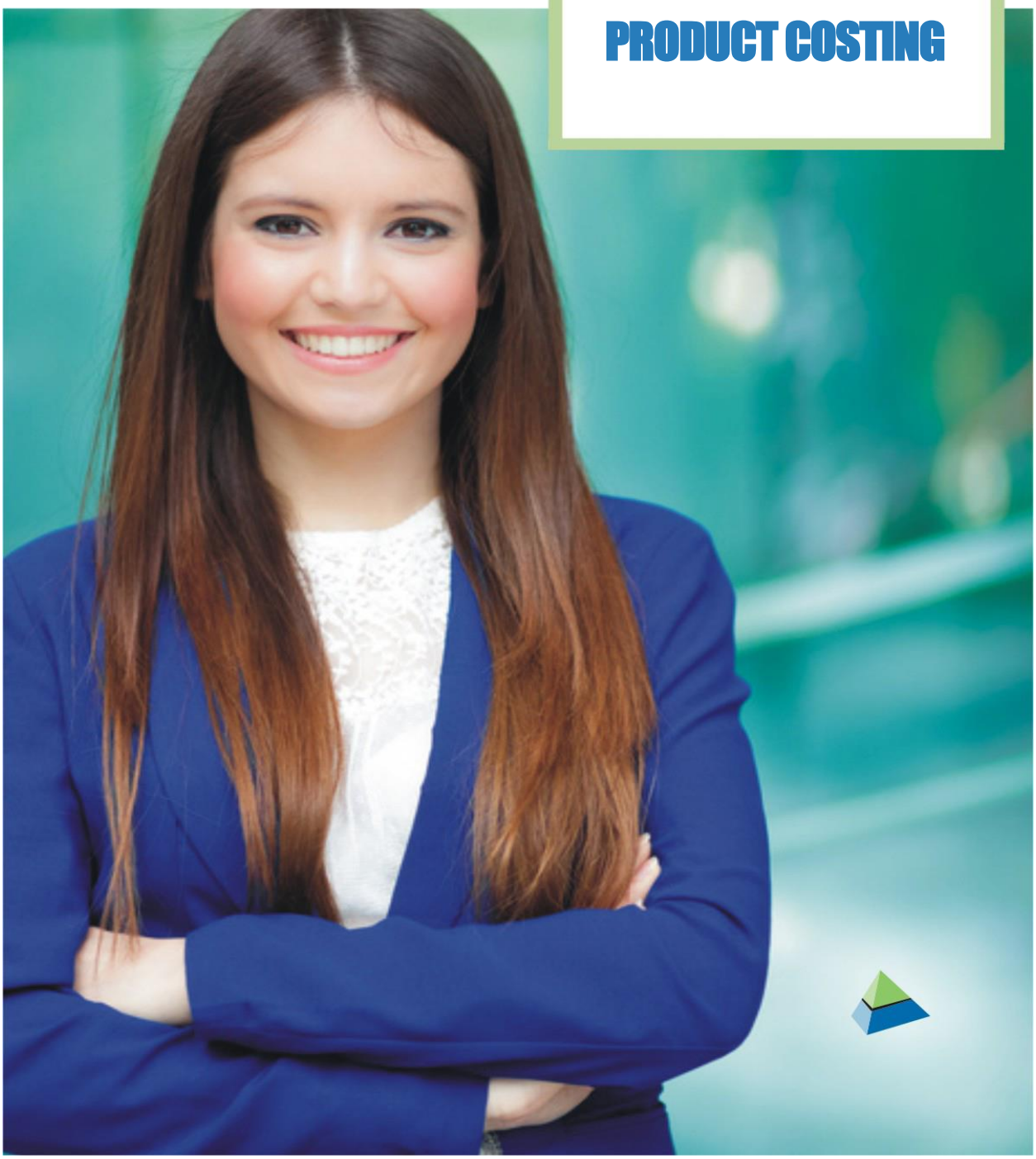
BATCHMASTER® ERP 18.2

User Guide

BatchMaster ERP with SAP Business One

BatchMaster Solutions
for Process Manufacturers

PRODUCT COSTING



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")	Reference Document

Abbreviation	Description
BOM	Bill of Materials
CFL	Choose From List
COA	Certificate of Analysis
ERP	Enterprise Resource Planning
FG	Finished Good
HMIS	Hazardous Material Information System
ID	Identification
Max.	Maximum
MPS	Material Planning Sheet
MRP	Material Resource Planning
O/H	Overhead
QC	Quality Control
SDS	Safety Data Sheet
Seq.	Sequence
UOM	Unit of Measurement
Vol.	Volume
WIP	Work in Progress
Wt.	Weight

Contents

1 DOCUMENT OVERVIEW 5

1.1 WHAT IS THIS DOCUMENT ALL ABOUT? 5
1.2 WHO SHOULD READ THIS DOCUMENT? 6
1.3 OBJECTIVES 6
1.4 WHAT'S NEW IN THIS RELEASE? 6

2 PRODUCT COSTING SETUP 7

2.1 COSTING DEFAULTS 7
2.1.1 General Tab 8
2.1.2 Cost Tab 9
2.1.3 Navigation Tab 15
2.2 LABOR/ADDITIONAL COST 16
2.3 OVERHEAD COST 17

3 PRODUCT COSTING 18

3.1 PRODUCT COST ANALYSIS 18
3.1.1 Header Information 19
3.1.2 Items Tab 22
3.1.3 Labor Tab 25
3.1.4 Consumables Tab 26
3.1.5 By Products Tab 28
3.1.6 Revision Tab 29
3.1.7 QC Test Tab 35
3.1.8 Analysis Tab 37
3.1.9 Attributes Tab 49
3.1.10 Allergens/Ingredients Tab 50
3.1.11 Attachments Tab 51
3.1.12 Go To Functions 51
3.1.13 Right-click Functions 57

4 COST UTILITIES 58

4.1 COST ROLLUP 58
4.1.1 Performing the Cost Roll Up 62

5 COSTING REPORTS 65

5.1 PRODUCT COST ANALYSIS REPORT 65
5.1.1 Generating a Product Cost Analysis Report 67
5.2 PRODUCT COST SUMMARY REPORT 72
5.2.1 Generating a Product Cost Summary Report 73
5.3 DETAILED PRODUCT COST REPORT 74
5.3.1 Generating a Detailed Product Cost Report 76
5.4 FORMULA COST SUMMARY REPORT 77
5.4.1 Generating a Formula Cost Summary Report 79

5.5 COST ROLLED UP REPORT 80
5.5.1 Generating a Cost Rolled Up Report 80
6 GLOSSARY 82

1 DOCUMENT OVERVIEW

This document gives an overview of the Product Costing function and how BatchMaster ERP with SAP Business One (BatchMaster ERP) can help process manufacturers. It explains features of the system 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 Is this Document All About?

The *Product Costing* module facilitates monitoring and interactive 'what-if' analysis of the costs incurred (or potentially incurred) during manufacturing. The impact of material, labor, and overhead adjustments on the total product cost will display in real time. The analysis also considers loss factors, Bill of Materials (BOM) items, lot sizes, and desired markup or margin. A powerful feature is the ability to adjust your formulas to meet desired target costs without sacrificing material properties!

The *Product Costing* module of BatchMaster ERP with SAP Business One (BatchMaster ERP) requires defining some basic information before using the module. The *Product Cost Analysis* screen provides an interactive analysis of the costs associated with the products you manufacture. The *Cost Rollup* screen calculates the new production cost of building a product with Item data. This is particularly useful when input costs to production such as materials, labor or overhead have recently changed or production assumptions of yield or loss have changed. You can rely on reports for detailed product cost, formula cost summary and product cost analysis to compare costs for finished goods in differently sized containers.

The *Theoretical Cost* feature is no longer supported from the BatchMaster ERP 16.2 release onwards. As an alternative, BatchMaster recommends using the *Item Cost* or *Default Item Vendor Price* options along with the other price lists available under the *RM Cost By* field in the *Physical Property Analysis* screen.

1.2 Who Should Read This Document?

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

1.3 Objectives

This document is designed to help the reader:

- Identify the purpose and functioning of the features in BatchMaster ERP.
- 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.

1.4 What's New In This Release?

Features and functionality are identical to the previous version.

2 PRODUCT COSTING SETUP

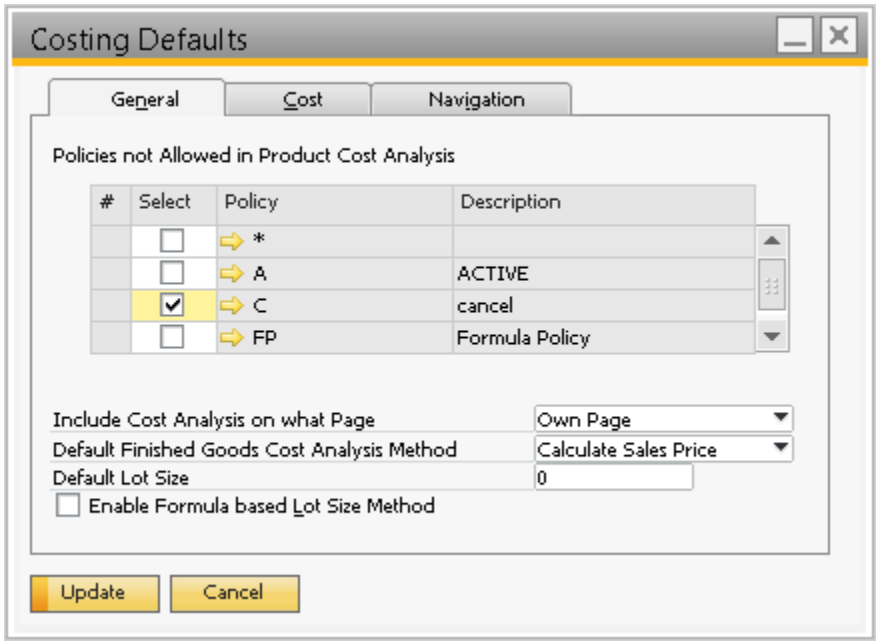
2.1 Costing Defaults

Using the *Formula Policies* function, you can exclude certain formulas from being shown in product cost analysis. For example, you may want to exclude all 'Experimental' formulas from analysis. You will also define page settings for costing reports, and decide whether to calculate a markup or margin on your product costs.

Formula Policies must be set up before defining the costing defaults. (Refer to BME-B1 *18.2 Formulation User Guide.)*

Go To: Administration → Setup → Product Costing → Costing Defaults.

The data maintained in the *Costing Defaults* screen is used extensively while working with several other screens of the *Costing* module.



2.1.1 General Tab

Policies not Allowed in Product Cost Analysis

The *Policies* grid lists all the defined formula policies.

Select: Check this option to restrict the *Formula* policy from being used in product cost analysis.

Policy: The policy codes previously defined. Policy codes are defined in a table and cannot be edited here.

Description: A description of the selected policy. Policy descriptions are defined in a table and cannot be edited here.

Include Cost Analysis on what Page (of the *Product Cost Analysis Report*)**:** Available options are:

- **Own Page:** Cost analysis information will be printed on a separate page.
- **Same Page:** Cost analysis information will be printed on the same page as the formula.
- **None:** The cost analysis will not print on the report.

Default Finished Good cost Analysis Method: Specify whether to calculate markup or margin when performing cost analysis. This value will be defaulted on the *Product Cost Analysis* screen. Available options are:

- **Calculate Sales Price** (default)**:** Allows you to specify a markup percentage and calculate sales price based on the cost of the product.
- **Calculate Margin:** The system will calculate margin cost based on the calculated per unit cost of the finished good and the price list applicable for the finished good.

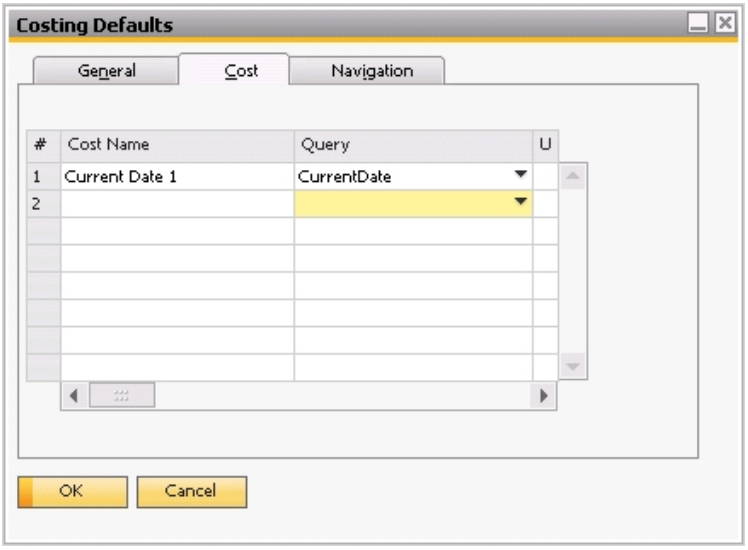
Default Lot Size: Specify the default lot size. The system uses the finished good lot size to calculate the accurate cost per unit of finished good. This lot size is used by default while performing cost rollup.

Enable Formula based Lot Size method: With this checkbox checked you can calculate an accurate rollup cost of the top level item on the basis of the individual lot size of all its sub level FG/intermediates. Choosing it implements the new logic of cost rollup, in which the top level item lot size will be picked from the Cost Rollup Criteria screen while its sub level FG/intermediate lot sizes will be obtained from their applicable formulas.

Update: Click the *Update* button to save the defined settings.

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

2.1.2 Cost Tab



Cost Name: The unique cost on the basis of which you need to analyze the product cost. The cost you define here will be displayed on the *Product Cost Analysis* screen to perform cost analysis.

Query: The query to be used to get the desired data for the respective cost. The drop-down menu lists all the user queries defined in SAP Business One. A custom query can also be defined using the *Query Generator* option available on the *Tools* menu. BatchMaster recommends the following *Custom Query* format:

SELECT ($[$Cls.1] + $[$Cls.3]) *20/100

In the above query, value **1** denotes CostingAnalysisProperties.FillQty and value **3** denotes CostingAnalysisProperties.FormulaConsumableCost.

Available parameters that can be used to create the queries are listed in the following table:

Parameter (1-23)	Refers to Costing Analysis Property
1	CostingAnalysisProperties.FillQty
2	CostingAnalysisProperties.FormulaMaterialCost
3	CostingAnalysisProperties.FormulaConsumableCost
4	CostingAnalysisProperties.FormulaMaterialOHCost
5	CostingAnalysisProperties.FormulaLaborMachineCost
6	CostingAnalysisProperties.FormulaLaborOHCost
7	CostingAnalysisProperties.FormulaMaterialLossCost
8	CostingAnalysisProperties.FormulaLossConstantCost

Parameter (1-23)	Refers to Costing Analysis Property
9	CostingAnalysisProperties.BOMItemCost
10	CostingAnalysisProperties.BOMConsumableCost
11	CostingAnalysisProperties.BOMItemOHCost
12	CostingAnalysisProperties.BOMLaborMachineCost
13	CostingAnalysisProperties.BOMLaborOHCost
14	CostingAnalysisProperties.FixedLaborCost
15	CostingAnalysisProperties.FixedOHCost
16	CostingAnalysisProperties.SetupLaborCost
17	CostingAnalysisProperties.SetupOHCost
18	CostingAnalysisProperties.FormulaVariableLaborCost
19	CostingAnalysisProperties.FormulaVariableOHCost
20	CostingAnalysisProperties.ByproductCost
21	CostingAnalysisProperties.ByproductOHCost
22	CostingAnalysisProperties.TotalFormulaCost
23	CostingAnalysisProperties.TotalCost

How to Create a Custom Query

Let us say I have to pay 5% brokerage on my raw material costs. Create an FMS that computes 5% of material cost.

Brokerage: SELECT ($[$BMM_CostingAnalysisProperties.FormulaMaterialCost]) *5/100.

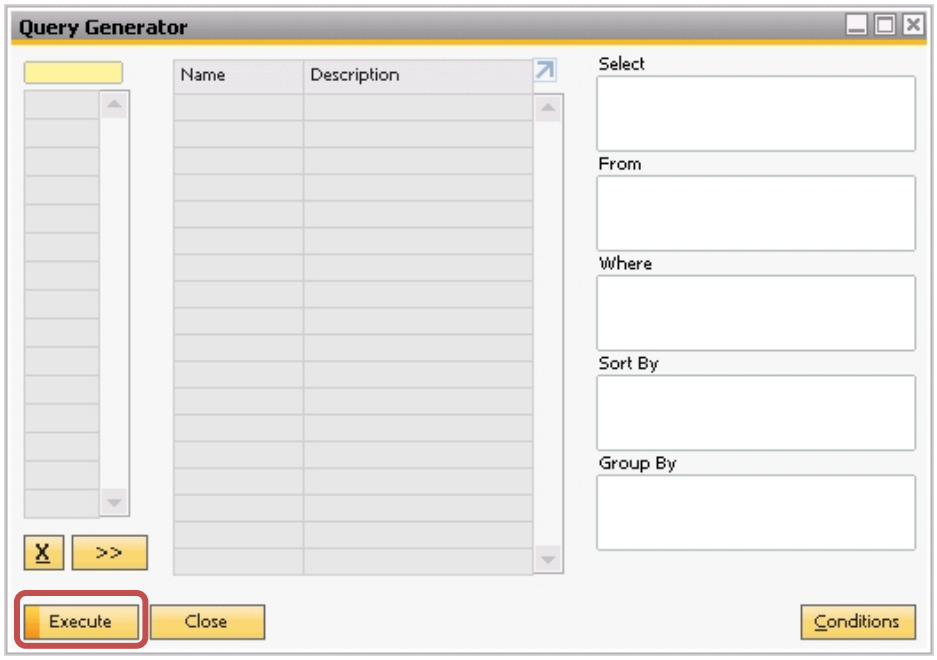
Using the parameters in the table above, we can assemble our query as:

Brokerage: SELECT ($[$Cls.1]) *5/100

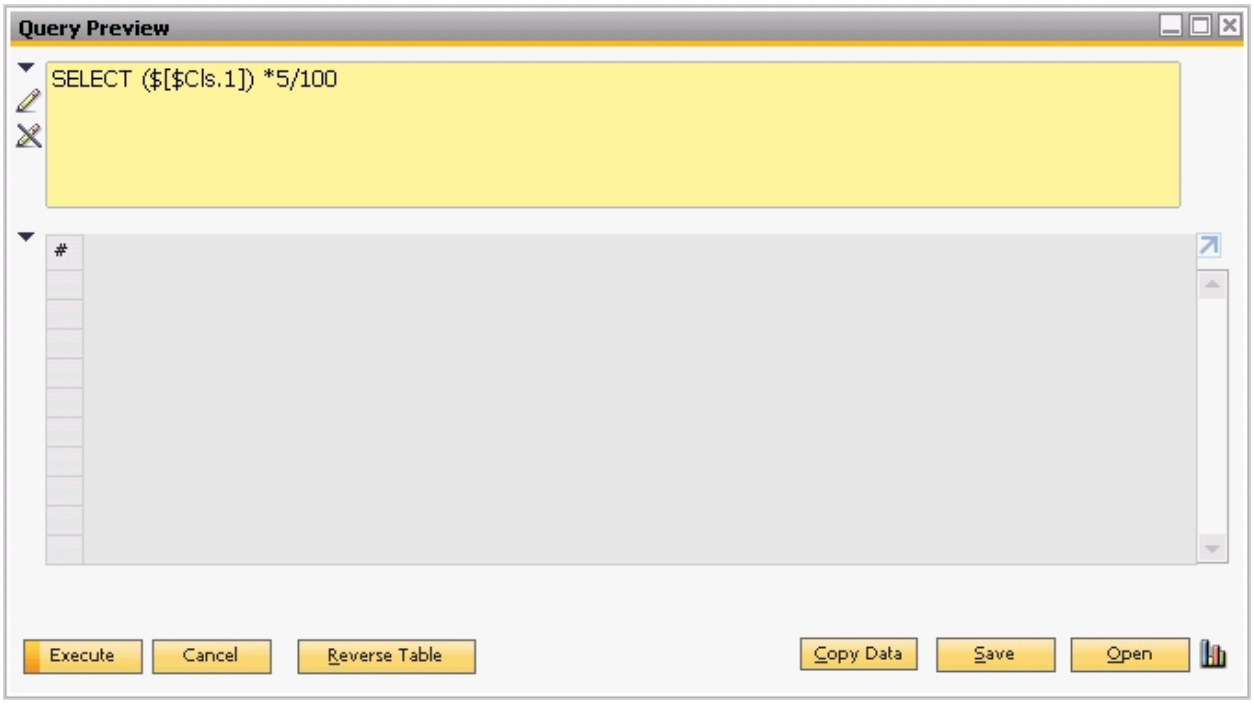
You build this query as shown in a document, and copy it.

Now, from the Toolbar, **Go To: Tools, Queries, Query Generator**.

