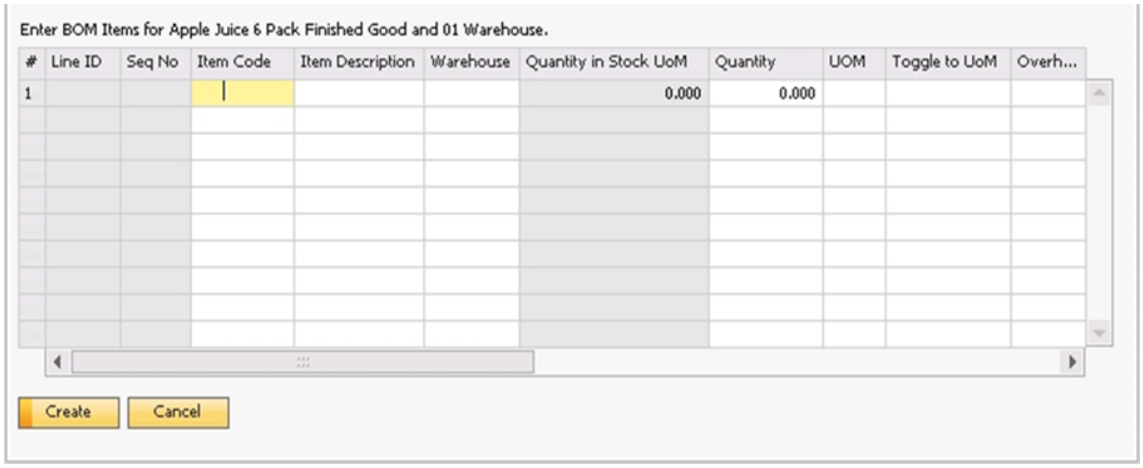
Use the *Revise Formula* option to create a new revision of the same formula.

3.1.11.18 Build Bill of Materials

From this screen you can associate an active formula with a new BOM. The screen will list the BOMs with which the formula is currently associated. Scroll (if necessary) to display the new line item box, as circled below.



1. Using the drop-down arrow, select the BOM type you want to link to the formula (*Finished Good* or *Intermediate*).
2. Click in the *Item Code* field and then press the *Tab* key for a lookup. The system will display item records. Highlight the one you want and click the *Choose* button.
3. Select the warehouse, enter the fill level, and choose the unit of measure.
4. Highlight the line you just added by clicking on its sequence number. The lower grid will activate.



5. Click in the *Item Code* field, and then press the *Tab* key. Choose the packaging material (or other item) you want to add to the BOM you are about to link to the formula.

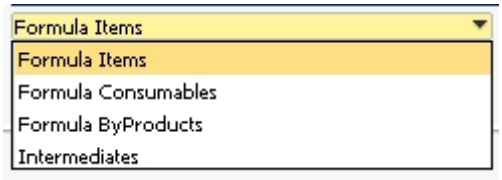
6. Enter the warehouse and quantity data.

7. Repeat steps 5 and 6 as needed.

8. Click the *Create* button to link the formula with the new BOM.

3.1.11.19 Relationship Map

A formula relationship map displays critical information about the formula in an easy-to-view manner. The relationship map for a formula would display the formula ID, formula description, formula revision, formula status, weight, and volume. In addition, you can choose to display information about the formula ingredients, consumables, by-products, or intermediates by choosing the appropriate option from the menu at the bottom of the screen.

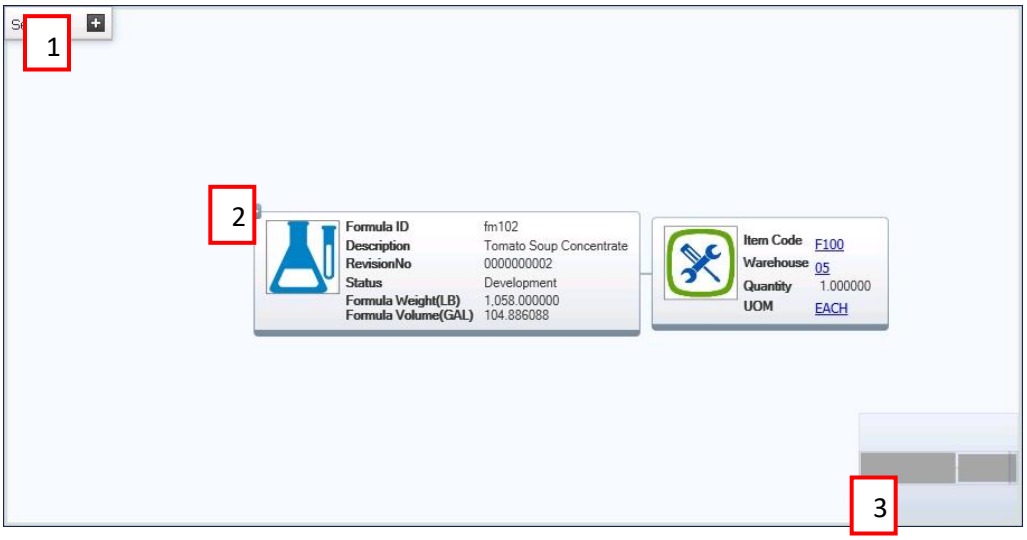


The *Settings* section (labeled '1' below) helps you customize the way in which the information is displayed**.** Click the **+** button to expand this section, or click the **–** button to close it.

Allow Tool Tips: View tool tips as you mouse over critical data on the relationship map.

Arrangement Strategy: The way you want to arrange information. Available options are *Orthogonal* and *Stagger*.

Flow Direction: The direction in which the entities containing information should be displayed. Available options are *Above*, *Below*, *Left*, and *Right*.

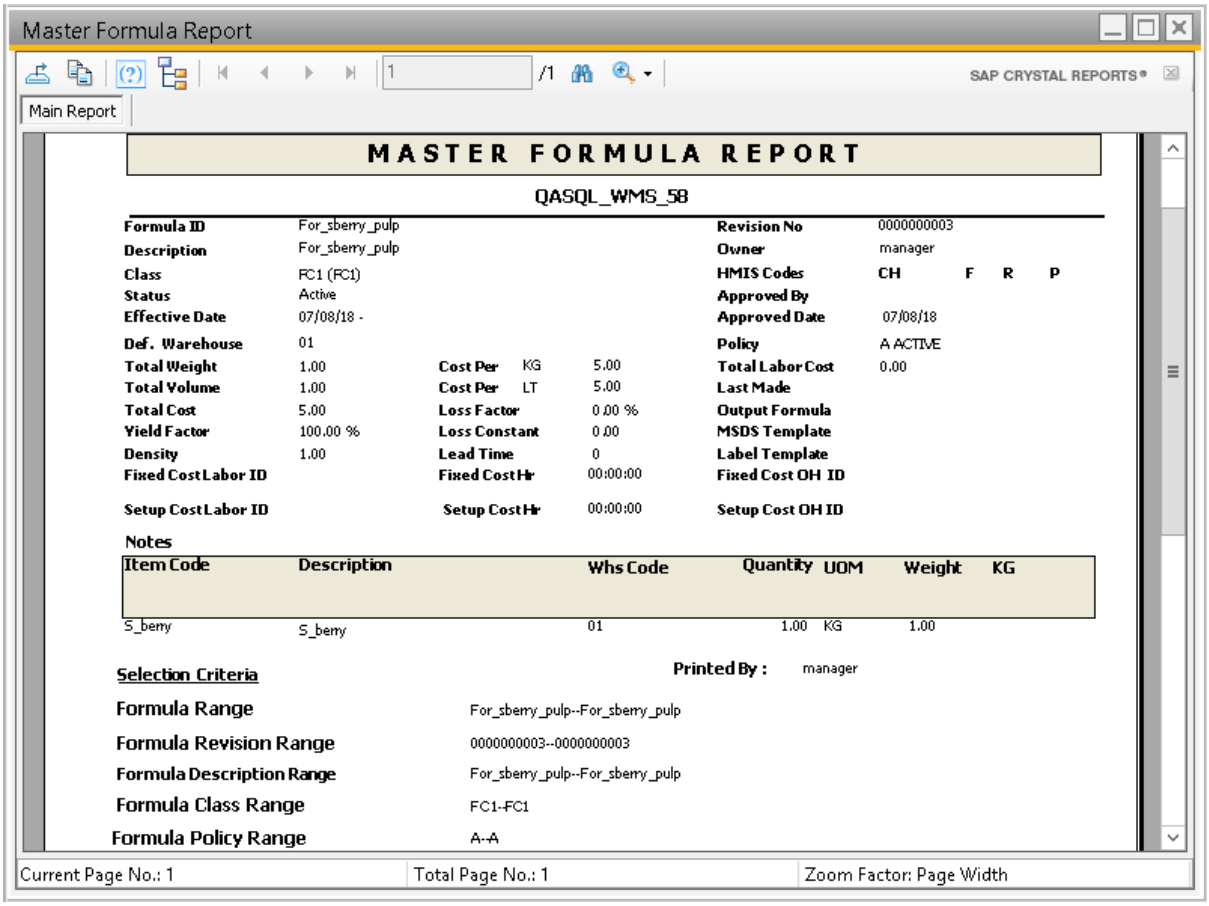


Click the +/- sign labeled '2' above to show the data associated with the formula in a separate entity. In the example above, we chose 'Formula Consumables' from the drop-down, so the consumable item is displayed. You can click on the Item Code and view the Item Master Record. You can also click on the FG Code and view the associated Item Master data.

