



FactoryTalk Batch Material Editor User Manual



Important User Information

Read this document and the documents listed in the additional resources section about installation, configuration, and operation of this equipment before you install, configure, operate, or maintain this product. Users are required to familiarize themselves with installation and wiring instructions in addition to requirements of all applicable codes, laws, and standards.

Activities including installation, adjustments, putting into service, use, assembly, disassembly, and maintenance are required to be carried out by suitably trained personnel in accordance with applicable code of practice.

If this equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

In no event will Rockwell Automation, Inc. be responsible or liable for indirect or consequential damages resulting from the use or application of this equipment.

The examples and diagrams in this manual are included solely for illustrative purposes. Because of the many variables and requirements associated with any particular installation, Rockwell Automation, Inc. cannot assume responsibility or liability for actual use based on the examples and diagrams.

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Throughout this manual, when necessary, we use notes to make you aware of safety considerations.



WARNING: Identifies information about practices or circumstances that can cause an explosion in a hazardous environment, which may lead to personal injury or death, property damage, or economic loss.



ATTENTION: Identifies information about practices or circumstances that can lead to personal injury or death, property damage, or economic loss. Attentions help you identify a hazard, avoid a hazard, and recognize the consequence.

IMPORTANT: Identifies information that is critical for successful application and understanding of the product.

These labels may also be on or inside the equipment to provide specific precautions.



SHOCK HAZARD: Labels may be on or inside the equipment, for example, a drive or motor, to alert people that dangerous voltage may be present.



BURN HAZARD: Labels may be on or inside the equipment, for example, a drive or motor, to alert people that surfaces may reach dangerous temperatures.



ARC FLASH HAZARD: Labels may be on or inside the equipment, for example, a motor control center, to alert people to potential Arc Flash. Arc Flash will cause severe injury or death. Wear proper Personal Protective Equipment (PPE). Follow ALL Regulatory requirements for safe work practices and for Personal Protective Equipment (PPE).

The following icon may appear in the text of this document.



Tip: Identifies information that is useful and can help to make a process easier to do or easier to understand.

Rockwell Automation recognizes that some of the terms that are currently used in our industry and in this publication are not in alignment with the movement toward inclusive language in technology. We are proactively collaborating with industry peers to find alternatives to such terms and making changes to our products and content. Please excuse the use of such terms in our content while we implement these changes.

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Preface

About this manual

This manual provides usage instructions for the FactoryTalk Batch Material Editor. It is one of a set of related manuals that describe installing, programming, and operating the FactoryTalk Batch system.

To review FactoryTalk Batch release notes and latest information regarding product compatibility refer to the [Product Compatibility and Download Center \(PCDC\)](#).

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- Components
Includes the name of the open-source component, its version number, and the type of license.
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- Licenses
Includes the name of the license, the list of open-source components citing the license, and the terms of the license.

The default location of this file is:

C:\Program Files (x86)\Common Files\Rockwell\Help\FactoryTalk Batch\Release Notes\OPENSOURCE

You may obtain Corresponding Source code for open-source packages included in this product from their respective project web site(s). Alternatively, you may obtain complete Corresponding Source code by contacting Rockwell Automation via the **Contact** form on the Rockwell Automation website: <http://www.rockwellautomation.com/global/about-us/contact/contact.page>. Please include "Open Source" as part of the request text.

Additional resources

This table is a comprehensive documentation list for the FactoryTalk® Batch products from Rockwell Automation.

Installation, Quick Start, and Getting Results Guides

Resource	Description
FactoryTalk Batch Components Installation and Upgrade Guide (BATCH-IN002)	Provides information and procedures for FactoryTalk Batch system installation. Includes information for FactoryTalk Batch Material Manager, FactoryTalk Event Archiver, and associated FactoryTalk Batch Client and Server components.

Resource	Description
FactoryTalk Batch View Quick Start Guide (FTBVS-QS001)	Provides information about using FactoryTalk Batch View to create, view, and command control recipes, acknowledge prompts and signatures, view equipment phases and diagnostic information, and view profile information.
FactoryTalk Batch View HMI Controls Quick Start Guide (BATCH-QS001D)	Provides a general overview of FactoryTalk Batch View HMI Controls.
FactoryTalk Batch eProcedure® Getting Results Guide (BWEPRO-GR011)	Explains the basics of FactoryTalk Batch eProcedure.
FactoryTalk Batch Getting Results Guide (BATCH-GR011)	Introduces the basics of automated batch manufacturing and the FactoryTalk Batch product components.
FactoryTalk Batch Material Manager Getting Results Guide (BWMTR-GR011)	Introduces the basics of FactoryTalk Batch Material Manager.

User Guides

Resource	Description
FactoryTalk Batch Material Editor User Guide (BWMTR-UM001)	Provides access to information and procedural instructions required to configure materials and the containers to hold them. The material data is stored in the material database, which is used to create material-based recipes. This information is intended as a reference for formulators.
FactoryTalk Batch Equipment Editor User Guide (BATCH-UM004)	Provides information on creating and maintaining an equipment database (area model). The area model is available to all other FactoryTalk Batch programs, including the Recipe Editor, Batch View, and Phase Simulator.
FactoryTalk Batch PhaseManager™ User Guide (BATCHX-UM011)	Describes the integration of the FactoryTalk Batch software with the Studio 5000 Logix Designer® application and the Logix 5000™ family of controllers. The integration simplifies the configuration and maintenance of the FactoryTalk Batch automation system, provides better communication between the FactoryTalk Batch Server and the Logix 5000 controller, and significantly reduces the programming effort required to develop the phase logic code that resides in your Logix 5000 controller.
FactoryTalk Batch Recipe Editor User Guide (BATCH-UM006)	Provides instructions on using FactoryTalk Batch Recipe Editor to create and configure master recipes for use in batch automation. The interface is based on IEC 61131-3 sequential function charts to organize recipes graphically into procedures, unit procedures, operations, and phases. Build recipes using either the SFC format or a table-based format.
FactoryTalk Batch View HMI Controls User Manual (FTBVS-UM003)	Provides details about using FactoryTalk Batch View HMI Controls to monitor and interact with the production process within a FactoryTalk View SE Display Client.
FactoryTalk Batch View User Manual (FTBVS-UM002)	Provides information and procedural instructions for using FactoryTalk Batch View in a modern and intuitive portal into a comprehensive batching solution for effective operations, leveraging its own web server using HTML5 technology to provide connectivity into a FactoryTalk Batch Server.
FactoryTalk Event Archiver User Guide (BATCH-UM012)	Provides information and instructions specific to the FactoryTalk Event Archiver. Intended for use by system administrators and production supervisors.

Administrator Guides

Resource	Description
FactoryTalk Batch Administrator Guide (BATCH-UM003)	Provides instructions for configuring security and services, and implementation and use of components not typically accessed or used by batch operators, such as the FactoryTalk Batch Server.
FactoryTalk Batch eProcedure Administrator Guide (BWEPRO-UM011)	Provides procedures specific to FactoryTalk Batch eProcedure, such as implementing security. Included are instructions for tasks specific to FactoryTalk Batch, such as configuring security and services to support FactoryTalk Batch eProcedure. Provides instructions on the implementation and use of components not typically accessed or used by batch operators, such as the FactoryTalk Batch Server.
FactoryTalk Batch Material Manager Administrator Guide (BWEPRO-UM011)	Provides information and instructions specific to FactoryTalk Batch Material Manager. Intended for use by system administrators and database administrators.

Reference Guides

Resource	Description
FactoryTalk Batch Material Server API Reference Manual (BWMTR-RM001)	Provides access to information regarding the interface between the FactoryTalk Batch Material Server and the FactoryTalk Batch Material Editor and FactoryTalk Batch. It is intended to be used as a reference information by custom interface developers.
FactoryTalk Batch PCD Programming Reference Manual (BATCH-RM004)	Provides information and instructions about the FactoryTalk Batch PCD interface design. It is intended to be used as a reference guide for PCD programmers.
FactoryTalk Batch Server API Reference Manual (BATCH-RM003)	Provides information regarding the interface between the FactoryTalk Batch Server and FactoryTalk Batch View – the Server Application Programming Interface (API). It is intended to be used as a reference guide by custom interface developers.

Resource	Description
FactoryTalk Batch System Files Reference Manual (BATCH-RM005)	Provides the technical information for configuration and maintenance of a FactoryTalk Batch system. It can be used as a reference information for implementation engineers and system administrators.
FactoryTalk Batch eProcedure Instruction File Design Reference Manual (BWEPRO-RM001)	Includes information about the building of manual nstruction files for manual phases in the equipment database This information is intended to be used as a reference by instruction file authors.

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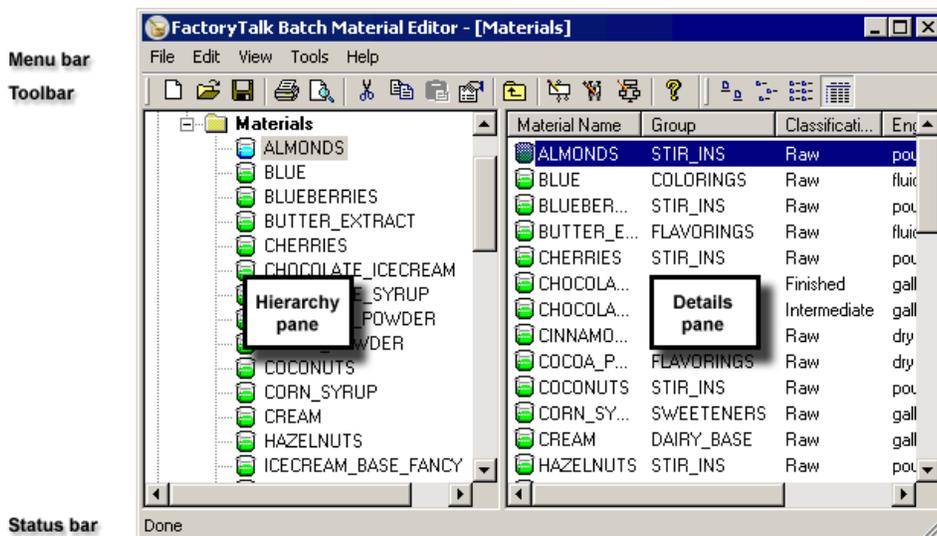
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Using the Material Editor

This guide provides access to information and procedural instructions required to configure materials and the containers to hold them. The material data is stored in the material database, which is used to create material-based recipes. This guide is intended as a reference for the formulator.

The Material Editor interface

The Editor interface is similar to Windows Explorer in the way items are displayed and the way you navigate within the application. The Editor has five standard areas: menu bar, toolbar, hierarchy pane, detail pane, and status bar.



Menu bar

The menu bar is similar to the standard menu bar found on most Windows applications. The menu bar contains the drop-down menus for **File**, **Edit**, **View**, **Tools**, and **Help**.

File Edit View Tools Help

This table describes the menu bar commands:

Item	Definition
File	Provides options for creating new objects, printing objects, and exiting the Editor.
Edit	Provides options for deleting selected items and viewing item properties. You use the Properties option for editing various items.
View	Allows you to show or hide the toolbar and status bar. You can also specify how data is viewed in the Detail pane and set user preferences for the Editor.
Tools	Allows you to configure system properties.

Item	Definition
Help	Provides you with on-line help and information regarding the software and the system.

Toolbars

The Editor toolbars are mode-specific, meaning the available icons on the toolbar change depending on the current mode of the Editor. The following table describes the options available on the various toolbars.

Icon	Description	Mode/View
	Create new item of the type of item currently selected	All
	Print preview	All
	Cut selected item	All
	Copy selected item	All
	Paste selected item	All
	View properties of the selected item	All
	Go to the folder one level up	All
	Invoke online help for the Editor	All
	Display items by using large icons	All
	Display items by using small icons	All
	Display items in list format	All
	Display detailed information for each item in the list view	All

Hierarchy pane

The left pane, called the Hierarchy pane, always contains a hierarchical (tree) view of the Editor data – much like the list of folders and files shown in Windows Explorer. The Hierarchy pane is a visual representation used to navigate through the data. The hierarchical tree view is the principal mechanism for accessing the application data and controlling how the data is viewed in the Detail pane.

- **Material Configuration List** contains a list of available materials.
- **Material Storage Configuration List** contains a list of storage containers and locations that are used for storing the various materials.

Detail pane

The right pane, called the Detail pane, always contains a view that represents one or more data items in the Hierarchy pane. This view is used to display the data in more detail. The detail pane is the principal mechanism for viewing the

application data in detail. It is generally a list view, but may also be an editable table view, a form view, or a graphical view.

- Material Configuration
- Material Storage Configuration
- Materials
- Locations
- Independent Containers

List view

The List View mode of the Detail pane contains data items in a columnar or icon format, depending on the mode and selected item. There are four ways to display the data items in the List View (the associated toolbar button is seen to the left of each description):

Icon	Display	Description
	Large icons	Each item appears as a full-sized icon (32 x 32 pixels) with a label below it. You can drag the items to any location in the List View.
	Small icons	Each item appears as a small icon (16 x 16 pixels) with the label to the right of it. You can drag the items to any location in the List View.
	List	Each item appears as a small icon with a label to the right of it. Items are arranged in columns and cannot be dragged to any location in the List View.
	Details	Each item appears on its own line, with additional information arranged in columns to the right. The leftmost column contains the small icon and label, and subsequent columns contain subitems as specified by the Editor.

With the exception of the first column of data in the List View, you cannot directly edit the data items. You can edit the data in the first column directly or right-click the desired item and select **Rename**.

Status bar

The status bar at the bottom of the Editor window usually displays a text message or state on the left side and the standard Caps Lock, Scroll Lock, and Num Lock states on the right side. In addition, to the immediate left of the Num Lock state, the status bar may display one or more icons representing the state and status of the Editor and/or its data. The following is a list of states that may be displayed in the status bar:

Icon	Item	Description
------	------	-------------

	Database	The Editor is accessing data.
	Error	An error occurred when editing data.
	Information	The currently selected data is predefined and not editable.
	Warning	A message displays a warning.
	Critical	A message displays critical error information.
	Question	A message displays a question.
	Searching	The Editor is searching for data.
	Secured	The currently selected data is secured.
	Printing	A report is being printed or previewed.
	Processing	The Editor is processing data.
	Waiting	The Editor is busy.
	Verification	Data is being verified.

Configuring the Material Editor

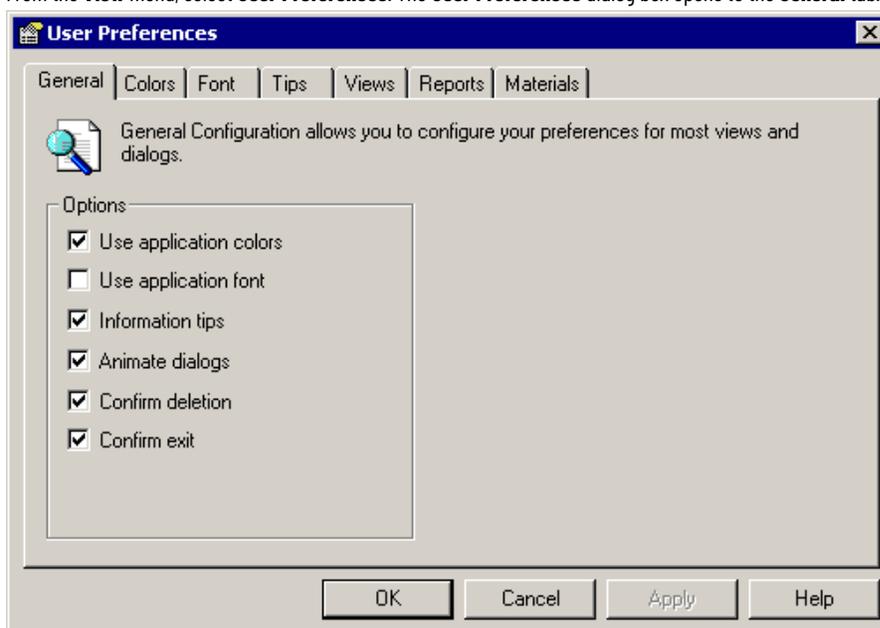
There are several settings you can choose from to configure the Material Editor. You can turn on information tips, change the text and background colors of the application, configure the various views, and set up reports used for printing recipe data. You can also change the location of the Material Server.

Setting user preferences

The User Preferences function allows you to customize the behavior and appearance of the various panes and views within the Editor application.

Setting general preferences

1. From the **View** menu, select **User Preferences**. The **User Preferences** dialog box opens to the **General** tab.



The **General** tab is used to configure the basic behavior and appearance of the Material Editor views and dialog boxes. The selections on the **General** tab are used in conjunction with other sections of the **User Preferences** dialog box.