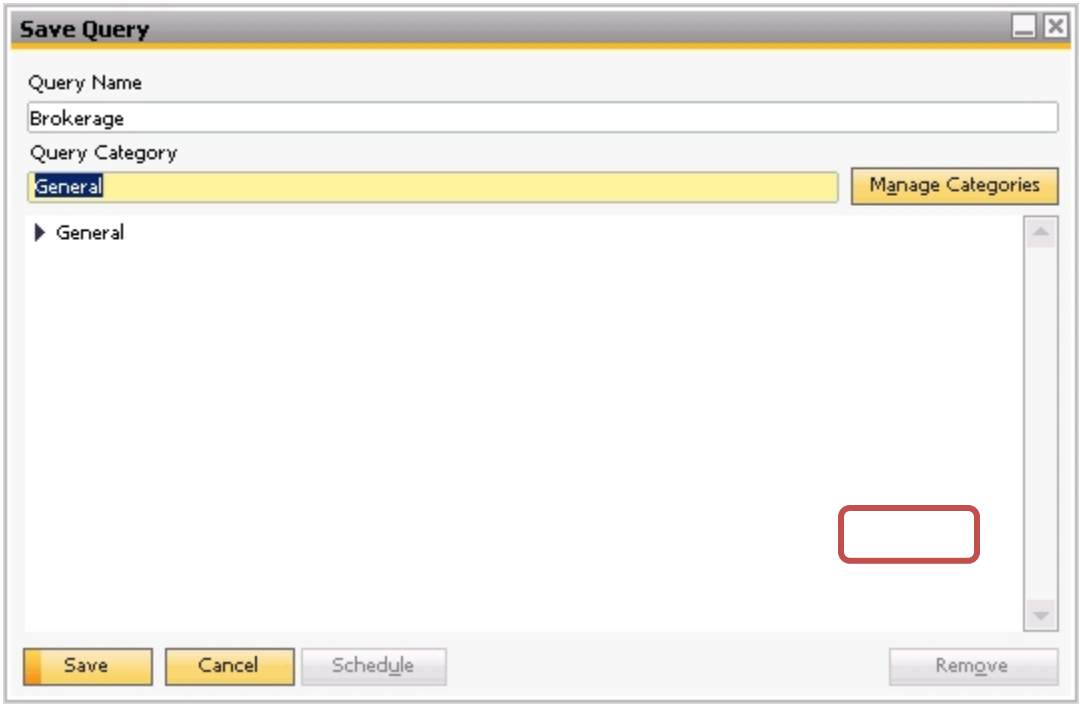
On the screen which opens, click the *Execute* button:



This will open another screen. Paste your copied query into the top box:

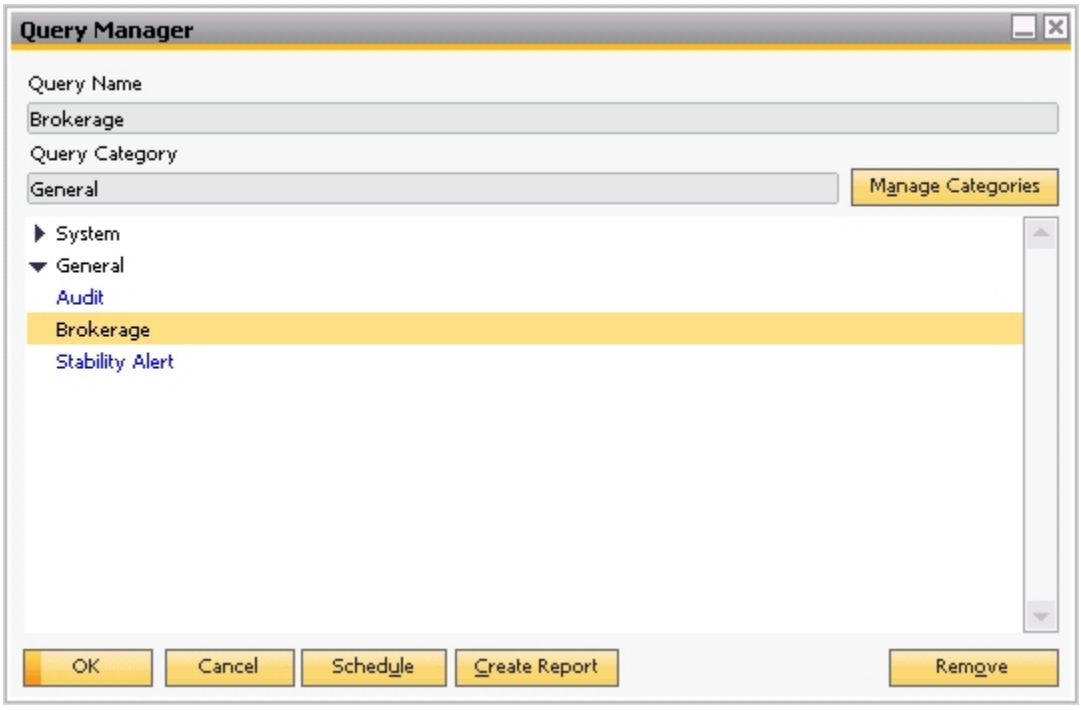


You cannot execute from this screen as we have added a multiplier to the query. You must, however, save your query. Click Save, the following screen opens:

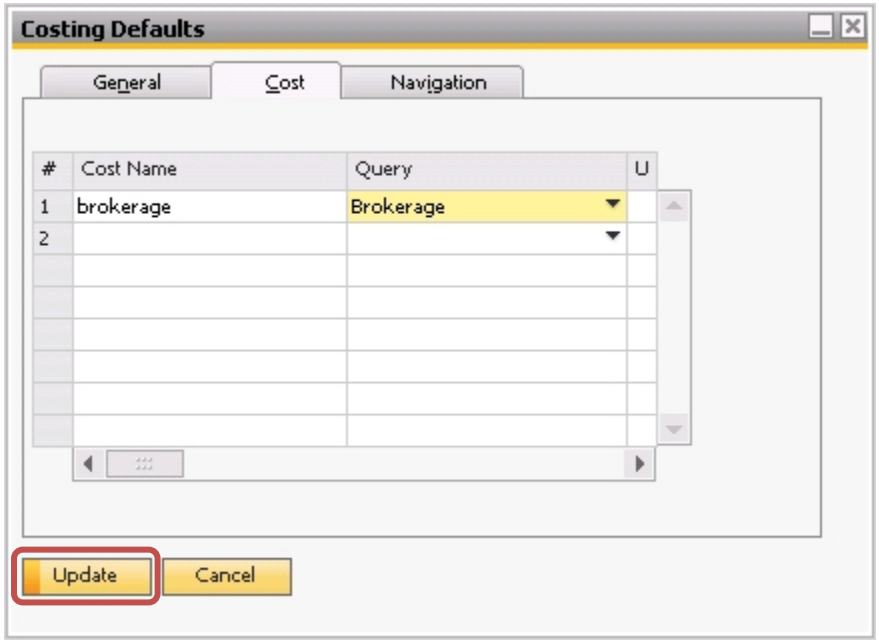


Give the query a name, and select a Category. Here, we have chosen the General category. Click *Save*

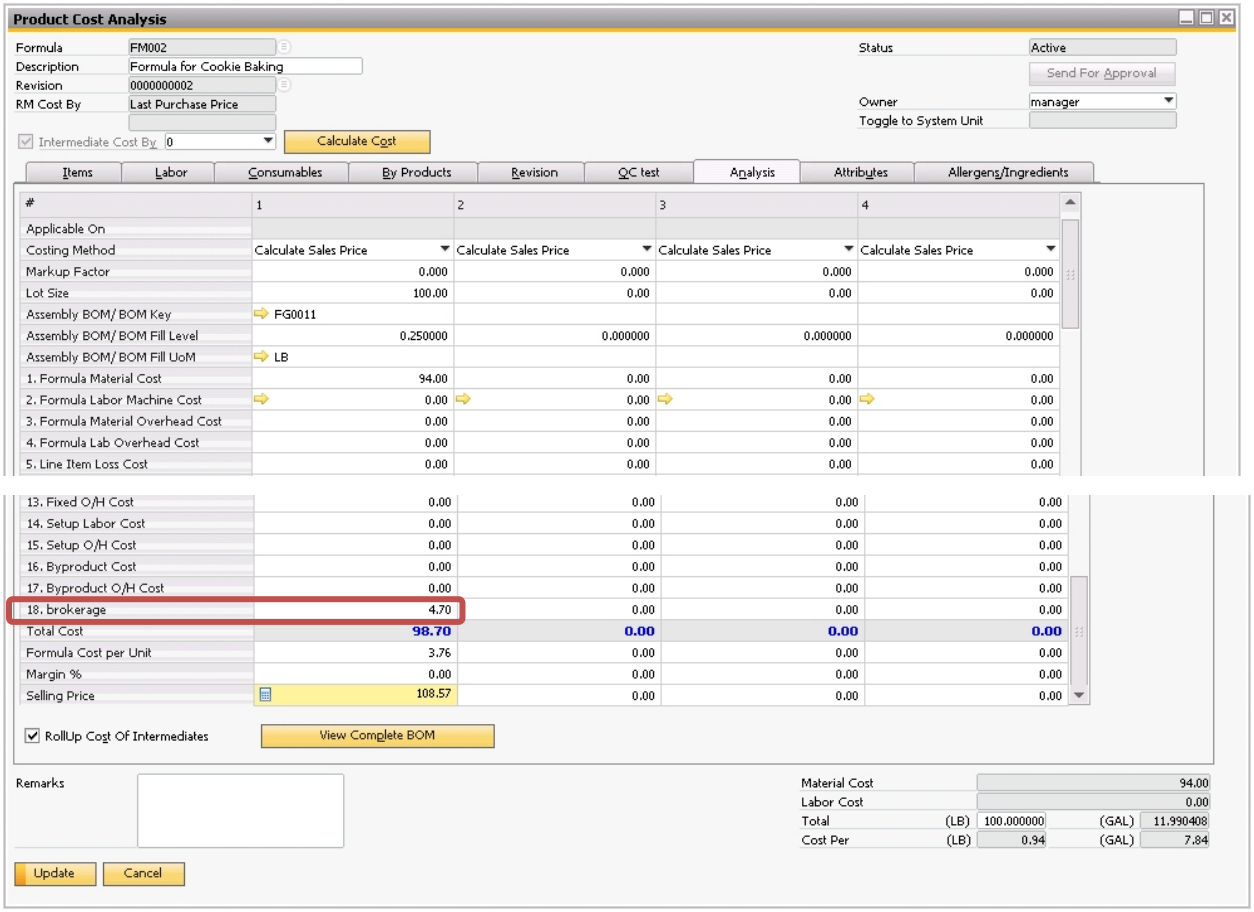
In Tools, Queries, Query Manager, we can see our Query:



Now we associate our *Brokerage* Query created above to a user-defined cost on the *Cost* tab of the *Costing Defaults* screen. Click *Update* to save.



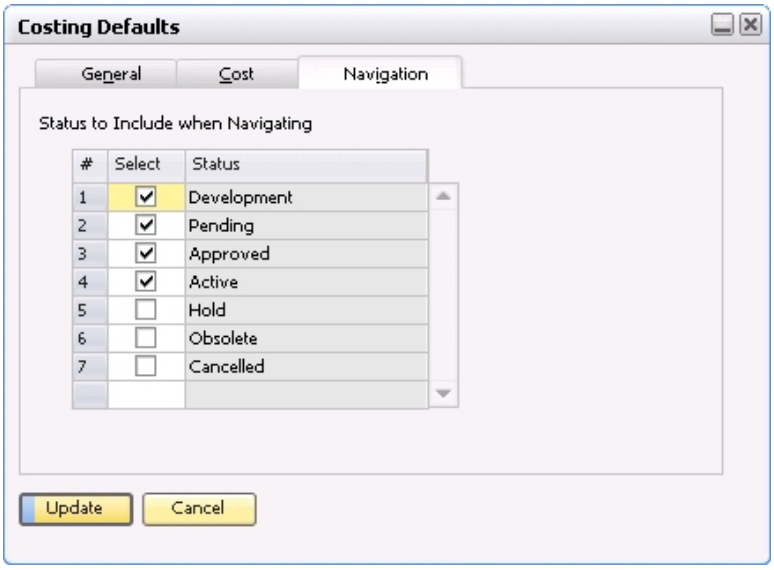
Observe the added custom cost on the *Analysis* tab of the *Product Cost Analysis* screen. You can now analyze the product cost with this additional user-defined cost, too.



Note is correctly 5% of the Formula Material Cost, and the value is included in the Total Cost.

2.1.3 Navigation Tab

With the *Navigation* tab, you can specify the formula statuses that need to be included in navigation during cost analysis. In other words, only those records that pertain to any of the selected statuses will be displayed while navigating through records.



Status to Include when Navigating

Select: Formula statuses that will be displayed when scrolling through formula records using the 'first record', 'previous record', 'next record', and 'last record' icons.

Status: The type of formulas to be included while navigating through formula records. Available options are *Active*, *Approved*, *Cancelled*, *Development*, *Hold*, *Obsolete*, and *Pending*.

You must select at least one status for navigation. *Development* status is selected by default. Formulas associated with the selected statuses, and not the displayed statuses, will be shown in the *Product Cost Analysis* screen during navigation.

Update: Click the *Update* button to save the changes made to the settings.

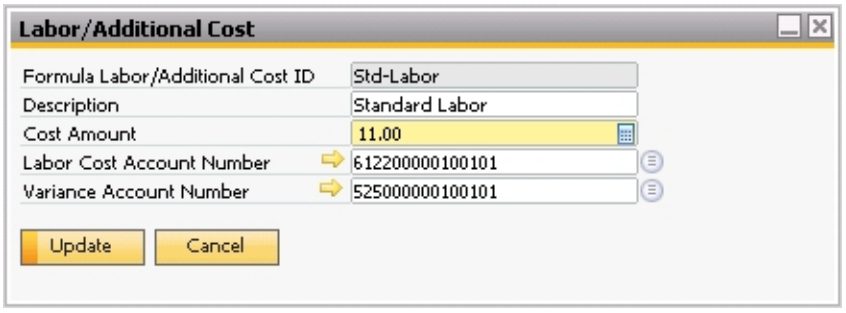
OK (shows after *Update* has been clicked)**:** Click the *OK* button to close the screen.

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

2.2 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.

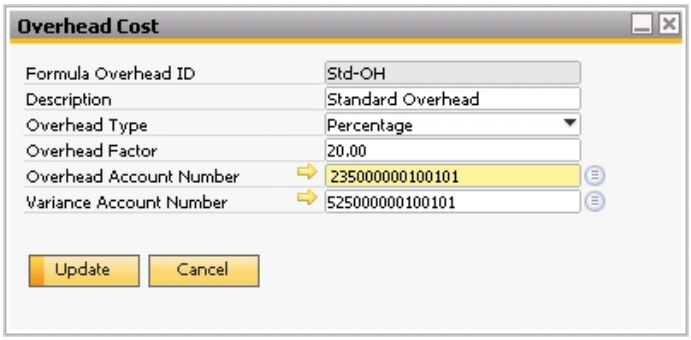
Cost Amount: The cost per unit (hour, kilowatt hour [KWH], etc.).

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.)

2.3 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.

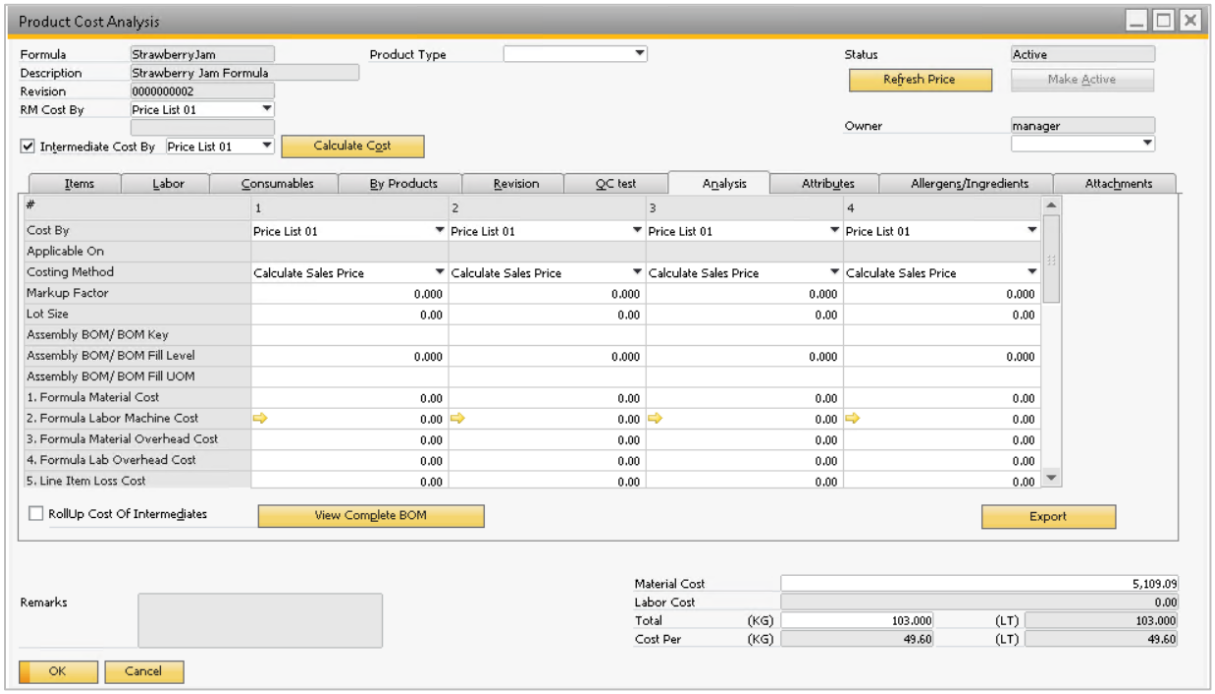
If the Overhead Type is set to *Currency Amount*, the Factor would be a fixed currency value regardless of line item quantities. If the Overhead Type is set to *Percentage*, the Factor would be a percentage value that will be multiplied by the line value to which it is attached. For example, if the line 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.

3 PRODUCT COSTING

3.1 Product Cost Analysis

Go To: Product Costing → Product Cost Analysis.



The *Product Cost Analysis* screen closely resembles the *Formula Entry* screen. You can create a new formula by duplicating and then modifying an existing formula. Or, using the *Analysis* tab, you can change certain attributes of a formula that has Active status and verify that the edits meet your cost objectives.

Available functions include:

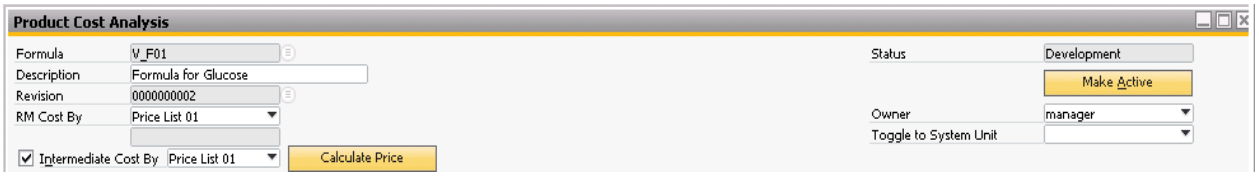
- Adjust the quantity of specific raw materials, overhead, and labor costs, and size the batch to reach a target cost, size, or density.
- Compare the cost of multiple finished goods on the basis of some common measurement (e.g., material cost, labor cost, line item loss, etc.).
- Compare the cost of finished goods of different sizes (goods made by filling the formula in different-sized containers).
- Perform a 'what-if' cost analysis by selecting different price lists.

- Adjust the quantity of specific raw materials, overhead, and labor costs, and size the batch in order to reach a target cost, size, or density. (This applies to Development formulas only.)
- Mark individual ingredients and select a target weight, volume, or total cost. The system will adjust the quantities of the marked ingredients to achieve the target values. (This applies to Development formulas only.)

Before you can perform a cost analysis for an item, a BOM of finished goods-type or assembly-type must be created and released.

Edits made on the *Product Cost Analysis* screen can only be saved for formulas that have *Development* status.

3.1.1 Header Information



Formula: Select a formula to analyze (a lookup button is available) or name a new formula if you are creating one.

Description: Enter a description or edit an existing description of the formula.

Revision: The revision number for the formula. The system maintains revision control. This is a numeric-only field that the user cannot edit. If multiple revisions for a formula exist, a second icon appears next to the lookup button.

Product Type (only with certain optional modules)**:** Assign from a drop-down menu.

Status: The system defaults to *Development* status for a new revision. When the approval process is not activated in *Formula Defaults*, the formula can be set to *Active* status. When the approval process is activated, the formula must be sent for approval. Refer to the *BME B1 18.2 Formulation User Guide* for an explanation of the various statuses.

RM Cost By: The price list for raw materials, selected from the drop-down menu. This price list will be applied for new line items by default.

When the price list selected in this field is the same one defined in the *Item Master Data* screen, the system will apply this price for the items in the grid. The theoretical cost feature is no longer supported by BatchMaster ERP. As an alternative, use the *Item Cost* or *Default Item Vendor Price* options along with the other price lists available in this field.

The drop-down menu in this field will list all the system-defined price lists. Other options include *Last Evaluated Price*, *Last Purchase Price*, *Item Cost*, *User Defined Cost*, *Item Default Vendor Price*, and *Formula Settings* (price list defined at the line item level).

User-defined Cost: An option that allows you to set costs that are independent of any pricing determination parameters. This option is only available on the *Formula Entry*, *Physical Property Analysis*, and *Product Cost Analysis* screens.

This is not a price list, but a custom price determination feature. Costs entered in this way can be included in the *Cost Roll Up* and *Reporting* utilities using the *Formula Settings* option from the drop-down menu.

Intermediate Cost By: Select this checkbox if you need to include the price list of the intermediate.

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

- When the *Intermediate Cost By* option is checked, the system will use the price stored in the intermediate price list to derive the formula cost.
- When the *Intermediate Cost By* option is unchecked, the system will first roll up the intermediate cost from its formula price list, then update the intermediate price list stored in the *Formula Defaults* screen, and finally derive the formula cost. The intermediate price list in this field will be defaulted from the *Formula Defaults* screen.

Calculate Price: Click this button to find out the actual cost of the formula. The system rolls up the formula cost to the lowest level based on the price lists.

Cost By: The system will suggest a price list by which the formula will be costed based on the entries made at the *Formula Defaults* screen. The price list can be overridden at the item level, if necessary.

The drop-down menu in this field will list all defined price lists and options for *Last Evaluated Price*, *Last Purchase Price,* and *User Defined Cost.*

Owner (optional)**:** The user who is responsible for the formula revision. The drop-down menu next to the *Owner* field lists all valid BatchMaster ERP users.

Send for Approval (only for new formula entry)**:** If the approval process is activated, then the formula status would be set to *Pending*. The system would place the formula in a queue and send a message to the formula approver that there is a formula awaiting review. If the approval process is not activated, then this button would make the formula status *Active*. See the "BatchMaster ERP with SAP Business One – Approval Procedure User Guide" for detailed information on the Approval Procedure.

Toggle to System Unit (only for new formula entry)**:** Click the drop-down arrow to select either the System Unit of Weight or System Unit of Measure (UOM). The system will immediately convert the line item UOMs to your choice.

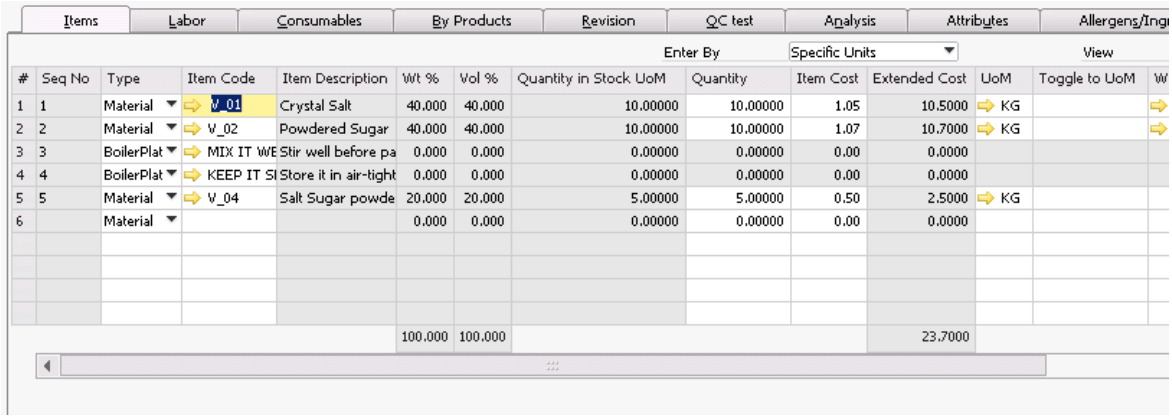
For additional information, consult the *BatchMaster ERP with SAP Business One 18.2 – Formulation User Guide*."

3.1.1.1 Maintaining Header Information

1. Open the Product Cost Analysis screen.
2. In the *Formula* field, enter the identification key for the formula.
3. In the *Description* field, enter a description associated with the formula.
4. Use the drop-down menu next to the *RM Cost By* field to select the price list for the formula.
5. To calculate the formula cost using the intermediate price list, check the *Intermediate Cost By* option and select the desired price list for the intermediate.
6. Use the drop-down menu next to the *Owner* field to select the user responsible for the formula revision.

3.1.2 Items Tab

On the *Items* tab you can view information on the items, boilerplate, and text associated with the formula.



#	Seq No	Type	Item Code	Item Description	Wt %	Vol %	Quantity in Stock UoM	Quantity	Item Cost	Extended Cost	UoM	Toggle to UoM	W
1	1	Material	W_01	Crystal Salt	40.000	40.000	10.00000	10.00000	1.05	10.5000	KG		
2	2	Material	W_02	Powdered Sugar	40.000	40.000	10.00000	10.00000	1.07	10.7000	KG		
3	3	BoilerPlat	MIX IT WE	Stir well before pa	0.000	0.000	0.00000	0.00000	0.00	0.0000			
4	4	BoilerPlat	KEEP IT SI	Store it in air-tight	0.000	0.000	0.00000	0.00000	0.00	0.0000			
5	5	Material	W_04	Salt Sugar powde	20.000	20.000	5.00000	5.00000	0.50	2.5000	KG		
6		Material			0.000	0.000	0.00000	0.00000	0.00	0.0000			
					100.000	100.000				23.7000			

When you are creating a new formula (by duplicating and modifying an existing formula) you can edit any cell that is presented in white. (For additional information, consult the *BatchMaster ERP with SAP Business One 18.2 – Formulation User Guide*.)

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

- **Specific Units:** This option is selected by default while creating a new formula in *Add* mode. Choose this option to measure the quantity of materials/items entered in their specific UOM(s).
- **Volume %:** Choose this option to measure the quantity of materials/items as a percentage of formula volume.
- **Weight %:** Choose this option to measure the quantity of materials/items as a percentage of formula volume weight.

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

#: The sequence number of the line.

Seq No: The order of the item in the sequence. Items would be shown in this sequence in the *Formula* and *Production* modules.