The toolbar labeled '3' above is used to change the size of images displayed on the screen.

3.1.11.20 Print Master Formula Report

Using this option you can print the *Master Formula Report* to view complete details of a formula or a range of formulas.



4 MANUFACTURING INSTRUCTIONS

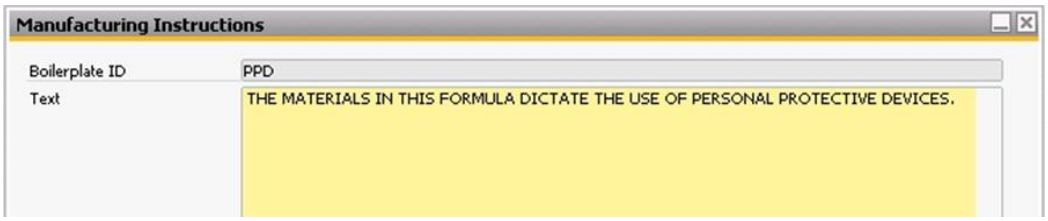
Boilerplates are standard manufacturing instructions for use in formulas. They are stored in a table, which means once they are defined, boilerplates can be inserted into formulas just by entering the Boilerplate ID.

If you have specific manufacturing instructions that you use in more than one formula, this option is how you should enter them, as opposed to 'literal text' instructions, which must be entered each time you use them in a formula. This saves time and reduces data entry errors. Note: These boilerplates are not the same as the boilerplates used in the *SDS Module*.

The boilerplate is treated as a line item in the formula, it is displayed among the ingredients in the sequence of operations, and it is printed on batch tickets in the *Production Module*.

Go To: Formulation → Manufacturing Instructions.

Press Ctrl + A to switch to 'Add' mode.



Boilerplate ID: A unique identification key, maximum of 20 alpha-numeric characters.

Text: The manufacturing instruction to be stored as boilerplate text.

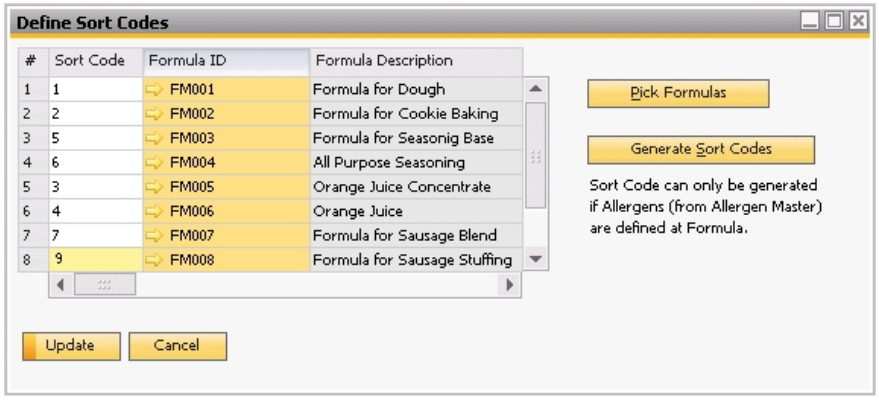
Add/Update: Click the *Add/Update* button to save the record.

Cancel: Click the *Cancel* button to close the screen without saving your changes.

5 DEFINE SORT CODES

BatchMaster ERP can limit batch scheduling based on process cell capacity. The sort code helps improve scheduling by allowing you to pick a range of formulas and apply sorting rules to them. This could be used to avoid contaminating different batches or to reduce set-up times between batches. If you have implemented the optional *Advanced Planning and Scheduling* (APS) function, the system would read the sort codes to automatically schedule batches.

Go To: Formulation → Define Sort Codes.



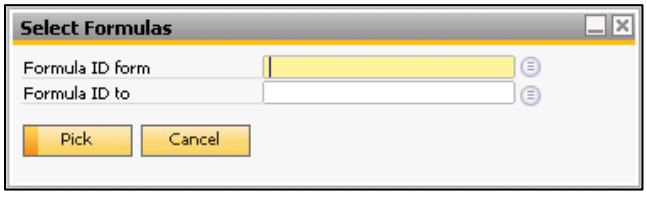
Sort Code: The suggested production sequence.

Formula ID: The identifier of the formula.

Formula Description: The description of the formula.

Allergens (not shown)**:** The allergens associated with the formula, if any.

Pick Formulas: Click the *Pick Formulas* button to go to the *Select Formulas* screen. You can use this screen to select formulas for sorting. Sort codes can only be applied to Active formulas.



Click the *Pick* button to select all the formulas within the range, along with any allergens associated with those formulas.

Generate Sort Code: Click the *Generate Sort Code* button to assign sort values to the selected formulas based on their allergens. If there are no allergens associated with a formula, you must manually assign the sort code. You can override a system-generated sort code if need be.

Update: Click the *Update* button to save your edits.

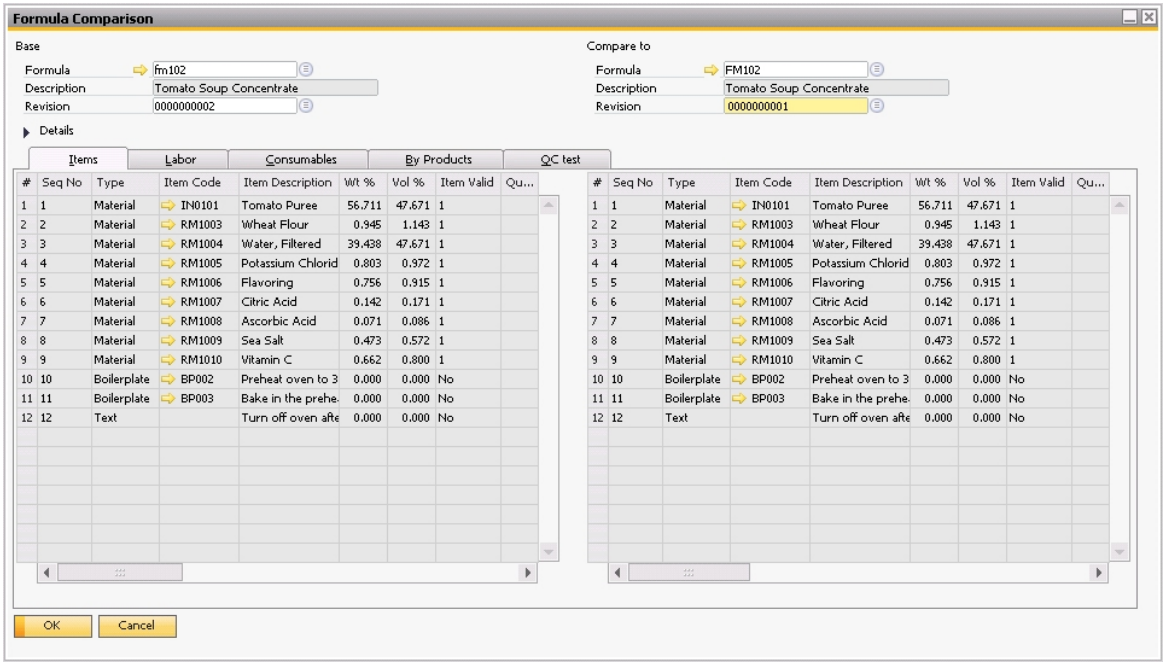
6 FORMULA UTILITIES

6.1 Formula Comparison

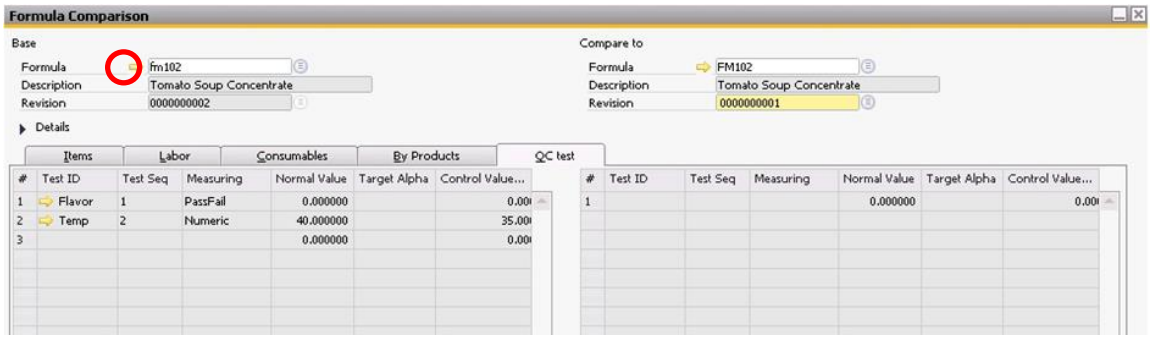
The *Formula Comparison* screen provides a method to compare two formulas. Data is displayed on tabs in the same way as in the *Formula Entry* screen.

Go To: Formulation → Formula Utilities → Formula Comparison.

Note that on some tabs two revisions of a formula may be identical:



But switching to another tab (i.e. Labor, Consumables, etc.) shows the differences between revisions:



No editing of formula data can be done from this screen, but clicking on the golden arrow will take you to the *Formula Entry* screen.