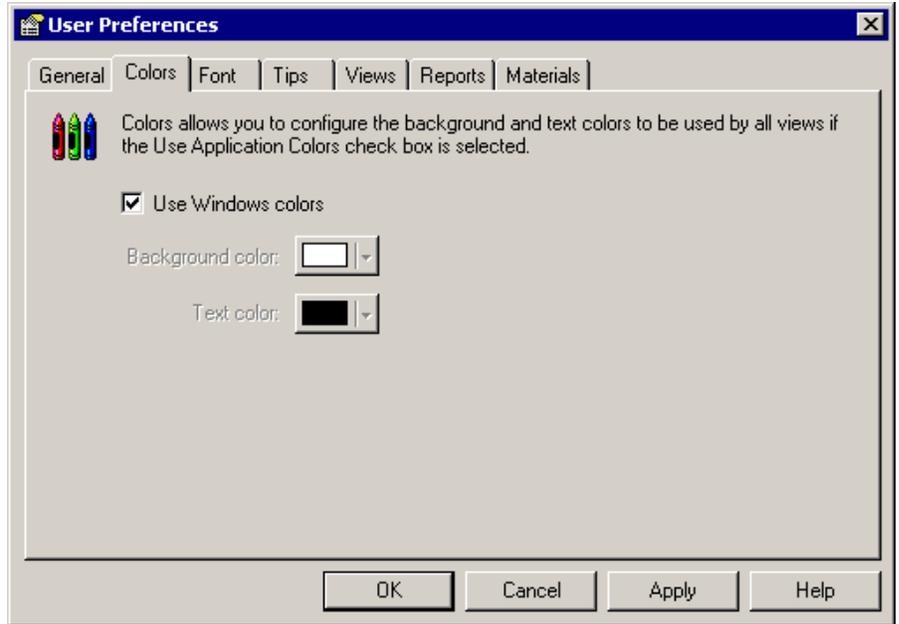
In the Options area you have the following selections:

- **Use application colors:** Select to assign colors, other than the current Windows colors, to the background and text in the views. (See [Changing colors on page 14](#) for more information.)
 - **Use application font:** Select to change the font, font style, and size from the default Windows style. (See [Changing fonts on page 14](#) for more information.)
 - **Information tips:** Select to enable single line tips that appear when you move the cursor over a button or field. (See [Editing information tips on page 15](#) for more information.)
 - **Animate dialogs:** Select to have dialog boxes fly out from the location from which they are opened.
 - **Confirm deletion:** Select to display an "Are you sure?" message when you delete an item. Leave disabled to delete an item immediately without confirmation.
 - **Confirm exit:** Select to have the application ask if you want to exit. Leave disabled to exit without a confirmation message.
2. Make the desired selection, and then click **Apply**.

Changing colors

The Material Editor defaults to the current Windows color scheme. You can change the color of the text and background.

1. On the **General** tab in the **User Preferences** dialog box, select **Use application colors**.
2. Select the **Colors** tab.

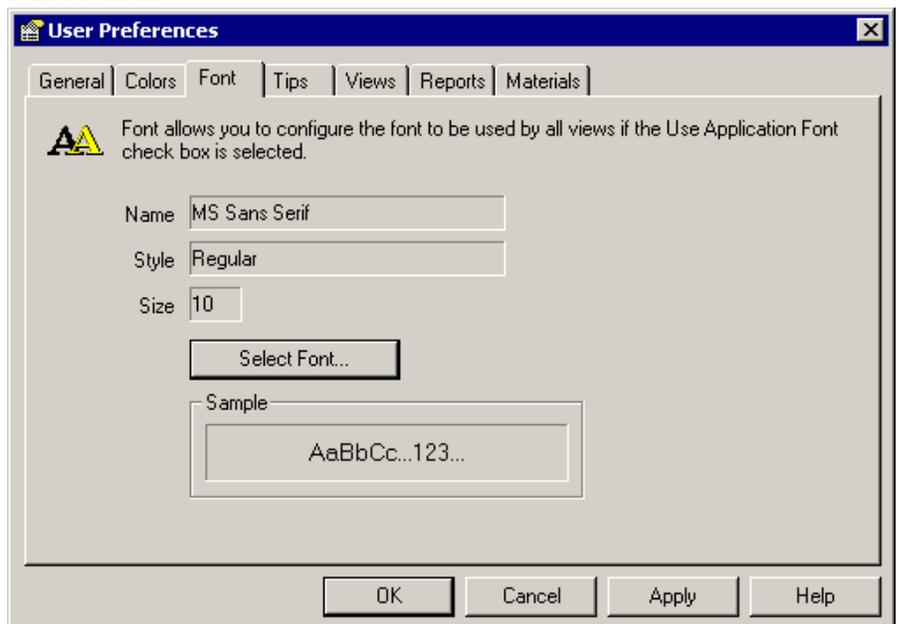


3. Disable **Use Windows colors** to enable the **Background color** and **Text color** lists.
4. Select the desired colors from the appropriate list, and then click **Apply**.

Changing fonts

The Material Editor defaults to the current Windows fonts. You can change the display font.

1. On the **General** tab in the **User Preferences** dialog box, select **Use application font**.
2. Select the **Font** tab.

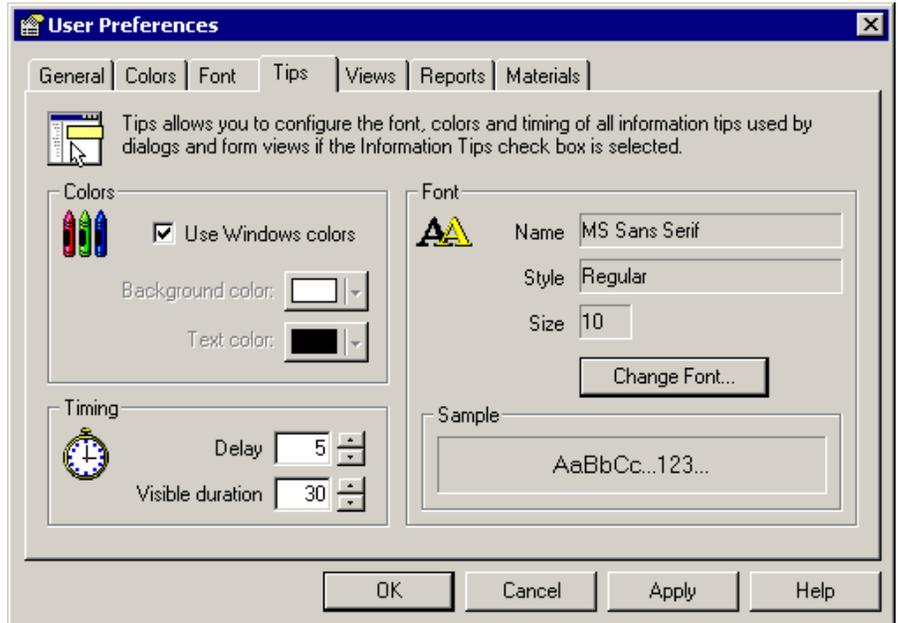


3. Click the **Select Font** button. The **Font** dialog box opens.
4. Select the desired font, style, and size from the appropriate lists, and then click **Apply**.

Editing information tips

Information tips appear when you move the cursor over a button or field. You can change the font and colors of tips, and set tip timing, which determines how soon a tip displays.

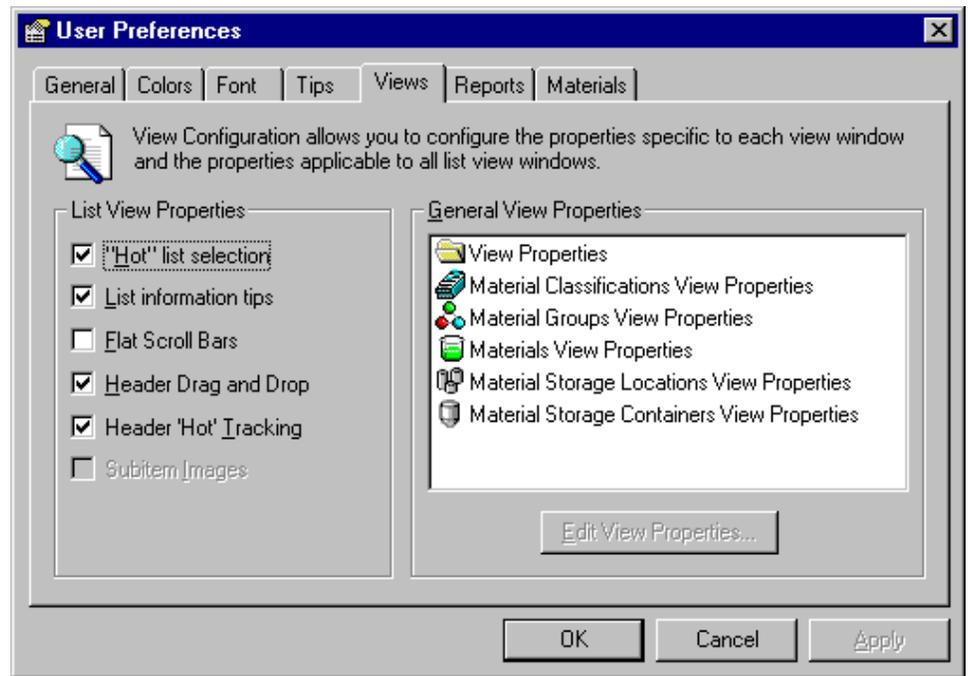
1. On the **General** tab of the **User Preferences** dialog box, select **Information tips** to enable tips.
2. Select the **Tips** tab.



3. To enable the **Background color** and **Text color** lists, disable **Use Windows colors**.
4. To change the tip color, select the text and background colors from the appropriate lists, and then click **OK**.
5. To change the tip font, click the **Change Font** button. The **Font** dialog box opens. Select the desired font, style, and size from the appropriate list, and then click **OK**.
6. To change the timing of information tips, use the **Up** and **Down** arrows to change the settings in the Timing area.
 - **Delay** determines how soon a tip displays when the cursor stops on an area with a tip.
 - **Visible duration** determines how long the tip stays visible before closing.
7. Click **Apply**.

Changing view properties

If you want to configure properties specific to each view and list in the Editor, use the **Views** tab. For all list views, you can enable information tips, alter the behavior of drag and drop, change the appearance of scroll bars, and set selection options. On selected views, you can change the font style and color, as well as the background color.



Changing list view properties

The List View Properties area contains the following options to change the appearance and behavior of items seen in a list view.

- **"Hot" list selection** - If selected, an item is automatically highlighted and selected when the cursor remains over the item for a certain period of time.
- **List information tips** - If selected, single-line tips appear when you move the cursor over a button or field. See [Editing information tips on page 15](#) for more information.)
- **Flat scroll bars** - If selected, scroll bars appear 2-dimensional. If disabled, scroll bars have a 3-dimensional appearance (Windows default). The following figure illustrates both the default (on the left) and flat (on the right) scroll bars:



- **Header drag and drop** - If selected, users can click and drag a header from one location to another in order to rearrange the columns.
- **Header "hot" tracking** - If selected, an item is automatically highlighted but not selected when the cursor moves over a header item. You must still click the item at least once to activate it.
- **Subitem images** - Not currently enabled.

Changing view fonts

You can change the font, font style, or font size for a selected view.

1. Select the **Views** tab on the **User Preferences** dialog box.
2. In the General View Properties area, select a view, and then click the **Edit View Properties** button. The **View Properties** dialog box opens to the **Colors** tab.
3. Select the **Font** tab, and then click the **Change Font** button. The **Font** dialog box opens.
4. Select the desired font, style, and size, and then click **OK**. The **View Properties** dialog box displays the selections you made.
5. Click **OK** to return to the **User Preferences** dialog box.
6. Click **Apply**.

Changing view colors

You can change the colors used in a selected view.

1. Select the **Views** tab on the **User Preferences** dialog box.
2. In the General View Properties area, select a view, and then click the **Edit View Properties** button. The **View Properties** dialog box opens to the **Colors** tab.
3. To enable the **Window Background**, **Text Background**, and **Text** lists, disable **Use Windows colors**.
4. Select the desired color for the window background (if applicable), text background, and text color from the appropriate lists, and then click **OK**.
5. Click **Apply**.

Working with columns and rows

The **Detail** pane contains data items in columnar or icon format. With the exception of the first column of data in the **Detail** pane, the data items cannot be edited directly. The data in the first column can be edited directly or by using the shortcut menu and selecting **Rename**.

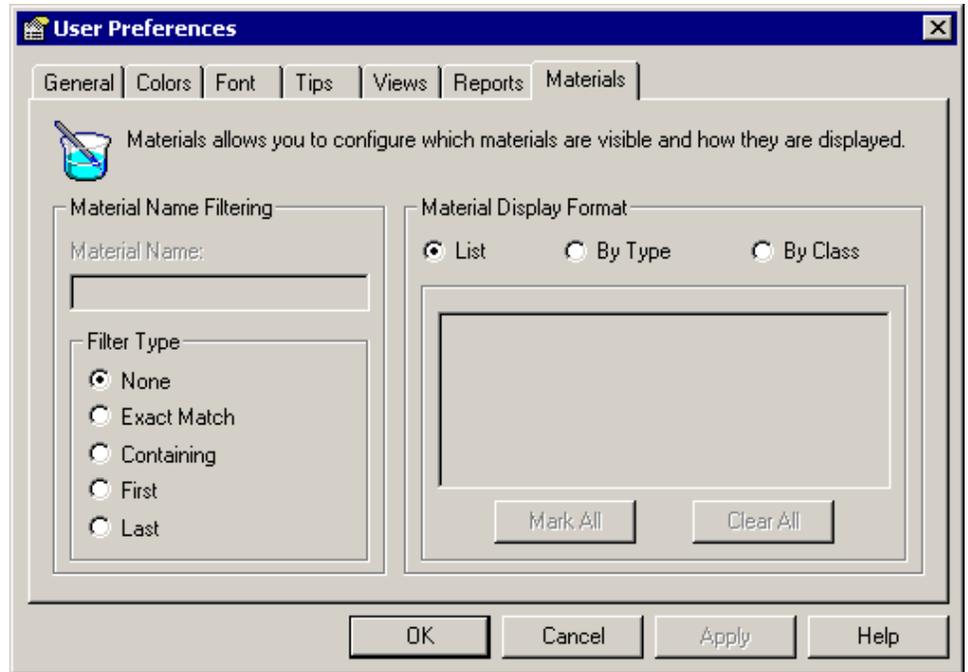
If you select **List** in the **User Preferences** dialog box, you can manipulate the columns and rows in the **Detail** pane as described in this table.

Item	Description
Sorting columns	Click a column header to sort the items in the column alphabetically or numerically.
Sizing columns	Automatically: To make the column width fit the contents, double-click the boundary to the right of the column heading. Manually: Drag the boundary on the right side of the column heading until the column is the desired width.
Editing the item name	Click once on a row to highlight it, and then click again. The item name will be encased in an editing box so that you can rename the item. Double-click on a row to open the Properties dialog box, allowing you to edit the item name. Right-click on a row to display the shortcut menu; select Rename .

<p>Editing a row</p>	<p>Double-click on a row to open the Properties dialog box to edit the row's information.</p> <p>Right-click on a row to display the shortcut menu; select Properties or other editing operations.</p>
<p>Copy, delete, or move rows</p>	<p>Right-click on a row to display the shortcut menu; select Cut, Copy, Paste, or Delete.</p>

Configuring the materials list

You can select which materials are visible in the Materials list and how they display.



Enabling material name filtering

You can select exactly which materials you want displayed by setting a filter. Filters are used to sort the material names and display particular ones. For instance, you could filter the material list to display only those material names containing a certain word or words.

1. From the **User Preferences** dialog box, select the **Materials** tab.
2. In the Material Name Filtering area, select the desired filtering option:
 - None** – Disables material filtering; the Material Name field is disabled.
 - Exact match** – Lists materials with names that match the filter text.
 - Containing** – Lists materials with names that contain the filter text.
 - First** – Lists only those materials with names that begin with the filter text.
 - Last** – Lists only those materials with names that end with the filter text.
3. In the **Material Name** box, type the text to use as a filter.
4. Click **Apply**. The materials are reordered, with the filter applied.

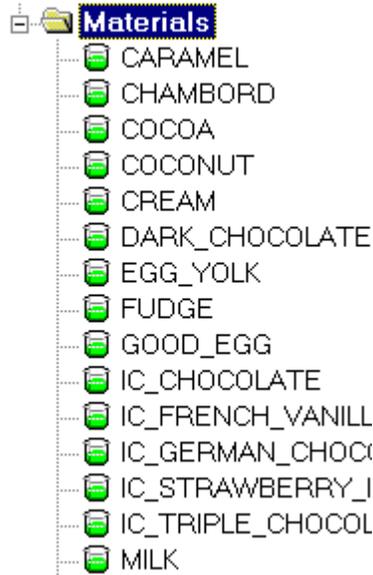
Configuring the material display

You can display the materials in list form (default) by type or by class. If you choose to display by type or class, you can select to display only certain types or classes of materials.

1. From the **User Preferences** dialog box select the **Materials** tab.
2. In the Materials Display Format area select the desired display format:

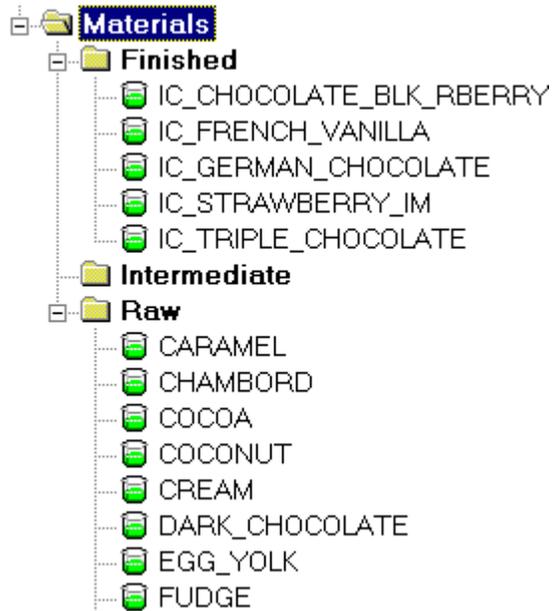
- **List (default)**

Displays the materials in alphabetical list form (as shown)



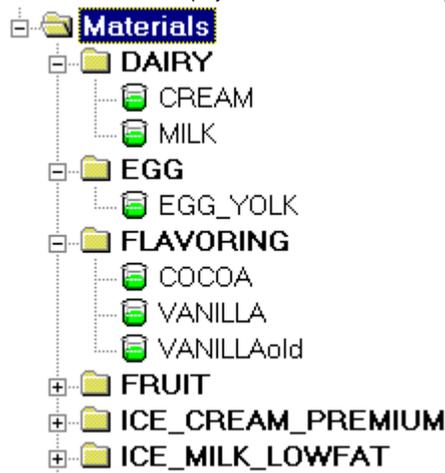
- **By Type**

Displays the materials by their type (for example; Finished, Intermediate, or Raw) or you can select all three to display the materials in a hierarchy view by type (as shown).