Type: The item type. Available options are:

- **Boilerplate:** When this option is chosen, you can select an item from the boilerplate table. A lookup function is available. The rest of the columns in the grid remain disabled.
- **Material:** Selecting this option allows you to define the formula items. An item master lookup function is available.

You can enter non-inventory items as ingredients when creating a formula, but the formula cannot become Active unless those non-inventory items are maintained as inventory.

- **Text:** When this option is selected, the *Description* column will be enabled. You can enter text information such as manufacturing or precautionary instructions associated with the formula. All other columns will remain disabled.

Item Code: The value of this field is based on the setting in the *Type* field.

- The boilerplate key is entered when the *Boilerplate* option is selected in the *Type* field.
- A raw material/intermediate is entered when the *Material* option is selected in the *Type* field.
- This field is disabled when the *Text* option is selected in the *Type* field.

Item Description: The description or text associated with the value entered in the *Item Code* field on the same row.

- When the *Type* selected is *Material*, this field stores the *Item Description*.
- When the *Type* selected is *Boilerplate*, this field stores the description of the boilerplate.
- When the *Type* selected is *Text*, this field stores user-defined text.

Wt%: When the *Wt%* option is selected in the *Entry By* field, the proportion of raw material items can be expressed in percentage by weight. The application will assume the total raw material weight is 100.

Vol%: When the *Vol%* option is selected in the *Entry By* field, the proportion of raw material items can be expressed in percentage by volume. The application will assume the total raw material volume is 100.

Quantity in Stock UoM: The unit of the quantity in stock.

Quantity: The quantity of the material required. This column is read-only when either the *Wt%* or *Vol%* option is selected in the *Entry By* field.

Item Cost: The cost of the material. Available options are *Standard*, *Last,* or *Average*.

Extended Cost: The extended cost of the material, calculated as:

$$Extended\ cost\ =\ Quantity\ *\ Item(\frac{Cost}{Unit})$$

UOM: When the *Material* option is selected in the *Line Type* field, the display unit of the item is stored in this field. If the selected item is not defined in inventory, then the application would default this field with the system weight unit. The drop-down menu next to the *Unit of Measure* field lists all the defined units of measure for the selected item.

Toggle To UOM: Allows you to toggle the quantity entered in different units. When you specify the desired unit in this column, the application will automatically convert the quantity in that unit.

Lot Strength: Displays the lot strength of the item as specified at the *Item Master Data* screen; if it is not specified, you can select the value for this field. The *Lot Strength* feature is applicable only for lot-tracked items.

Warehouse: The warehouse location for the desired item. Choose the required warehouse from the drop-down list next to the *Warehouse* field. Use the arrow on the left side of the field to display Warehouse Details.

The warehouse code entered in this field must be a valid non-drop ship warehouse defined within the database.

Overhead ID: The Overhead Key associated with the item, if applicable.

Loss: The loss percentage of the line level item.

Cost By: The source of the cost. The drop-down menu next to the *Cost By* field lists all defined price lists and options for *Last Evaluated Price*, *Last Purchase Price,* and *User Defined Cost*. The value set on the *Header* section is entered by default, but this can be overridden if required.

Stages: The name of the stage under which the item is getting processed.

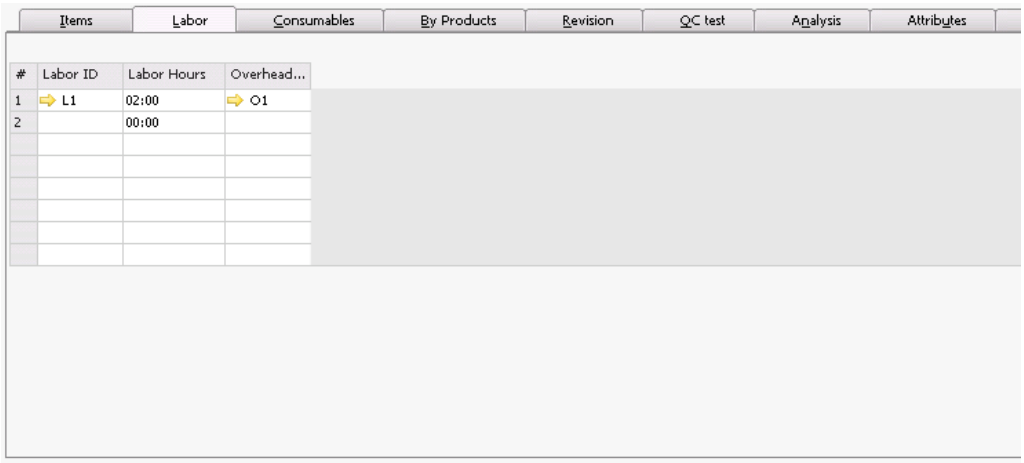
3.1.2.1 Maintaining Items Tab Information

1. Enter the desired item type in the *Type* field. Available options are *Material*, *Boilerplate*, and *Text*.
2. Enter an ingredient of the formula in the *Item Code* field.
3. Specify the weight and volume percentage of the item in the *Wt%* and *Vol%* fields, respectively.
4. Enter the quantity of the required item in the *Quantity* field.

5. Enter the cost of the item in the *Item Cost* field.
6. Enter the extended cost of the item.
7. Select the lot size associated with the item in the *Lot Size* field.
8. Add as many items as required, one in each row of the grid.
9. Click the *Update* button to save the record.

3.1.3 Labor Tab

Use the *Labor* tab to associate the information on labor activities involved in implementing the formula. Such information includes the labor key, labor overhead, and time consumed in labor activities.



When you are creating a new formula (by duplicating and modifying an existing formula) you can edit any cell that is presented in white. (For additional information, consult the *BatchMaster ERP with SAP Business One 18.2 – Formulation User Guide*)

#: The Sequence Number of the Line.

Labor ID: Pre-defined Labor Key

Labor Hours: The length of time required at this Labor ID to make this formula.

Overhead ID: An Overhead Key used in association with the Labor ID to account for Burden, etc.

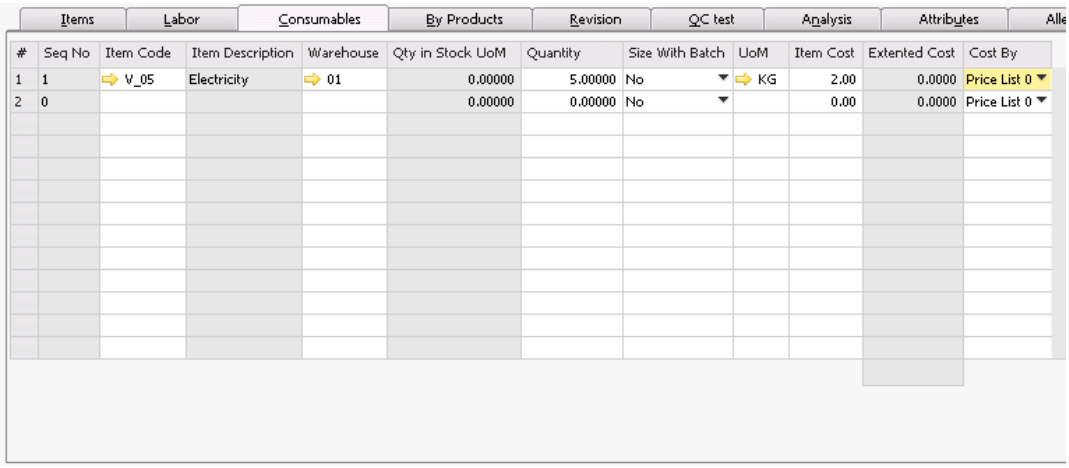
3.1.3.1 Maintaining Labor Tab Information

1. Choose a *Labor ID* for the Labor required to make this Formula. Multiple Labor IDs can be entered.
2. Enter the time required for this Labor ID for making this Formula.
3. Associate an Overhead Key, if required, to add Burden, etc. to this Labor line.

3.1.4 Consumables Tab

Here you can view information on the consumable items associated with the formula. Consumables are items that are not ingredients of the formula, but are required for production and used up during production. An example would be a filter that needs to be replaced at the end of each batch run.

The *Consumables* tab is visible only if you check the *Show Consumables* option at the *Formula Defaults* screen.



When you are creating a new formula (by duplicating and modifying an existing formula) you can edit any cell that is presented in white. (For additional information, consult the *BatchMaster ERP with SAP Business One 18.2 – Formulation User Guide.*)

#: The sequence number of the line.

Seq No: The order of the items in sequence. Items would be shown in this sequence in the *Formula* and *Production* modules.

Item Code: The consumable item used in the formula. The drop-down list next to this field retrieves all the inventory items.

Item Description: The description of the consumable item selected in the *Item Code* field.

Warehouse: The warehouse location of the consumable entered. Choose the required warehouse from the drop-down list next to the *Warehouse* field.

Qty in Stock UOM: The quantity of the item in its stock unit. This is a system-generated field.

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

Size with Batch: Specify whether items should be sized with batch size. Possible values are:

- **Yes:** The application will round item quantities to the next integer. For example, 2.7 would be rounded to 3.
- No**:** The item will not be sized with the batch.

UOM: The display unit of the item. This is a mandatory field.

Item Cost: The cost of the material. Available options are *Standard*, *Last*, or *Average*.

Extended Cost: The extended cost of the consumable item.

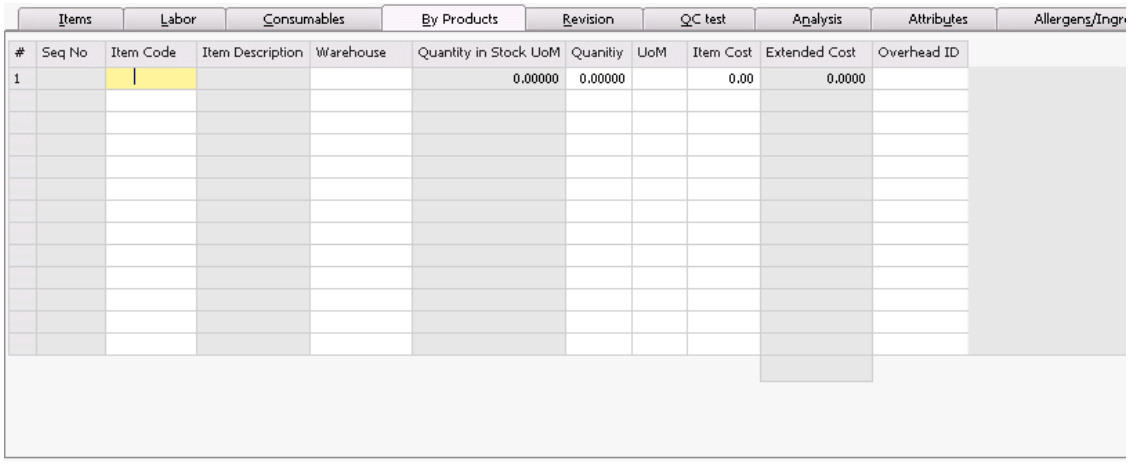
Cost By: Lets you specify the Cost By value for the Formula associated with a consumable item. This drop-down menu lists all the price lists and options for *Item Cost*, *Last Purchase Price*, and *Last Evaluated Price*.

3.1.4.1 Maintaining Consumables Tab Information

1. Enter the key of the consumable item used in the formula in the *Item Code* field.
2. Enter the quantity of the consumable item used in the formula in the *Quantity* field.
3. Use the drop-down menu next to the *Size with Batch* field to specify whether or not the items should be sized with the batch.
4. Choose the desired price list from the drop-down menu next to the *Cost By* field.
5. Add as many consumable items as needed, one in each row.
6. Click the *Update* button to save the record.

3.1.5 By Products Tab

This tab allows you to view information on the by-products created as a result of production using the formula. By-products can be used in other formulas or further processed to become saleable items.



When you are creating a new formula (by duplicating and modifying an existing formula) you can edit any cell that is presented in white. (For additional information, consult the *BatchMaster ERP with SAP Business One 18.2 – Formulation User Guide*.)

#: The sequence number of the line.

Seq No: The order of the item in the sequence. Items will be shown in this sequence in the *Formula* and *Production* modules.

Item Code: The item key of the by-product produced by the formula. Choose the required inventory item using the lookup next to this field.

Item Description: The description associated with the item code.

Warehouse: The warehouse location for the by-product.

Quantity in Stock UOM: The quantity of the by-product displayed in its stock unit. This is a system-generated field.

Quantity: The quantity of the by-product item produced.

UOM: The display unit of the item.

Item Cost: The cost of the material. Available options are *Standard*, *Last*, or *Average*.

Extended Cost: The extended cost for the material line item.

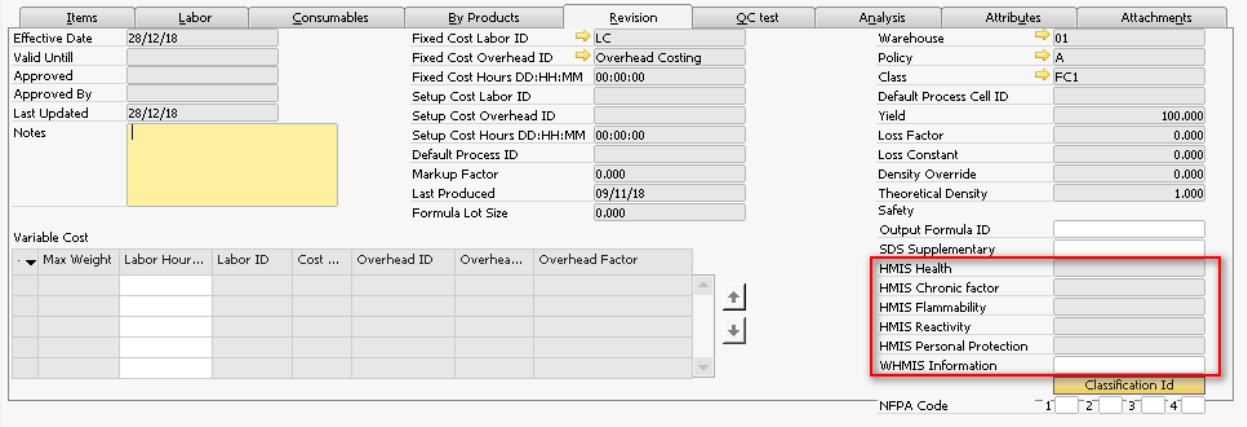
Overhead ID: The overhead key associated with the by-product.

3.1.5.1 Maintaining By Products Tab Information

1. Enter the by-product item produced by the formula in the *Item Code* field.
2. Enter the quantity of the by-product produced in the *Quantity* field.
3. Add as many by-products as required, one in each row.
4. Click the *Update* button to save the record.

3.1.6 Revision Tab

On the *Revision* tab you can view historical information pertaining to various formula details.



When you are creating a new formula (by duplicating and modifying an existing formula) you can edit any cell that is presented in white. (For additional information, consult the *BatchMaster ERP with SAP Business One 18.2 – Formulation User Guide*.)

Safety data can be edited on formulas that have *Development* or *Active* status.

Effective Date: The date from which the formula would be effective. A formula cannot have *Active* status if the system date is not equal to or greater than the effective date. An effective date of 1/1/1900 means the formula is always effective.

Valid Until: The date until which the formula is valid. In other words, after this date the application will automatically make the formula obsolete. A formula cannot have an *Active* status if the system date is

past the *Valid Until* date. If this date is null, then the application would assume that there is no end date associated with the formula. This date can only be changed for formulas with *Development* status.

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

Approved By: The user who has approved the formula.

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

Fixed Cost Labor ID: Specify the identification code of the labor with fixed cost.

Fixed Cost Overhead ID: The overhead associated with fixed costs.

Fixed Cost Hours: The number of hours when the fixed labor will be working.

Setup Cost Labor ID: The labor key associated with set-up activities, such as cleaning the equipment or process cell.

Setup Cost Overhead ID: The overhead key associated with the set-up activities.

Setup Cost Hours: The number of hours needed to set up the batch.

Default Process ID (optional)**:** Tie production stages to a production batch using this formula.

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

Formula Lot Size: If formula lot size you specified at the Formula Entry, gets displayed here.

Variable Cost

#: The sequence number of the line.

Seq No: The order of the variable cost in the sequence. Variable cost in formula and production will be shown in this sequence.

Max Weight: The value of the maximum weight for the respective row of the variable costs associated with the formula.

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 can be 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 costs is applicable. The lower limit of the batch weight for a range is determined based on the maximum weight of the preceding row. For example, suppose that the Max Weight for the first row is 100, and the Max Weight

of the second row is 500. The variable cost will be according to the first row if 0 < Batch Weight ≤ 100; whereas the variable cost will be according to the second row if 100 < Batch Weight ≤ 500.

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

- 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) would be 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) would be 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 labor hours required by the labor, as specified in the Labor Key.

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

Overhead ID: The Overhead Key of the variable costs for the formula. This value is used to perform cost analysis in the *Costing* module and calculate costs associated with producing the end item using the formula.

Overhead Type: The Overhead Key for variable costs is automatically populated when the associated Overhead Key is entered. Available options are:

- ***$ Type*:** The Batch Weight (in system weight unit) is multiplied by the factor of the Overhead Key to calculate the cost contribution of this overhead. This is a read-only field.
- **% Type:** The Batch Weight (in system weight unit) is multiplied by the amount of the Labor Key multiplied by the factor of the Overhead Key of the same line to calculate the cost contribution of this overhead. This is a read-only field.

Overhead Factor: The value is entered automatically when the associated Overhead Key is entered. This is a read-only field.

Warehouse: The warehouse location for the formula item. This is a mandatory field.

Policy: The policy of the formula. This is a mandatory field. Formula policy is used in:

- Production Setup to specify whether formulas associated with the policy should be allowed in production.
- Costing Setup to specify whether formulas associated with the policy should be allowed in Product Cost Analysis.
- Laboratory Setup to specify whether formulas of that policy should be allowed in Physical Property Analysis.

Class: The class associated with the formula. The formula class provides a Work in Progress (WIP) account for use in production of items using the specific formula.

Default Process Cell ID: Associate a process cell with the formula.

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. A zero value in this field means that the density override has not been applied.

Last Produced: When this formula was last used in production. This is a system maintained field.

Theoretical Density: The theoretical density of the formula, which is the ratio of formula weight to formula volume. This is a read-only field.

Safety

Data maintained under this section can be edited on formulas with both *Development* and *Active* status.

Output Formula ID: For the purpose of printing Safety Data Sheets (SDS), an Output Formula Key is listed here. This is used when the SDS information of the product cannot be directly determined from the formula ingredients.

For example, the reaction of hydrogen gas and chlorine gas produces HCl. The SDS of HCl cannot be generated based on the properties of hydrogen gas and chlorine gas, because the properties of HCl are very different from those of the separate ingredients. In such cases, a separate output formula for HCl should be created and attached here. For SDS purposes, this formula may list HCl as an ingredient.

SDS Supplementary File: The default SDS template associated with the formula. This ID is used for printing a SDS for this formula.

HMIS Health: The HMIS rating for a health hazard associated with the formula. Available options are *None*, *Mild*, *Moderate*, *Serious*, and *Extreme*. This value is used in the *SDS* module.

HMIS Chronic Factor: The HMIS rating for how chronic the product associated with the formula is. Available options are *Chronic* and *None*. This value is used in the *SDS* module.

HMIS Flammability: The HMIS rating for flammability associated with the product manufactured using the formula. Available options are *None*, *Mild*, *Moderate*, and *Serious*. This value is used in the *SDS* module.

HMIS Reactivity: The HMIS rating for reactivity associated with the formula. Available options are *None*, *Mild*, *Moderate*, and *Serious*. This value is used in the *SDS* module.

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

- *Face Shield, Gloves, Synthetic Apron.*
- *Safety Glasses, Gloves, Dust Respirator.*
- *Safety Glasses, Gloves, Synthetic Apron, Dust Respirator.*
- *Safety Glasses, Gloves, Synthetic Apron.*
- *Safety Glasses, Gloves.*
- *Safety Glasses.*

WHMIS Information: The WHMIS information associated with the formula.

3.1.6.1 Maintaining Revision Tab Information

1. Specify any comment or remarks in the *Notes* field, if required.
2. Using the *Fixed Cost Labor ID* selection option, choose the Labor Key associated with the formula to calculate the fixed labor cost.
3. Enter the Overhead Key applicable for the fixed labor using the *Fixed Cost Overhead ID* field.
4. In the *Fixed Cost Hours* field, enter the time (fixed) consumed by labor to complete the batch.
5. In the *Setup Cost Labor ID* field, enter the Labor Key associated with the labor to set up the batch.
7. In the *Setup Cost Overhead ID* field, enter the Overhead Key associated with the Labor Key to compute the overhead cost required for setup.
8. Enter the number of hours consumed to setup the batch in the S*etup Cost Hours* field.
9. Select the default process ID in the *Default Process ID* field.
10. Specify the factor that should be used to compute sales price of finished goods and intermediates in the *Markup Factor* field.
11. Select the warehouse location applicable for the formula item.
12. Choose the policy applicable for the formula in the *Policy* field.
13. Select the formula classes applicable for the formula in the *Class* field.
14. In the *Default Process Cell ID* field, enter the process cell to be assigned to the formula by default.
15. Specify the target yield associated with the formula in the *Yield* field.
16. Enter the variable loss of the product being produced by the formula in the *Loss Factor* field.
17. Enter the fixed amount that is lost during processing a formula in the *Loss Constant* field.
18. If required, enter the desired value in the *Density Override* field. This value will override the density calculated by the application.

19. Populate the columns in the *Variable Cost* grid.

    a. Enter the maximum weight applicable to the respective row of the variable costs for the formula in the *Max Weight* field.

    b. Choose the Labor Key for the variable costs associated with the formula in the *Labor ID* field.

    c. Select the Overhead Key for the variable costs associated with the formula in the *Overhead ID* field.

    d. Specify the desired *Output Formula Key* in the *Safety* segment.

    e. Select the desired supplementary file in the *SDS Supplementary* field.

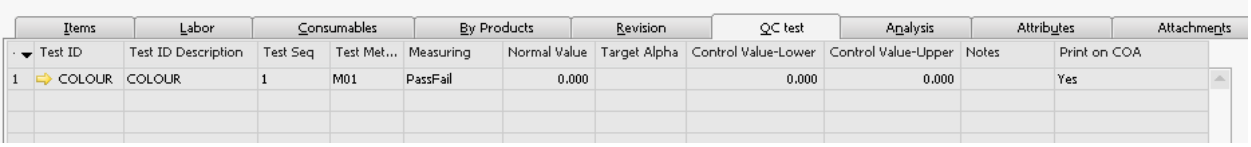
    f. Specify the HMIS rating in each of these fields: *HMIS Health*, *HMIS Chronic Factor*, *HMIS Flammability*, *HMIS Reactivity*, and *HMIS Personal Protection*.

    g. Enter appropriate information in the *WHMIS Information* field.

20. Click the *Update* button to save your data.

3.1.7 QC Test Tab

On this tab you can view information pertaining to Quality Control (QC) tests associated with the formula.



When you are creating a new formula (by duplicating and modifying an existing formula) you can edit any cell that is presented in white. (For additional information, consult the *BatchMaster ERP with SAP Business One 18.2 – Formulation User Guide*.)

Test ID: The Test ID associated with the test selected at this row.

Test Seq: The sequence in which the tests need to be performed. The application will automatically increment sequence numbers. You can re-sequence the tests using the arrow buttons at the right edge of the screen.

Measuring: Defines how tests are measured. Available options are:

- **Alphanumeric Value:** The test result is expressed as an alphanumeric value.

- **Numeric Value:** The test result is expressed as a numeric value.
- **Pass/Fail Value:** The test result can be either *Pass* or *Fail*.

Normal Value: If the measuring type applied is *Numeric,* then this field would be used to store the normal test value.

Target Alpha: If the measuring type applied is *Alphanumeric*, then this field would be used to store the test value.

Control Value-Lower: If the measuring type entered is *Numeric,* then this field would store the lower limit of the acceptable range of test values.

Control Value-Upper: If the measuring type entered is *Numeric,* then this field would store the upper limit of the acceptable range of test values.

Notes: QC notes entered by the tester.