6.2 Material Substitution

The need for material substitution can be based on material quality, temporary shortages, engineering changes, and so forth. The system provides a utility to substitute a particular item with its alternate item in a single click. There is an option to select an additional material that must be present in the formula to trigger the substitution.

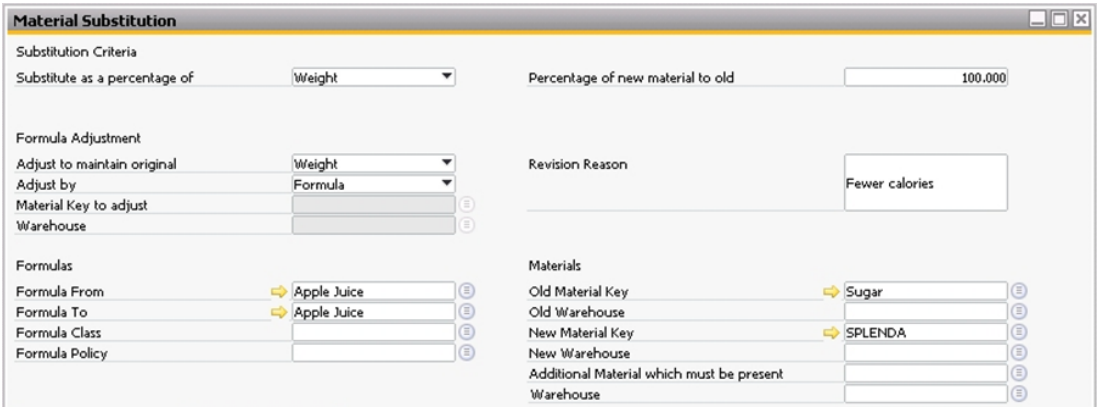
There are two ways to substitute a material:

- By weight percentage.
- By volume percentage.

Using the *Material Substitution* utility, you can establish the filter criteria including the required materials, specific warehouses, and formula characteristics.

Following a material substitution, a formula may be adjusted to maintain its size by either weight or volume. This adjustment can be made to one specific material in the formula or to the entire formula. You can also specify whether the substitution is to be done manually or automatically. After the substitution, each formula will be saved as a new revision with Development status. A report will be printed showing the results of each substitution.

Go To: Formulation → Formula Utilities → Material Substitution.



Substitution Criteria

Substitute as percentage of: Available options are *Weight* and *Volume*.

Percentage of new material to old: If the two materials are interchangeable without adjustment, enter 100. If the new material is twice as potent as the old, enter 50. If the new material is half as potent as the old, enter 200.

This is not a substitute for maintaining the 'loss factor' of the raw material in *Formula Entry.* If the new material has a different loss factor, that data must be manually changed after the substitution is completed.

Formula Adjustment

Adjust to maintain original: Specify whether to:

1. Maintain the original formula weight after the substitution.
2. Maintain the original formula volume after the substitution.
3. Not re-size the formula after substitution.

Revision Reason: The reason for the substitution. This will be copied to the new formula revision.

Adjust By: if you are keeping formula weight or volume intact, specify how to adjust the formula.

- ***Formula*:** After the new material is substituted, the entire formula will be resized to maintain the original weight or volume.
- ***Material*:** After the new material is substituted, only the material you enter here will be resized to maintain the original weight or volume. For example, let's say you are substituting more concentrated HCl and want to adjust the water in the formula to maintain the original weight.

Material Key to Adjust: The ID of the item (material) that will be adjusted to maintain the formula's weight or volume. This field is enabled only if the *Material* option is selected in the *Adjust by* field.

Warehouse: Enter the warehouse from which the substitute material is to be pulled. This field is enabled only if the *Material* option is selected in the *Adjust by* field.

Formulas

Formula From/To: The first and last *Formula ID* that will be affected by the material substitution. If this field is left blank, the system will start with the first formula that contains the material being substituted and end with the last one.

Formula Class: Enter a Class Value to restrict the substitution to that class.

Formula Policy: Enter a Policy Value to restrict the substitution to that policy.

Materials

Old Material Key: The material that will be replaced.

Old Warehouse (optional)**:** The warehouse of the 'old' raw material.

New Material Key: The new raw material ID.

New Warehouse (optional)**:** The warehouse of the 'new' raw material.

Additional Material Which Must Be Present (optional)**:** A raw material that must be present in a formula to qualify it for the substitution. For example, you may wish to only substitute in formulas that contain a specific catalyst.

Warehouse (optional)**:** The warehouse of the additional material.

Make Active/Send for Approval: If the approval procedure is not implemented for the formula undergoing substitution, the caption of this field is *Make Active*. You must check the *Make Active* box to make the formula active after the substitution. If the approval procedure is implemented, the caption is *Send for Approval*. Checking this option starts the approval process for the formula.

⚠ Selecting the *Make Active* checkbox to make the formula *Active* following material substitution is mandatory.

Get Records: Click the *Get Records* button to display in the lower grid the formulas that meet your selection criteria.

Select All/Unselect All: Click this button to select or de-select all records in the grid.

Grid

Select: Check the box corresponding to a material to select that item for material substitution. The details (Formula ID, description, etc.) default from the Formula Master table.

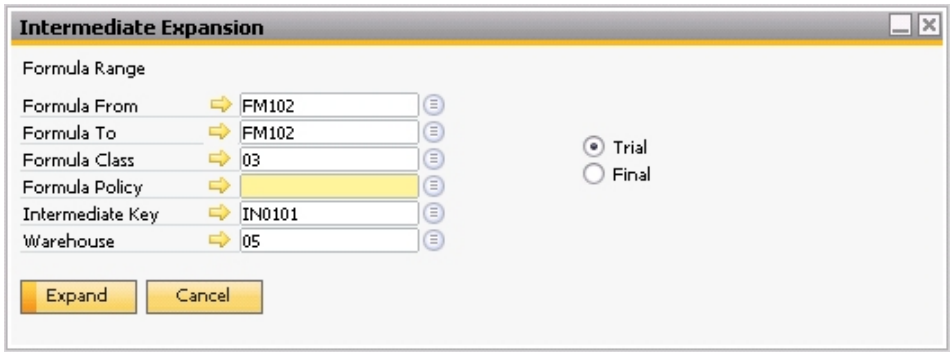
Make Substitution: Click the *Make Substitution* button to implement the material substitution.

Cancel: Click the *Cancel* button to close the screen without saving your changes.

6.3 Intermediate Expansion

To convert one or more formulas from multi-level to single level, use this utility. It will replace an Intermediate line item with the raw materials that are used to produce that intermediate. When an Active formula has been changed via this utility, the previous version is saved in the formula history. If a Development formula is changed via this utility, no new revision is saved but data is written to the *Change Log* file. (See *Tools* → *BMM Change Log* on the top toolbar.)

Go To: Formulation → Formula Utilities → Intermediate Expansion.



Formula From and **Formula To:** Enter the ID(s) of the formula(s) whose intermediate line item is to be expanded. You must clearly specify which formulas are to be acted upon, otherwise the system will expand the intermediate in all the formulas in which it is found.

- To expand in only one formula, enter that formula ID in both the *From* and *To* fields.
- Otherwise, enter a range of formula IDs, with the first (lowest) ID in the *From* field and the last (highest) in the *To* field.

Formula Class and **Formula Policy:** As an alternative (or in addition to the *From* and *To* fields) you can enter a Formula Class and/or Formula Policy ID. If you do so, only formulas that match that value and meet any From/To criteria you enter will be processed.

Intermediate Key: The intermediate which is to be expanded in the specified formula or range of formulas. This is the only field that is mandatory on this screen.

Warehouse: The warehouse associated with the intermediate material key.

Mode of Expansion: Select the Mode of Expansion by clicking either the *Trial* button or the *Final* button. If the Trial mode is chosen, a report will be printed showing the new formula structure. The actual expansion takes place only when the Final mode is selected.

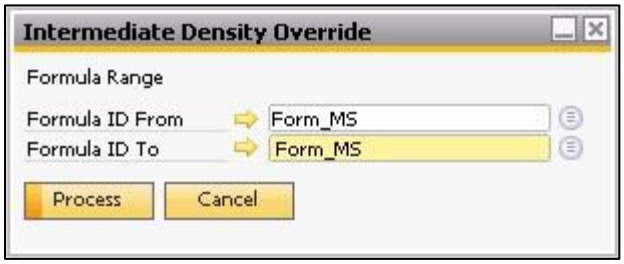
Expand: Click the *Expand* button to display the expanded view of the formula. A report is generated listing the formula(s) that satisfy the filter criteria.

Cancel: Click the *Cancel* button to close the screen without saving your changes.

6.4 Intermediate Density Override

The Intermediate Density Override utility helps you ensure that for an intermediate item, the conversion factors from Stock UOM to the System Weight UOM or to the System Volume UOM are consistent with the rolled-up densities of all material items in the formula. This also ensures that the Fill Level of the associated BOM is the quantity of the material that should be filled to make one stock unit of the end item. If there are any discrepancies, the item level conversion factors (from Stock UOM to the System Weight UOM or to the System Volume UOM) are updated.

Go To: Formulation → Formula Utilities → Intermediate Density Override.



Formula ID From and To: The formula or range of formulas. Leaving the *Formula Range* field blank means the system will search through all of the available formulas.