- **By Class**

Displays the materials by their class designation (for example; Colorings, Flavorings, etc.) or you can select all classes to display the materials in a hierarchy view by class (as shown).

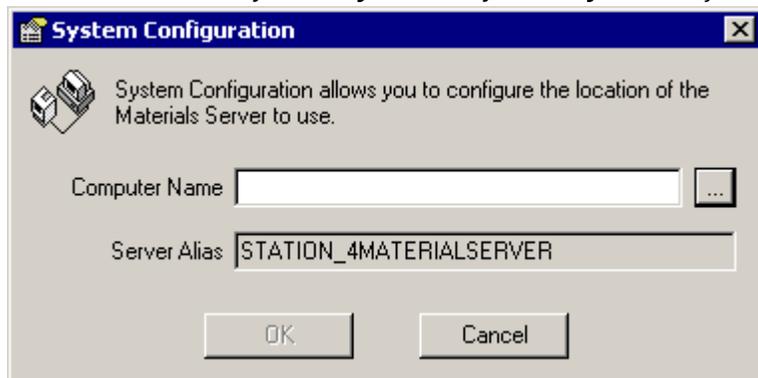


3. Click **Apply**. The Material list is refreshed, with the display format applied.

Selecting another Material Server

You do not have to select a Material Server after installation. It is done automatically. However, in a case where the server becomes disabled or is removed from the system, you must select a different server, which you can do easily from the Editor.

1. From the **Tools** menu, select **System Configuration**. The **System Configuration** dialog box opens.



2. Click the **Browse** button. The **Select Computer** dialog box opens.
3. Select the new server from the list of computers.
4. Click **OK** to return to the **Server Options** dialog box. The system configuration information is updated from the Network Editor of the selected server.
5. Click **OK** to exit **System Configuration**.

Generating printed reports

The report printing feature of the Editor allows you to print lists of the materials, containers, and other items in the database, in a report formatted with headers, footers and column headings (in list reports). There are two report formats available: formatted and list. The header (at the top of the page) consists of the report name, while the footer (at the bottom of the page) contains the date and time of printing and the page count.

A formatted report presents the information down the page, with bold field names as shown in this figure.

A list report presents the data in a columnar, spreadsheet format, with one line per data item. The field names become column headings as shown in this figure.

You can customize the reports by setting margins, changing font styles, and selecting text colors. In addition, you can enter custom text that is also included in the footer. See [Setting report preferences on page 22](#) for more information.

Previewing reports

The Print Preview function of the Editor allows you to see how a printed report will look before you send it to the printer.

1. Click the **Print Preview** button. The Print Preview window opens, displaying the report as it will look when printed. The following options are available from the Print Preview window:
 - **Next Page** – If there is more than one page in the report, click Next Page to view the next page of the report.
 - **Prev Page** – Click to view the previous report pages (if there is more than one page in the report).
 - **Two Page** – Allows you to view two pages of a report in the same window.
 - **One Page** – Returns to the default preview setting of one page per window.
 - **Zoom In/Out** – Click **Zoom In** to magnify the preview page. Click **Zoom Out** to reduce the size of the page in the preview window.
 - **Close** – Closes the preview window.
2. Click **Close** to return to the Editor. You can either print the report or make additional report configuration changes.

Printing reports

1. In the Editor's Hierarchy pane, select the list or item(s) that you want to print.
2. From the **File** menu, click **Print**. You could also click the **Print** button or press ctrl+p to display the **Print** dialog box.
3. Ensure that the correct printer is selected, and click **OK**.



Tip: To configure heading and footer fonts, and add a custom footer to your reports, see [Setting report preferences on page 22](#) for instructions.

Printing a Range of Reports

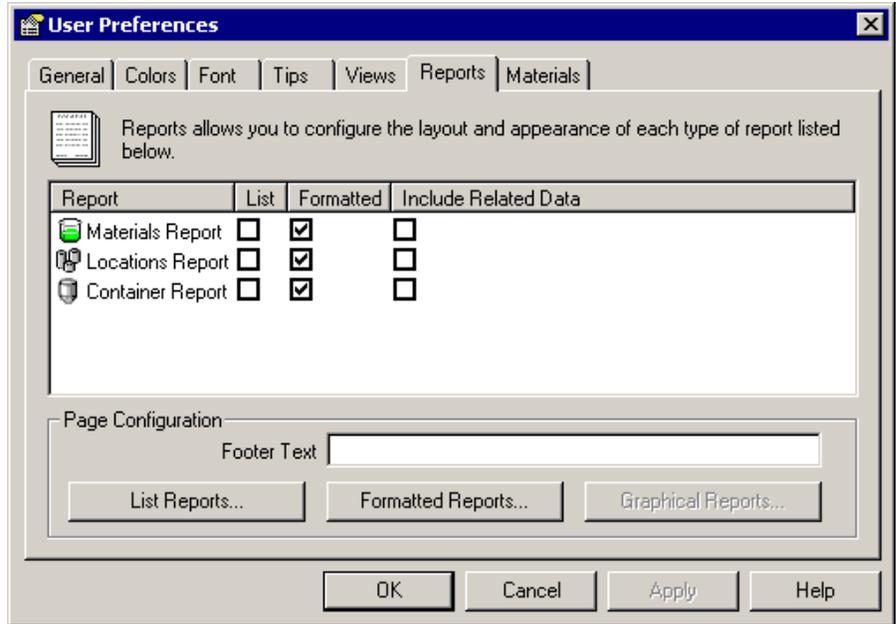
Occasionally, you may want to print just certain pages of the report. You can do so by entering the starting and ending page numbers of the section you want printed.

1. In the Editor's Hierarchy pane, select the list or item(s) that you want to print.
2. Click **Print**.
3. In the **Page Range** area, click **Pages**. Type the page numbers to print in the **From** and **To** boxes.
4. Ensure that the correct printer is selected and click **OK**.

Setting report preferences

You can define a footer to print on every page of the report and select the font and color (if your printer supports color printing) for the various sections of the report.

1. From the **View** menu, select **User Preferences**. The **User Preferences** dialog box opens to the **General** tab.
2. Select the **Reports** tab. The default report style for most views is **Formatted**.



The **Reports** tab contains the following items:

Item	Description
Report column	Lists the report templates available for the item or view that is currently active in the Editor.
List check box	Enables the list report style, if available for the associated report.
Formatted check box	Enables the formatted report style, which is the default format for most reports.
Include Related Data check box	Adds any additional data associated with the selected item to the printed report.
<i>Footer Text</i>	Prints the word or phrase entered at the bottom of each report page.
List Reports button	Opens the Report Page Configuration dialog box where you can set the margins, font, and text color for a specific report template.
Formatted Reports button	
Graphical Reports button	Not enabled in Material Manager.

3. To change the type of printed report, select either **List** or **Formatted** to the right of the appropriate report.

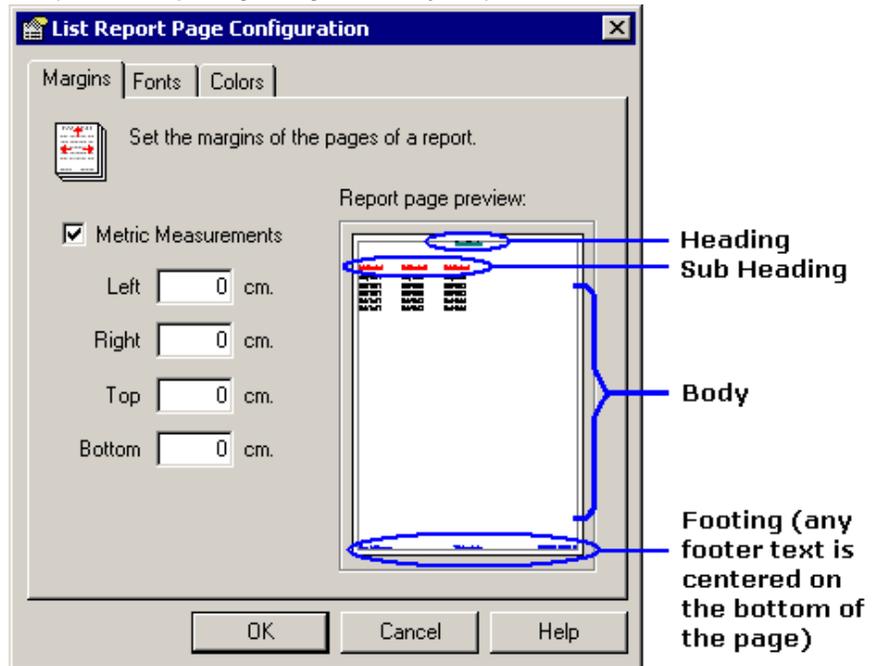


Tip: If you select the **List** format, set the page orientation to landscape. From the **File** menu, select **Print Setup**, select **Landscape** in the Orientation area, and then click **OK**.

4. Where available, you can select **Include Related Data**, and any additional data associated with the selected item (single items only – not lists or groups) also prints on the report.
5. In the **Footer Text** box, type a word or phrase to appear centered at the bottom of each page.
6. Click **Apply**.

Changing margins

1. To change the margins, fonts, and colors of a printed report, click the desired **Report** button (List, Formatted, or Graphical). The **Report Page Configuration** dialog box opens.

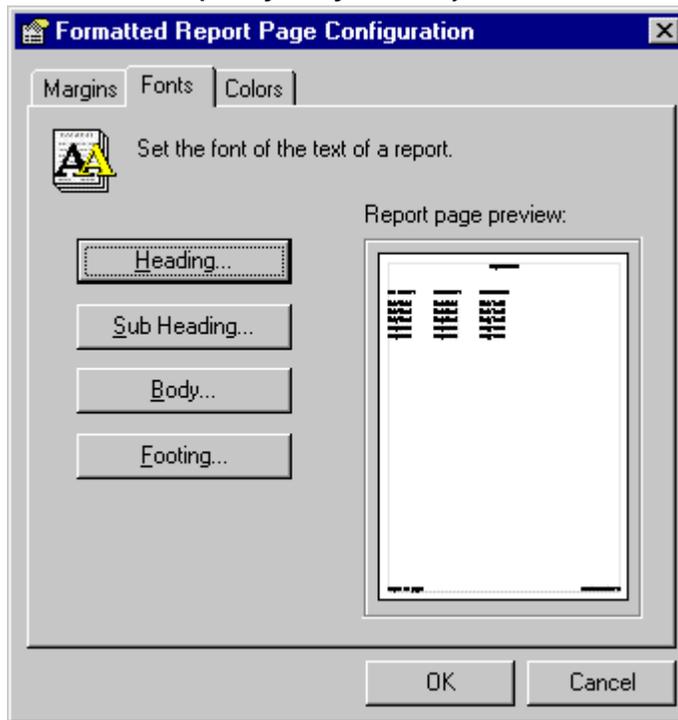


2. Change the margin widths of the printed report if desired. Type the desired amounts in each box for the **Left**, **Right**, **Top**, and **Bottom** margins. A visual representation of each margin change displays in the Report page preview area. Note that this is not to scale.
3. If you want to use inches instead of metric measurements, disable **Metric Measurements**.
4. Click **OK** to close the **Report Page Configuration** dialog box.
5. Click **Apply**.

Setting the report fonts and colors

You can change the font type, style, and size of each section in the report template.

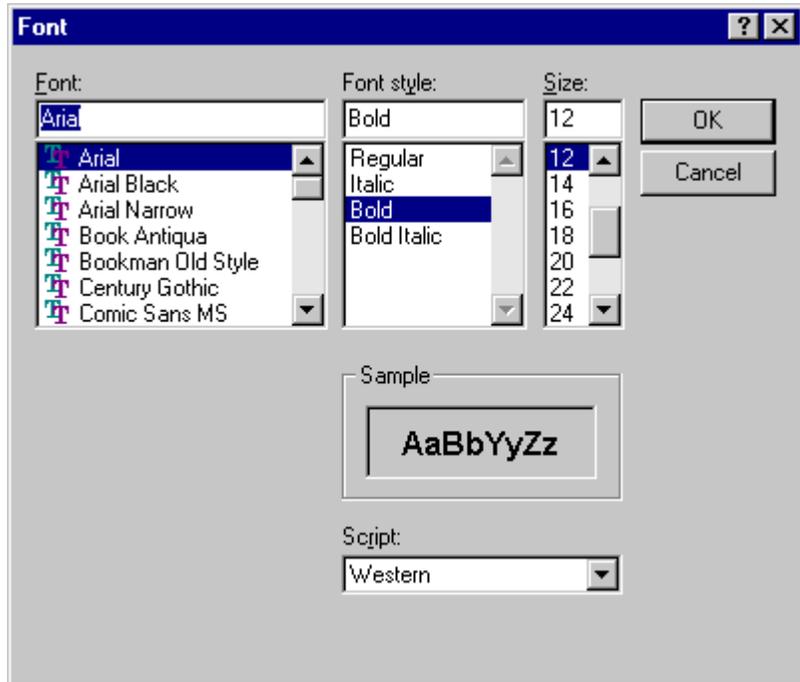
1. From the **Formatted Report Page Configuration** dialog box, select the **Fonts** tab.



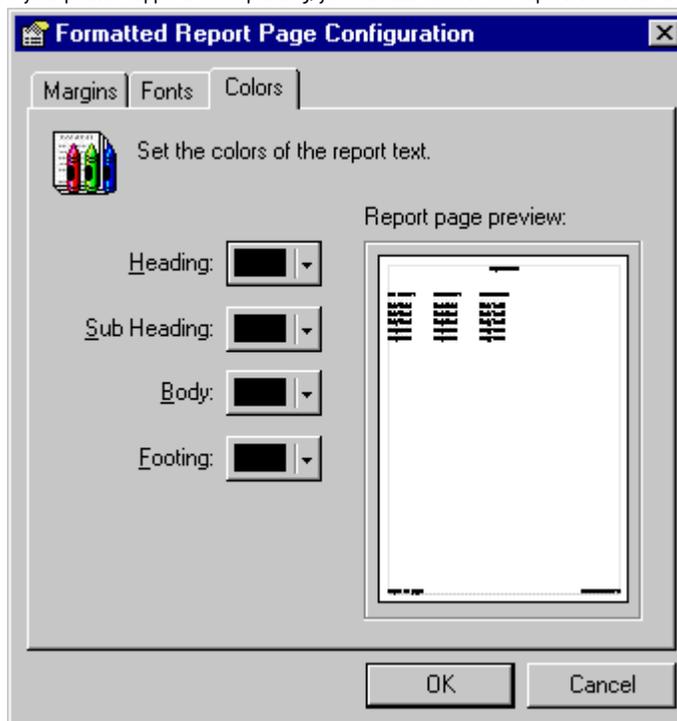
There are four areas in a report for which you can edit the fonts and colors:

- **Heading** - Prints across the top of each page, generally in a larger, bolder font than the rest of the report.
- **Sub Heading** - Refers to the field names, such as Material Name or Group. In formatted reports, sub headings print to the left of the actual report data.
- **Body** - Refers to the actual report data text, which is usually smaller and lighter than the headings.
- **Footing** - Prints the page number, date, and time that the report is printed across the bottom of each page, generally in a smaller font than the rest of the report.

- Click the button for the report section you want to edit. The **Font** dialog box opens.



- Select the desired font, font style, and size, and then click **OK**.
- If your printer supports color printing, you can add color to the report. Select the **Colors** tab.



- Click the color selection button corresponding to the report section to which you want to add color. The **Color** dialog box opens.
- Select a color from the **Color** dialog box, and then click **OK**. You will see a visual representation of each color change in the Report page preview area of the dialog box.
- Repeat for the other sections of the report, as desired. When you are finished changing fonts and colors, click **OK** to close the **Report Page Configuration** dialog box.
- Click **Apply**.

Configuring states

The state of a lot informs others about the availability of a material. When a lot of material is assigned the state of **Ready To Use**, it can be distributed to its configured containers and used in a recipe. You can use lot states to keep certain lots of material from being used in a recipe. For instance, you can assign a **Rejected** state to a material that does not conform to standards. Since the state is not **Ready To Use**, the FactoryTalk Batch Server does not use the material.

The same rule applies to the state of a container. If a container is not **Ready To Use**, you cannot distribute material to that container, either as an addition of material from a container to a recipe, or the distribution of material to a container from the recipe. You can use container states to keep certain containers from being used. For example, when a container needs a maintenance check, assign the **Maintenance** state. Since the state is not **Ready to Use**, the FactoryTalk Batch Server does not use the container.

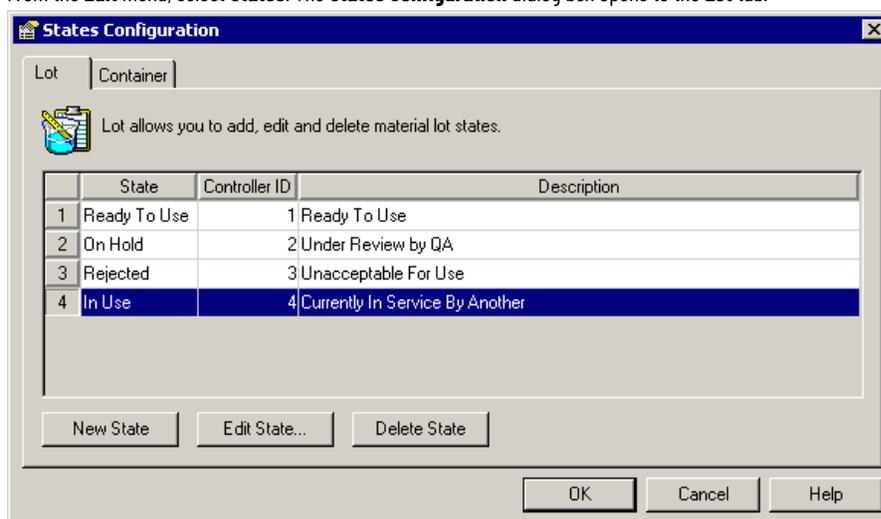
The **States Configuration** option allows you to pre-configure descriptive information about the lot and container states, but not report an actual quantity of that lot or container.