Print on COA: Specifies if this test needs to be printed on the Certificate of Analysis (COA) report. Available options are *Yes* and *No*.

3.1.7.1 Maintaining the QC Test Tab

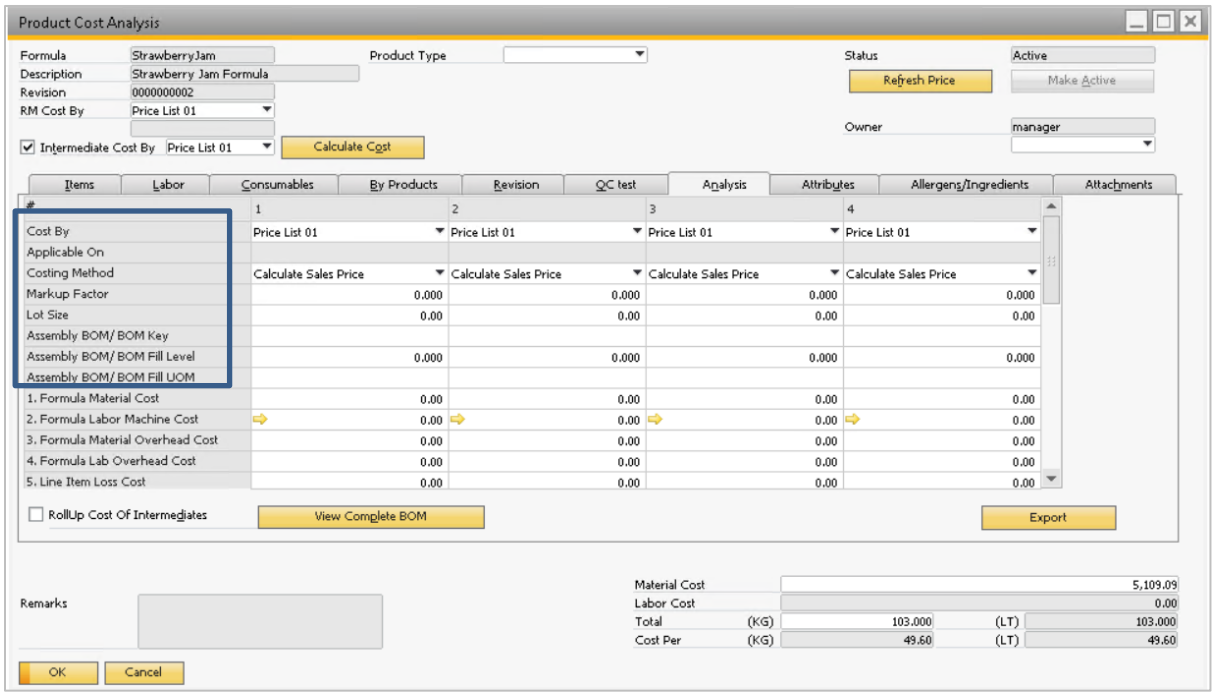
1. Choose the required QC test using the *Test ID* field.
2. Specify the sequence of the QC tests (when there are multiple tests) in the *Test Seq* field.
3. Enter the appropriate test type in the *Type* field.
4. Select the appropriate test criteria in the *Measuring* field. Available options are *Pass/Fail*, *Numeric*, or *Alphanumeric*.
5. Enter the target test value in the *Normal Value* field if the test type selected is *Numeric*.
6. Specify the target test value in the *Target Alpha* field if the test type selected is *Alphanumeric*.
7. Enter the upper limit of the acceptable range of values in the *Control Value-Upper* field for the *Numeric* test type.
8. Enter the lower limit of the acceptable range of values in the *Control Value-Lower* field for the *Numeric* test type.
9. Enter any comment related to the QC test in the *Notes* field.

10. Using the *Print on COA* drop-down menu, choose *Yes* or *No* to include/exclude the test in the *COA Report*.

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

3.1.8 Analysis Tab

Here you can perform cost analysis on up to four different finished good items manufactured using the same formula. Alternatively, you can use the same formula or BOM and apply different price lists.



Data entered in the fields shown "boxed" above will define the formulas to be analyzed.

Cost By: The price list to use when analyzing the formula. In addition to all defined price lists, available options are *Last Evaluated Price*, *Last Purchase Price*, *Item Cost*, *Formula Settings* and *Default Item Vendor Price*.

Applicable On: If this option is selected, the system will pick any price discounts that are applicable on or after the given date. The field is enabled only when you select the *Default Item Vendor Price* option in the *Cost By* field.

Costing Method: Specify whether the system will calculate Sales Price or Margin:

- When Sales Price is selected, the system will add the markup factor to the total cost of the product to calculate the sales price.

- When Margin is selected, the system will pick the finished good price from the specified price list and calculate a profit margin based on the total cost of the product.

Markup Factor: A Markup Factor, expressed as a percentage. This is a mandatory field.

Lot Size (mandatory): The value in this field is populated from the *Default Lot Size* field, which is found on the *General* tab of the *Costing Defaults* screen. The system will allocate any fixed costs over the entire lot and calculate the accurate cost of a finished good per unit. You can edit this field to analyze the costs for different lot sizes of the formula.

Regardless of the Lot Size entered here, the costs displayed will always be for one stocking unit of the Finished Good you select.

Assembly BOM/BOM Key: This field is used to specify a Finished Good, Intermediate, or Assembly type BOM to be analyzed. A lookup is available. When this data is entered, the remaining fields associated with this column are automatically populated. Four separate Assembly BOM/BOM Keys can be entered on the four cost analysis columns on this screen.

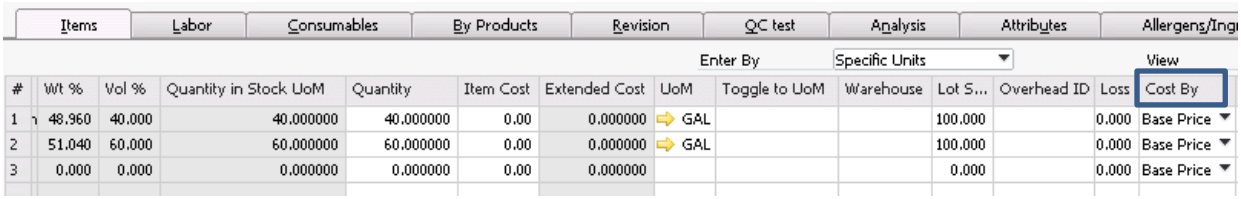
Remember, the BOMs you select must be in *Released* status.

Assembly BOM/BOM Fill Level: The fill level of the BOM. You can edit this field to find the cost for a different fill level, but the system will not allow you to save your changes.

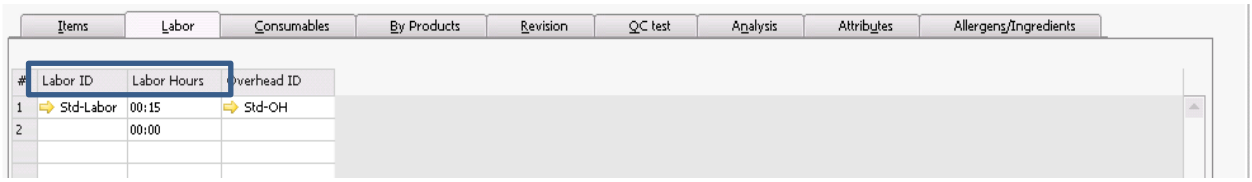
Assembly BOM/BOM Fill UOM: The fill unit of the BOM. For intermediate BOMs this value is ignored.

The remaining fields can be edited for "what-if" analysis but will not be stored as part of the formula.

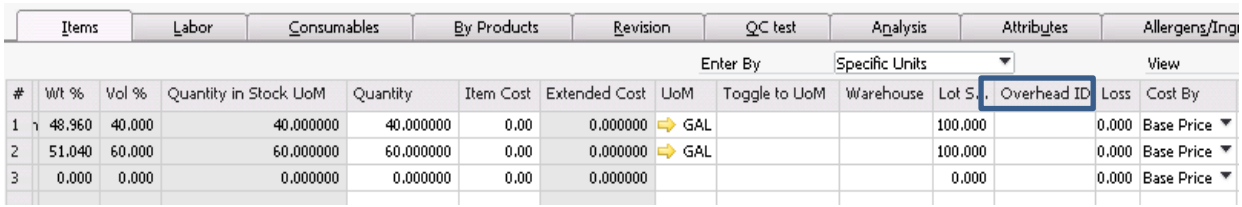
1. **Formula Material Cost:** The total material cost of the formula, entered at the line item level on the *Items* tab (i.e., the *Cost By* field). The cost value comes from the price list associated with the line item, and varies with batch size.



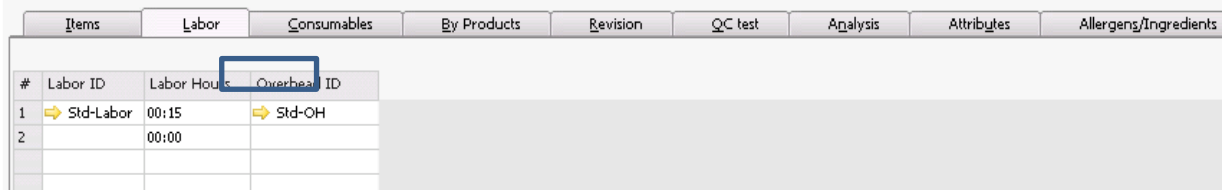
2. **Formula Labor/Machine Cost:** The labor or machine cost of the formula, entered at the line item level on the *Labor* tab (i.e., the *Labor ID* and *Labor Hours* fields). Cost varies with batch size.



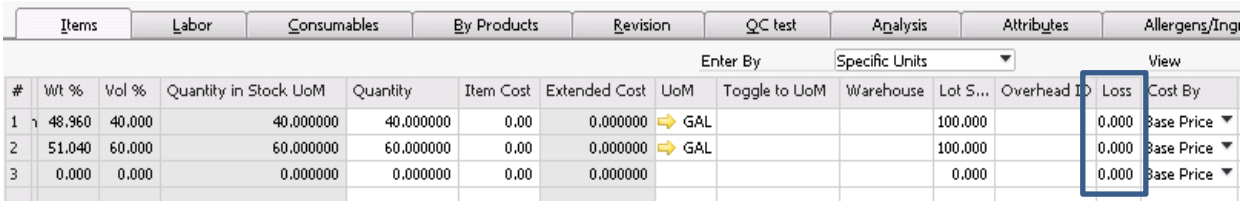
3. **Formula Material Overhead Cost:** The material overhead cost of the formula, entered at the line item level on the *Items* tab (i.e., the *Overhead ID* field). Cost varies with batch size.

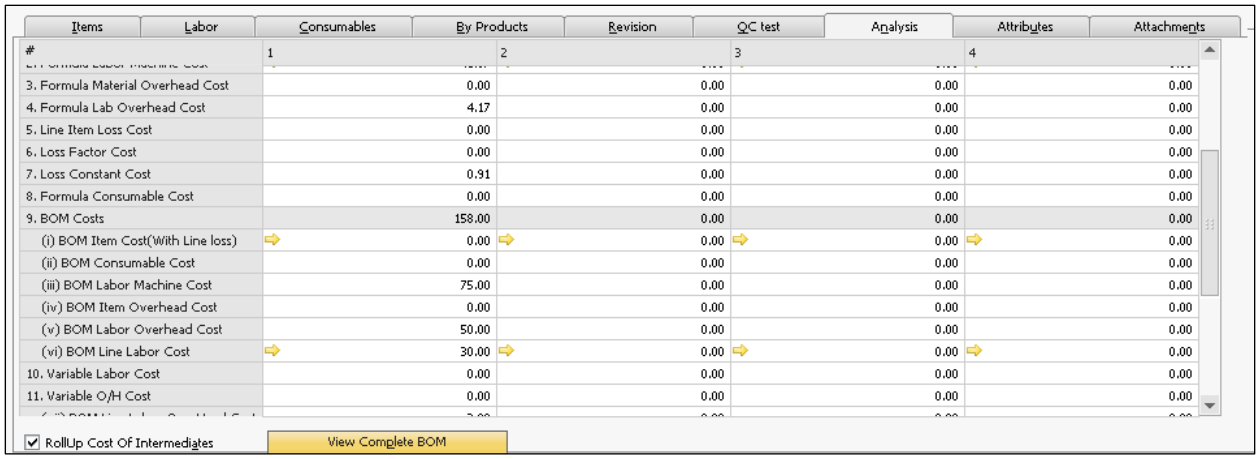


4. **Formula Lab Overhead Cost:** The labor overhead cost associated with the formula, entered at the line item level on the *Labor* tab (i.e., the *Overhead ID* field). Cost varies with batch size.



5. **Line Item Loss Cost:** The sum of any loss costs entered at the line item level on the *Items* tab. Cost varies with batch size.





The table on the following pages includes the formulas associated with the formulas or items that populate this tab.

Property	Notes
✔ CostPriceList	The price list selected by you for costing purposes. By default, this property will be price list defined on the formula.
BPCode	The code of the business partner. If applicable, the system will retrieve pricing applicable to the given business partner for the given price list. Special price will be calculated only for applicable items; for all other items, the price list used for cost calculations will be used. A detailed example is given below.
ApplicableOn	Specifies at what point of time costing analysis calculations are done. This field will default to the current date. This date will be used to calculate Period and Volume discounts for the items.
LotSize	This field will hold quantity in SKU of finished goods that is being used to calculate Product Cost. For example, what would be the per-unit cost if the lot size is 1,000? What it would be if the lot size is 500? This information is a mandatory input.
Assembly Item	Item code of the finished good.
FillQty	Quantity by which the finished good will be filled. This will default to the Fill Qty defined for the item in the BOM. $$Factor = \frac{1}{LotSize}$$
FillUnit	Unit of fill quantity.
✔ *Factor*	Internal field used to calculate the factor that will be used to arrive at the per-unit SKU cost of the finished good.
Formula MaterialCost	The total material cost of the formula. This property excludes any line losses and formula losses. **Calculation**: $$TC = \sum (Qty\ of\ material\ expressed\ in\ SKU * Price\ defined\ in\ CostPriceList\ Or\ SpecialPrice\ (if\ applicable)$$ $$FormulaMaterialCost = TC * Factor$$

Formula Consumable Cost	Total consumable cost. Includes any extra consumables required due to formula losses. **Calculation**: $Cost = \sum (qty\ of\ consumable\ expressed\ in\ SKU * Price\ defined\ in\ CostPriceList\ Or\ SpecialPrice\ (if\ applicable))$ $FormulaConsumableCost = Cost * Factor$
Formula MaterialOHCost	Total overhead cost used at material, excluding line losses and formula losses. **Calculation**: For lines having fixed overhead: $OH1 = SUM\ of\ (OH\ Amount)$ For lines having % overhead: $OH2 = \sum (Qty\ of\ material\ expressed\ in\ SKU * Price\ defined\ in\ CostPriceList\ Or\ SpecialPrice * OH\ Factor)$ $OHCOST = OH1 + OH2$ $FormulaMaterailOHCost = OHCOST * Factor$
FormulaLabor MachineCost	Total labor used in routing. Includes extra raw material issued due to formula losses. Default Rank will be used for calculation. If default Rank is not defined, 1 will be used. For labor type of lines: $LC1 = \sum \left(Labor\ time\ expressed\ in\ hours * Lab\frac{cost}{hr}\right)$ For process type of lines: $LC2 = \sum \{(Setup\ time\ expressed\ in\ hours * Lab\ cost/hr) + \left(Fixed\ time\ expressed\ in\ hours * Lab\frac{cost}{hr}\right) + \left(Run\ time\ expressed\ in\ hours * Lab\frac{cost}{hr} * Man\ Machine\ Ratio\right) + (Run\ time\ expressed\ in\ hours * Machine\ cost/hr)\}$ $Cost = LC1 + LC2$ **Calculation of Run Time:** When *Size with Batch* option on process line is *Yes*: $Run\ Time\ in\ hours = \left(Total\ incoming\ material1\ expressed\ in\ system\frac{weight}{machine} capacity\ in\ systen * Time\ Required\right)$ When *Size with Batch* option on process line is *No*: $Run\ Time\ in\ hours = Round\ to\ next\ integer((Total\ incoming\ material1\ expressed\ in\ system\ weight/machine\ capacity\ in\ system\ weight)) * Time\ Required)$ $FormulaLaborMachineCost = Cost * Factor$ 1: Total Incoming Material on a given routing line

✔ FormulaLab OHCost	Total overhead applicable on Labor used in process. As there is no overhead applicable at a labor line or process line, overhead calculated will be comprised of Setup and fixed overhead. **Calculation**: For Process type of lines: $Cost = \sum$ (If OH type is %, then: $\left(Fixed + time\ expressed\ in\ hours * Fixed\ labor \frac{cost}{hr} * overhead\ \%\right) +$ $\left(Setup\ cost\ expressed\ in\ hours * Setup\ labor \frac{cost}{hr} * overhead\ \%\right)$ Else: $(Fixed\ OH\ Amount + Setup\ OH\ Amount)$ $FormulaLabOHCost = Cost * Factor$
LineItemLoss Cost	Loss due to line losses defined at raw materials. **Calculation**: $TC = \sum (Qty\ of\ material\ expressed\ in\ SKU * (1/(1 - Loss\%/100) - 1) * Price\ defined\ in\ CostPriceList\ Or\ SpecialPrice$ (if applicable) $LineItemLossCost = TC * Factor$
LossFactor Cost	Loss due to loss factor defined at formula. **Calculation**: $X = (FormulaRawMaterialCost + FormulaMaterialOHCost) * \left(\frac{1}{1} - \left(\frac{loss\%}{100}\right) - 1\right)$ LossFactorCost = X * Factor
✔ LossConstant Cost	Loss due to loss constant defined at formula. **Calculation**: $X = (FormulaRawMaterialCost + FormulaMaterialOHCost) / (StandardFormulaWeight1)) * Loss\ Constant)$ $LossConstantCost = X * Factor$ $StandardFormulaWeight = (Total\ RM\ Weight - Total\ By\ weight)(weight\ excludes\ formula\ losses)$
BOM Costs	
✔ BOMItem Cost (With Line Loss)	Cost of assembly items in BOM. Includes any extra "what if" items added by the user at the time of cost analysis. **Calculation**: $BOMItemCost = \sum (BOM\ item\ qty\ expressed\ in\ SKU * Price\ defined\ in\ CostPriceList\ Or\ SpecialPrice)$ + BOM Line Loss cost
✔ BOM Consumable Cost	Cost of consumable item defined in BOM. **Calculation**: $TC = \sum (BOM\ consumable\ qty\ expressed\ in\ SKU * Price\ defined\ in\ CostPriceList\ Or\ SpecialPrice)$

	$BOMConsumableCost = TC * Factor$
✔ BOMItem OHCost	Cost of overhead at BOM assembly items. **Calculation**: $BOMItemOHCost = \sum$ (If OH type is %, then: $BOM\ item\ qty\ expressed\ in\ SKU * Price\ defined\ in\ CostPriceList\ Or\ SpecialPrice * OH\%$ Else: $OH\ Amount)$
✔ BOMLabor MachineCost	BOM labor/machine cost defined in BOM process (per-unit cost). Includes fixed and setup labor. For calculations, default processed # (Rank) will be considered. If default is not defined, 1 will be considered as default. **Calculation**: $LC1 = \sum \{ \left(Setup\ time\ expressed\ in\ hours * Lab\frac{cost}{hr}\right) + \left(Run\ time\ expressed\ in\ hours * Lab\frac{cost}{hr} * Man\ Machine\ Ratio\right) + \left(Run\ time\ expressed\ in\ hours * Machine\frac{cost}{hr}\right)\}$ **RunTime Calculation:** $Lot\ Size = Lot\ size\ entered\ by\ the\ user\ for\ costing\ calculations$ If RunRate = Minutes per piece, then: $X = Lot\ Size * \frac{RunTime}{60}$ Else, if RunRate = Hours per Piece: $X = LotSize * Run\ Time$ Else, if RunRate = Pieces per Minute: $X = \frac{\frac{LotSize}{Run}Time}{60}$ Else, if RunRate = Pieces per Hour: $X = \frac{LotSize}{RunTime}$ Note that here *RunTime* field contains quantity instead of time. Else, if RunRate = Fixed Minutes: $X = \frac{RunTime}{60}$ Else, if RunRate = Fixed Hours: $X = RunTime$ $BOMLaborMachineCost = LC1 * Factor$
BOM Line Labor Cost	BOM line labor cost defined in BOM process (per-unit cost). **Calculation**: **RunTime Calculation:** $Lot\ Size = Lot\ size\ entered\ by\ the\ user\ for\ costing\ calculations$ If RunRate = BOM Line labor in Minutes per piece, then:

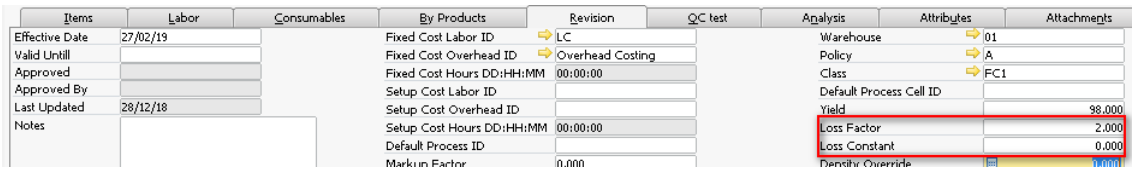
	$X = Lot\ Size * \frac{RunTime}{60}$ Else, if RunRate = Hours per Piece: $X = LotSize * Run\ Time$ $LC1 = \sum \{ \left(X * Lab\frac{cost}{hr}\right)\}$ $BOMLine\ Labor\ Cost = LC1 * Factor$
BOM Labor Overhead Cost	BOM labor overhead cost defined in BOM process (per-unit cost). **Calculation**: $BOMLaborOHCost = \sum$ (If OH type is %, then: $BOMLaborMachineCost\ expressed\ in\ SKU * OH\%$ Else: If OH type is Currency then: BOMLaborHours * $OH\ Amount$)
BOM Line Labor Overhead Cost	BOM Line labor overhead cost defined in BOM process (per-unit cost). **Calculation**: $BOMLineLaborOHCost = \sum$ (If OH type is %, then: $BOMLineLaborCost\ expressed\ in\ SKU * OH\%$ Else: If OH type is Currency then: BOMLineLaborHours * $OH\ Amount$)
✔ FixedLabor Cost	Cost of fixed labor defined in formula. **Calculation:** $X = Fixed\ hours * fixed\ lab(\frac{cost}{hr})$ $FixedLaborCost = X * Factor$
✔ FixedOHCost	Cost of fixed overhead defined in the formula. **Calculation:** If OH is %, then: $X = Fixed\ hours * fixed\ lab\frac{cost}{hr} * OH\ \%$ Else, $X = Fixed\ hours * OH\ Amount$ $FixedOHCost = X * Factor$
✔ SetupLabor Cost	Cost of setup labor. **Calculation**: $X = Setup\ hours * setup\ lab(\frac{cost}{hr})$ $SetupLaborCost = X * Factor$
✔ SetupOHCost	Cost of setup overhead. **Calculation**: If OH is %, then:

	$X = Setup\ hours * setup\ lab \frac{cost}{hr} * OH\ \%$ Else, $X = Setup\ hours * OH\ Amount$ $SetupOHCost = X * Factor$
✔ VariableLabor Cost	Cost of variable labor, if any. **Calculation**: $X = variable\ hours\ picked\ based\ on\ batch\ size * applicable\ lab(\frac{cost}{hr})$ $VariableLaborCost = X * Factor$
✔ VariableOH Cost	Variable overhead, if any. **Calculation**: If OH is %, then: $X = variable\ hours\ picked\ based\ on\ batch\ size * applicable\ lab \frac{cost}{hr} * OH\ \%$ Else, $X = OH\ Amount$ $VariableOHCost = X * Factor$
✔ Byproduct Cost	Cost of by-product. This cost will be deducted from formula cost. Cost of the by-product will be based on the price list selected for the cost analysis. **Calculation:** $X = \sum \left(Byproduct\ qty\ expressed\ in\ SKU * Sized\ formula\ wt\ with \frac{losses}{standard} formula\ wt * Price\ defined\ in\ CostPriceList\ Or\ SpecialPrice \right)$ $ByproductCost = X * Factor$
✔ TotalCost	The total cost of the finished good expressed per stock-keeping unit. **Calculation**: $TotalCost = (FormulaMaterialCost + FormuaConsumableCost + FormulaLaborMachineCost + FormulaMaterailOHCost + FormulaLabOHCost + LineItemLossCost + BOMConsumableCost + BOMLaborMachineCost + BOMLaborOHCost + FixedLaborCost + FixedOHCost + SetupLaborCost + SetupOHCost + VariableLaborCost + VariableOHCost + - ByproductCost) + BOMItemCost$ + BOM Line Labor Overhead Cost + BOM Line Labor Cost
✔ FormulaCost PerUnit	The end item cost per unit excluding BOM costs. **Calculation**: $FormulaCostPerUnit =$

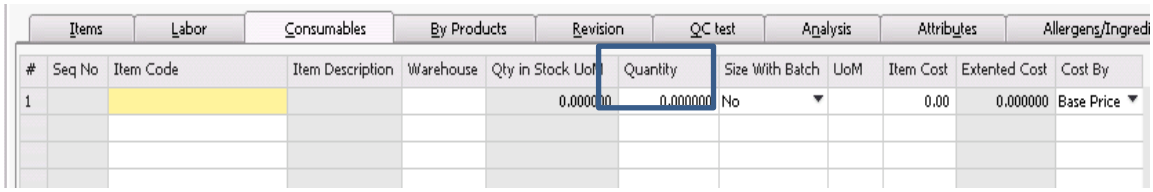
	$(FormulaMaterialCost + FormulaConsumableCost + FormulaLaborMachineCost + FormulaMaterailOHCost + FormulaLabOHCost + LineItemLossCost + FixedLaborCost + FixedOHCost + SetupLaborCost + SetupOHCost + VariableLaborCost + VariableOHCost - ByproductCost)/Factor * /RequiredFormulaWeight$
✔ Markup MarginFactor	Defaults to markup factor as % defined for the formula, but can be changed by the user. If *CostAnalysisBy* is set to **Calculate Sales Price,** then the system will calculate the selling price based on this markup factor. If *CostAnalysisBy* is set to **Calculate Margin,** then this field shows the margin calculated by the system. $Margin\% = (Price\ of\ FG\ Price\ defined\ in\ CostPriceList - TotalCost) / Price\ of\ FG\ Price\ defined\ in\ CostPriceList * 100$
✔ SellingPrice	If *CostAnalysisBy* is set to **CalculateSalesPrice**, then the system will calculate the sales price as: $SellingPrice = TotalCost\left(1 + \frac{MarkupMarginFactor}{100}\right)$ If *CostAnalysisBy* is set to **Calculate Margin**, then this field shows the selling price of the finished good defined in the price list selected for the cost analysis.