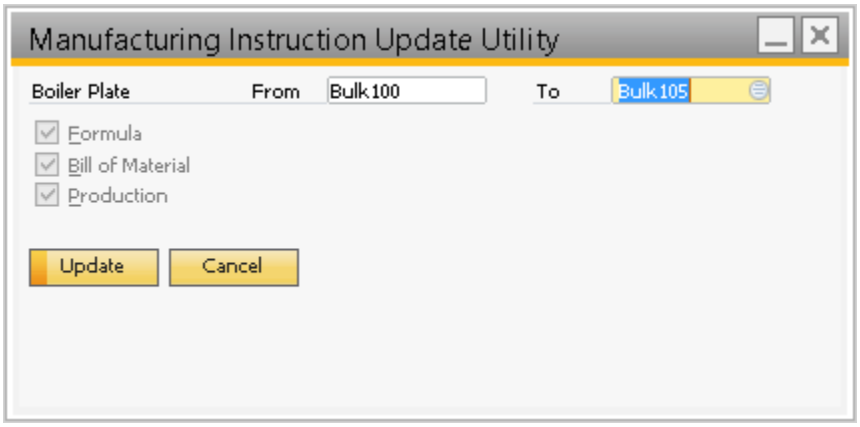
Process: Click the *Process* button to implement the density override. A report of the formulas satisfying the filter criteria will be generated.

Cancel: Click the *Cancel* button to close the screen without implementing the density override.

6.5 Manufacturing Instruction Update Utility

Using the *Manufacturing Instruction Update Utility* you can update modified manufacturing instruction text on Formula/BOM/Production screens.

Go To: Formulation → Formula Utilities → Manufacturing Instruction Update Utility



Boiler Plate From and To: A Boilerplate or a range of Boilerplates. Leaving the *Boiler Plate Range* field blank means the system will search through all of the available Boilerplates.

Update: Click the *Update* button to update the modified manufacturing instructions on the Formula, Bill of Material and Production screens.

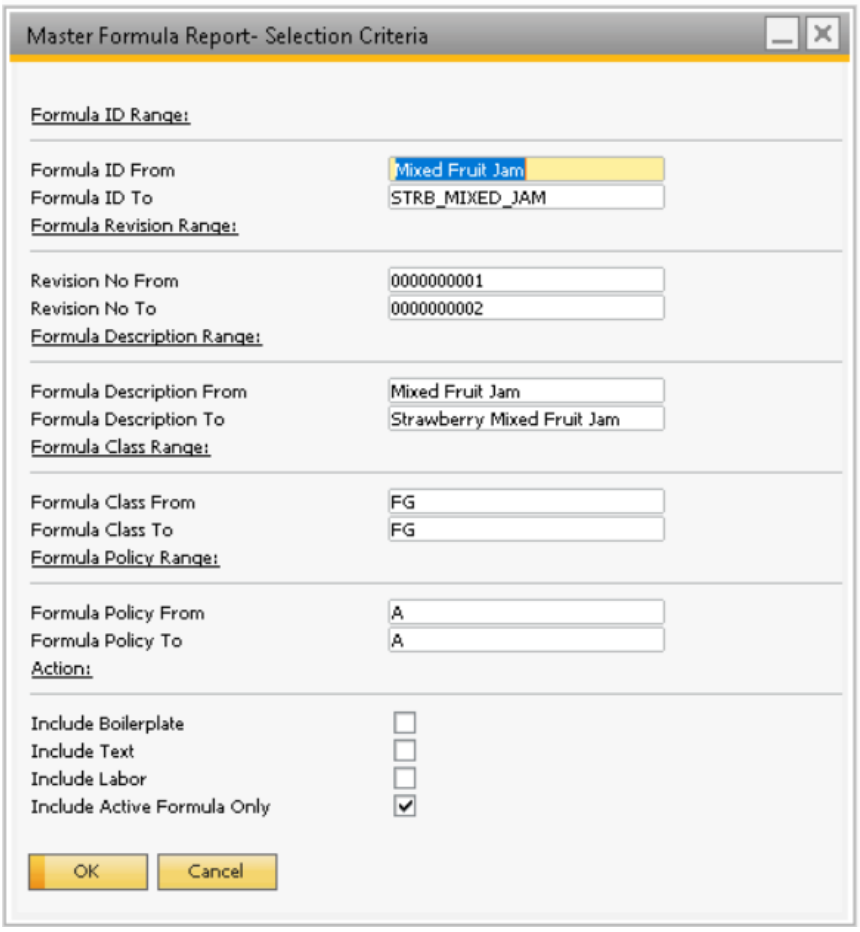
Cancel: Click the Cancel button to close the screen without saving changes.

7 FORMULA REPORTS

7.1 Master Formula Report

The *Master Formula Report* screen allows you to generate a detailed report showing all aspects of a formula or a range of formulas. Additionally, you can specify whether the report should contain literal text, boilerplate and active formula information.

Go To: Production → Production Reports → Formulation Report → Master Formula Report.



Formula ID Range

Formula ID From: The lower limit of a range of formulas for which data will be filtered and displayed in the report. Leaving this field blank has the same effect as selecting the first available formula in the database.

Formula ID To: The upper limit of a range of formulas for which data will be filtered and displayed in the report. Leaving this field blank has the same effect as selecting the last available formula in the database.

Formula Revision Range

Revision No From: The lower limit of a range of formula revision numbers for which data will be filtered and displayed in the report. Leaving this field blank has the same effect as selecting the first available formula revision in the database.

Revision No To: The upper limit of a range of formula revision numbers for which data will be filtered and displayed in the report. Leaving this field blank has the same effect as selecting the last available formula revision in the database.

Formula Description Range

Description From: The lower limit of a range of descriptions pertaining to formulas for which data will be filtered and displayed in the report. Leaving this field blank has the same effect as selecting the first available formula description in the database.

Description To: The upper limit of a range of descriptions pertaining to formulas for which data will be filtered and displayed in the report. Leaving this field blank has the same effect as selecting the last available formula description in the database.

Formula Class Range

Class From: The lower limit of a range of formula classes pertaining to formulas for which data will be filtered and displayed in the report. Leaving this field blank has the same effect as selecting the first available formula class in the database.

Class To: The upper limit of a range of formula classes pertaining to formulas for which data will be filtered and displayed in the report. Leaving this field blank has the same effect as selecting the last available formula class in the database.

Formula Policy Range

Policy From: The lower limit of a range of formula policies pertaining to formulas for which data will be filtered and displayed in the report. Leaving this field blank has the same effect as selecting the first available formula policy in the database.

Policy To: The upper limit of a range of formula policies pertaining to formulas for which data will be filtered and displayed in the report. Leaving this field blank has the same effect as selecting the last available formula policy in the database.

Action

Include Boilerplates: Specify whether or not to include boilerplates in the report.

Include Labor: Specify whether or not to include labor details in the report.

Include Text: Specify whether or not to include text, such as manufacturing instructions, in the report.

Include Active Formula Only: Specify whether or not to include active formula, in the report.

Print: Click the *Print* button to generate the report.

Cancel: Click the *Cancel* button to close the screen without generating the report.

7.1.1 Generating a Master Formula Report

1. Use the lookups next to the *Formula From* and *Formula To* fields to enter the lower and upper limits, respectively, of the range of formulas for which data will be filtered and displayed in the report.

2. Use the lookups next to the *Revision From* and *Revision To* fields to enter the lower and upper limits, respectively, of the range of formula revisions for which data will be filtered and displayed in the report.

3. Use the lookups next to the *Description From* and *Description To* fields to enter the lower and upper limits, respectively, of the range of formula descriptions pertaining to formulas for which data will be filtered and displayed in the report.