Tip: The FactoryTalk Batch Server can bind a recipe only to a material or container that is **Ready To Use**.

Creating new states

1. From the **Edit** menu, select **States**. The **States Configuration** dialog box opens to the **Lot** tab.



Tip: You cannot edit or delete the system-defined **Ready To Use** state.

2. If you are creating a container state, select the **Container** tab. If you are creating a lot state, skip this step.
3. Click the **New State** button. The **Create Lot (or Container) State** dialog box opens.
4. In the **Name** box, type a unique name for the state.
5. In the **Description** box, type a detailed description of the state.

6. The **Controller ID** field defaults to the next numeric value in sequence, or you can change it to a unique number. This ID is provided to allow the PLC programmer to access a subplot record from the material database.
7. Click **OK** to save the new state.

Editing states

1. From the **States Configuration** dialog box, select the **Lot** or **Container** tab.
2. Select the record row to edit, and then click the **Edit State** button. The **Edit Lot (or Container) State** dialog box opens.
3. Make the necessary changes, and then click **OK**.

Deleting states

1. From the **States Configuration** dialog box, select the **Lot** or **Container** tab.
2. Select the record row to delete, and then click the **Delete State** button.



Tip: You cannot delete a lot state that is assigned to a material. You must either edit the material to assign a different state or delete the material. Additionally, you cannot delete a container state that is assigned to a container. You must either edit the container to assign a different state or delete the container.

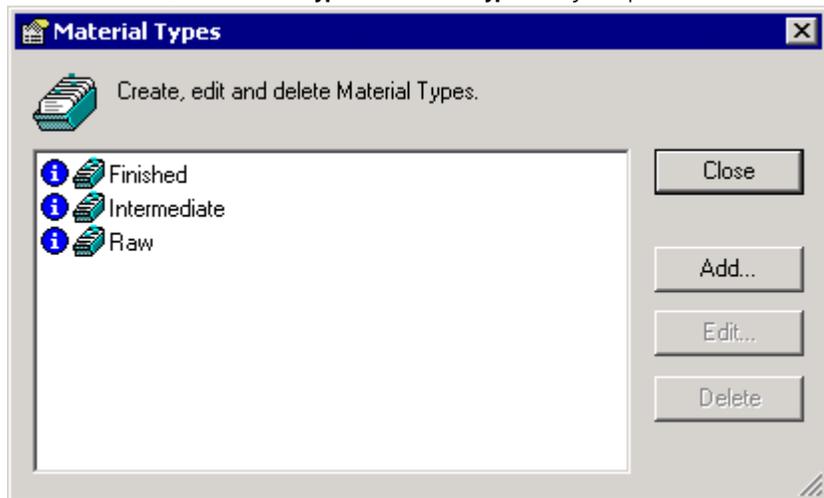
Configuring material types

A material type is the descriptive state of a material. The Material Manager has three default material types:

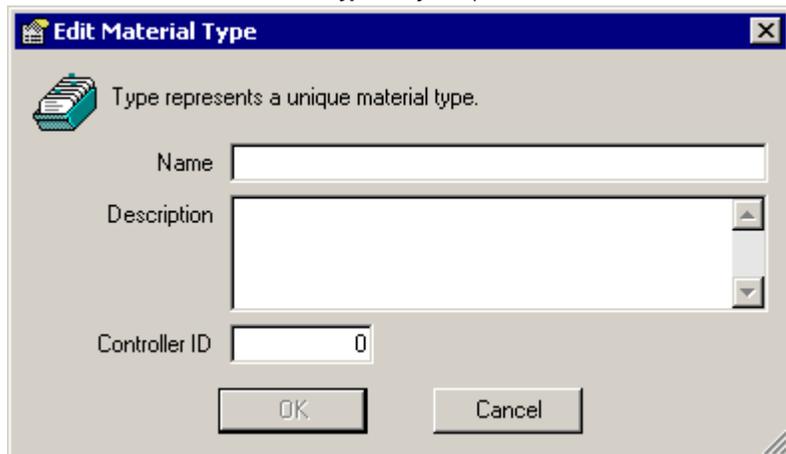
- **Finished** is a process output (final product such as vanilla ice cream), which is the quantity of a material that is distributed after the execution of a recipe.
- **Raw** is a process input, which is the quantity of material, such as milk or eggs, added for the execution of a recipe.
- **Intermediate** can be both a process input or a process output.

Creating material types

1. From the **Edit** menu, select **Material Types**. The **Material Types** dialog box opens.



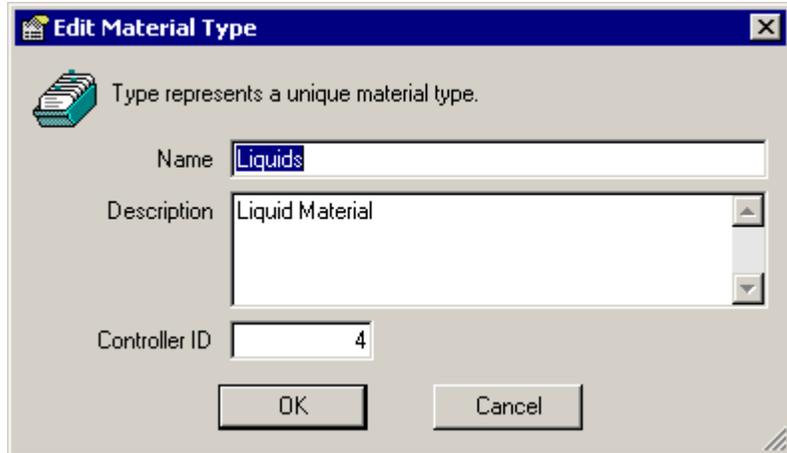
2. Click the **Add** button. The **Edit Material Type** dialog box opens.



3. In the **Name** box, type a unique name for the selected material.
4. In the **Description** box, type a detailed description of the selected material.
5. The **Controller ID** field defaults to the next numeric value in sequence. If necessary, you can change this to a unique number, which is used for PCD phase programming. (See the *FactoryTalk Batch PCD Programming Reference Guide* for more information.)
6. Click **OK** to save the new material type.

Editing material types

1. From the **Material Types** dialog box, select the type, and then click the **Edit** button.



2. Make the necessary changes to the material type information, and then click **OK**.

Delete material types

Use this procedure to delete material types.

To delete material types:

1. From the **Material Types** dialog box, select the type, and then click **Delete**.
2. If **Confirm deletion** is enabled on the **User Preferences** dialog box, a confirmation message opens. To delete the type, click **Yes**.

If **Confirm deletion** is disabled on the **User Preferences** dialog box, the material type is deleted without a confirmation message. (See **Configuring the Material Editor** for more information.)



Tip: You cannot delete a material type that is assigned to a material. You must either edit the material to assign a different type or delete the material.

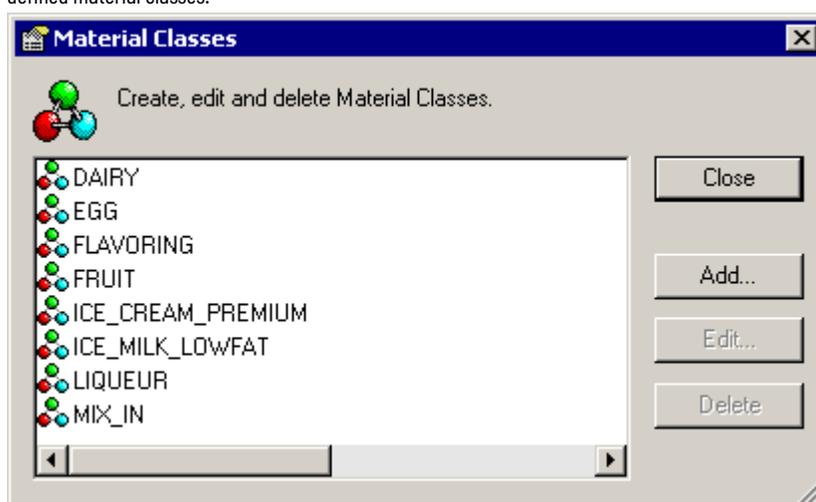
Configuring material classes

A material class defines one or more materials that are considered similar to each other. An example of a material class is Sweetener, which could contain the materials Granulated Sugar and Corn Syrup. Using material classes simplifies adding materials to storage containers – you can then add the whole class of materials to a container, instead of adding each material individually.

You can also define properties for material classes, which propagate to all materials created with reference to a material class. For example, if the material brown sugar is based on the sweeteners material class, which has defined material class properties, such as color and melting temperature, then brown sugar automatically inherits those material class properties. You can then modify the inherited material class properties by deleting inherited properties that do not pertain to the material, or change the minimum, maximum, and default values.

Creating material classes

1. From the **Edit** menu, select **Material Classes**. The **Material Classes** dialog box opens listing the currently defined material classes.

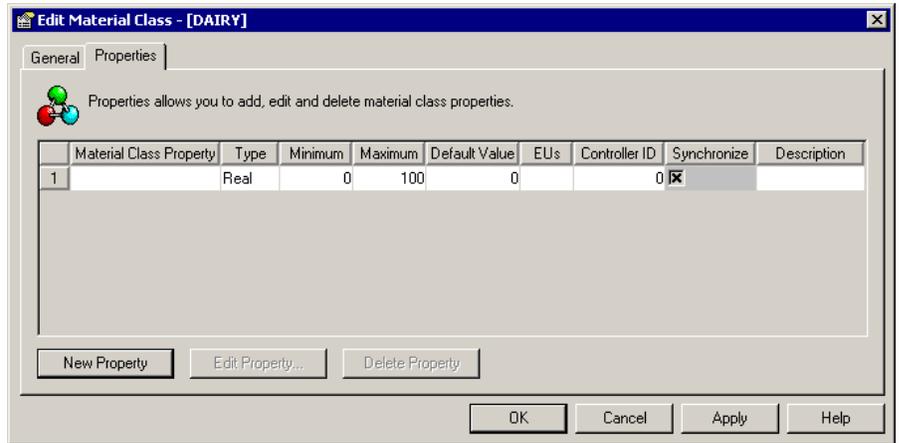


2. Click the **Add** button. The **Create Material Class** dialog box opens to the **General** tab.



3. In the **Name** box, type a unique name for the new class.
4. In the **Description** box, type a detailed description for the new class.
5. The **Controller ID** field defaults to the next numeric value in sequence. If necessary, you can change this to a unique number, which is used for PCD phase programming. (See the *FactoryTalk Batch PCD Programmer Technical Reference Guide* for more information.)
6. Click **Apply** to save the changes. The **Edit Material Class** dialog box opens.

7. Select the **Properties** tab, and then click the **New Property** button.



The following is a list of the items in the **Properties** tab.

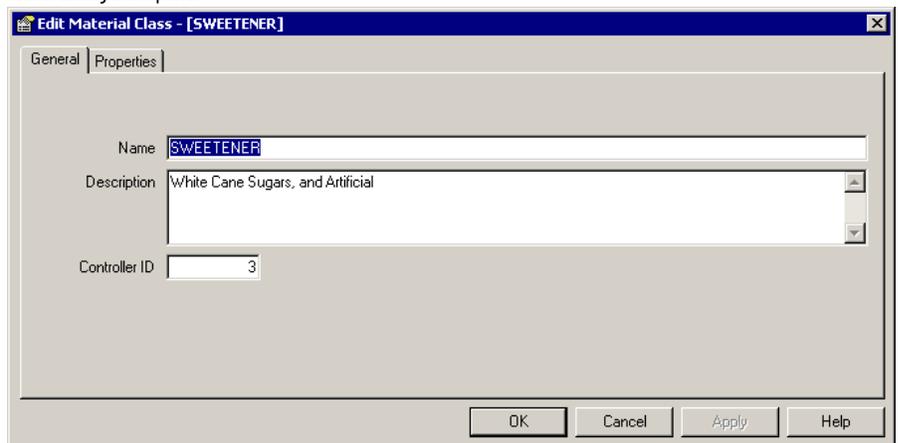
Item	Description
Material Class Property	Unique name assigned to the material class property. When a class is assigned to a material, all property names (class properties and independent properties) must be unique. Names of material class properties cannot be the same as material properties that belong to a material assigned to the class. (See Adding material properties on page .)
Type	Represents the data type from which the provided value is to be derived. There are three data types supported: Real, Integer, and String. <div style="border: 1px solid black; padding: 5px;">  Tip: Unsigned data types introduced in Logix5000 version 32.00 are not supported by FactoryTalk Batch. Configuring a FactoryTalk Batch tag to reference a controller tag of any unsigned data type (USINT, UINT, UDINT, ULINT) will result in bad communication. If you attempt to run batches referencing any tags that include one of these data types a communication failure occurs at the point when the tag is used. Use FactoryTalk Batch Tag Verify to produce a report that identifies any issues with the tag(s). </div>
Minimum	Minimum value for the material class property. Cannot be greater than the maximum value.
Maximum	Maximum value for the material class property. Cannot be less than the minimum value.

Item	Description
Default Value	Default value for the material class property. Must be between Minimum and Maximum values.
EUs	Engineering unit of measure for the material class property.
Controller ID	Defaults to the next numeric value in sequence. If necessary, you can change this to a unique number to be used for PCD phase programming.
Synchronize	Select to propagate changes to all inherited material and lot properties. This selection is necessary only when you make changes to a material property.
Description	Detailed description of the material class property.

8. Type the information in the appropriate boxes to define the material class property.
9. Click **Apply** to save the changes, or click **OK** to save the record and close the dialog box.

Editing material classes

1. From the **Material Classes** dialog box, select the class, and then click the **Edit** button. The **Edit Material Class** dialog box opens.



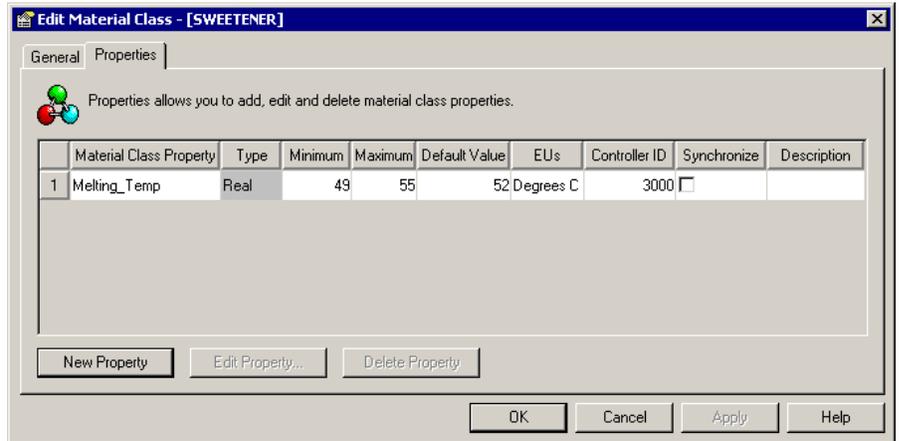
2. Make necessary changes, and then click **Apply**.

Edit material class properties

Use this procedure to edit material class properties.

To edit material class properties:

1. If you need to change the material class properties, select the **Properties** tab from the **Edit Material Class** dialog box. The currently defined material class properties display in a table format. You can also use a form to make changes. See **Using a form to edit material class properties** for more information.



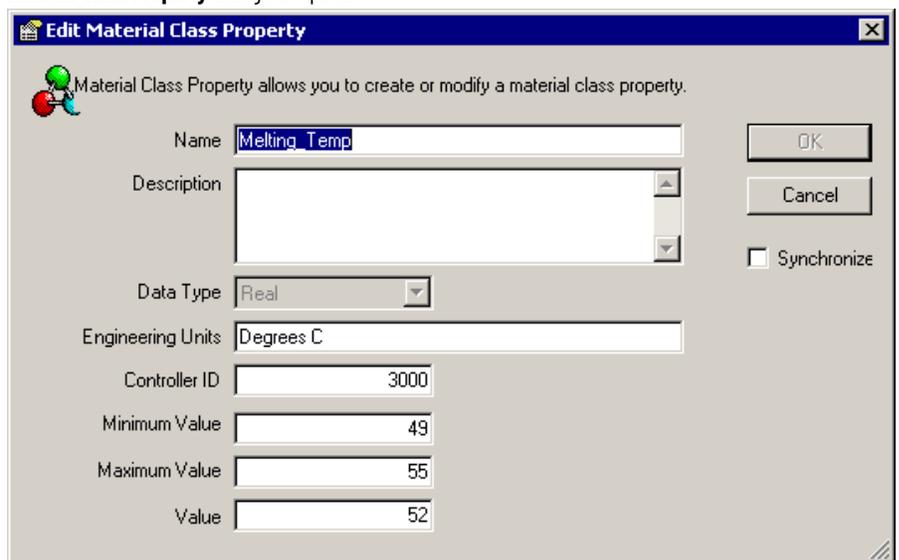
2. Make the desired changes. You cannot change the **Type**.

IMPORTANT: If you are changing a value that contains a decimal, use the Delete key to delete the value before typing a new value containing a decimal. If you type over the old value containing the decimal, the new decimal is not recognized by the application.

3. If you want to propagate the changes to all material and lot properties that are based on this material class, select **Synchronize**.
4. Click **Apply** to save the changes, or click **OK** to save the record and close the dialog box.

Using a form to edit material class properties

1. On the **Properties** tab, select the record row to edit, and then click the **Edit Property** button. The **Edit Material Class Property** dialog box opens.



2. Make the desired changes. You cannot change the **Type**.

IMPORTANT: If you are changing a value that contains a decimal, use the Delete key to delete the value before typing a new value that contains a decimal. If you type over the old value containing the decimal, the new decimal is not recognized by the application.

3. If you want to propagate the changes to all material and lot properties that are based on this material class, select **Synchronize**.
4. Click **OK**.

Deleting material classes

1. From the **Material Classes** dialog box, select the class, and then click **Delete**.
2. If the **Confirm deletion** is enabled on the **User Preferences** dialog box, a confirmation message opens. To delete the class, click **Yes**.