6. **Loss Factor Cost:** The variable loss cost at the formula level, defined on the Revision tab (i.e., the Loss Factor field value). Varies with batch size.

7. **Loss Constant Cost:** The fixed loss cost at the formula level, defined on the *Revision* tab (i.e., the *Loss Constant* field value). Does not vary with batch size.



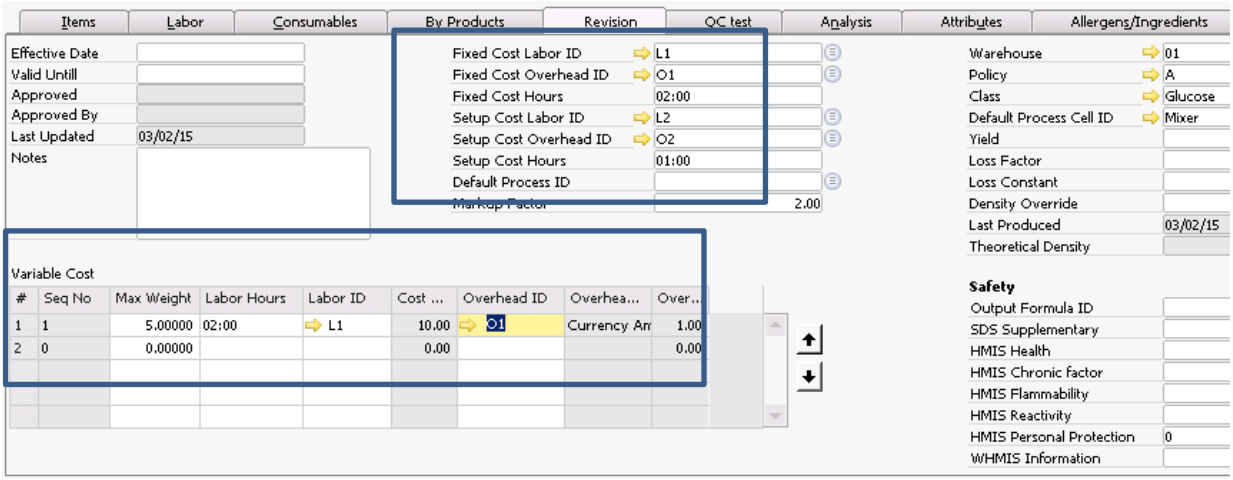
8. **Formula Consumable Cost:** The cost of consumables at the formula level (i.e., the *Size with Batch* field value). May vary with batch size depending on the line item settings on the *Consumables* tab.



9. **BOM Costs** (summary line)**:** The total of sub-costs listed. (For additional information, consult the *BatchMaster ERP with SAP Business One 18.2 – Bill of Material User Guide*.)

10.-11. Variable Labor, Variable O / H (lower box): The sum of each of these costs, defined on the Revision tab. Can be defined for one or more weight ranges.

12-15: Fixed Labor, Fixed Overhead, Setup Labor, Setup Overhead (upper box)**:** The sum of each of these costs, defined on the *Revision* tab.



16. **Byproduct Cost:** Material cost of the byproduct(s) made during production.

17. **Byproduct O/H Cost:** Overhead cost of byproduct(s) made during production.

Total Cost: The total cost of the product being produced with the formula, based on the system data and taking into account the allowed user edits on the screen.

Formula Cost per Unit: The cost per unit of the product, based on the system data and taking into account the allowed user edits on the screen.

Margin %: The profit percentage of the product, based on the cost totals and the markup percentage and lot size entered by the user.

Selling Price: The suggested selling price of the product, based on the cost totals and lot size entered by the user. Here we see the impact of a 2 percent mark-up factor.

15. Setup O/H Cost	100.00	100.00
16. Byproduct Cost	0.00	0.00
17. Byproduct O/H Cost	0.00	0.00
Total Cost	**465.98**	**462.59**
Formula Cost per Unit	15.49	13.11
Margin %	33.33	33.33
Selling Price	698.97	693.89

Rollup Cost of intermediates: Select this checkbox to explode any intermediates to its constituents and compute costs.

View Complete BOM: Click this button to view the BOM explosion screen, which displays the BOM hierarchy.

Export: You can export the full scope of their cost analysis including any custom costs added via Costing Defaults into an Excel file.

3.1.8.1 Maintaining Analysis Tab Information

1. Select the price list to be associated with the formula using the drop-down available near the *Cost By* field.
2. Enter the costing method for the finished good items in the *Costing Method* field.
3. Enter the *Markup Factor* and *Lot Size* in the respective fields.
4. Select the BOM type in the *Assembly BOM/BOM Key* field. Available options are *Finished Good BOM* or *Assembly type BOM*.
5. Change the fill level to see costs for the desired fill level, if required.
6. Enter the markup factor in the *Markup Factor* field.
7. The *Formula Material Cost* field contains the material costs associated with the formula.
8. The *Formula Labor Machine Cost* field contains the machine costs associated with the formula.
9. The *Formula Material Overhead Cost* field contains the material overhead costs associated with the formula.
10. The *Formula Labor Overhead Cost* field contains the labor overhead costs associated with the formula.

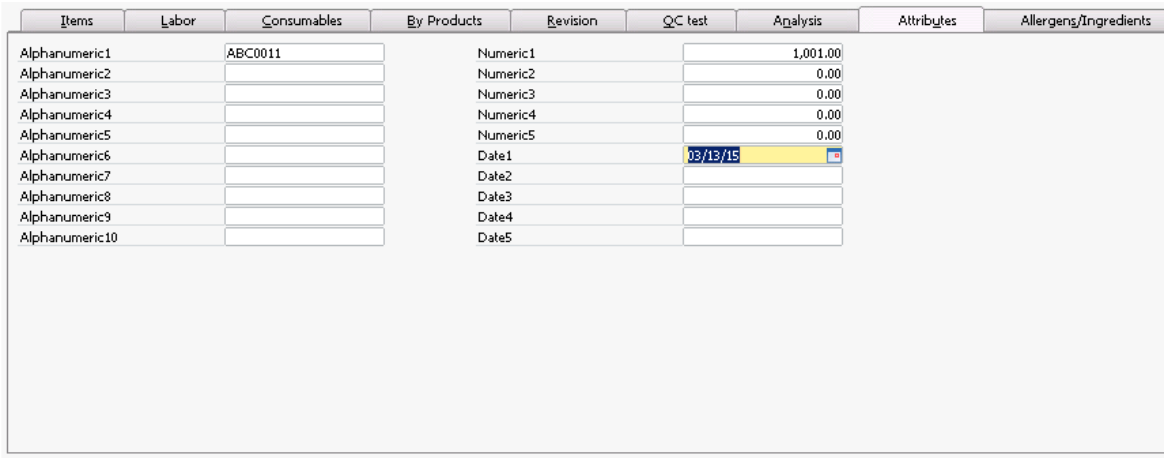
11. Select the *Rollup Cost of intermediates* checkbox to explode any intermediate to its constituents and compute costs.

12. Click the *View Complete BOM* button to view the BOM explosion screen which displays the exploded BOM hierarchy.

13. Enter the required details and click the *OK* button to continue.

3.1.9 Attributes Tab

On this tab you can view, enter, or edit information pertaining to the user-defined attributes of production using the formula.



You can edit any cell that is presented in white. You can also change the field labels to meet your business requirements. (For additional information, consult the *BatchMaster ERP with SAP Business One 18.2– Formulation User Guide*.)

Alphanumeric (1 through 10): The field value composed of a combination of alphabetical and numeric characters. You can enter letters (A...Z), numbers (0…9), and the underscore character.

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

Date (1 through 5): The value used to define dates which have a predetermined size and format.

Remarks: Any extra remarks or comments related to the formula.

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

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

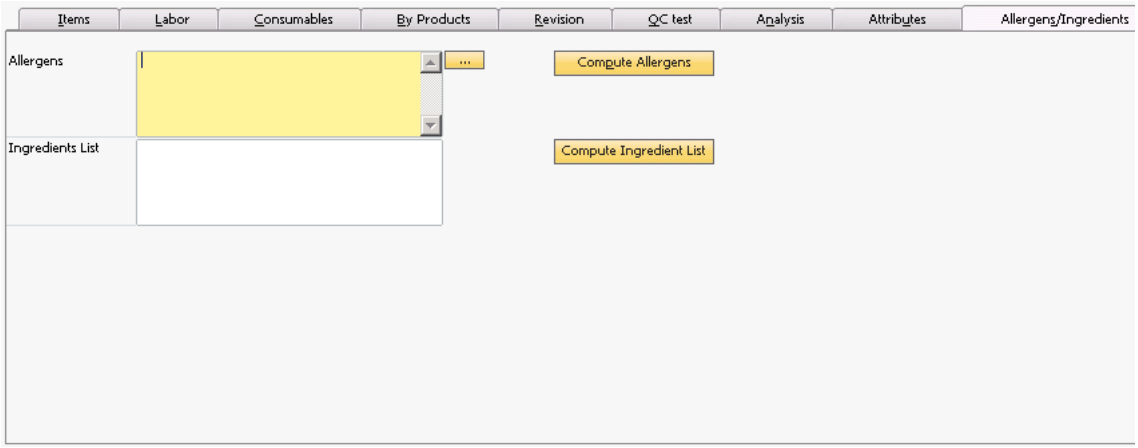
Total: The sum total of the weight of all the lines, displayed in the System Weight UOM.

Cost per: The cost of one Unit (System Weight Unit) of the formula.

3.1.9.1 Maintaining Attributes Tab Information

1. Enter the required alphanumeric values for the reporting purpose in the *Alphanumeric1* through *Alphanumeric10* fields.
2. Specify the numeric value in the *Numeric1* through *Numeric5* fields, as needed.
3. If needed, associate the dates in the *Date1* through *Date5* fields.
4. Click the *Update* button to save the record.

3.1.10 Allergens/Ingredients Tab



Allergens: The allergen used in the formula.

Compute Allergens: Click this button to compute 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 the ingredients in the raw materials or intermediates.

Remarks: Remarks or comments related to the formula.

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

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

Total: The sum total of the weight of all the lines, shown in the System Weight UOM.

Cost per: The cost of one unit (System Weight Unit) of the formula.

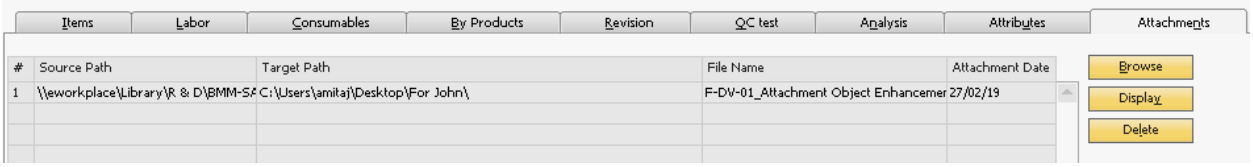
View Complete Formula: Click the *View Complete Formula* button to show hierarchical information for the formula.

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

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

3.1.11 Attachments Tab

On the *Attachments* tab, you can browse and locate file(s) that you want to attach to this record. It must be located on a shared server.



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 in the *Attachment Folder* field in SAP *General Settings* screen.

File Name: Displays the name of the file.

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

Browse: Use this button to search and locate the path of the file which needs 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.

3.1.12 Go To Functions

At the top of your screen is a Windows toolbar with the following options:

File | Edit | View | Data | Go To |

The *Go To Menu* provides powerful functions depending on the status of the formula you are editing.

Size Formula: Clicking this option displays the *Formula Sizing* screen.

The sizing functionality is applicable only when the formula status is Development. Available options for sizing a formula are:

1. **By weight.** When this option is selected, only the *Weight Quantity* and *Units* fields will be enabled. You need to enter the weight and a valid weight type unit. To resize the quantities of items by weight, the application 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 = 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 byproducts and consumables are calculated in a similar way.

2. **By volume.** When this option is selected, only the *Volume Quantity* and *Units* fields will be enabled. You need to enter the volume and a valid volume type unit. To calculate the *New Total System Volume*, the application 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 = New Total System Volume / Current Total RM Volume

c. Calculate the new quantity using this formula:

d. New Quantity (resized by volume) = Factor * Qty in display UOM

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

3. **By specific quantity of material.** When this option is selected, only the *By Quantity of Material* and *Units* fields will be enabled. You need to select an existing formula item, a new quantity, and a valid item unit. The application will size the formula lines according to the quantity entered. (See example screen shot on the following page.)

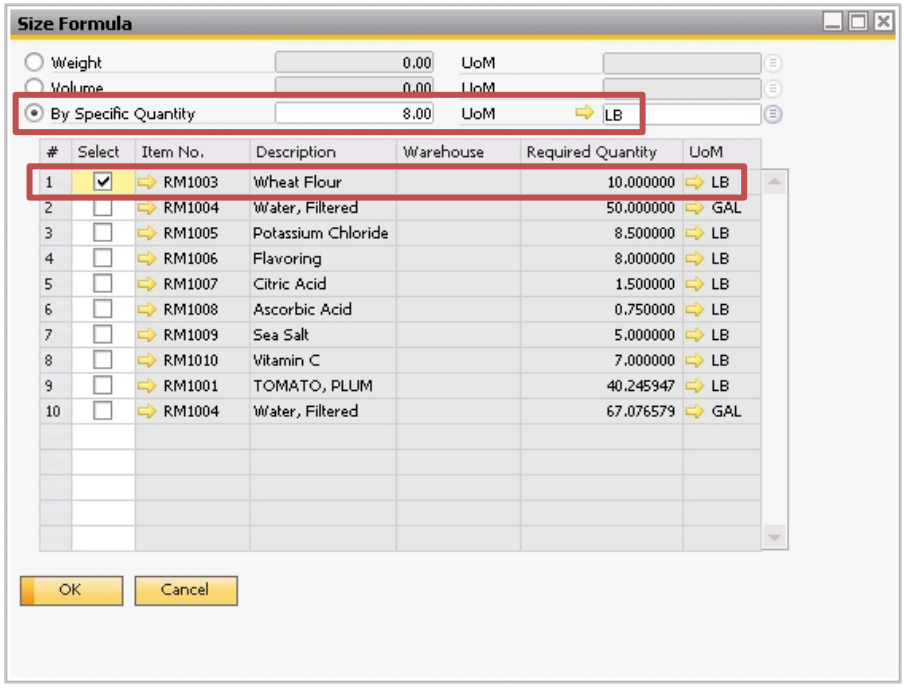
   a. Calculate the New Item Quantity in System Weight by converting the new quantity into the system weight unit.

   b. Calculate the factor using this formula:

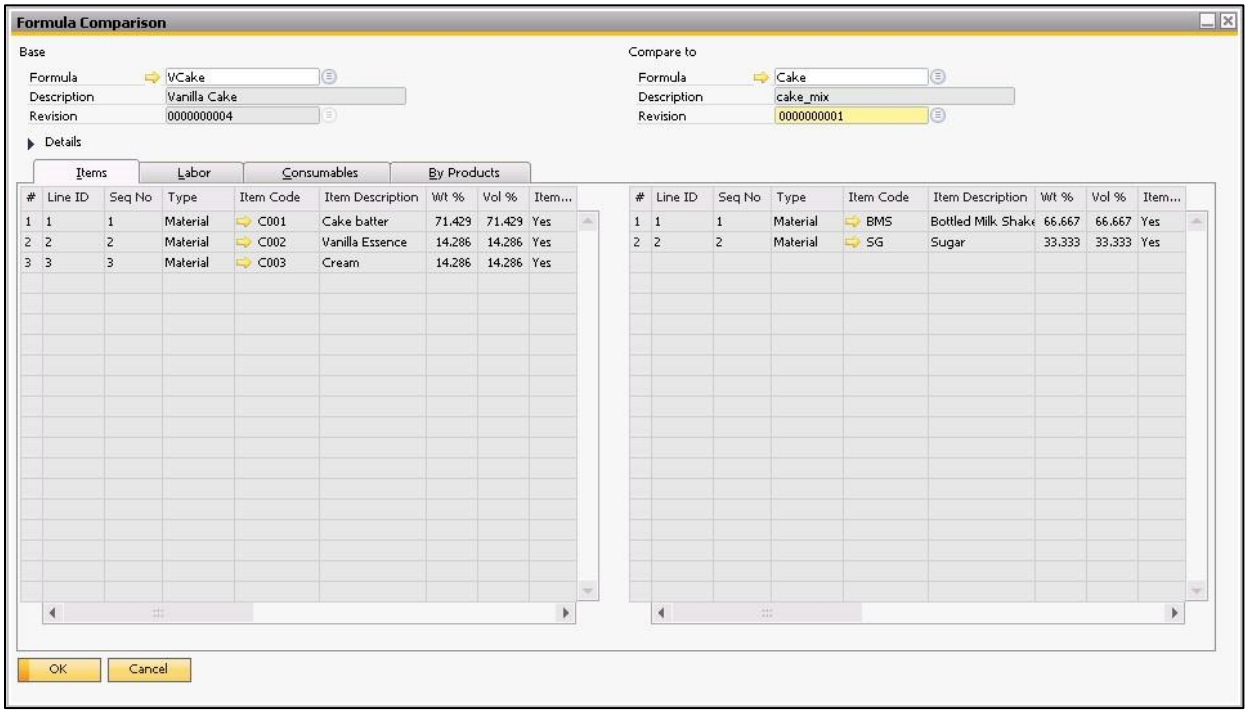
   Factor = New Item Quantity (System Weight) / Current Item Quantity (System Weight)

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

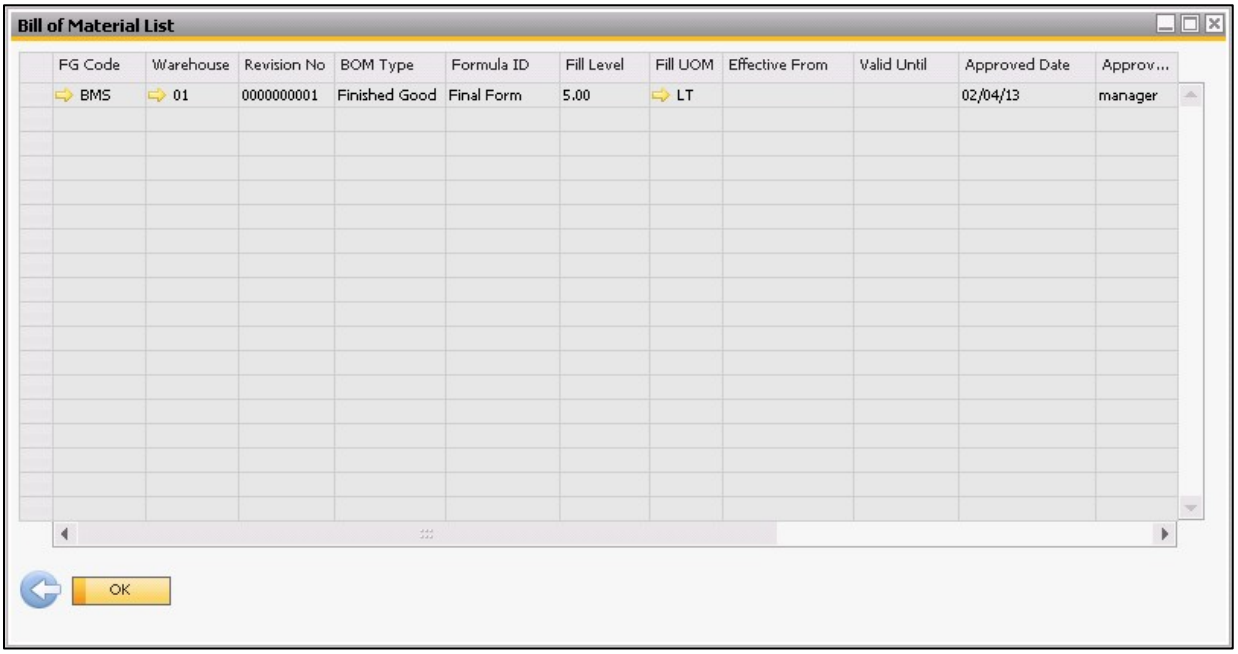
Selecting one of the resizing options, entering a value, and clicking *OK* resizes the formula accordingly. The formula line items of material type and the byproducts (if any) are sized accordingly. The sized formula is not saved until the *Update* button is clicked. (For additional information, consult the *BatchMaster ERP with SAP Business One 18.2 – Formulation User Guide*.)



Formula Comparison: Choose this option to display the *Formula Comparison* screen with the current formula. You can select and compare two distinct formulas, or two versions of the same formula. The *Items*, *Consumables*, and *By Products* grids are read-only and display all relative information.



Bill of Materials List: A screen that lists all available BOMs in which the formula is being used.



Put on Hold: Changes the formula status from *Active* to *Hold*. The formula will not be available for production until its status is changed back to *Active*.

Release Hold: Changes the status of the formula from *Hold* to *Active*.