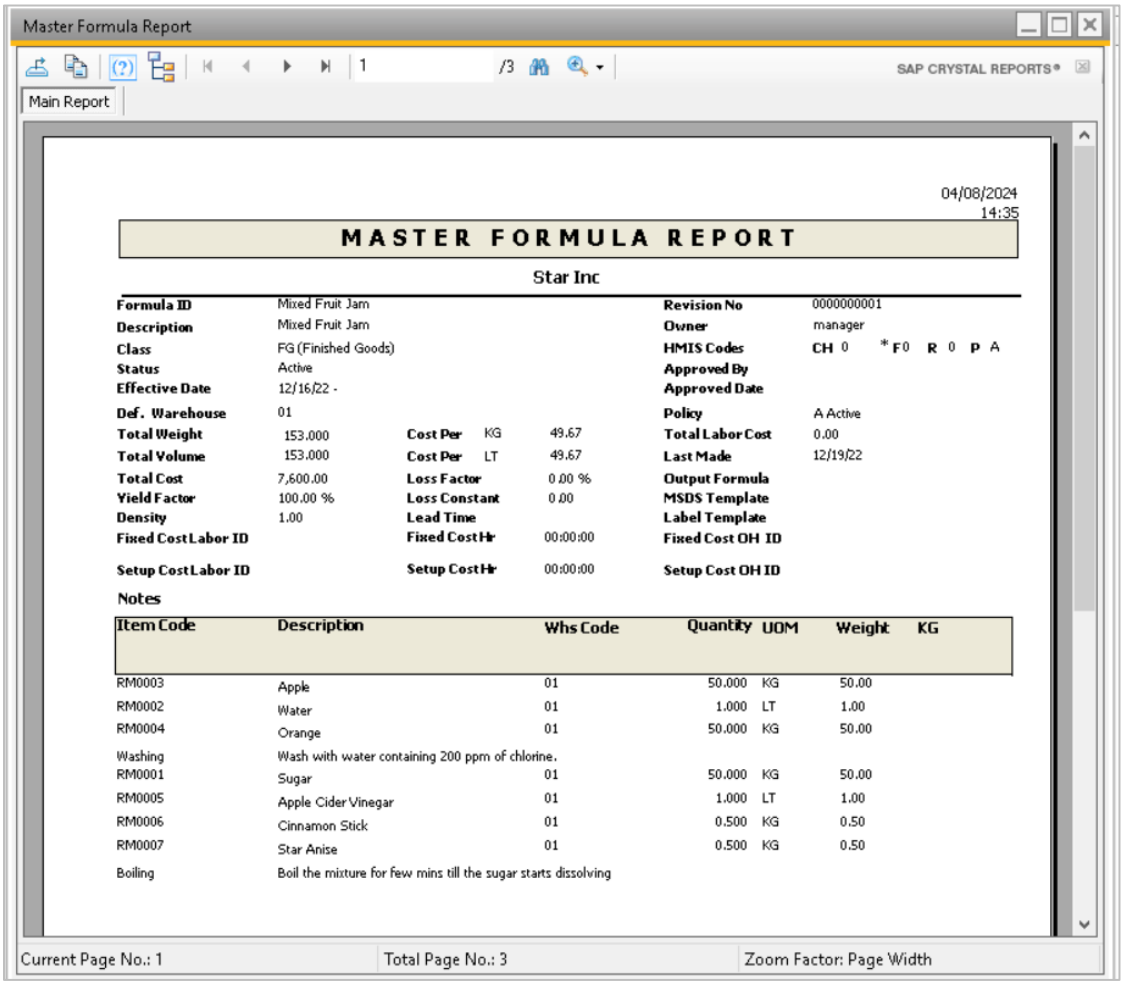
4. Use the lookups next to the *Class From* and *Class To* fields to enter the lower and upper limits, respectively, of the range of formula classes pertaining to formulas for which data will be filtered and displayed in the report.

5. Use the lookups next to the *Policy From* and *Policy To* fields to enter the lower and upper limits, respectively, of the range of formula policies pertaining to formulas for which data will be filtered and displayed in the report.

6. Select the *Include Boilerplates, Include Labor, Include Text and Include Active Formula Only* checkboxes to display boilerplates, labor details, text information (manufacturing instruction or notes) and include active formula, respectively, in the report.

7. Click the *Print* button to generate the report.

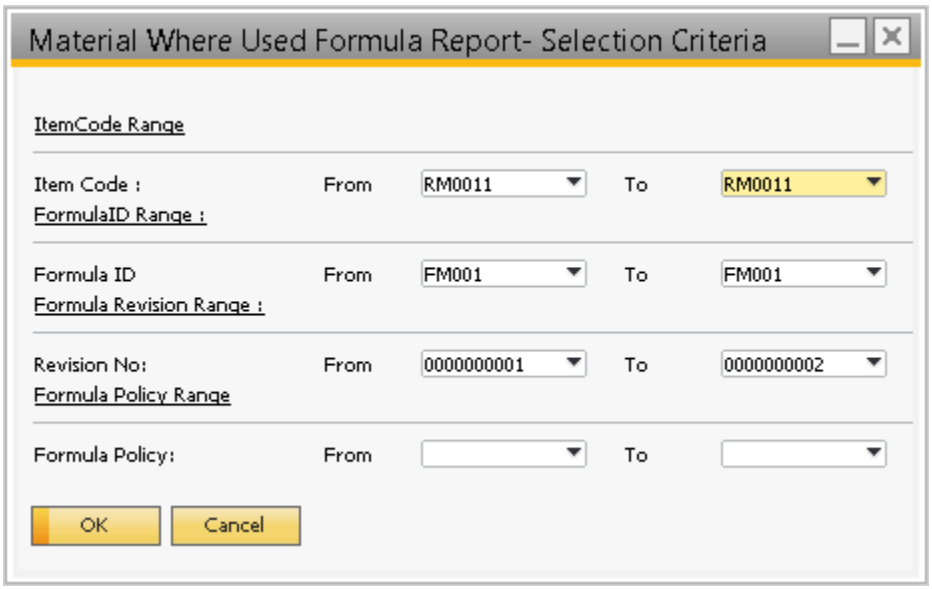
An example of a generated Master Formula Report is presented below.



7.2 Material Where Used Formula Report

From the *Material Where Used Formula Report* screen you can generate a report that displays the formulas in which a specific material or a range of materials is used. This report is especially useful for costing, auditing, or regulatory purposes. It also allows you to examine usage of a single material or evaluate the potential impact of changing materials in a formula.

Go To: Production → Production Reports → Formulation Report → Material Where Used Formula Report.



Item Code Range

Item Code From: The lower limit of the range of items which should be displayed in the report. Leaving this field blank has the same effect as selecting the first available item in the database.

Item Code To: The upper limit of the range of items which should be displayed in the report. Leaving this field blank has the same effect as selecting the last available item in the database.

Formula ID Range

Formula ID From: The lower limit of the range of formulas for which data will be filtered and displayed in the report. Leaving this field blank has the same effect as selecting the first available formula in the database.

Formula ID To: The upper limit of the range of formulas for which data will be filtered and displayed in the report. Leaving this field blank has the same effect as selecting the last available formula in the database.

Formula Revision Range

Revision From: The lower limit of the range of formula revisions that use the selected range of items. Leaving this field blank has the same effect as selecting the first available formula revision.

Revision To: The upper limit of the range of formula revisions that use the selected range of items. Leaving this field blank has the same effect as selecting the last available formula revision.

Formula Policy Range

Policy From: The lower limit of the range of formula policies which can be used to filter formulas that use the selected range of items. Leaving this field blank has the same effect as selecting the first available formula policy.

Policy To: The upper limit of the range of formula policies which can be used to filter formulas that use the selected range of items. Leaving this field blank has the same effect as selecting the last available formula policy.

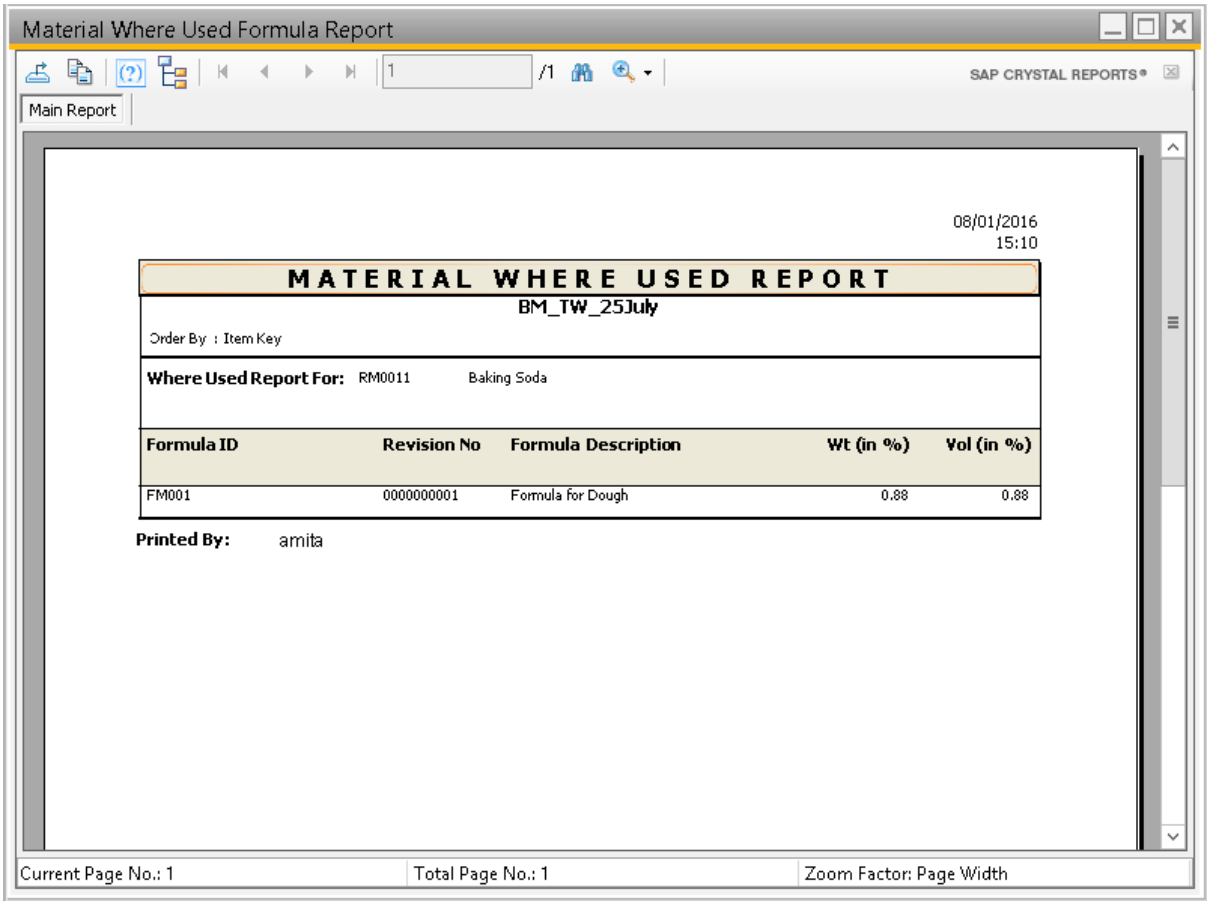
Print: Click the *Print* button to generate the report.