If the **Confirm deletion** is disabled on the **User Preferences** dialog box, the material class is deleted without a message (see [Configuring the Material Editor on page 13](#) for more information).

IMPORTANT: You cannot delete a material class that is assigned to a material. You must either assign a different material class to the material or delete the material.

Deleting material class properties

1. From the **Material Classes** dialog box, select the class, and then click the **Edit** button. The **Edit Material Class** dialog box opens.
2. Select the **Properties** tab.
3. Select the record row to delete, and then click the **Delete Property** button.
4. Click **Apply** to save the changes, or click **OK** to save the record and close the dialog box.

Configuring materials

The Material Editor is used to facilitate easy configuration and manipulation of the material-based recipes database. Material configuration is the process of adding, editing and deleting various material data that is stored in the material database.

Creating a material record

When adding materials, you must create a general description record of the material before you can define the other attributes of the material.

1. Right-click **Materials** in the Hierarchy pane and select **New Material** (or click the **New** toolbar button). The **Create Material** dialog box opens.

The following is a list of items in the **Create Material** dialog box:

Item	Description
Name	Unique name assigned to the material (<i>required</i>).
Description	Detailed description of the material.
Inventory Key	Provides an interface for integrating in-house material inventory systems to plant production processes.
Engineering Units	The unit of measure being used for this material.
Type	The Material Type to which this material belongs (<i>required</i>). Defaults to Raw material type.
Class	The Material Class to which this material belongs (<i>required</i>). Defaults to Ungrouped material class.
Default Lot State	All lots derived from this material default to this state.
Controller ID	Defaults to the next numeric value in sequence. If necessary, you can change this to a unique number to be used for PCD phase programming.
Last Edited By	System name of the user who last changed the material record (<i>view-only</i>).

Item	Description
Last Modified	Date and time record last modified based on the system date and time (<i>view-only</i>).

2. Type the information in the appropriate boxes to define the material.
3. Click **Apply** to save the information. The **Edit Material** dialog box opens.

The **Edit Material** dialog box contains the following tabs:

- **Properties:** A list of custom attributes that are associated with the material. This data is optional information and is not required. (See [Configuring material properties on page 38](#) for more information.)
- **Lots:** The information that identifies a particular quantity of a material. A lot holds all of the static information about the lot, such as Lot Identifier, Material Type, State of the lot, Engineering Units, and Controller ID value). (See [Configuring material lots on page 42](#) for more information.)
- **Containers:** The definition of some type of storage that holds materials. Some containers hold one material (such as a bin or tank), and others can hold multiple materials (such as a pallet). Containers can be a source for materials (adding materials from the container) or the destination for materials (such as the distribution of a finished product). (See [Configuring containers on page 47](#) for more information.)
- **Priorities:** Used to select which container of material you want to use first. For example, a container that has the oldest material must be used before newer materials. In the **Priorities** column, the default priority value is **100**. The allowed values are 1 to 100, with 1 being the lowest value, which is selected first. You can assign as many priorities per container as needed. If the container with the value of **1** runs out of material, the next priority for that container is used. (See [Configuring material priorities on page 48](#) for more information.)
- **Inventory:** A view of the material lot distribution. Each row represents a subplot. A subplot is an amount of material in the selected lot that has been distributed to a container. The container, lot, and label are used by the FactoryTalk Batch Server when searching for a material to bind to a recipe. (See [Configure material inventory on page 49](#) for more information.)

Configuring material properties

The **Properties** tab contains a list of custom attributes that are associated with the material. This data is optional information and is not required. Custom attributes always have indexes starting at 1000. Since a material could be

composed of numerous property elements, you can add numerous property records. Additionally, it allows you to edit existing properties and delete properties from the list.

For materials that might have the same custom properties, you can duplicate properties with the same Controller ID to multiple containers. For example, if two materials have a pH_Factor property, you can assign the property to both materials using the same Controller ID.

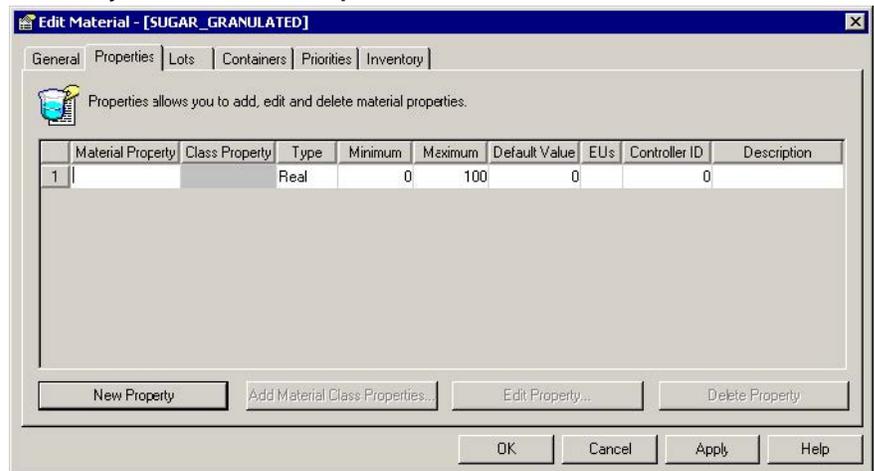
Adding material properties

Use this procedure to add material properties.

To add material properties

1. If the **Edit Material** dialog box is open, click the **Properties** tab.
If not, right-click on a material in the Hierarchy or Detail pane, and select **Properties**. The **Edit Material** dialog box opens. Click the **Properties** tab.
2. Click the **New Property** button to create a new property record row.

The following is a list of items on the **Properties** tab:



Item	Description
Material Property	Unique name assigned to the material property (<i>required</i>). All property names (material class properties and independent material properties) must be unique. Names of material class properties cannot be the same as material properties that belong to a material assigned to the class. See Creating material classes for more information.
Class Property	Name of the inherited material class property (<i>view only</i>).
Type	Represents the data type that the provided value is to be derived from (<i>required</i>). There are three data types supported: Real, Integer, and String.

Item	Description
	 <p>Tip: Unsigned data types introduced in Logix5000 version 32.00 are not supported by FactoryTalk Batch. Configuring a FactoryTalk Batch tag to reference a controller tag of any unsigned data type (USINT, UINT, UDINT, ULINT) will result in bad communication. If you attempt to run batches referencing any tags that include one of these data types a communication failure occurs at the point when the tag is used.</p> <p>Use FactoryTalk Batch Tag Verify to produce a report that identifies any issues with the tag(s).</p>
Minimum	Minimum value for the material property. Cannot be greater than the maximum value.
Maximum	Maximum value for the material property. Cannot be less than the minimum value.
Default Value	The default value for the material property. Must be greater than the minimum value and less than the maximum value for the material property.
EUs	Engineering unit of measure for the material property.
Controller ID	ID numbers begin at 1000 and increment by 10 for each attribute added. If necessary, you can change this to a unique number to be used for PCD Phase Programming.
Description	Detailed description of the material property.

3. Type the information in the appropriate boxes to define the material property.
4. Click **Apply** to save the record, or click **OK** to save the record and close the dialog box.

Editing material properties

1. If the **Edit Material** dialog box is open, select the **Properties** tab.
If not, right-click on a material in the **Hierarchy** or **Detail** pane, and select **Properties**. The **Edit Material** dialog box opens. Select the **Properties** tab. The currently defined material properties display in a table format. You can also use a form to make changes.

The screenshot shows the 'Edit Material - [SUGAR_GRANULATED]' dialog box with the 'Properties' tab selected. The dialog contains a table of material properties and several control buttons.

	Material Property	Class Property	Type	Minimum	Maximum	Default Value	EUs	Controller ID	Description
1	Melting_Temp	Melting_Temp	Real	49	55	52 Degrees C		3000	
2	Sweetener		Real	5	5000	150 pounds		1000	Powdered Sugar

Buttons at the bottom of the dialog include: New Property, Add Material Class Properties..., Edit Property..., Delete Property, OK, Cancel, Apply, and Help.

For inherited material class properties, you can change only the minimum, maximum, and default values.

2. Modify the material property as desired.

IMPORTANT: If you are changing a value that contains a decimal, use the Delete key to delete the value before typing a new value that contains a decimal. If you type over the old value containing the decimal, the new decimal is not recognized by the application.

3. Click **Apply** to save the changes, or click **OK** to save the record and close the dialog box.



Tip: Changing a duplicate property that is assigned to other materials does not affect the other properties.

Using a form to edit material properties

1. On the **Properties** tab, select the record row to edit, and then click the **Edit Property** button. The **Edit Material Class Property** dialog box opens.

2. Modify the material property as desired, and then click **OK**.

IMPORTANT: If you are changing a value that contains a decimal, use the Delete key to delete the value before typing a new value that contains a decimal. If you type over the old value containing the decimal, the new decimal is not recognized by the application.

3. Click **Apply** to save the changes, or click **OK** to save the record and close the dialog box.



Tip: Changing a duplicate property that is assigned to other materials does not affect the other properties.

Deleting material properties

1. From the **Edit Materials** dialog box, select a record row to delete, and then click the **Delete Property** button.
2. Click **Apply** to save the changes, or click **OK** to save the record and close the dialog box.



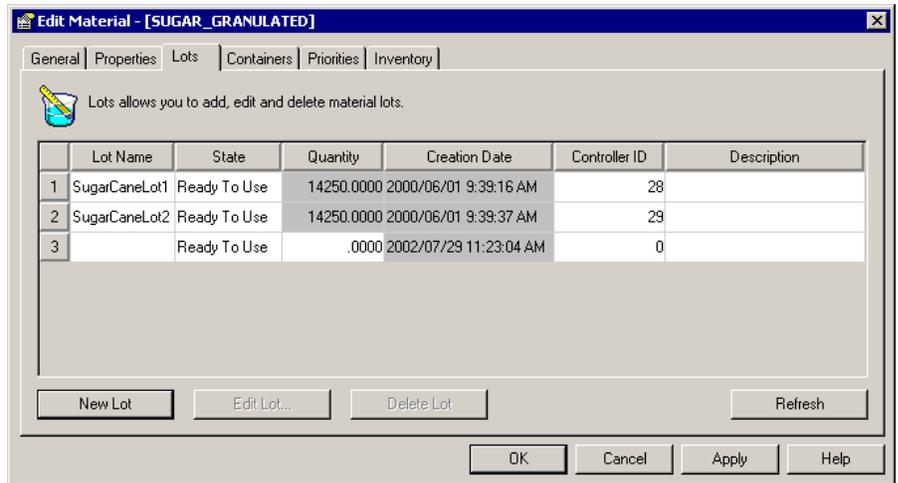
Tip: Deleting a duplicate property that is assigned to another material does not affect the other material's property.

Configuring material lots

The **Lots** tab contains the information that identifies a particular quantity of a material. A lot holds all of the static information about the lot, such as Lot Identifier, Material Type, State of the lot, Engineering Units, and Controller ID value. A lot may also contain sublots, which detail the actual quantity of the lot that is distributed into material storage containers. An example of a lot could be: Shipment number SN2009 of the material Granulated Sugar, which is part of the material class Sweetener and is classified as a **Raw** material type.

Adding new lots

1. From the **Edit Material** dialog box, select the **Lots** tab. Existing lots display in ascending order by lot name. You can sort the list by clicking the column header to display an up arrow (ascending) or down arrow (descending).
2. Click the **New Lot** button to insert a new lot record row.



The following is a list of items on the **Lots** tab:

Item	Description
Lot Name	Unique name to identify the lot (<i>required</i>).
State	Current state of the lot (<i>required</i>).
Quantity	Total amount of this lot of material (<i>required</i>).
Creation Date	Date and time the lot was added (<i>view-only</i>).
Depletion Date	Date and time the lot was deleted (<i>view-only</i>).
Controller ID	Defaults to the next numeric value in sequence. You can change this to a unique number for PCD phase programming.
Description	Detailed description of the lot record.
Refresh button	Re-queries the materials database for lots of this material and repopulates the displayed lot records.

3. Type the information in the appropriate boxes to define the material lot.
4. Click **Apply** to save the changes, or click **OK** to save the record and close the dialog box.

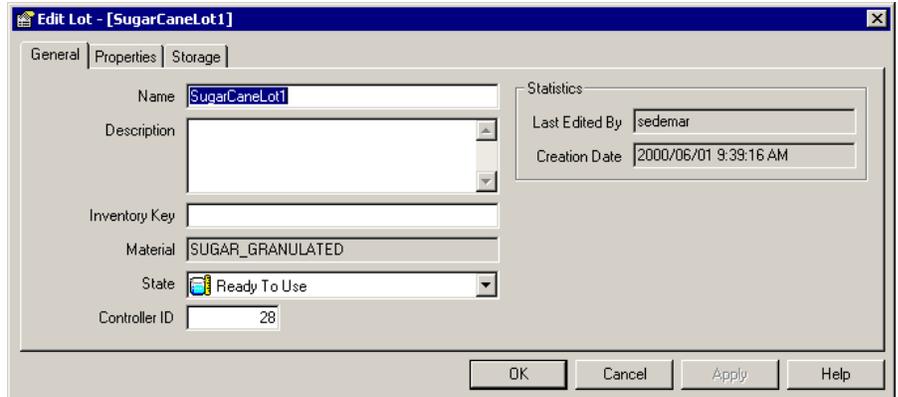
Deleting lots

1. From the **Edit Material** dialog box, select a record row to delete, and then click the **Delete Lot** button.
2. Click **Apply** to save, or click **OK** to save and close the dialog box.

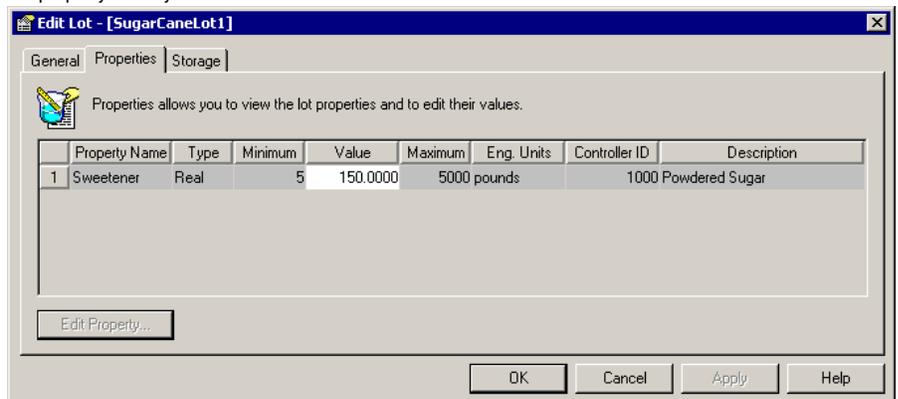
Editing a lot

You can change the material's properties and the amount of material in the lot, and distribute a lot of material to a container.

1. From the **Edit Material** dialog box, select a record row to edit, and then click the **Edit Lot** button. The **Edit Lot** dialog box opens to the **General** tab.



2. Modify the general lot information as needed, and then click **Apply**.
3. Select the **Properties** tab. The properties assigned to the lot of material display. You can change the value of the property directly in the **Value** column or use a form.



4. In the **Value** box, type a new value for the property.

IMPORTANT: If you are changing a value that contains a decimal, use the Delete key to delete the value before typing a new value that contains a decimal. If you type over the old value containing the decimal, the new decimal is not recognized by the application.

5. Click **Apply** to save the changes, or click **OK** to save the record and close the dialog box.

Using a form to change lot properties

1. On the **Properties** tab, select the record row to edit, and then click the **Edit Property** button. The **Edit Lot Property** dialog box opens.

2. In the **Value** box, type the value of the property, and then click **OK**.

IMPORTANT: If you are changing a value that contains a decimal, use the Delete key to delete the value before typing a new value that contains a decimal. If you type over the old value containing the decimal, the new decimal is not recognized by the application.

Distributing a lot

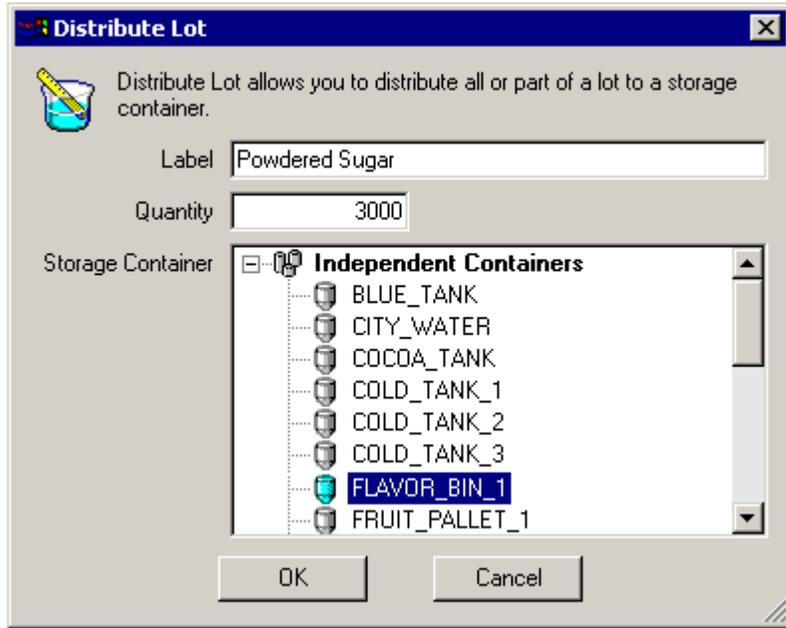
When you distribute a lot, you create a subplot that is identified by a label. A subplot is an amount of material in the selected lot that is distributed to a container.



Tip: Before creating distributions, verify that both the material lot and container have a state of Ready to Use.

1. From the **Edit Lot** dialog box, select the **Storage** tab. Existing sublots display in ascending order by label name. Each record row represents a subplot. You can sort the list by clicking the column header to display an up arrow (ascending) or down arrow (descending).