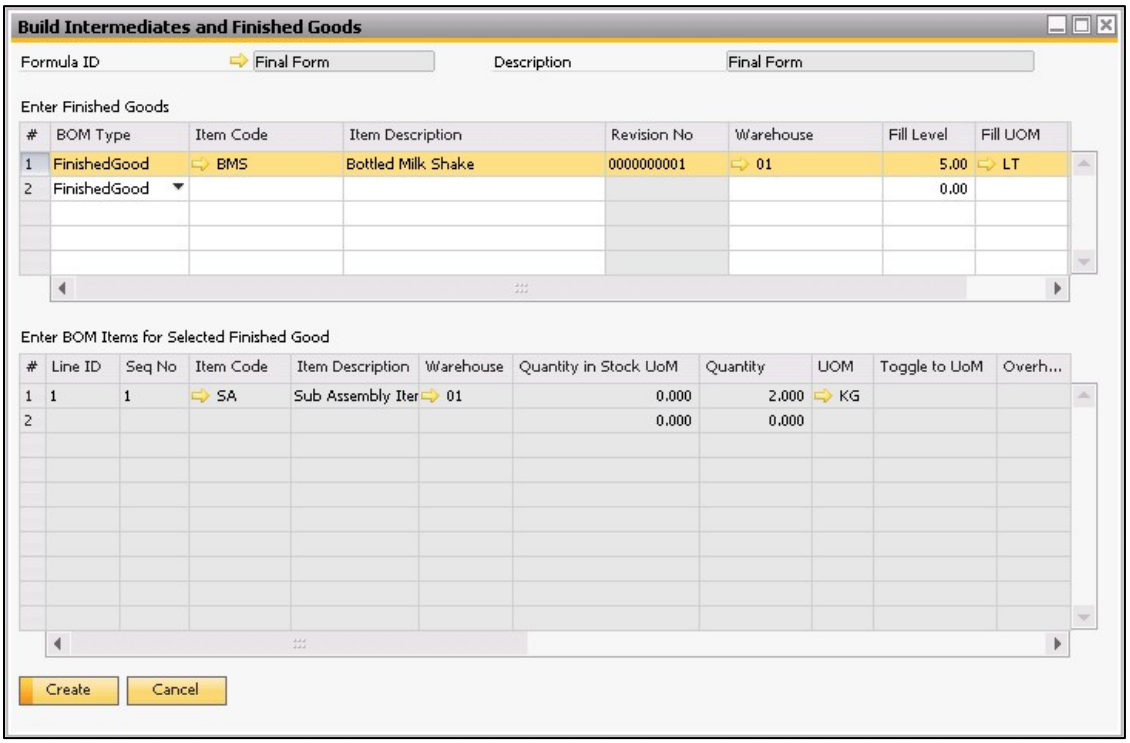
Make Obsolete: Changes the status of a formula to *Obsolete*. This means the formula is no longer available for production.

Print Specifications: Prints a report listing the group IDs, specifications, and specification values associated with the formula.

Specifications: Opens a window in which you can define specifications for the formula. You can use this information for conducting quality control tests. A specification typically contains the standards of performance upon which the quality tests are evaluated. (For additional information, consult the *BatchMaster ERP with SAP Business One 18.2 – Formulation User Guide*.)

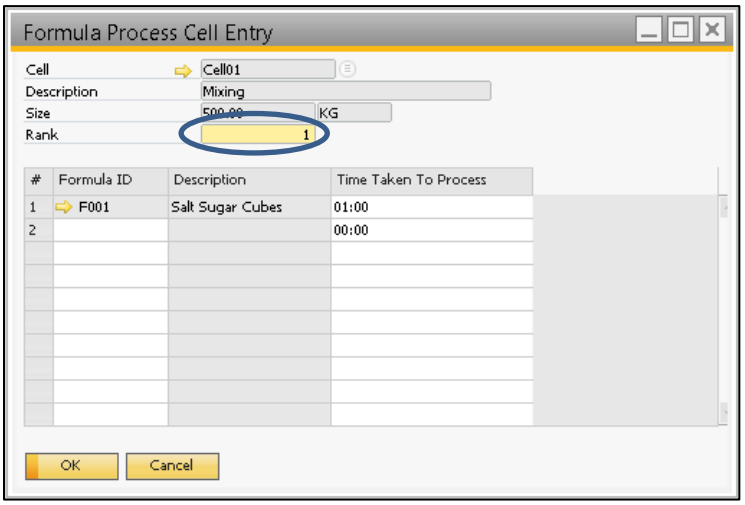
Revise Formula: Creates the same formula with a new revision number. (See Section 3.1.12 Right-Click Functions to learn how to copy formula details to make a new formula.)

Build Bill of Materials: Opens the *Build Intermediates and Finished Goods* screen, in which you can create an intermediate or finished good BOM for the desired fill level. You can also enter component items for the selected finished good BOM. (For additional information, consult the *BatchMaster ERP with SAP Business One 18.2 – Formulation User Guide.*)

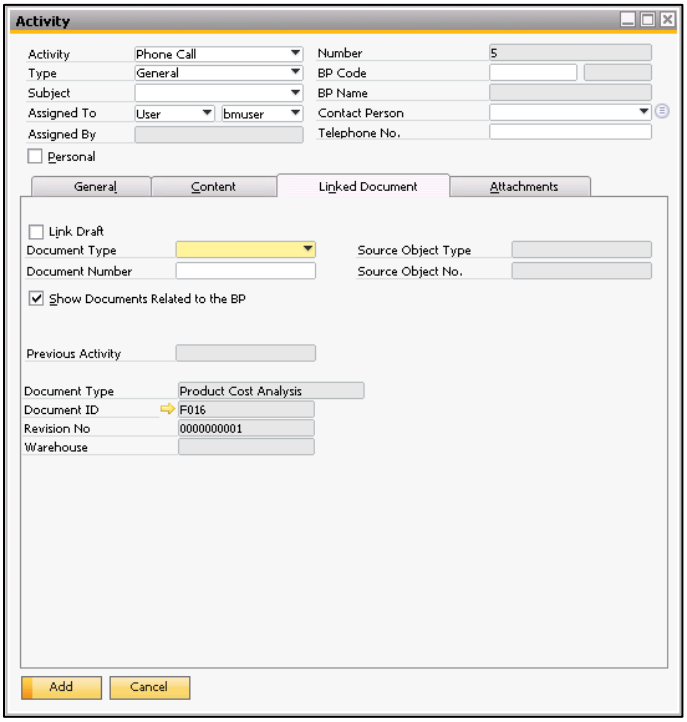


Print Nutritional Label: Opens a window where you can define what label(s) to print and what information to print on them. You can print the Nutritional label in 6 different formats, where each format serves a different purpose. (For additional information, consult the *BatchMaster ERP with SAP Business One 18.2 – Formulation User Guide.*)

Process Cell Entry: Displays a window in which you can associate the formula with one or more process cells. The purpose of this link is to define the amount of time needed in the process cell to complete the normal batch size. This aids in capacity planning. If you associate a formula with more than one process cell, MPS/MRP uses the 'rank' value to determine in which cell the work will be scheduled.



New Activity: Select the *New Activity* option to go to the *Activity* screen in SAP. Use this screen to create and associate activities. See the *BatchMaster ERP with SAP Business One 18.2 – Activities SOP* for more information.



Build Intermediates: The *Items* grid of the *Product Cost Analysis* screen allows you to select multiple items and then choose the *Build Intermediate* option from the *GoTo* menu to create a new formula. Selecting one or more formula lines and clicking the 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 status *Development*.

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

View Complete Formula: Choose this option to display the *View Complete Formula* screen with a graphical layout. You can drill into intermediates and match items to processes. This is a read-only screen with two distinct viewing options, *By Section* and *Indented*. When the *By Section* view is selected, the screen will list all information in tabs. Use the *Expand* and *Collapse* buttons to expand or collapse any item or process that has indented information.

3.1.13 Right-click Functions

Delete: Clicking this option deletes the data in the *Active* field on the screen.

Remove: Click the *Remove* option to delete the formula record. (Only enabled for formulas that have *Development* status.)

Duplicate: Clicking this option copies the formula details but allows you to rename the formula. (This is in contrast to the *Revise* function, which creates the same formula with a new revision number.)

The rest of the right-click functions are covered in Section 3.1.11 Go To Functions.

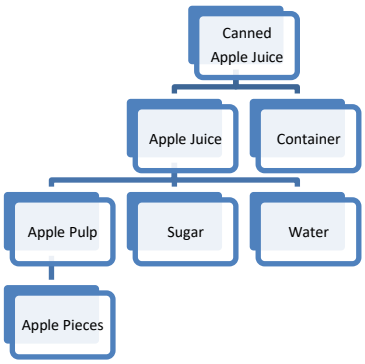
4 COST UTILITIES

4.1 Cost Rollup

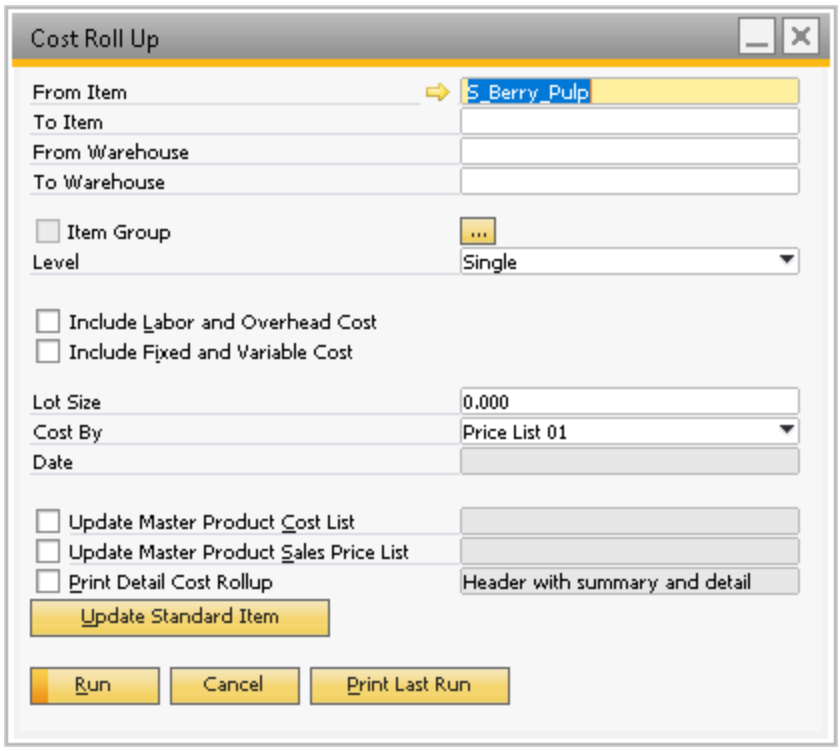
Go To: Product Costing → Cost Utilities → Cost Roll Up.

On the *Cost Rollup* screen you can perform cost rollup for a range of items. This functionality combines and replaces the *Intermediate Cost Rollup* and *Update Finished Good Costs* utilities.

For example, canned apple juice is manufactured by filling containers with apple juice. Apple juice is manufactured by mixing apple pulp, sugar, and water. Apple pulp is manufactured by crushing apple pieces. This manufacturing cycle is shown in the following illustration.



A multi-level cost roll-up starts from the bottom up. First, the manufacturing cost of apple pulp is calculated. This cost is included in the manufacturing cost of apple juice. Finally, the manufacturing cost of apple juice is included in the cost of canned apple juice.



From/To Item: The lower and upper limits, respectively, of the range of items for which you want to roll up costs. Leaving either field blank will result in the system including the very first or very last item as part of the roll-up.

From/To Warehouse: The lower and upper limits, respectively, of the range of warehouses that store the items for which you want to roll up costs. Leaving either field blank will result in the system including the very first or very last warehouse code as part of the roll-up.

Item Group: Instead of using the From/To Item limiter, you can select which items are included in the cost roll-up by picking an item group. The default is *All*, but a drop-down menu shows you other choices.

Level: Specify whether the system will calculate costs at a single level or at multiple levels:

- **Single:** The system will only take costs from one level down. In our example, the cost of canned apple juice would be rolled up based on the costs of apple juice and containers. Any changes to costs below that level would not impact the roll-up.
- **All:** Costs in all levels will be rolled up. In a multi-level rollup, the costs of all items are updated based on the cost of items in the next lower level.

Include Labor and Overhead Cost: The following costs will be included in the rollup calculations:

- BOM Item Overhead.

- BOM Labor Cost.
- BOM Labor Overhead.
- BOM Line Labor Cost.
- BOM Line Labor Overhead.
- Formula Labor Cost.
- Formula Labor Overhead Cost.
- Formula Material Overhead Cost.
- Setup Labor Cost.
- Setup Overhead Cost.

Include Fixed and Variable Cost: The following costs will be included in the rollup calculations:

- Fixed Labor Cost.
- Fixed Overhead Cost.
- Variable Labor Cost.
- Variable Overhead Cost.

The following costs are included while calculating the rollup cost, irrespective of whether the *Include Labor and Overhead Cost* and the *Include Fixed and Variable Cost* options are selected.

- BOM Item Cost.
- By-product Cost.
- By-product Overhead Cost.
- Formula Materials Costs.
- Line Item Loss Cost.
- Loss Constant Cost.
- Loss Factor Cost.

Lot Size: The quantity of the finished good for which costs are being calculated. The value in this field is populated from the *Default Lot Size* field, which is found on the *General* tab of the *Costing Defaults* screen. Generally, unit cost falls as lot size increases, because the system divides fixed costs, setup costs, and constant loss cost across a bigger lot size. You can enter a different Lot size as required.

Cost By: The price list for the formula to be used in the cost roll-up. This information can be accessed from the drop-down menu next to the *Cost By* field. Available options are:

- Any of the *Price Lists* available in the system.
- *Item Cost*.
- *Formula Setting* (price list defined at line item level).
- *Last Evaluated Price*.
- *Last Purchase Price*.
- *Item Default Vendor Price*.

Date: Select the date specific to which you want to draw the vendor price. This field is enabled only when the price list selected is *Item Default Vendor Price.*

Update master product cost list: Check this option to update the desired product cost list with the correct finished good or intermediate cost. When this checkbox is selected the field next to it is enabled, allowing you to select the price list.

Update master product sales price list: Check this option to calculate the sales price of finished goods/intermediates based on the mark-up factor defined at the formula level and update the selected master sales price list.

Print Detail Cost Rollup: Select this option to print a detailed cost rollup report, displaying cost component details of Top level items as well as all its sub level FGs and Intermediates. You can generate the report in 3 different formats, discussed below.

Only Header : This layout shows the List of BOM Items

Header with Summary: In this format you can see a list of BOM items with a Cost Summary.

Header with Summary and Detail: Shows List of BOM items, Summary of BOM as well as Detail Cost of Top level BOM item.

Update Standard Item: Clicking on this button system takes the data of last rollup run for BOM items whose cost valuation method is set as *Standard Cost*, and populate it on the Inventory Revaluation screen. On the *Inventory Revaluation* screen you can view the Current Standard cost as well as the New cost (Rolled up cost) of the item. If needed you can *Add* the record and update the item current cost with the new cost.

Print Last Run: Using this button you can print the recent cost rollup data, based on the selected report option.

The selected report option should be same as you selected during the run process.

Run: Click the *Run* button to execute the cost roll up utility.

Cancel: Click the *Cancel* button to close the screen without performing the cost rollup.

4.1.1 Performing the Cost Roll Up

1. Specify the item range on which to perform the cost rollup using the lookups available near the *From Item* and *To Item* fields.

2. Specify the warehouse range for the selected items using the lookups available near the *From Warehouse* and *To Warehouse* fields.

3. Select the desired item group(s) using the drop-down menu next to the *Item Group* field, if desired.

4. Choose the level for performing the cost rollup in the *Level* field. Available options are *Single* and *All*.

5. Check the *Include Labor & Overhead Cost* option, if appropriate.

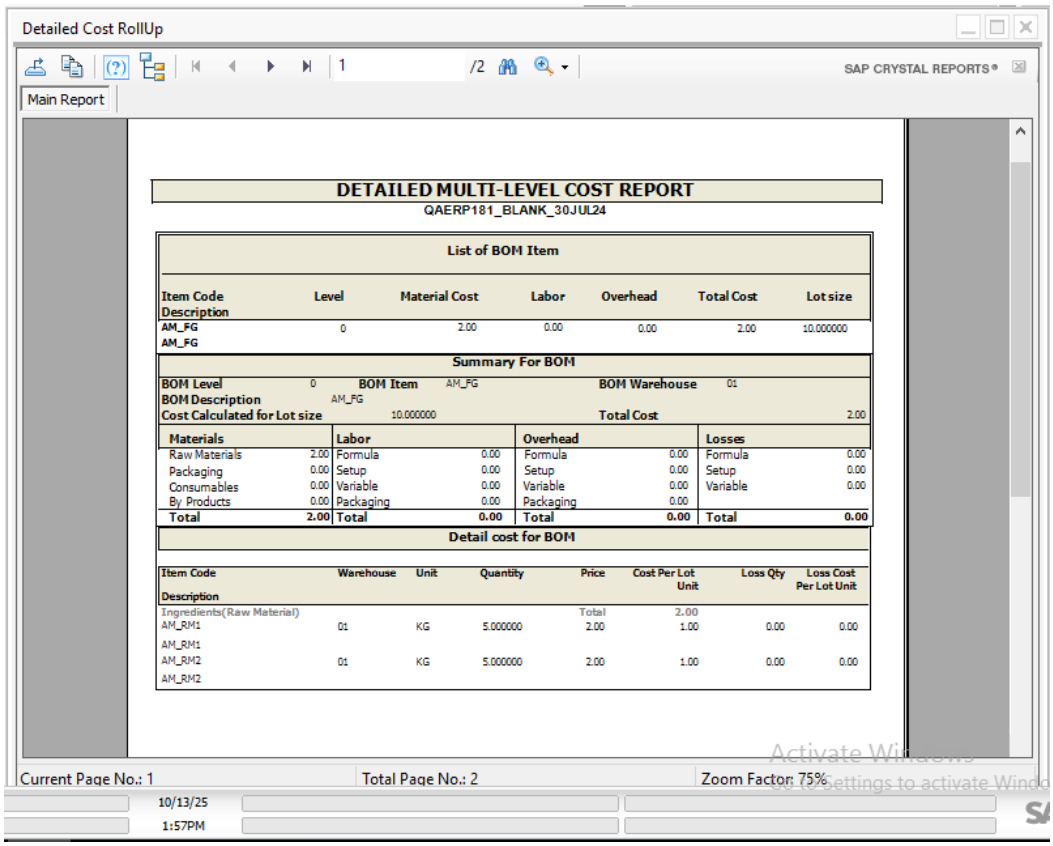
6. Check the *Include Fixed & Variable Cost* option, if appropriate.

7. Enter the rollup lot size in the *Lot Size* field.

8. Select the price list of the formula to be used in the rollup using the drop-down menu next to the *Cost By* field. The selected *Cost By* value will now appear in both the report header and summary sections, along with other applied filters such as item, plant, and date range.

9. If you have selected the price list *Item Default Vendor Price* in the *Cost By* field and need to account for prices on a specific date, then select the desired date.

10. Click the *Run* button to roll up the cost. A report will be generated.

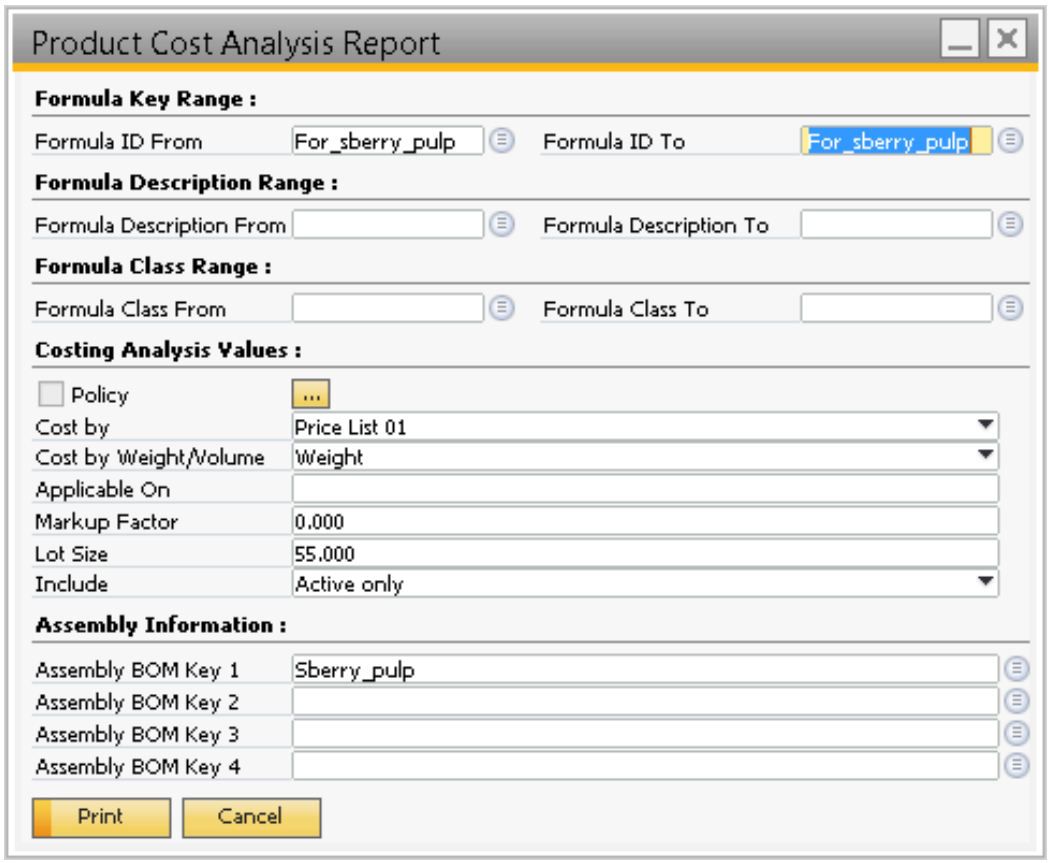

Detailed Cost RollUp
SAP CRYSTAL REPORTS
Main Report
DETAILED MULTI-LEVEL COST REPORT
QAERP181_BLANK_30JUL24
List of BOM Item
Item Code
Description
Level
Material Cost
Labor
Overhead
Total Cost
Lot size
AM_FG
AM_FG
0
2.00
0.00
0.00
2.00
10.000000
Summary For BOM
BOM Level 0
BOM Item AM_FG
BOM Warehouse 01
BOM Description AM_FG
Cost Calculated for Lot size 10.000000
Total Cost 2.00
Materials
Raw Materials 2.00
Packaging 0.00
Consumables 0.00
By Products 0.00
Total 2.00
Labor
Formula 0.00
Setup 0.00
Variable 0.00
Packaging 0.00
Total 0.00
Overhead
Formula 0.00
Setup 0.00
Variable 0.00
Packaging 0.00
Total 0.00
Losses
Formula 0.00
Setup 0.00
Variable 0.00
Total 0.00
Detail cost for BOM
Item Code
Description
Warehouse
Unit
Quantity
Price
Cost Per Lot Unit
Loss Qty
Loss Cost Per Lot Unit
Ingredients(Raw Material)
Total 2.00
AM_RM1
AM_RM1
01
KG
5.000000
2.00
1.00
0.00
0.00
AM_RM2
AM_RM2
01
KG
5.000000
2.00
1.00
0.00
0.00
Current Page No.: 1
Total Page No.: 2
Zoom Factor: 75%
10/13/25
1:57PM

5 COSTING REPORTS

5.1 Product Cost Analysis Report

From this screen you can print detailed product cost analysis information for up to four finished goods. Results will be displayed as a Crystal Report which can be printed or exported.

Go To: Product Costing → Costing Reports → Product Cost Analysis Report.



Formula ID From/To: The range of formula(s) that will be included in the report. Leaving these fields blank will mean all formula records will be included. When you leave *Formula ID From* blank, all formula records up to and including the Formula ID in the *Formula ID To* field will be displayed. Conversely, when you leave *Formula ID To* blank, all formula records from the Formula ID in the *Formula ID From* field to the last formula will be displayed.