Cancel: Click the *Cancel* button to close the screen without generating the report.

7.2.1 Generating a Material Where Used Formula Report

1. Use the lookups next to the *Item Code From* and *Item Code To* fields to enter the lower and upper limits, respectively, of the range of items to be filtered and displayed on the report.
2. Use the lookups next to the *Formula From* and *Formula To* fields to enter the lower and upper limits, respectively, of the range of formulas to be filtered and displayed on the report.
3. Use the lookups next to the *Revision From* and *Revision To* fields to enter the lower and upper limits, respectively, of the range of formula revisions to be filtered and displayed on the report.
4. Use the lookups next to the *Formula Policy From* and *Formula Policy To* fields to enter the lower and upper limits, respectively, of the range of formula policies pertaining to formulas to be filtered and displayed on the report.
5. Click the *Print* button to generate the report.

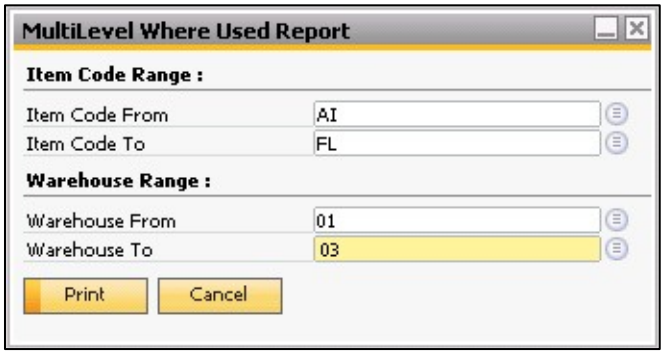
An example of a generated *Material Where Used Formula Report* is provided below.



7.3 MultiLevel Where Used Report

From the *Multi-Level Where Used Report* screen you can generate a report displaying the formulas and formula components where a material or a range of materials is used. This report is useful in resolving material-related issues and in meeting regulatory requirements, auditing needs, or other issues involving the use of a specific material. You can choose whether to include in-house or purchased intermediates in the report.

Go To: Formulation → Formula Reports → Multi-Level Where Used Report.



Item Code Range:

Item Code From: The lower limit of the range of items (found in formulas and formula components) that should be filtered and displayed in the report. Leaving this field blank has the same effect as selecting the first available item.

Item Code To: The upper limit of the range of items (found in formulas and formula components) that should be filtered and displayed in the report. Leaving this field blank has the same effect as selecting the last available item.

Warehouse Range:

Warehouse From: The lower limit of the range of warehouses for items (found in formulas and formula components) that should be filtered and displayed in the report. Leaving this field blank has the same effect as selecting the first available warehouse value.

Warehouse To: The upper limit of the range of warehouses for items (found in formulas and formula components) that should be filtered and displayed in the report. Leaving this field blank has the same effect as selecting the last available warehouse value.

Print: Click the *Print* button to generate the report.

Cancel: Click the *Cancel* button to close the screen without generating a report.

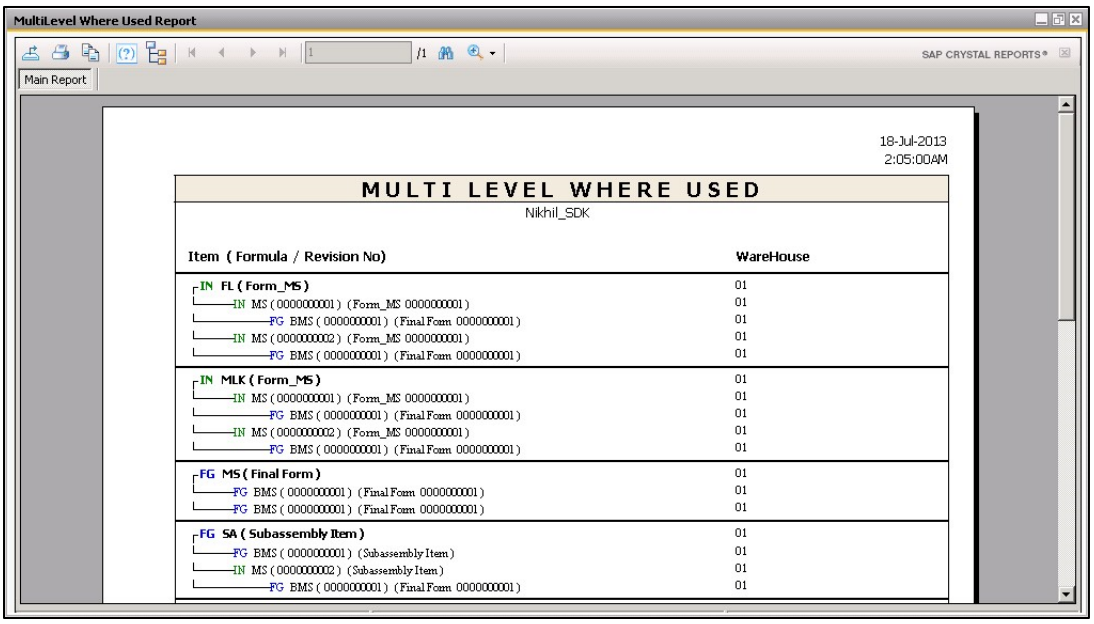
7.3.1 Generating a MultiLevel Where Used Report

1. Use the lookups next to the *Item Code From* and *Item Code To* fields to enter the lower and upper limits, respectively, of the range of items (found in formulas and formula components) that should be filtered and displayed in the report.

2. Use the lookups next to the *Warehouse From* and *Warehouse To* fields to enter the lower and upper limits, respectively, of the range of warehouses for items (found in formulas and formula components) that should be filtered and displayed in the report.

3. Click the *Print* button to generate the report.

An example of a generated *MultiLevel Where Used Report* is provided below.

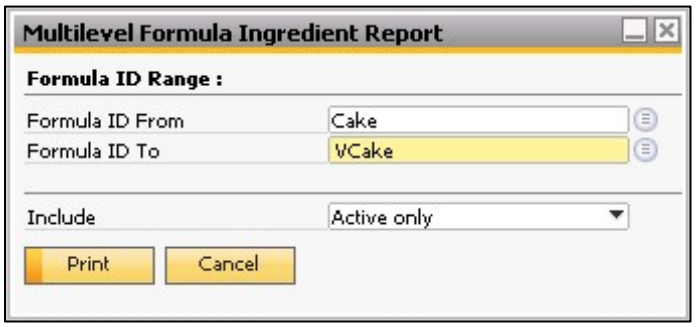


7.4 MultiLevel Formula Ingredient Report

You can use the *MultiLevel Formula Ingredient Report* screen to generate a report showing all the ingredients used in a formula or a range of formulas. Raw materials and the raw materials in an intermediate contained in the formula or a range of formulas can be viewed in this report.

This screen is helpful when you need to make a decision about the ingredients used in a formula. When the ingredient is part of an intermediate, BatchMaster also indicates the relative level of the ingredient in comparison to the top level of the formula.

Go To: Formulation → Formula Reports → Multi-Level Formula Ingredient Report.



Formula ID Range:

Formula ID From: The lower limit of the range of formulas with ingredients that should be displayed in the report. Leaving this field blank has the same effect as selecting the first available formula.

Formula ID To: The upper limit of the range of formulas with ingredients that should be displayed in the report. Leaving this field blank has the same effect as selecting the last available formula.

Include: The status of formulas with ingredients that should be displayed on the report.

Print: Click the *Print* button to generate the report.

Cancel: Click the *Cancel* button to close the screen without generating the report.

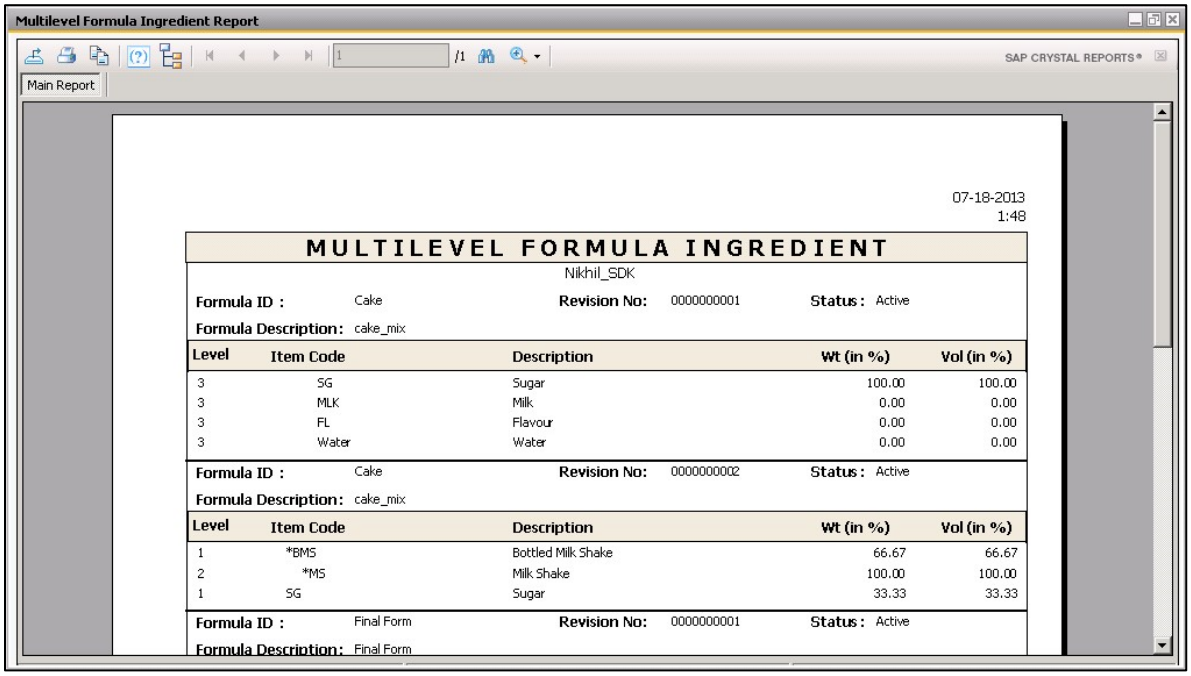
7.4.1 Generating a MultiLevel Formula Ingredient Report

1. Use the lookups next to the *Formula From* and *Formula To* fields to enter the lower and upper limits, respectively, of the range of formulas for which ingredients should be displayed on the report.