2. Select the record row to distribute, and then click **Distribute**. The **Distribute Lot** dialog box opens.



3. In the **Label** box, type a unique name for the subplot.
4. In the **Quantity** box, type the amount to distribute.
5. From the **Storage Container** list, select a container to store the distributed amount.
6. Click **OK** to return to the **Storage** tab on the **Edit Lot** dialog box.
7. Click **Apply** to save the changes, or click **OK** to save the record and close the dialog box.

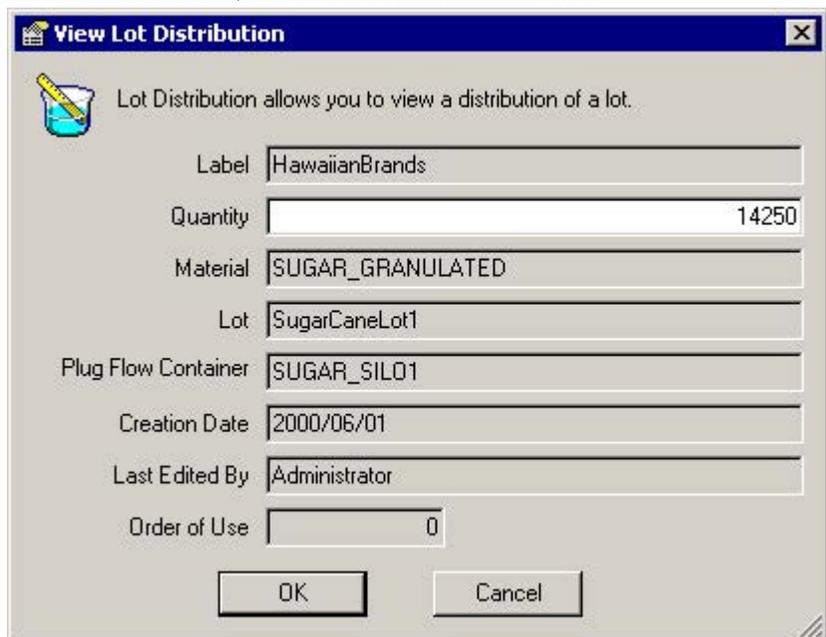
Changing a subplot quantity

1. From the **Edit Lot** dialog box, select the **Storage** tab. The distributed amounts of the lot display.



Tip: If you edit a subplot by distributing the lots of material, deleting a distribution, or changing the amount of material, the material's inventory information also changes.

2. Select the record row to edit, and then click the **Edit Distribution** button.



3. In the **Quantity** box, type a new amount.

IMPORTANT: If you are changing a value that contains a decimal, use the Delete key to delete the value before typing a new value that contains a decimal. If you type over the old value containing the decimal, the new decimal is not recognized by the application.

4. Click **OK** to return to the **Storage** tab on the **Edit Lot** dialog box.
5. Click **Apply** to save the changes, or click **OK** to save the record and close the dialog box.

Deleting a subplot

1. From the **Edit Material** dialog box, select the **Inventory** tab.
2. Select the row to delete, and then click the **Delete Distribution** button.
3. Click **Apply** to save the changes, or click **OK** to save the changes and close the dialog box.

Configuring containers

A container is some type of storage that holds materials. Some containers, such as a bin or tank, hold one material, while others, such as a pallet, can hold multiple materials. Containers can be a source for materials (adding materials from the container) or the destination for materials (such as the distribution of a finished product).

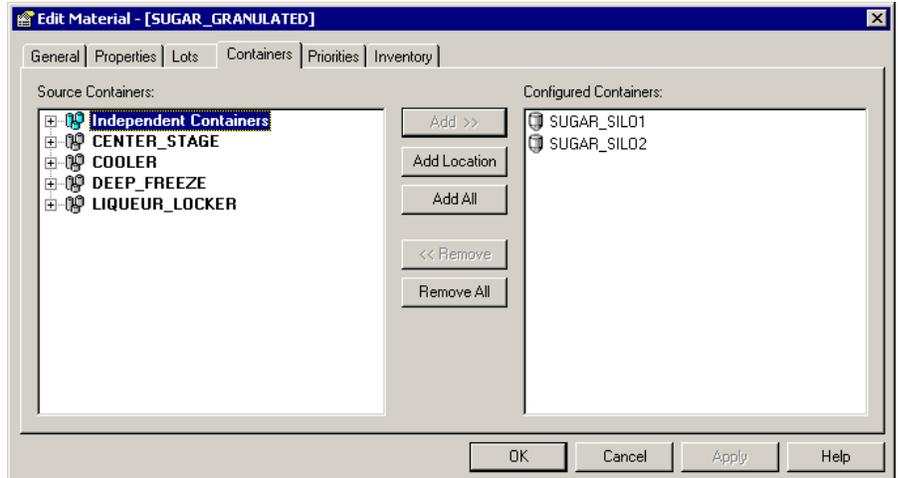
From the **Containers** tab you can add or remove source containers, by location or individually, to the material's **Configured Containers** list. When you distribute the material you select a container from the list. Only the containers configured to hold the lots of this material are used in the execution of a recipe.

If the containers are not configured, the **Source Containers** list only displays the virtual container. There are two methods you can use to configure containers:

- Create the containers first, create the materials second, and then assign containers to materials.
- Create materials first and assign them to the virtual container. As you create the containers, reassign the materials. (See [Configuring storage containers on page 53](#) for more information.)

Assigning containers to materials

1. From the **Edit Material** dialog box, select the **Containers** tab.



2. There are three methods you can use to move containers from the **Source Containers** list to the **Configured Containers** list.
 - To add a storage location of containers, select a location from the **Source Containers** list, and then click the **Add Location** button. All the containers assigned to that location are added to the **Configured Containers** list.
 - To add an individual container, expand the location group to display the containers assigned to that location. Select an individual container, and then click the **Add** button.
 - To add all the source containers to the configured containers, click the **Add All** button.
3. Click **Apply** to save the changes, or click **OK** to save the record and close the dialog box.

Removing a container

Removing a container merely unassigns the material from that container. The container definition still exists in the material database.

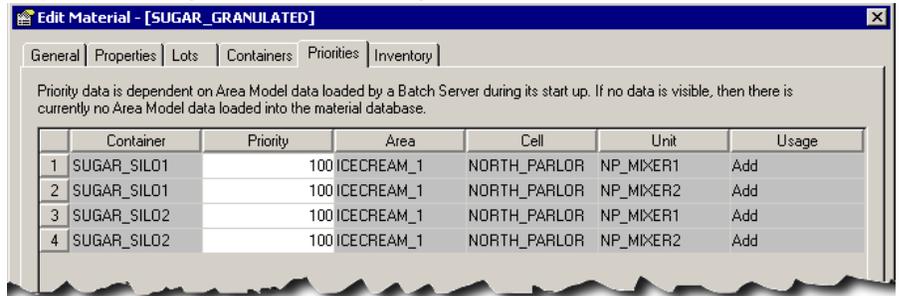
1. There are three methods you can use to move containers from the **Source Containers** list to the **Configured Containers** list.
 - To remove a single container, select the container in the **Configured Containers** list, and then click the **Remove** button.
 - To remove more than one container, select the container in the **Configured Containers** list, hold down either the shift key or the ctrl key, select other containers to remove, and then click the **Remove** button.
 - To remove all the containers in the **Configured Containers** list, click the **Remove All** button.
2. Click **Apply** to save the changes, or click **OK** to save the record and close the dialog box.

Configuring material priorities

The priorities of a material are used to select a container of material that you want to use first; for example, a container that has the oldest material needs to be used before newer materials. In the **Priorities** column, the default priority value is **100**. The allowed values are 1 to 100, with 1 being the lowest value, which is selected first. You can assign as many priorities per container as needed. If the container with the value of **1** runs out of material, the next priority for that container is used.

The **Priorities** tab displays area model data, which is loaded into the material database by a FactoryTalk Batch Server during start up. If no information is visible, then the database does not contain the area model data.

1. From the **Edit Material** dialog box, select the **Priorities** tab. Existing containers assigned to the material display in ascending order by container name. You can sort the list by clicking the column header to display an up arrow (ascending) or down arrow (descending).



2. In the **Priority** box, type a value from 1 to 100.
3. Click **Apply** to save the changes, or click **OK** to save the changes and close the dialog box.

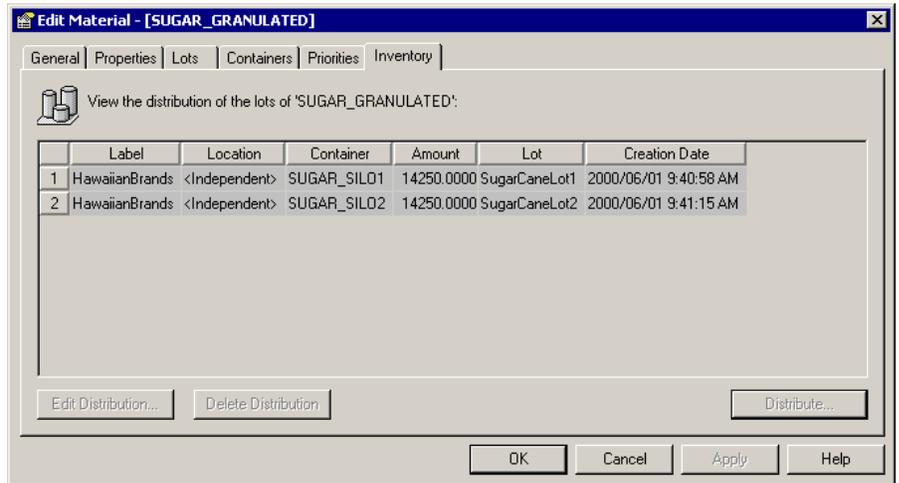
Configure material inventory

The **Inventory** tab displays a view of the material lot distribution. Each row represents a subplot. A subplot is an amount of material in the selected lot that is distributed to a container. The container, lot, and label are used by the FactoryTalk Batch Server when searching for a material to bind to a recipe. When the recipe is complete, the FactoryTalk Batch Server updates the amount to reflect the amount of material either consumed from the container (Addition) or added to the container (Distribution). You configure the container type in the FactoryTalk Batch Equipment Editor. (See the *FactoryTalk Batch Equipment Editor User Manual* for more information).

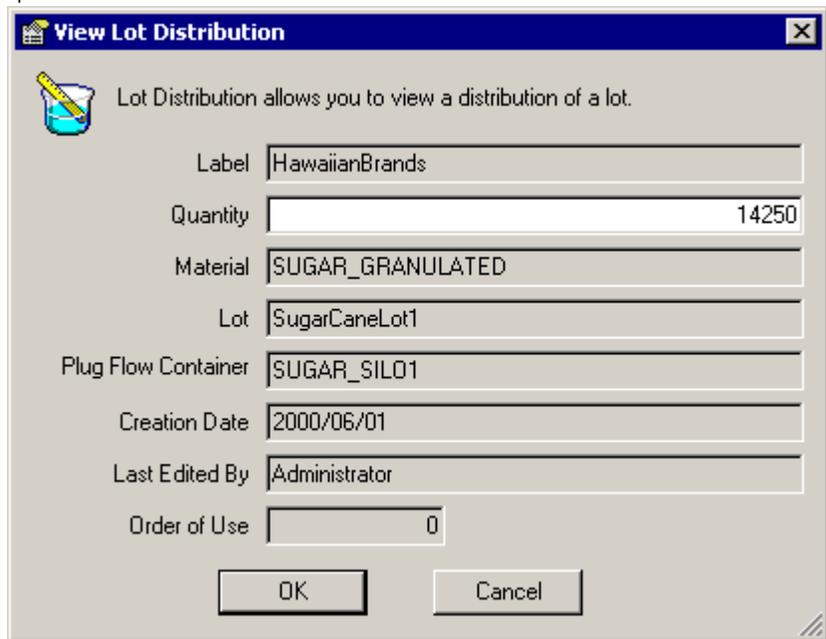
When you edit, distribute, or delete a distribution in a material's inventory, the results also affect the container's inventory.

Changing a subplot quantity

- From the **Edit Material** dialog box, select the **Inventory** tab. Existing sublots display in ascending order by label name. Each record row represents a subplot. You can sort the list by clicking the column header to display an up arrow (ascending) or down arrow (descending).



- Select the record row, and then click the **Edit Distribution** button. The **View Lot Distribution** dialog box opens.



- In the **Quantity** box, type a new amount.

IMPORTANT: If you are changing a value that contains a decimal, use the Delete key to delete the value before typing a new value that contains a decimal. If you type over the old value containing the decimal, the new decimal is not recognized by the application.

- Click **OK** to return to the Inventory tab on the Edit Lot dialog box.
- Click **Apply** to save the changes, or click **OK** to save the record and close the dialog box.

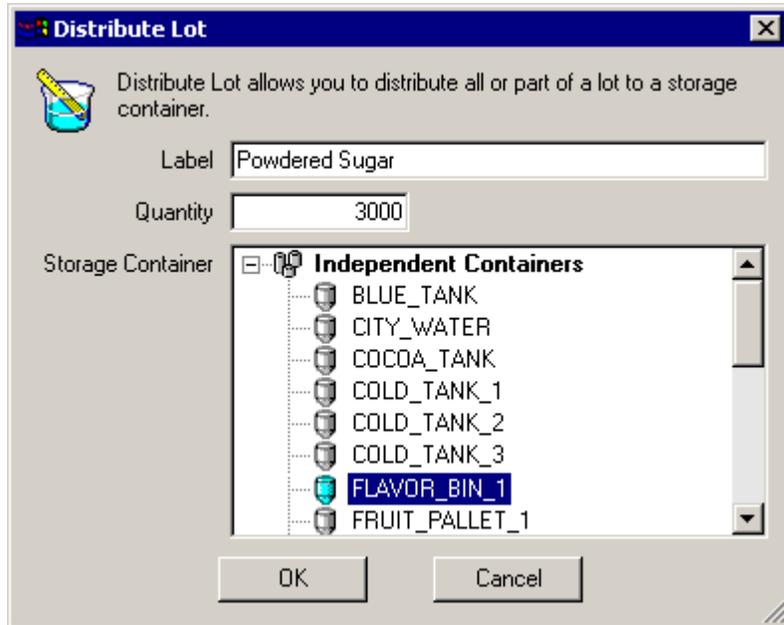
Deleting a subplot

1. From the **Edit Material** dialog box, select the **Inventory** tab.
2. Select the row to delete, and then click the **Delete Distribution** button.
3. Click **Apply** to save the changes, or click **OK** to save the changes and close the dialog box.

Managing inventory distribution

Managing lot distribution from the **Inventory** tab gives you an opportunity to adjust the inventory levels in containers.

1. From the **Edit Material** dialog box, select the **Inventory** tab.
2. Select the record row, and then click the **Distribute** button. The **Distribute Lot** dialog box opens.



3. In the **Label** box, type a unique name for the subplot.
4. In the **Quantity** box, type the amount to distribute.
5. From the **Storage Container** list, select a container to store the distributed amount.
6. Click **OK** to return to the **Inventory** tab on the **Edit Lot** dialog box.
7. Click **Apply** to save the changes or click **OK** to save the changes and close the dialog box.

Deleting materials

1. In either the Hierarchy pane or Detail pane, right-click the material to delete, and then click the **Delete** button.
2. If the **Confirm deletion** user preference is enabled, you are asked to verify the deletion. To delete the material, click **Yes**; to cancel the deletion, click **No**.

If the **Confirm deletion** user preference is disabled, the selection is deleted without a confirmation message. (See [Configuring the Material Editor on page 13](#) for more information.)

Configuring storage containers and locations

Independent containers are the actual elements that contain the lot(s) of material(s) that are used by FactoryTalk Batch in the execution of a recipe. A material storage container can be anything that either contains or acts as a location for lots of material (tank farm, vessel, or pallet). The containers can either be grouped within material storage locations for convenience or can remain as independent containers.

Each material storage location is an independent entity that represents the location of the containers where lots of materials are stored. Locations can contain a grouping of containers related to that location. Examples of locations are warehouses and plants. What is important about material storage locations is the knowledge of what lot(s) of material(s) reside in or on that particular location. If you make changes to the configuration in the plant, you have to open the area model, make the changes, save it and restart the server. By using storage locations, you can feed material from a location instead of an independent container. By moving the container from location to location in the material database, you will not need to modify the equipment database.

Configuring storage containers

You can add storage containers individually or to the **Independent Containers** group. When adding a container, a general description of the container must be created before you can define the properties of the container. There are three types of containers: Composite, Plug Flow, and Pallet.

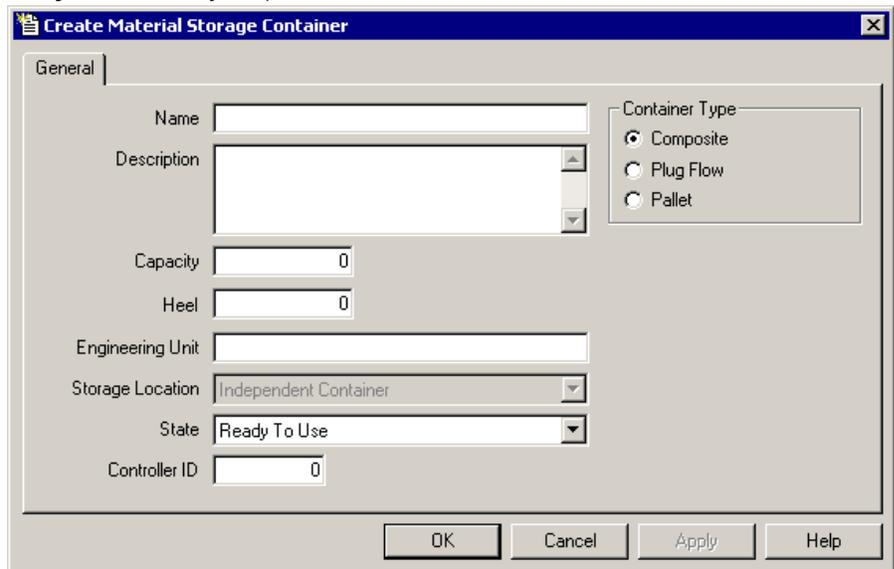
- A **composite** container holds more than one lot, but the lots are mixed. You cannot distinguish between lots, therefore the lot IDs do not matter, and you will not keep inventory on the lot. For example, a tank can be filled with one lot of milk. When another lot of milk is added, the two lots become mixed, and are, therefore, indistinguishable from one another.
- A **plug flow** container holds one type of material, but is comprised of two or more different lots. The first lot that went in is the first to come out. For example, you can add a lot of grain to a silo containing another lot of grain and the two lots remain separate (for the most part). Each lot can be inventoried.
- A **pallet** can have multiple materials, which usually are bags of a specific quantity of material. For example, a pallet could be stacked with 100 pound bags of flour, sugar, and cocoa.