Formula Description From/To: The range of formula descriptions that can be used to filter the data displayed in the report. Leaving these fields blank will mean all formula records will be included. When you leave *Formula Description From* blank, all formula records up to and including the Formula Description in the *Formula Description To* field will be displayed. Conversely, when you leave *Formula*

Description To blank, all formula records from the Formula Description in the *Formula Description From* field to the last formula will be displayed.

Formula Class From/To: The range of formula classes that can be used to filter the data displayed in the report. Leaving these fields blank will mean all formula records will be included. If you leave *Formula Class From* blank, all formula records up to and including the Formula Class in the *Formula Class To* field will be displayed. Conversely, if you leave *Formula Class To* blank, all formula records from the Formula Class in the *Formula Class From* field to the last formula will be displayed.

Cost Analysis Values

Policy: The formula policies that can be used to filter the data displayed in the report. All policies are selected by default, or you can use the lookup next to the *Policy* field to see a list of formula policies.

If any policy is selected, then the box adjacent to the *Policy* caption will be checked automatically.

Cost by: The price list to use for the analysis. A drop-down menu is provided next to the *Cost by* field. Available options are:

- *All the price lists defined in the system*.
- *Item Cost*.
- *Formula Setting*.
- *Last Evaluated Price*.
- *Last Purchase Price*.
- *Default Item Vendor Price*.

The default value is determined during system setup.

Cost by Weight/Volume: Defines whether to use weight or volume as the costing basis. The default value is determined during system setup.

Applicable On: If *Cost By* field is selected as *Default Item Vendor Price* and time-specific discounts have been defined for the vendor then the system will use this date to pick applicable pricing of the raw materials.

Markup Factor: The markup factor used to calculate the sales price of your finished foods. The markup factor is expressed as a percentage.

Lot Size: The value in this field is populated from the *Default Lot Size* field, which is found on the *General* tab of the *Costing Defaults* screen. This is a mandatory field, and can be edited.

Include: The formulas for which costs will be calculated. Available options are *Active Only* or *Active and Development*.

Assembly Information

Assembly BOM Key 1 through 4: The BOM Keys to be included in the report.

Print or Cancel: Click the *Print* button to print the report, or *Cancel* to clear the data selections. Click *Cancel* a second time to close the report selection screen.

5.1.1 Generating a Product Cost Analysis Report

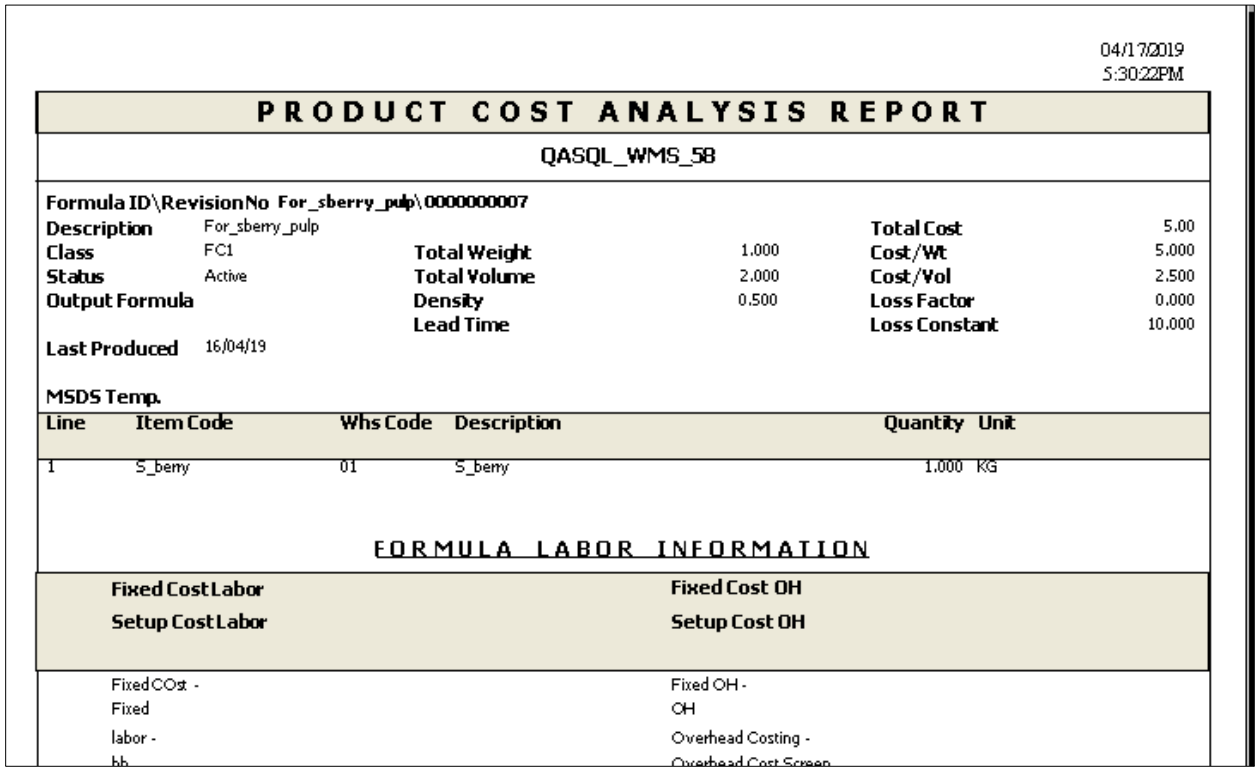
1. In the *Formula Key From* and *Formula Key To* fields, enter the range of formula keys based on which data is to be filtered and displayed on the report.
2. In the *Formula Description From* and *Formula Description To* fields, specify the range of formula descriptions based on which data is to be filtered and displayed on the report.
3. In the *Formula Class From* and *Formula Class To* fields, enter the range of formula classes based on which data is to be filtered and displayed on the report.
4. Select the *Formula Policy* to be included while filtering data on the report. Use the selection option to choose the required formula policy from the list.
5. If need be, filter data based on formula policy by selecting the *Policy* option and selecting the desired policy. The system displays all the formula policies created in BatchMaster ERP from which you can choose.
6. Select the desired option to be included in the report with the help of the drop-down available next to the *Cost Method* field.
7. Select the desired option using the drop-down menu next to the *Cost by Weight/Volume* field. Available options are *Weight* or *Volume*.
8. Specify the date on which the pricing discount is applicable, using the date selection button available near the *Applicable on* field.
9. Specify the *Markup Factor* and the *Lot Size* in the respective fields. These are mandatory fields.

10. Specify whether the report should include formulas of *Active* status or *Active* as well as *Development* statuses, in the *Include* field.

11. Specify the assembly BOM Keys (1, 2, 3 and 4) to be included in the report.

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

An example of a generated *Product Cost Analysis Report* is provided below.



04/17/2019
5:30:22PM

PRODUCT COST ANALYSIS REPORT

QASQL_WMS_58

Formula ID\RevisionNo For_sberry_pulp\0000000007

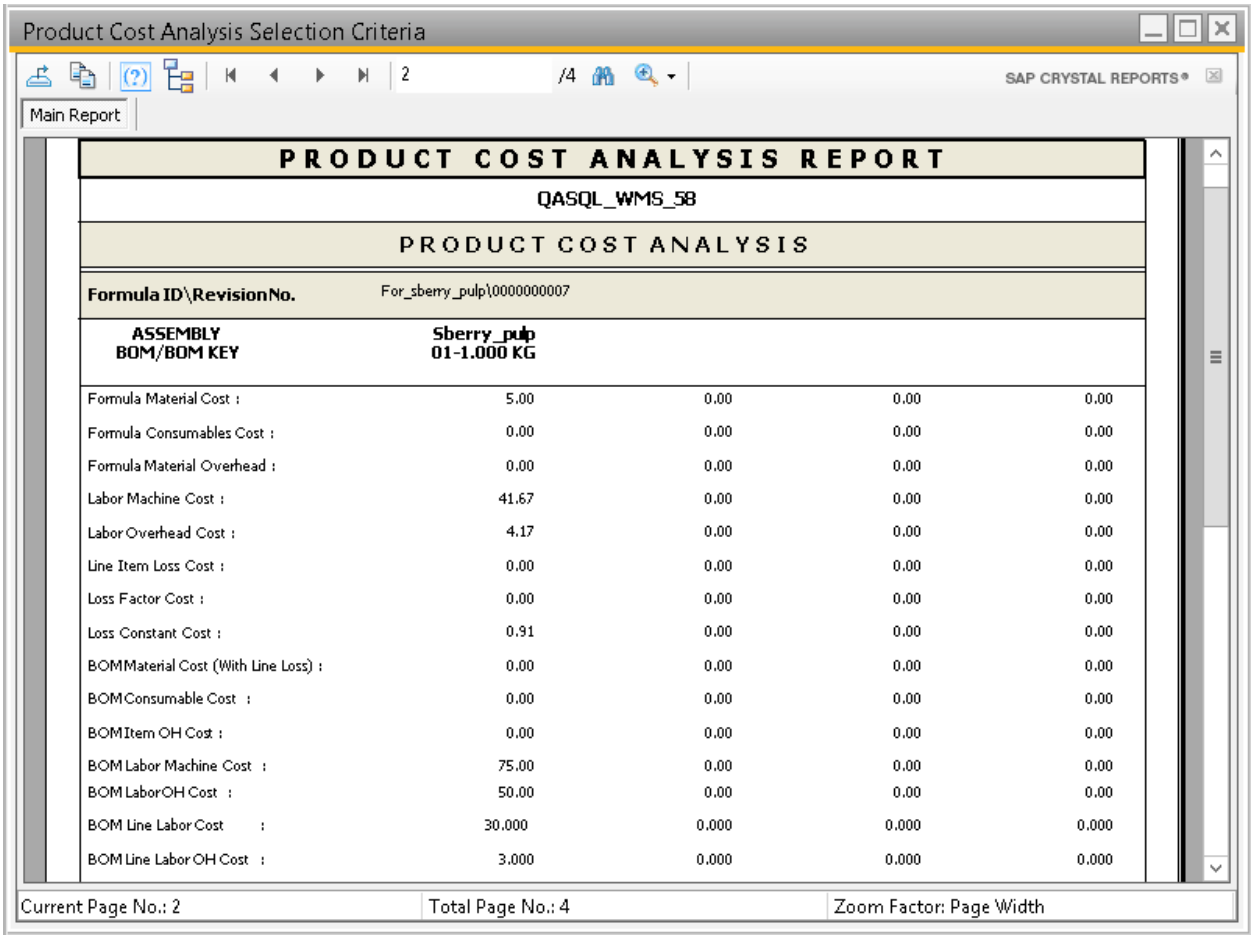
Description	For_sberry_pulp			**Total Cost**	5.00
Class	FC1	**Total Weight**	1.000	**Cost/Wt**	5.000
Status	Active	**Total Volume**	2.000	**Cost/Vol**	2.500
Output Formula		**Density**	0.500	**Loss Factor**	0.000
		Lead Time		**Loss Constant**	10.000
Last Produced	16/04/19				

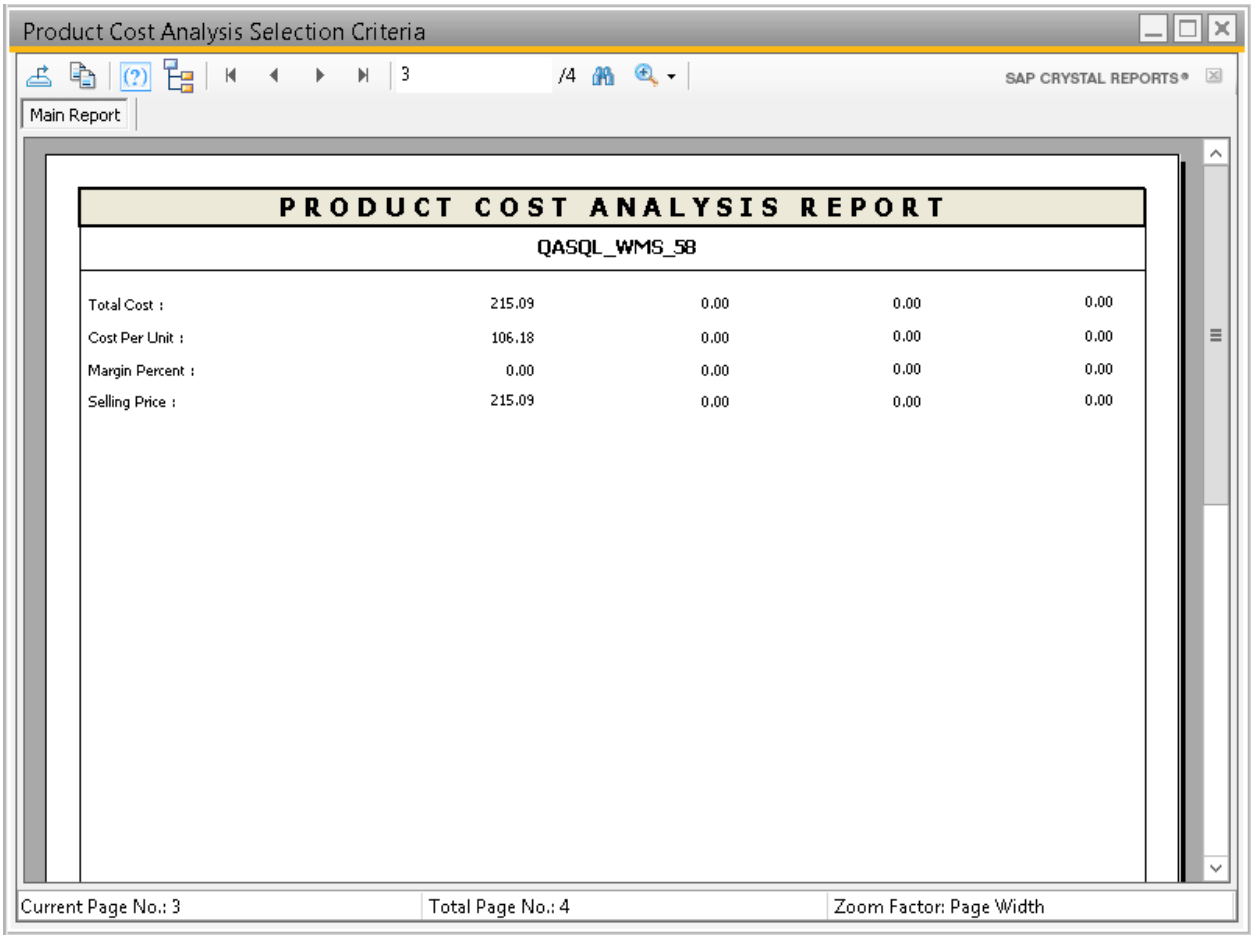
MSDS Temp.

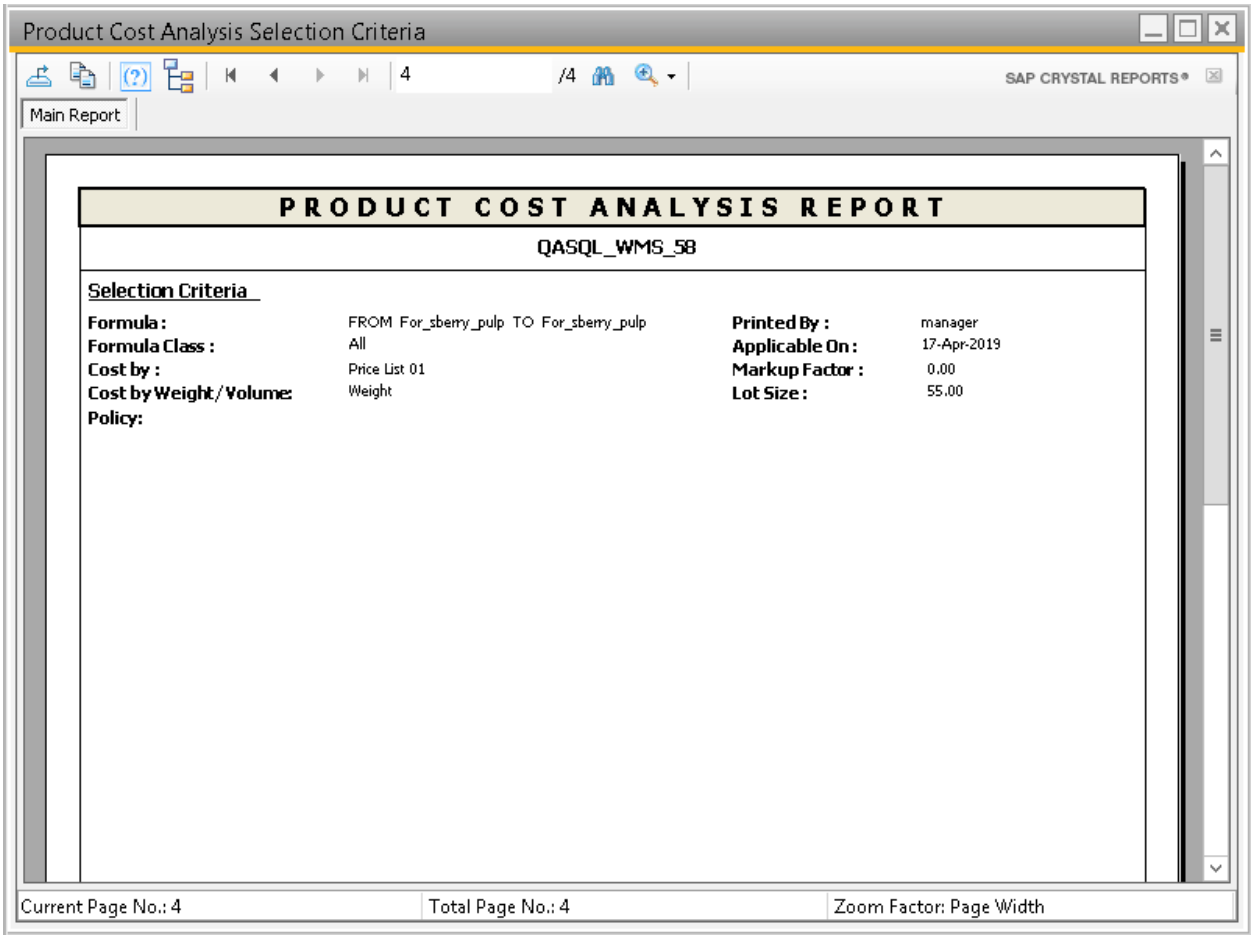
Line	Item Code	Whs Code	Description	Quantity	Unit
1	S_berry	01	S_berry	1.000	KG

FORMULA LABOR INFORMATION

Fixed Cost Labor	Fixed Cost OH
Setup Cost Labor	**Setup Cost OH**
Fixed COst - Fixed	Fixed OH - OH
labor - bb	Overhead Costing - Overhead Cost Screen


Product Cost Analysis Selection Criteria
SAP CRYSTAL REPORTS®
Main Report
PRODUCT COST ANALYSIS REPORT
QASQL_WMS_58
PRODUCT COST ANALYSIS
Formula ID\RevisionNo. For_sberry_pulp\0000000007
ASSEMBLY BOM/BOM KEY Sberry_pulp 01-1.000 KG
Formula Material Cost : 5.00 0.00 0.00 0.00
Formula Consumables Cost : 0.00 0.00 0.00 0.00
Formula Material Overhead : 0.00 0.00 0.00 0.00
Labor Machine Cost : 41.67 0.00 0.00 0.00
Labor Overhead Cost : 4.17 0.00 0.00 0.00
Line Item Loss Cost : 0.00 0.00 0.00 0.00
Loss Factor Cost : 0.00 0.00 0.00 0.00
Loss Constant Cost : 0.91 0.00 0.00 0.00
BOMMaterial Cost (With Line Loss) : 0.00 0.00 0.00 0.00
BOMConsumable Cost : 0.00 0.00 0.00 0.00
BOMItem OH Cost : 0.00 0.00 0.00 0.00
BOM Labor Machine Cost : 75.00 0.00 0.00 0.00
BOM LaborOH Cost : 50.00 0.00 0.00 0.00
BOM Line Labor Cost : 30.000 0.000 0.000 0.000
BOM Line Labor OH Cost : 3.000 0.000 0.000 0.000
Current Page No.: 2
Total Page No.: 4
Zoom Factor: Page Width

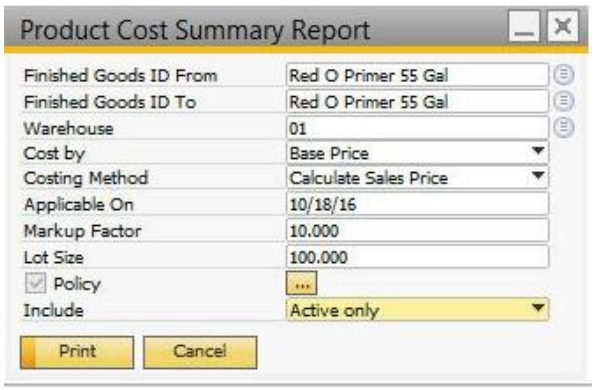

Product Cost Analysis Selection Criteria
3
/4
SAP CRYSTAL REPORTS®
Main Report
PRODUCT COST ANALYSIS REPORT
QASQL_WMS_58
Total Cost : 215.09 0.00 0.00 0.00
Cost Per Unit : 106.18 0.00 0.00 0.00
Margin Percent : 0.00 0.00 0.00 0.00
Selling Price : 215.09 0.00 0.00 0.00
Current Page No.: 3
Total Page No.: 4
Zoom Factor: Page Width


Product Cost Analysis Selection Criteria
4
/4
SAP CRYSTAL REPORTS®
Main Report
PRODUCT COST ANALYSIS REPORT
QASQL_WMS_58
Selection Criteria
Formula : FROM For_sberry_pulp TO For_sberry_pulp
Formula Class : All
Cost by : Price List 01
Cost by Weight/Volume: Weight
Policy:
Printed By : manager
Applicable On : 17-Apr-2019
Markup Factor : 0.00
Lot Size : 55.00
Current Page No.: 4
Total Page No.: 4
Zoom Factor: Page Width

5.2 Product Cost Summary Report

Use this screen to print product cost information in a summarized format.

Go To: Product Costing → Costing Reports → Product Cost Summary Report.



Finished Goods ID From: The lower limit of a range of finished goods that can be used to filter data displayed on the report

Finished Goods ID To: The upper limit of a range of finished goods that can be used to filter data displayed on the report.

Warehouse: The warehouse used to store the finished good.

Cost By: The price list based on which cost analysis is to be performed and displayed on the report. Available options are:

- *All the price lists defined in the system*.
- *Item Cost*.
- *Formula Setting*.
- *Last Evaluated Price*.
- *Last Purchase Price*.
- *Default Item Vendor Price*.

Costing Method: The costing method selected from the drop-down menu. Available options are:

- *Calculate Margin*.
- *Calculate Sales Price*.

Applicable On (optional)**:** If Cost By field is selected as *Default Item Vendor Price* and time-specific discounts have been defined for the vendor then the system will use this date to pick applicable pricing of the raw materials.

Markup Factor: The markup factor used to calculate the sales price of your finished foods. The markup factor is expressed in percent.

Lot Size: The value in this field is populated from the *Default Lot Size* field, which is available on the *General* tab of the *Costing Defaults* screen.

Policy: One or more formula policies that can be used to filter formulas related to those policies only. By default, all policies are selected.

When any policy is selected, the box adjacent to the *Policy* field is checked automatically.

Include: Specify whether to calculate cost for *Active* formulas only or include *Development* versions as well.

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

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

5.2.1 Generating a Product Cost Summary Report

1. Complete the range of formulas to be used to filter data for the report at the *Finished Goods Key From* and *To* fields. Use the selection option to choose the required finished goods from the list.
2. Enter the required location at the *Warehouse* field.
3. Enter the appropriate values in the *Cost By* and *Costing Method* fields using the drop-down menus provided next to the fields.
4. Enter the date on which the pricing discount needs to be applicable using the date selection criteria available near the *Applicable On* field.
5. Enter the appropriate values at the *Markup Factor* and *Lot Size* fields. Both fields are mandatory.
6. Use the selection option to choose the required Formula Policy from the list. The system will display all the formula policies created in BatchMaster ERP from which you can choose.