2. In the *Include* field, specify the status of formulas with ingredients that should be displayed on the report.

3. Click the *Print* button to generate the report.

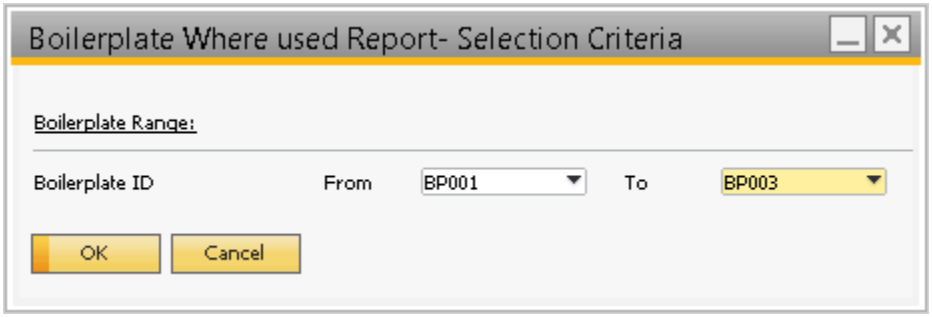
An example of a generated *MultiLevel Formula Ingredient Report* is provided below.



7.5 Boilerplate Where Used Report

The *Boilerplate Where Used Report* screen generates a report that lists the formulas that use a specific boilerplate or a range of boilerplates.

Go To: Production → Production Reports → Formulation Report → Boilerplate Where Used Report.



Boilerplate Id From: The lower limit of the range of boilerplates used in formulas that should be filtered and displayed in the report. Leaving this field blank has the same effect as selecting the first available boilerplate.

Boilerplate Id To: The upper limit of the range of boilerplates used in formulas that should be filtered and displayed in the report. Leaving this field blank has the same effect as selecting the last available boilerplate.

Print: Click the *Print* button to generate the report.

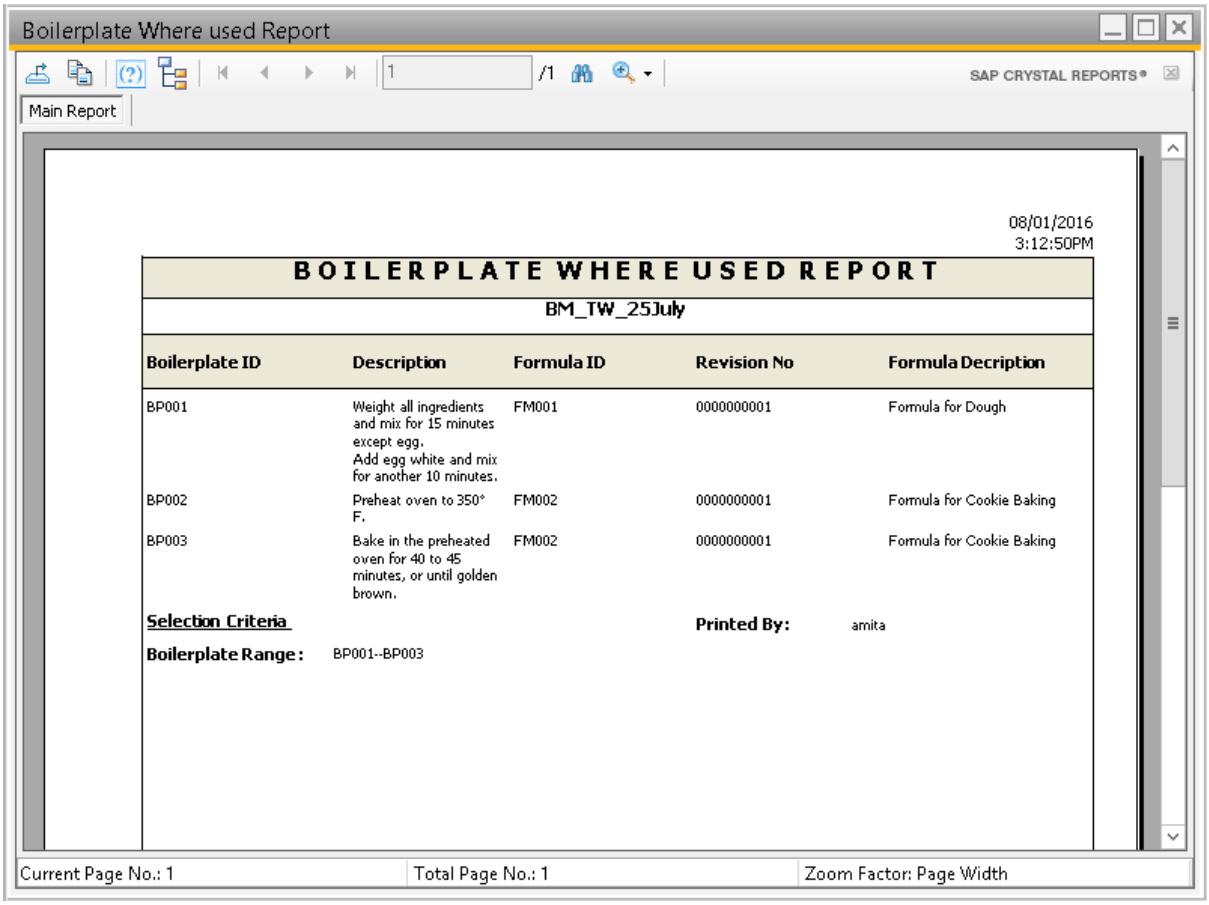
Cancel: Click the *Cancel* button to close the screen without generating the report.

7.5.1 Generating a Boilerplate Where Used Report

1. Use the lookups next to the *Boilerplate From* and *Boilerplate To* fields to enter the lower and upper limits, respectively, of the range of boilerplates used in formulas that should be displayed in the report.

2. Click the *Print* button to generate the report.

An example of a generated *Boilerplate Where Used Report* is provided below.



7.6 INCI Report

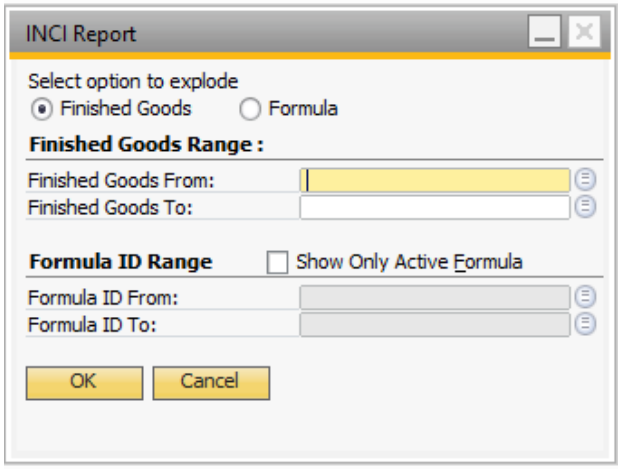
INCI stands for International Nomenclature of Cosmetic Ingredients. Basically, the INCI is a system for naming cosmetic ingredients that is multilingual, multinational, and based on the Latin language. It is a nomenclature based on international lists of ingredients known and used by pharmacists, and scientists worldwide.

INCI Report provides a way to generate a report showing the ingredient's nomenclature statement used within the formula. The report displays the INCI name and EINCIS Number for the CAS number being defined within the formula. This is required for compliance issues, especially for compliance with Bio-Terrorism Act. It displays the aggregate the quantity % of each INCI item used in the finished product, including sub-assemblies and their respective Formula items and quantity.

For consumer safety, certain accurate information is a requirement to appear on labels of products such as Food, Drugs or cosmetics, etc. For example, the ingredients are listed on the ingredient declaration for the purchaser to reduce the risk of an allergic reaction to an ingredient the user has had an allergy to before. INCI names are mandated on the ingredient statement of every consumer personal care product. The INCI system allows the consumer to identify the ingredient content.

The report is accessible by authorized users of SAP Business One and is available for viewing and printing in both PDF and Excel formats.

Go To: Formulation → Formula Reports → INCI Report



Select option to explode:

You can select any one option to generate the INCI Report. The system will enable the fields based on the selection made to this field. The report explodes the Formula at multi-level for finished goods

including explosion for Purchase Intermediate. For each finished product, it displays all the Formula items and their corresponding quantity, including sub-assemblies and Formula items and its quantity.