	 Composite	 Plug Flow	 Pallet
Description	Contains like material	Contains multiple sublots layered in vessel	Contains multiple materials
# of materials container may hold	1	1	n
# sublots container may hold	1	n	n

Access to sublots	Sequential	Sequential	Random
Sublots trackable?	No; anything added is combined with original subplot	Yes; assumption is that active subplot is at bottom of vessel	Yes; any subplot is always accessible

Creating a storage container

1. Right-click **Independent Containers**, and then select **New Material Storage Container**. The **Create Material Storage Container** dialog box opens to the **General** tab.



The following is a list of the items on the **General** tab of the **Create Material Storage Container** dialog box:

Item	Description
Name	Unique name assigned to the container.
Description	Detailed description of the container (<i>optional</i>).
Capacity	Amount of material a storage container can hold.
Heel	Quantity of material remaining in a container when emptied. For a container to be considered a binding candidate for material additions, the total inventory of the container must be greater than the heel value. The heel is not applicable to material distributions. (See Using container heel properties on page 67 for more information.)
Engineering Unit	Unit of measure for the material (<i>optional</i>).
Storage Location	Location where the container is added.
State	State of the container indicating the availability of a material.

Item	Description
Controller ID	If left at 0 (zero), defaults to the next numeric value in sequence. You can assign a unique number for PCD phase programming.
Container Type	Type of container: Composite, Plug Flow, or Pallet.



Tip: If you want to use a container for phase binding, its **State** must be set to **Ready to Use**, otherwise the FactoryTalk Batch Server will not view the container as eligible for binding.

1. Type the information in the appropriate boxes to define the container.
2. Click **Apply**. The **Edit Material Storage Container** dialog box opens to the **General** tab. Once you created the general container record, you can configure the container properties, priority data, materials, and contents.

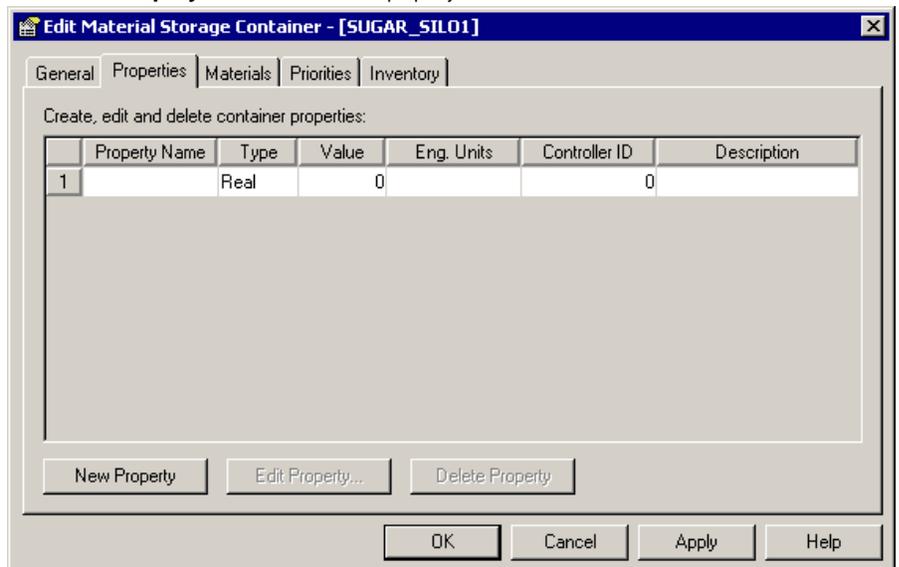
IMPORTANT: When you add a new container or modify an existing container in the Material Editor, the area model is not automatically updated. To update the area model open the Equipment Editor.

Configuring container properties

The **Properties** tab contains a list of custom attributes that can be associated with the container. This data is optional information and is not required. Custom attributes always have indexes starting at 1000. Since a container class can also be represented as a collection of containers, the **Properties** tab allows you to add numerous records to make a collection.

For containers that might have the same custom properties, you can duplicate properties with the same Controller ID to multiple containers. For example, if two containers have a pH_Factor property, you can assign the property to both containers using the same Controller ID.

1. From the **Edit Material Storage Container** dialog box, select the **Properties** tab.
2. Click the **New Property** button to insert a new property record row.



The following is a list of the items on the **Properties** tab:

Item	Description
Property Name	Unique name assigned to the property <i>(required)</i> .
Type	<p>Represents the data type for the provided value <i>(required)</i>. There are three data types supported: Real, Integer, and String.</p> <hr/> <p> Tip: Unsigned data types introduced in Logix5000 version 32.00 are not supported by FactoryTalk Batch. Configuring a FactoryTalk Batch tag to reference a controller tag of any unsigned data type (USINT, UINT, UDINT, ULINT) will result in bad communication. If you attempt to run batches referencing any tags that include one of these data types a communication failure occurs at the point when the tag is used.</p> <p>Use FactoryTalk Batch Tag Verify to produce a report that identifies any issues with the tag(s).</p> <hr/>
Value	The value of the container property.
Eng. Units	The unit of measure being used for the material.
Controller ID	ID numbers begin at 1000 and increment by 10 for each attribute added. You can change the controller ID to a unique number for use in PCD phase programming.
Description	Detailed description of the container property.

3. Type the information in the appropriate boxes to define the container properties.
4. Click **Apply** to save the changes, or click **OK** to save the record and close the dialog box.

Editing container properties

1. From the **Edit Material Storage Container** dialog box, select a record number to edit and click the **Edit Property** button.

Edit Container Property

Container Property allows you to create or modify a container property.

Name:

Description:

Data Type:

Value:

Engineering Units:

Controller ID:

Buttons: OK, Cancel

2. Modify the container property as needed, and then click **OK**.

IMPORTANT: If you are changing a value that contains a decimal, use the Delete key to delete the value before typing a new value that contains a decimal. If you type over the old value containing the decimal, the new decimal is not recognized by the application.

3. Click **Apply** to save the changes, or click **OK** to save the record and close the dialog box.

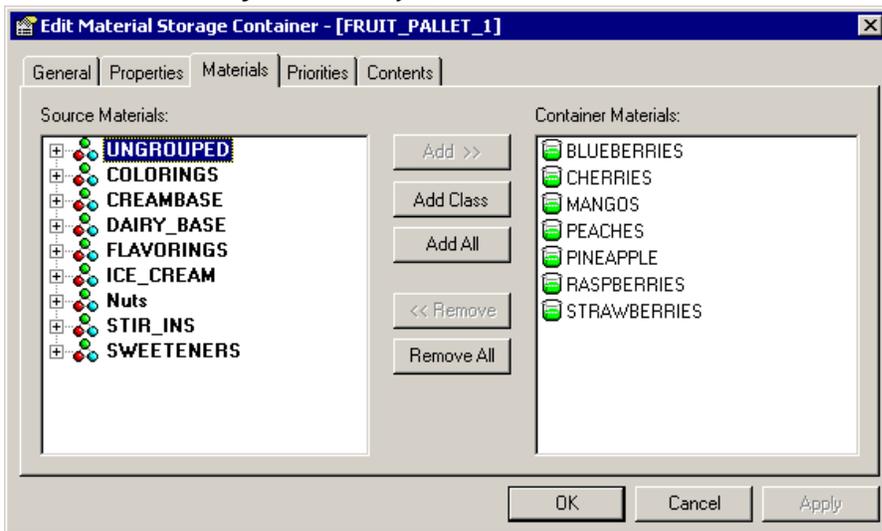
Deleting container properties

1. From the **Edit Material Storage Container** dialog box, select a record row to delete, and then click the **Delete Property** button.
2. Click **Apply** to save the changes to the properties, or click **OK** to save the changes and close the dialog box.

Configuring container materials

From the **Materials** tab you can add or remove source materials, by group or individually, to the container.

1. From the **Edit Material Storage Container** dialog box, select the **Materials** tab.



2. There are three methods you can use to move materials from the **Source Materials** list to the **Configured Materials** list.
 - To add a group of materials, select a group from the **Source Materials** list, and then click the **Add Class** button. All the materials assigned to that class are added to the **Configured Materials** list.
 - To add a single material, expand a material group to display the materials. Select a material, and then click the **Add** button.
 - To add all the source materials to the configured materials, click the **Add All** button.
3. Click **Apply** to save the changes, or click **OK** to save the record and close the dialog box.

Removing a material

Removing a material merely unassigns the material from that container. The material definition still exists in the material database.

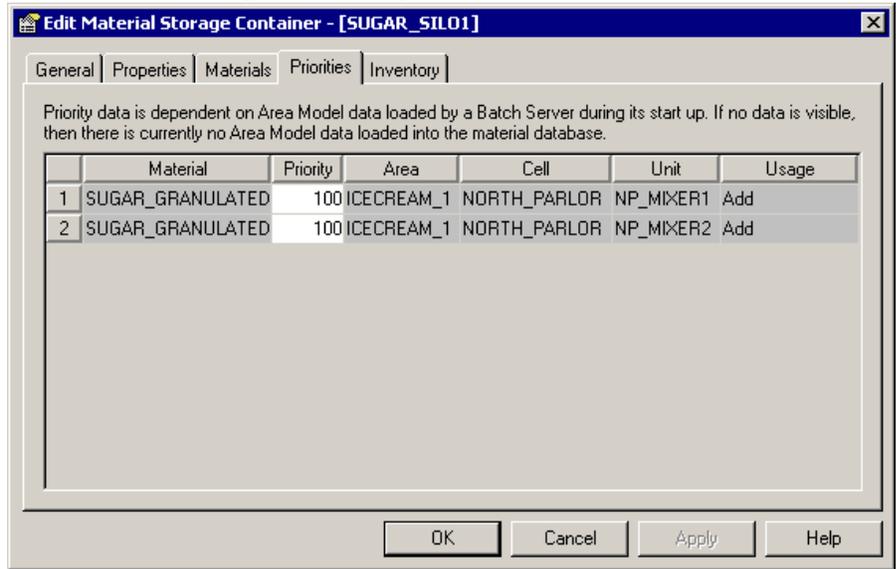
1. There are three methods you can use to move materials from the **Configured Materials** list to the **Source Materials** list.
 - To remove a single material, select the material in the **Configured Containers** list, and then click the **Remove** button.
 - To remove more than one material, select a material in the **Configured Materials** list, hold down either the shift key or the ctrl key, select other materials to remove, and then click the **Remove** button.
 - To remove all the materials in the **Configured Materials** list, click the **Remove All** button.
2. Click **Apply** to save the changes, or click **OK** to save the record and close the dialog box.

Configuring container priorities

The priorities of a container are used to select materials that you want to use first. For example, the oldest material needs to be used before newer materials are used in a recipe, so you can set priority values for each container. The default priority value is **100**. The allowed values are 1 to 100, with **1** being the lowest value, which is selected first. You can assign as many priorities per material as needed. If the container with a value of **1** runs out of material, the next priority container for that material is used.

The **Priorities** tab displays area model data loaded into the material database by a FactoryTalk Batch Server during start up. If no information is visible, then the database does not contain the area model data.

1. From the **Edit Material Storage Container** dialog box, select the **Priorities** tab.



The following is a list of items in the **Priorities** tab:

Item	Description
Material	Unique name of the material stored in the container <i>(view-only)</i> .
Priority	The priority ranking of the container <i>(required)</i> .
Area	The area model name loaded by the FactoryTalk Batch Server <i>(view-only)</i> .
Cell	The cell class instance configured in the area model, that has the container assigned to it <i>(view-only)</i> .
Unit	The unit class instance configured in the area model that has the container assigned to it <i>(view-only)</i> .
Usage	The type of usage configured in the area model, which determines if the container is an addition of material, distribution, or both <i>(view-only)</i> .

2. In the **Priority** column, select a record row to edit, and then type a value from **1** to **100**.
3. Click **Apply** to save the changes, or click **OK** to save the changes and close the dialog box.

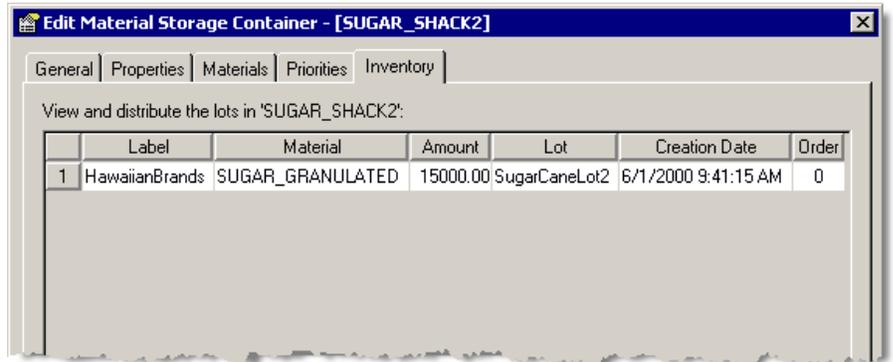
Configuring container inventory

The **Inventory** tab displays a view of the distribution of the lots of material in the selected container. Each row represents a subplot. A subplot is an amount of material in the selected lot that has been distributed to a container. The material, lot, and label are used by the FactoryTalk Batch Server when searching for a material to bind to a recipe.

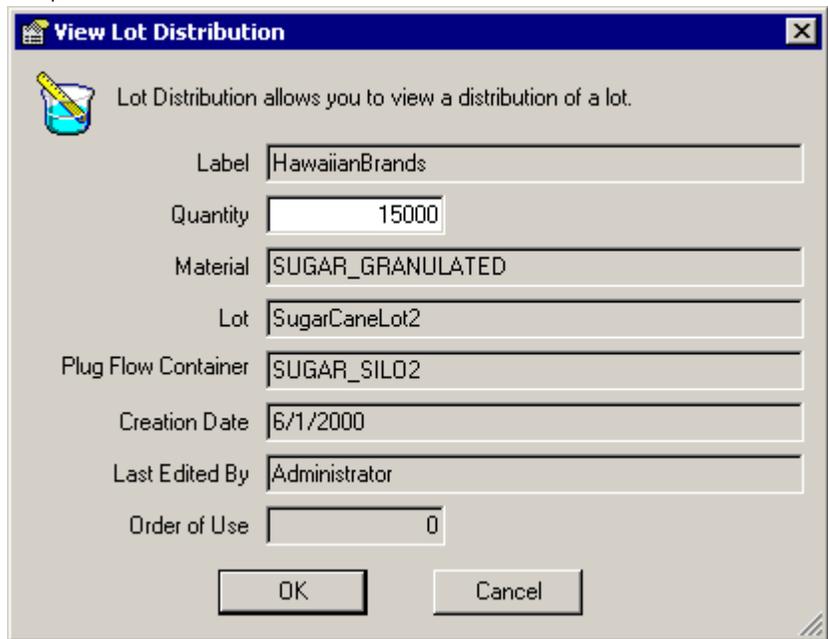
When you edit, distribute, or delete a distribution in a container's inventory, the results also affect the material's inventory.

Changing inventory quantity

1. From the **Edit Material Storage Container** dialog box, select the **Inventory** tab. The list of sublots for the storage container displays.



2. Select the record row to edit, and then click the **Edit Distribution** button. The **View Lot Distribution** dialog box opens.



3. In the **Quantity** box, type a new amount, and then click **OK**.

IMPORTANT: If you are changing a value that contains a decimal, use the Delete key to delete the value before typing a new value that contains a decimal. If you type over the old value containing the decimal, the new decimal is not recognized by the application.

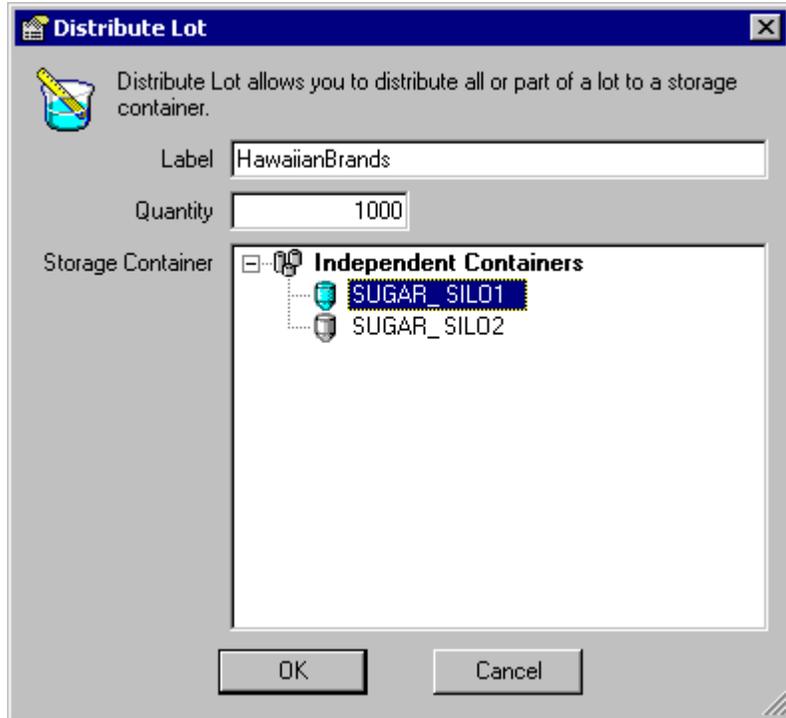
Deleting a distribution

From the **Edit Material Storage Container** dialog box, select the record row to delete, and then click the **Delete Distribution** button.