7. Choose the formula status to be included during processing using the drop-down menu next to the *Include* field.

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

An example of a generated *Product Cost Summary Report* is provided below.

PRODUCT COST SUMMARY REPORT

Chemical 2nd Generation Database

Finished Goods Key FG Description Formula ID/RevisionNo	Material (Cost+Overhead) BOM RevisionNo	BOM Cost Other Cost	Labor Cost + Overhead	Total Cost	Cost / Unit	Markup Factor/Margin (%)	Markup / Unit	Sell Price Inv Unit	Sell Price per Unit
Red O Primer 55 Gal Red Oxide Primer-55 Gal Drum Red Oxide Primer/0000000004	198.93 0000000001	5.50 0.00	136.71	351.14	7.33	10.000	8.06	386.25	8.06

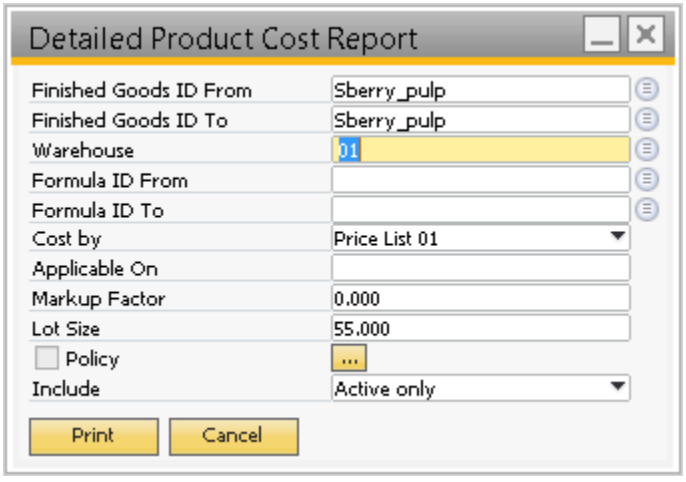
Selection Criteria :

Finished Goods Key :	FROM: Red O Primer 55 Gal TO: Red O Primer 55 Gal	**Business Partner :**	
Whs Code :	01	**Markup Factor/Margin Percent (%) :**	10
Cost By :	Base Price		
Cost Method :	Calculate Sales Price	**Lot Size :**	100.00
Printed By :	manager		

5.3 Detailed Product Cost Report

The *Detailed Product Cost Report* shows the costs associated with selected finished goods and formulas. The results will be displayed as a Crystal Report that can be printed or exported.

Go To: Product Costing → Costing Reports → Detailed Product Cost Report.



Finished Goods ID From: The lower limit of a range of finished goods that can be used to filter data displayed on the report.

Finished Goods ID To: The upper limit of a range of finished goods that can be used to filter data displayed on the report.

Warehouse: The warehouse used to store the finished good.

Formula ID From: The lower limit of a range of formulas that can be used to filter data displayed on the report.

Formula ID To: The upper limit of a range of formulas that can be used to filter data displayed on the report.

Cost By: The price list based on which the cost analysis will be performed and displayed on the report. Available options are:

- *All the price lists defined in the system,* including any custom price lists you have defined.
- *Item Cost*.
- *Formula Settings*.
- *Last Evaluated Price*.
- *Last Purchase Price*.
- *Default Item Vendor Price*.

Applicable On (optional)**:** *If Cost By* field is selected as *Default Item Vendor Price* and time-specific discounts have been defined for the vendor then the system will use this date to pick applicable pricing of the raw materials.

Markup Factor: The markup factor used to calculate the sales price of your finished foods. The markup factor is expressed in percent.

Lot Size: The value in this field is populated from the *Default Lot Size* field, which is available on the *General* tab of the *Costing Defaults* screen.

Policy: Formula policies to be used to filter formulas related to those policies only. By default, all policies are selected.

When any policy is selected, the box adjacent to the *Policy* field is checked automatically.

Include: Specify whether to calculate costs for *Active* formulas only or include *Development* versions as well.

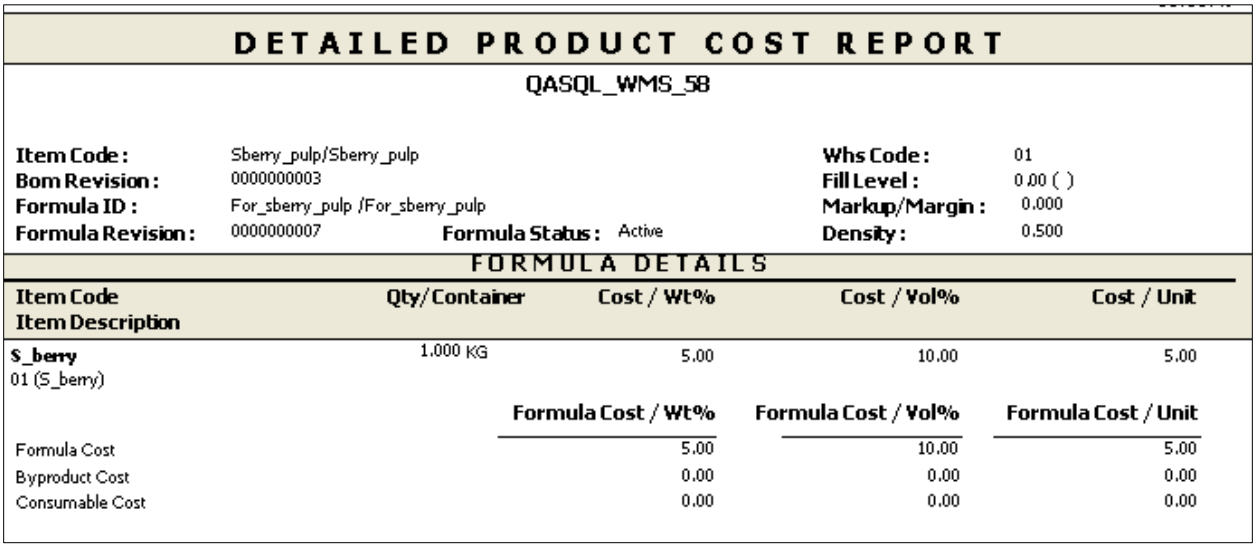
Print: Click the *Print* button to generate and print the report.

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

5.3.1 Generating a Detailed Product Cost Report

1. In the *Finished Goods ID From* and *Finished Goods ID To* fields, enter the lower and upper limits, respectively, of the range of finished goods keys to be used to filter data for the report.
2. Specify the required warehouse in the *Warehouse* field.
3. In the *Formula ID From* and *Formula ID To* fields, enter the lower and upper limits, respectively, of the range of formula keys to be used to filter data for the report.
4. In the *Cost By* field, select the price list to be used to filter and display data on the report.
5. Enter the appropriate value in the *Applicable on* field.
6. Enter the appropriate values in the *Markup factor* and *Lot Size* fields.
7. Select the *Policy* option and choose the required formula policies to filter data on the report.
8. In the *Include* field, choose the formula status to be used to filter formula-related data.
9. Click the *Print* button to generate the report.

An example of a generated *Detailed Product Cost Report* is provided below.



DETAILED PRODUCT COST REPORT

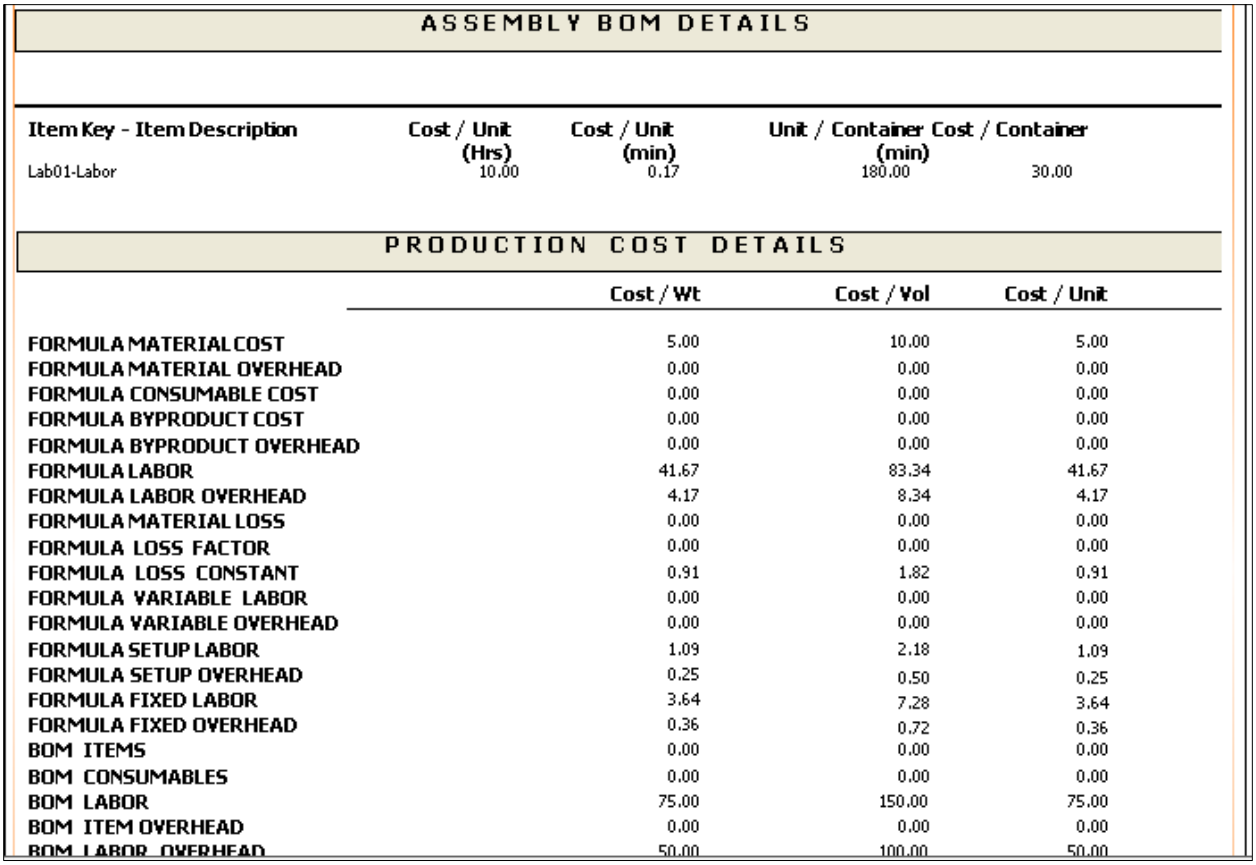
QASQL_WMS_58

Item Code :	Sberry_pulp/Sberry_pulp	**Whs Code :**	01
Bom Revision :	0000000003	**Fill Level :**	0.00 ( )
Formula ID :	For_sberry_pulp /For_sberry_pulp	**Markup/Margin :**	0.000
Formula Revision :	0000000007 **Formula Status :** Active	**Density :**	0.500

FORMULA DETAILS

Item Code Item Description	Qty/Container	Cost / Wt%	Cost / Vol%	Cost / Unit
S_berry 01 (S_berry)	1.000 KG	5.00	10.00	5.00

	Formula Cost / Wt%	Formula Cost / Vol%	Formula Cost / Unit
Formula Cost	5.00	10.00	5.00
Byproduct Cost	0.00	0.00	0.00
Consumable Cost	0.00	0.00	0.00

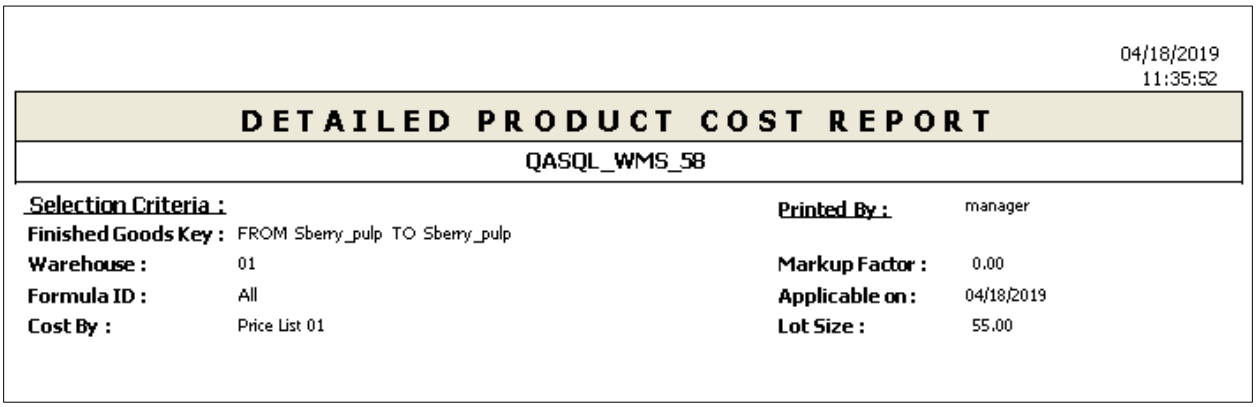


ASSEMBLY BOM DETAILS

Item Key - Item Description	Cost / Unit (Hrs)	Cost / Unit (min)	Unit / Container	Cost / Container (min)
Lab01-Labor	10.00	0.17	180.00	30.00

PRODUCTION COST DETAILS

	Cost / Wt	Cost / Vol	Cost / Unit
FORMULA MATERIAL COST	5.00	10.00	5.00
FORMULA MATERIAL OVERHEAD	0.00	0.00	0.00
FORMULA CONSUMABLE COST	0.00	0.00	0.00
FORMULA BYPRODUCT COST	0.00	0.00	0.00
FORMULA BYPRODUCT OVERHEAD	0.00	0.00	0.00
FORMULA LABOR	41.67	83.34	41.67
FORMULA LABOR OVERHEAD	4.17	8.34	4.17
FORMULA MATERIAL LOSS	0.00	0.00	0.00
FORMULA LOSS FACTOR	0.00	0.00	0.00
FORMULA LOSS CONSTANT	0.91	1.82	0.91
FORMULA VARIABLE LABOR	0.00	0.00	0.00
FORMULA VARIABLE OVERHEAD	0.00	0.00	0.00
FORMULA SETUP LABOR	1.09	2.18	1.09
FORMULA SETUP OVERHEAD	0.25	0.50	0.25
FORMULA FIXED LABOR	3.64	7.28	3.64
FORMULA FIXED OVERHEAD	0.36	0.72	0.36
BOM ITEMS	0.00	0.00	0.00
BOM CONSUMABLES	0.00	0.00	0.00
BOM LABOR	75.00	150.00	75.00
BOM ITEM OVERHEAD	0.00	0.00	0.00
BOM LABOR OVERHEAD	50.00	100.00	50.00



04/18/2019
11:35:52

DETAILED PRODUCT COST REPORT

QASQL_WMS_58

Selection Criteria :

Finished Goods Key : FROM Sberry_pulp TO Sberry_pulp

Warehouse : 01

Formula ID : All

Cost By : Price List 01

Printed By : manager

Markup Factor : 0.00

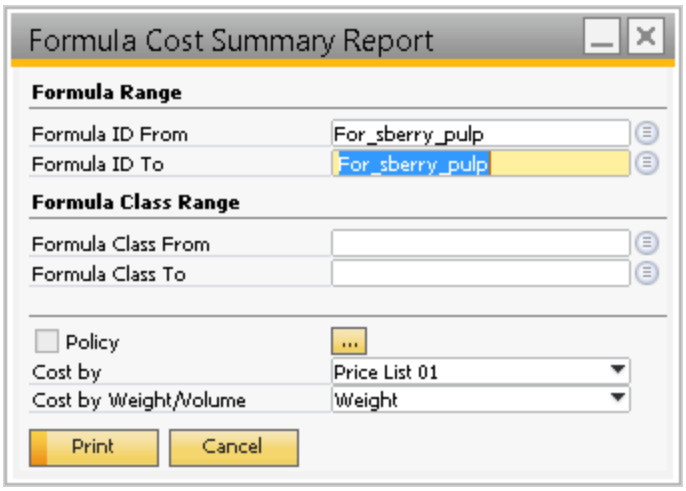
Applicable on : 04/18/2019

Lot Size : 55.00

5.4 Formula Cost Summary Report

Using the *Formula Cost Summary Report* screen, you can generate a report that displays the costs associated with the selected range of formulas. The results are displayed as a Crystal Report that can be printed or exported.

Go To: Product Costing → Costing Reports → Formula Cost Summary Report.



Formula ID From: The lower limit of a range of formulas that can be used to filter data displayed on the report.

Formula ID To: The upper limit of a range of formulas that can be used to filter data displayed on the report.

Formula Class From: The lower limit of a range of formula classes that can be used to filter data displayed on the report.

Formula Class To: The upper limit of a range of formula classes that can be used to filter data displayed on the report.

Policy: One or more formula policies that can be used to filter data displayed on the report. By default, all policies are selected.

When any policy is selected, the box adjacent to the *Policy* field is checked automatically.

Cost By: The price list based on which cost analysis is performed and displayed on the report. Available options are:

- *All the price lists defined in the system*.
- *Item Cost*.
- *Formula Settings*.
- *Last Evaluated Price*.
- *Last Purchase Price*.
- *Default Item Vendor Price*.

Cost by Weight/Volume: Using the drop-down menu next to the *Cost by Weight/Volume* field, specify whether the data in the cost report shall be displayed by weight or volume.

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

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

5.4.1 Generating a Formula Cost Summary Report

1. In the *Formula ID From* and *Formula ID To* fields, enter the lower and upper limits, respectively, of the range of formulas to be used to filter data in the report.
2. In the *Formula Class From* and *Formula Class To* fields, enter the lower and upper limits, respectively, of the range of formula classes to be used to filter data in the report.
3. Select the *Policy* checkbox and choose the required formula policies to be used to filter data in the report. By default, all policies are selected.
4. Select the desired price list to be included while filtering data, using the drop down available near the *Cost By* field.
5. Enter the appropriate value in the *Cost by* field. Available options are *Weight* or *Volume*.
6. Click the *Print* button to generate the report.

An example of a generated *Formula Cost Summary Report* is provided below.

FORMULA COST SUMMARY REPORT

QASQL_WMS_58

04/18/2019
11:21:59AM

Formula ID	Formula Description	Revision No	Density	RMC	Labor	Overhead	Loss	Other Cost	Total Cost
For_sberry_pulp	For_sberry_pulp	0000000001	1.00	5.00	40.00	8.00	0.00	0.00	53.00
For_sberry_pulp	For_sberry_pulp	0000000002	1.00	5.00	40.00	8.00	0.00	0.00	53.00
For_sberry_pulp	For_sberry_pulp	0000000003	1.00	5.00	0.00	0.00	0.00	0.00	5.00
For_sberry_pulp	For_sberry_pulp	0000000004	1.00	5.00	0.00	0.00	0.00	0.00	5.00
For_sberry_pulp	For_sberry_pulp	0000000005	1.00	5.00	0.00	0.00	0.00	0.00	5.00
For_sberry_pulp	For_sberry_pulp	0000000006	1.00	5.00	301.67	37.97	50.00	0.00	394.64
For_sberry_pulp	For_sberry_pulp	0000000007	0.50	5.00	301.67	37.97	50.00	0.00	394.64

Selection Criteria :

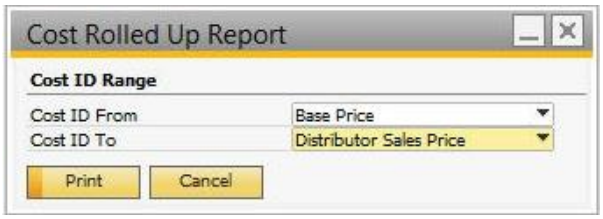
Formula : FROM For_sberry_pulp TO For_sberry_pulp
Formula Class : All
Cost by : Price List 01
Cost by Weight /Volume: Weight

Printed By : manager
Policy:

5.5 Cost Rolled Up Report

From the *Cost Rolled Up Report* screen you can get a list of item cost data in a Crystal Report format.

Go To: Production → Production Reports → Cost Rolled Up Report.



Cost ID From: The lower limit of the range of Cost IDs to be used as filter criteria during processing.

Cost ID To: The upper limit of the range of Cost IDs to be used as filter criteria during processing.

Ok: Click the *Print* button to generate and print the report.

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

5.5.1 Generating a Cost Rolled Up Report

1. Complete the range of Cost ID s to be used as filter criteria in the *Enter Cost ID From* and *Enter Cost ID To* fields. Use the selection option to choose the required cost from the list.

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

An example of a generated *Cost Rolled Up Report* is provided below.

COST ROLLED UP REPORT

Chemical 2nd Generation Database

Cost ID	FG Code	FG Whs Code	Evaluation Method	FG Cost	Cost
Base Price					
	Amino Methyl Propnl	01	Standard	13.74	0.00
	Ammonium Hydx Sol.	01	Standard	7.20	0.00
	Aq. Acrylic Additive	01	Standard	7.26	0.00
	Aromatic Solvent#100	01	Standard	5.14	1.75
	Calcium 10	01	Standard	9.44	0.00
	Citric Acid 50	01	Standard	20.40	0.00
	Cobalt 12 Mix	01	Standard	10.01	0.00
	Microcrystal talc	01	Standard	7.36	0.00
	Naphtha Solution	01	Standard	78.68	0.00
	Prim. Amyl Acetate	01	Standard	8.42	0.00
	Red O Primer 55 Gal	01	Standard	194.75	0.00
	Resin Mix	01	Standard	8.30	0.00

6 GLOSSARY

Term	Definition
Active Formula	A formula that is currently being used in the manufacturing process.
Allergen	Any product that is capable of causing an allergic reaction.
BOM	(Bill of Material) A list or discrete parts or components (e.g., 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 and it can be sold for a cost or be used in some other process.
COA	(Certificate of Analysis) An authenticated document which is issued by the authorized signatory and certifies the quality and purity of products being exported.
Consumables	Consumables are those items that are not a part of ingredients of the formula, but are consumed while making the product using the formula.
Costing Method	A process of assigning cost to an item which, in turn, determines the manufacturing cost of the finished good.
ERP	(Enterprise Resource Planning) A set of integrated applications that you use to collect, store, manage, and interpret data from different business activities such as Inventory Management, Manufacturing, Product Planning, Sales, Shipping, Marketing, etc.
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.
Formula Policy	Indicates the status of the formula as Active, Obsolete, Hold or any other.
HMIS	(Hazardous Materials Identification System) A rating system used to identify the hazard level of a material using color codes.
Item Type	A parameter that enables you to classify an item as a raw material, an intermediate, or a finished good.
Intermediate Good	The final product in a production process, which can further be used as a raw material in the manufacture of another product.
Labor Cost Account	Account used to post the labor cost when a production batch is either partly closed or fully closed.
Laboratory	A closed location equipped with facilities necessary to carry out a scientific research or process.

Term	Definition
Lot Strength	Specify the percentage of active ingredient of an item present in a specific lot of the item. For example, fat is the active ingredient of milk. A lot strength of 15% for a specific milk lot indicates that it contains 15% fat.
Markup Factor	The profit percentage margin associated with the formula being used. This percentage is used for cost analysis.
Nutritional Label	A label which is printed on most packaged food. This informational panel defines the overall nutrient composition of the product.
Originator	The one who created the formula.
Overhead	A term used to indicate indirect costs involved in manufacturing a product, such as management and office staff salaries.
Overhead Account	Account used to post the overhead cost when a production batch is either partly closed or fully closed.
Process Cell	A location with one or more machines that acts a work center for laborers to manufacture a product.
Product Cost	Cost directly involved in manufacturing a product such as raw material cost, direct labor cost, and production overhead.
Raw Material	A substance in its natural or semi-processed state that is used to manufacture a good.
SDS	(Safety Data Sheet) A form that stores critical properties of a hazardous material and enables emergency personnel to handle the material safely.
Setup Cost	Cost involved in preparing the machinery and location for the manufacturing process, such as the cost involved in cleaning up the machinery.
Variable Costs	A term used to indicate costs that vary with the quantity of goods manufactured, such as labor cost.
Variance Account	Account used when there is difference in the standard labor cost and the actual labor cost when a batch is closed.
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.