- **Finished Goods:** When this option is selected, only the *Formula* fields will be enabled.
- **Formula:** When this option is selected, only the *Formula* fields will be enabled.

Finished Goods Range:

Show Only Active Formulas: When this option is selected, the *Formula From and To* fields lookup will list only *Active* status finished goods only.

Finished Goods From: The lower limit of a range of Finished Goods for which data will be filtered and displayed in the report. Leaving this field blank has the same effect as selecting the first available Finished Goods in the database.

Finished Goods To: The upper limit of a range of Finished Goods for which data will be filtered and displayed in the report. Leaving this field blank has the same effect as selecting the last available Finished Goods in the database.

Formula ID Range:

When the Formula option is selected, the Formula ID From/To lookups obtains the formula revision with Active, Development, and Experimental status and are considered having latest revision only.

Say, for example, we have 4 formula statuses, the system will considering the latest revision and have one of the statuses from *Active*/*Development*/*Experimental*.

Revision Number	Formula Status	Decision for consideration in *Formula ID From/To* lookup	Reason for Considering/Discarding a revision for the *Formula ID From/To* lookup.

1.	Development	Discarded	Old Revision with *Active* status
2.	**Active**	**Considered**	**Latest Revision with Active status.**
3.	Pending	Discarded	Only *Active/Development/ Experimental* Status is Considered. This is an old revision.
4.	Obsolete	Discarded	Only *Active/Development/ Experimental* Status is Considered. This is the latest revision but having *Obsolete* status is not considered.

Formula ID From: The lower limit of a range of formulas for which data will be filtered and displayed in the report. Leaving this field blank has the same effect as selecting the first available formula in the database.

Formula ID To: The upper limit of a range of formulas for which data will be filtered and displayed in the report. Leaving this field blank has the same effect as selecting the last available formula in the database.

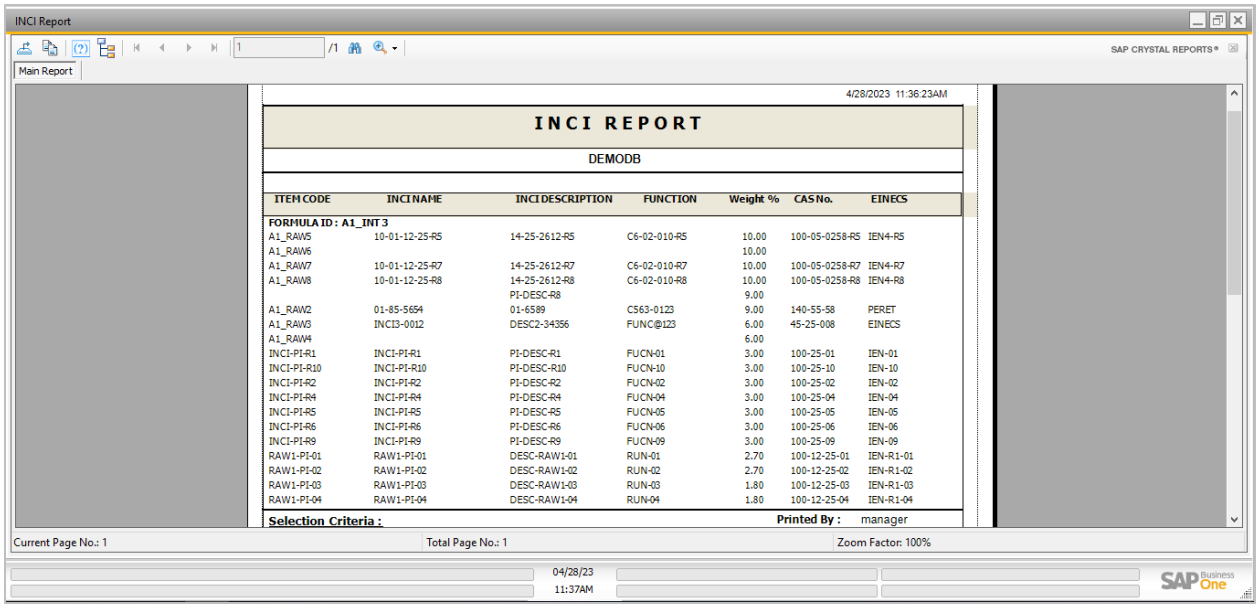
Ok: Click the Ok button to generate the report.

Cancel: Click the *Cancel* button to close the screen without generating the report.

7.6.1 Generating a INCI Report

1. Use the lookups next to the *Formula ID From* and *Formula ID To* fields to enter the lower and upper limits, respectively, of the range of formulas for which data will be filtered and displayed in the report.
2. Use the lookups next to the *Finished Goods From* and *Finished Goods To* fields to enter the lower and upper limits, respectively, of the range of *Finished Goods* for which data will be filtered and displayed in the report.
3. Click the *Print* button to generate the report.

An example of a generated *INCI Report* is displayed below:


INCI Report
Main Report
SAP CRYSTAL REPORTS®
4/28/2023 11:36:23AM
INCI REPORT
DEMODB
ITEM CODE INCI NAME INCI DESCRIPTION FUNCTION Weight % CAS No. EINECS
FORMULA ID : A1_INT 3
A1_RAW5 10-01-12-25-R5 14-25-2612-R5 C6-02-010-R5 10.00 100-05-0258-R5 IEN4-R5
A1_RAW6 10.00
A1_RAW7 10-01-12-25-R7 14-25-2612-R7 C6-02-010-R7 10.00 100-05-0258-R7 IEN4-R7
A1_RAW8 10-01-12-25-R8 14-25-2612-R8 C6-02-010-R8 10.00 100-05-0258-R8 IEN4-R8
PI-DESC-R8 9.00
A1_RAW2 01-85-5654 01-6589 C563-0123 9.00 140-55-58 PERET
A1_RAW3 INCI3-0012 DESC2-34356 FUNC@123 6.00 45-25-008 EINECS
A1_RAW4 6.00
INCI-PI-R1 INCI-PI-R1 PI-DESC-R1 FUCN-01 3.00 100-25-01 IEN-01
INCI-PI-R10 INCI-PI-R10 PI-DESC-R10 FUCN-10 3.00 100-25-10 IEN-10
INCI-PI-R2 INCI-PI-R2 PI-DESC-R2 FUCN-02 3.00 100-25-02 IEN-02
INCI-PI-R4 INCI-PI-R4 PI-DESC-R4 FUCN-04 3.00 100-25-04 IEN-04
INCI-PI-R5 INCI-PI-R5 PI-DESC-R5 FUCN-05 3.00 100-25-05 IEN-05
INCI-PI-R6 INCI-PI-R6 PI-DESC-R6 FUCN-06 3.00 100-25-06 IEN-06
INCI-PI-R9 INCI-PI-R9 PI-DESC-R9 FUCN-09 3.00 100-25-09 IEN-09
RAW1-PI-01 RAW1-PI-01 DESC-RAW1-01 RUN-01 2.70 100-12-25-01 IEN-R1-01
RAW1-PI-02 RAW1-PI-02 DESC-RAW1-02 RUN-02 2.70 100-12-25-02 IEN-R1-02
RAW1-PI-03 RAW1-PI-03 DESC-RAW1-03 RUN-03 1.80 100-12-25-03 IEN-R1-03
RAW1-PI-04 RAW1-PI-04 DESC-RAW1-04 RUN-04 1.80 100-12-25-04 IEN-R1-04
Selection Criteria :
Printed By : manager
Current Page No.: 1
Total Page No.: 1
Zoom Factor: 100%
04/28/23
11:37AM
SAP Business One

8 GLOSSARY

Term	Definition
Boilerplate	A text that can be used repeatedly in a new entity, such as context and screen.
BOM	(Bill of Material) A list or discrete parts or components such as raw materials, intermediate assemblies, and containers that make up a finished good.
By-product	A resultant product of a manufacturing process which is not the intended outcome. By-products can be sold for a cost or used in another process.
Density	A physical parameter that measures how compact a substance is. Density is calculated in terms of mass per unit volume.
Finished Good	An item that results at the end of a manufacturing process but has not yet been sold.
Formula	A list of ingredients, their proportions, and instructions for making a product.
Formula Class	A set of accounting information that is common to a group of formulas.
HMIS	(Hazardous Materials Identification System) A rating system used to identify the hazard level of a material using color codes.
Intermediate Expansion	The process of substituting an intermediate used in a formula with its ingredients.
Intermediate Good	A bulk item or substance that is the product in a production process, which is then used as an ingredient in the manufacture of another product.
Item Type	A parameter that allows you to classify an item as a raw material, an intermediate, or a finished good.
Overhead	A term used to indicate indirect costs involved in manufacturing a product, such as management and office staff salaries.
Process Cell	A location with one or more machines that acts a work center for laborers to manufacture a product.
Raw Material	A substance in its natural or un-processed state that is used to manufacture a good.
Setup Cost	Cost involved in preparing the machinery and location for a manufacturing process, such as the cost involved in cleaning the machinery.

Term	Definition
Variable Costs	A term used to indicate costs that vary with the quantity of goods manufactured, such as labor cost.
WIP Account	(Work In Progress) An accounting term used to indicate costs involved in the manufacturing process, such as raw material costs, labor costs, and overhead costs.

9 INDEX