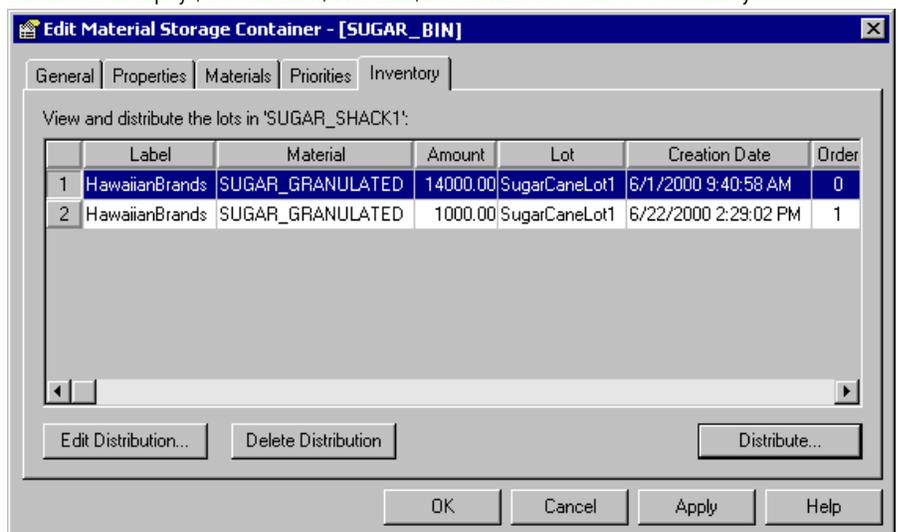
Distributing a lot

When you distribute a subplot of material, the distributed subplot appears with the **Label**, **Container**, and **Amount** distributed in the inventory of the selected storage container and also in the materials inventory.

1. From the **Edit Material Storage Container** dialog box, select the record row to distribute, and then click the **Distribute** button. The **Distribute Lot** dialog box opens.



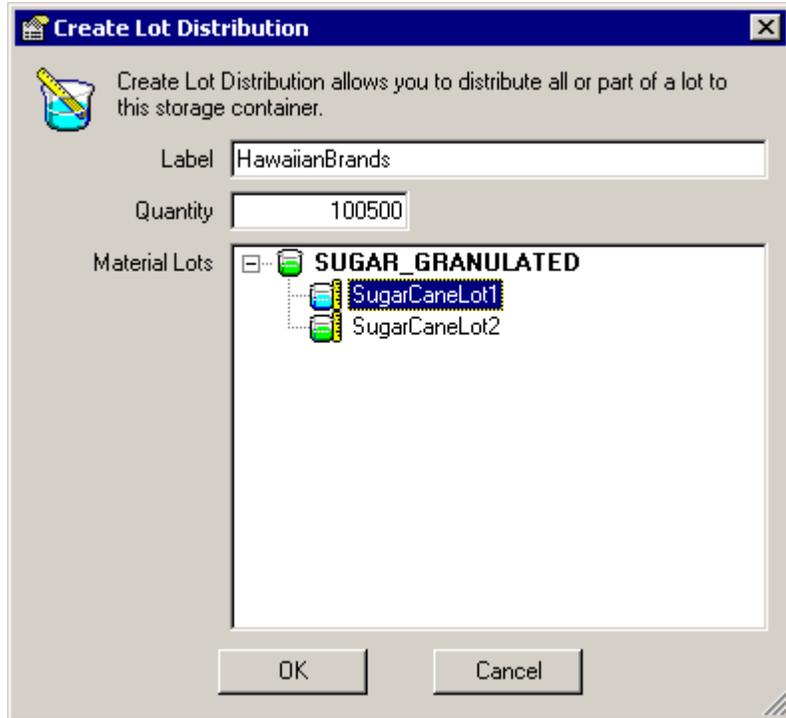
2. In the **Label** box, type a unique label name for the subplot.
3. In the **Quantity** box, type the amount to distribute.
4. From the **Storage Container** list, select a container to use for storing the distributed amount.
5. Click **OK** to return to the **Inventory** tab. If you distributed the lot into the container in which you are working, the new subplot displays, with the **Label**, **Container**, and **Amount** distributed in the inventory.



Adding a new quantity of material to a deleted subplot

When a subplot of a lot of material is used up, the subplot is deleted from the database. You can create a new quantity of that same subplot, using the **Create Distribution** button.

1. From the **Edit Material Storage Container** dialog box, click the **Create Distribution** button. The **Create Lot Distribution** dialog box opens.



2. In the **Label** box, type a unique label name for the subplot.
3. In the **Quantity** box, type the amount being distributed.
4. In the **Material Lots** list, select a lot of material to distribute.
5. Click **OK** to save the changes and close the dialog box.

Editing storage containers

1. In either the Hierarchy or Detail pane, right-click a container, and then select **Properties**. The **Edit Material Storage Container** dialog box opens to the **General** tab. The container name displays in the title bar.
2. Make the necessary changes to the storage container.

IMPORTANT: If you are changing a value that contains a decimal, use the Delete key to delete the value before typing a new value that contains a decimal. If you type over the old value containing the decimal, the new decimal is not recognized by the application.

3. Click **OK** to save the changes.

Deleting storage containers

1. In either the Hierarchy pane or Detail pane, right-click a container, and then select **Delete**.
2. If **Confirm deletion** is enabled on the **User Preferences** dialog box, a confirmation message displays. To delete the storage container, click **Yes**.

If **Confirm deletion** is disabled on the **User Preferences** dialog box, the storage container is deleted without a confirmation message. (See [Configuring the Material Editor on page 13](#) for more information on defining the user preferences.)

Creating storage locations

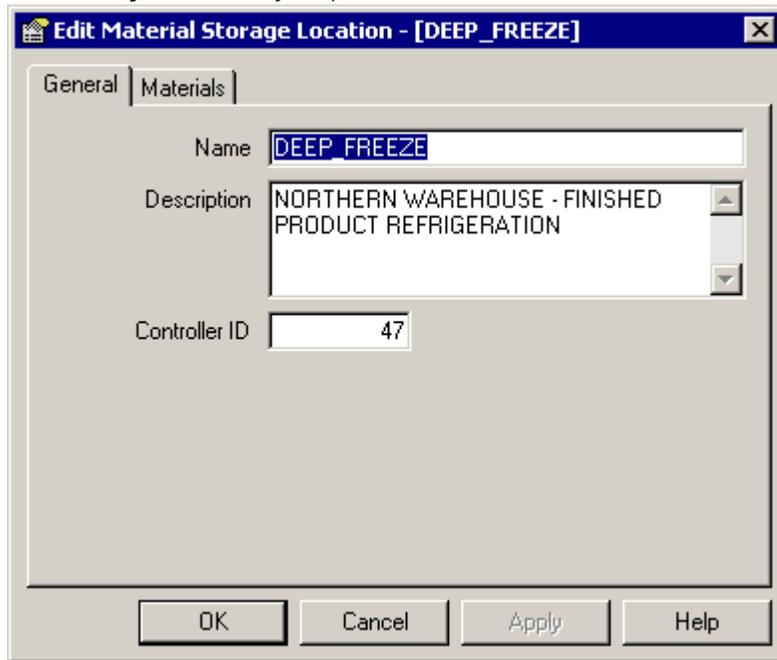
Storage locations represent the locations of actual material storage containers. When adding new locations, you must add a record of the location before you can configure it.

1. In the Hierarchy pane, right-click **Locations**, and then select **New Material Storage Location**. The **Create Material Storage Location** dialog box opens.

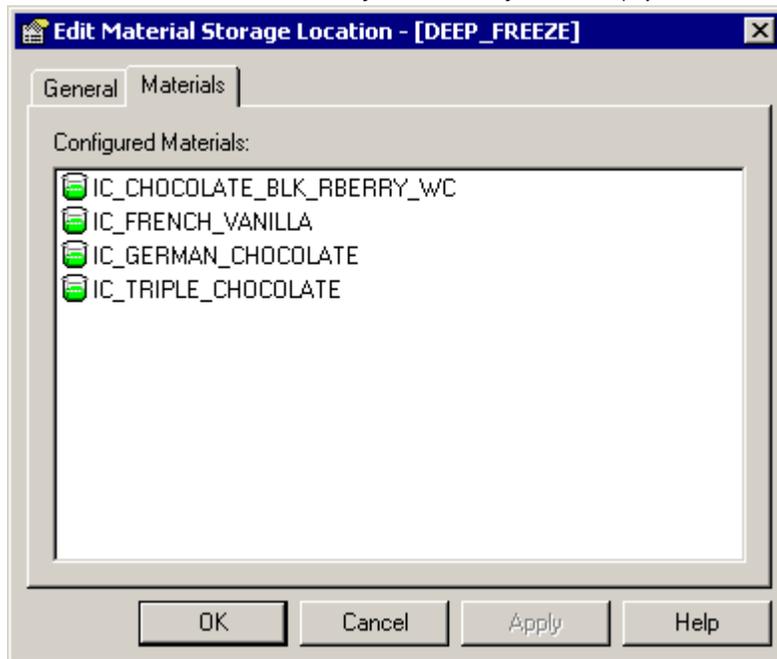
2. In the **Name** box, type a unique name for the material.
3. In the **Description** box, type a detailed description of the material.
4. In the **Controller ID** box, type a unique number if desired. If left at 0 (zero), the **Controller ID** defaults to the next numeric value in sequence.
5. Click **OK** to save the new location and close the dialog box.
6. In either the Hierarchy or Detail pane, right-click the storage location, and then select **New Material Storage Container**.
7. Configure the material storage containers for this storage location. (See [Configuring storage containers on page 53](#) for more information.)

Editing storage locations

1. In either the Hierarchy or Detail pane, right-click a storage location, and then select **Properties**. The **Edit Material Storage Location** dialog box opens to the **General** tab.



2. Make any necessary changes to the general information, and then click **Apply**.
3. Select the **Materials** tab. The materials assigned to this storage location display.



To make any changes to the list of configured materials, you need to edit the storage container located in the storage location. (See [Editing storage containers on page 62](#) for more information.)

- To view material properties, double-click a material. The **View Material** dialog box opens.

You only can view the material's property values. To edit the values, use the **Edit Material** dialog box. (See [Creating a material record on page 37](#) for more information.)

- Click **Close** to close the dialog box.

Deleting storage locations

- To delete a location, right-click on a location and select **Delete**.
- If **Confirm deletion** is enabled on the **User Preferences** dialog box, a confirmation message about the selected location opens. To delete the location, click **Yes**.

If **Confirm deletion** is disabled on the **User Preferences** dialog box, the storage location is deleted without a confirmation message. (See [Configuring the Material Editor on page 13](#) for more information on defining the user preferences.)



Tip: You cannot delete a material storage location that has material storage containers assigned to it. You must either reassign or delete the containers, and then you can delete the storage location.

Using container heel properties

The *container heel* is the specified quantity of inventory within a container that cannot be removed as part of a material addition. For material addition binding, the container is effectively empty when inventory drops below this level.

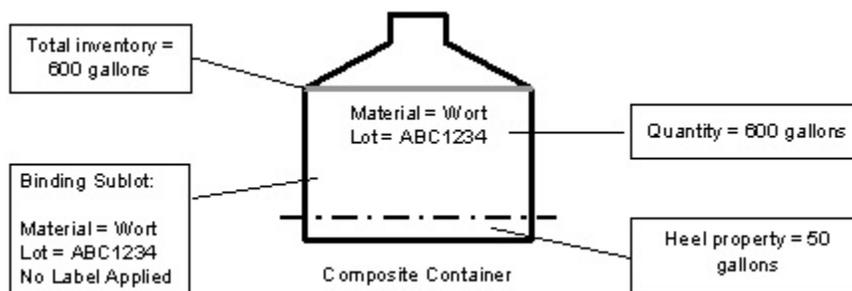
Material distributions do not have a use for the heel property. When the total amount of inventory in the container is less than the heel property, the container is not empty. The selection of the container for a material distribution must follow the binding rules for distribution binding by container type.

For a container to be considered a binding candidate for a material addition step, the total of all inventory of the same material within a container must be greater than the container's heel property.

When the quantity of inventory within a container is less than the heel property, the container will not be considered available for binding. This prevents containers that are effectively empty from being reselected to add material to a batch.

Composite Container Example:

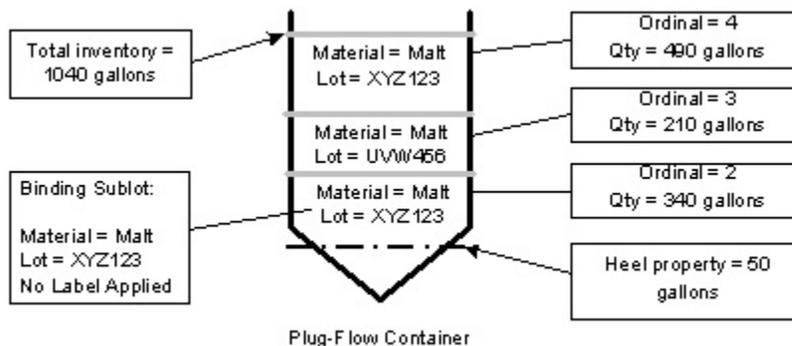
Composite containers have only one subplot. The total inventory is the quantity of that subplot.



Plug-Flow Container Example:

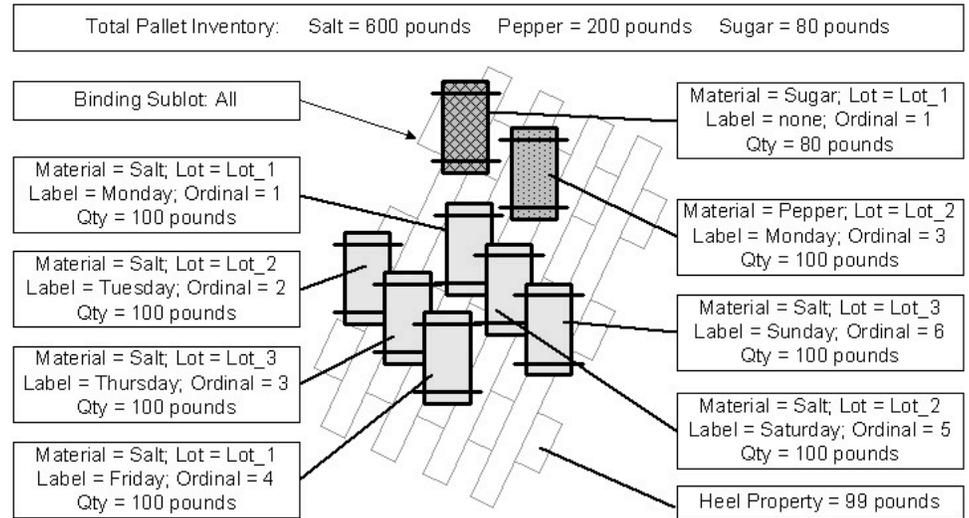
Plug-Flow containers may only contain one material, but may have many sublots. The sublots are assigned ascending ordinal values as they are put into the container. Sublots are assumed to be consumed in ordinal order, lowest to highest value, thus creating a first in/first out (FIFO) queue of inventory. Consumption may span multiple sublots.

Total inventory is the sum of all sublots within the Plug-Flow container.



Pallet Container Example:

Pallet containers may contain any number of materials, and may have many sublots. In the example below, there are six sublots of Salt and two sublots of Pepper. The sublots are assigned ascending ordinal values by material as they are put into the container. Sublots are assumed to be consumed in ordinal order, lowest to highest value, thus creating a first out, first in queue of inventory. Consumption may span multiple sublots.



Total inventory is the sum of all sublots of the same material within the within the Pallet container. The example pallet has three total inventory values; Salt: 600 pounds, Pepper: 200 pounds and Sugar: 80 pounds. The heel property, 99 pounds, is applied to each of these materials. Considering only the Total Inventory/Heel Property rule, this pallet would be a binding candidate for material specifications for Salt and Pepper, but not Sugar.

Accessing the heel property from phase logic

The container heel property of a container supports being downloaded to phase logic. The 7800, 17800, 8000 and 18000 series phase requests to download data from the Material Database are used to download the heel property of any container.

The container heel property of a container supports being uploaded from phase logic. The 7800, 17800, 8000 and 18000 series phase requests to upload data from the Material Database are used to upload a value to the heel property of any container.

The 7800, 17800, 83NN, 183NN, 87NN and 187NN phase requests require an integer to identify the property to be referenced. For containers, the Heel Property will have an index of 10.

Material object model support for heel property

The **Container** object has been updated to include a property called **heel**.

Assigning a new heel property, like all material objects, requires replacing the whole container:

```
InsertContainer(objContainer as Container)
```

or updating an existing container by updating the whole object:

```
UpdateContainer(objContainer as Container)
```

Rockwell Automation Support

Use these resources to access support information.

Technical Support Center	Find help with how-to videos, FAQs, chat, user forums, and product notification updates.	rok.auto/support
Knowledgebase	Access Knowledgebase articles.	rok.auto/knowledgebase
Local Technical Support Phone Numbers	Locate the telephone number for your country.	rok.auto/phonesupport
Literature Library	Find installation instructions, manuals, brochures, and technical data publications.	rok.auto/literature
Product Compatibility and Download Center (PCDC)	Get help determining how products interact, check features and capabilities, and find associated firmware.	rok.auto/pcdc

Documentation feedback

Your comments help us serve your documentation needs better. If you have any suggestions on how to improve our content, complete the form at rok.auto/docfeedback.

Waste Electrical and Electronic Equipment (WEEE)



At the end of life, this equipment should be collected separately from any unsorted municipal waste.

Rockwell Automation maintains current product environmental information on its website at rok.auto/pec.

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