Oracle® Agile Product Lifecycle Management for Process

Label Ingredient Optimization Solution Pack

Extensibility Pack 3.12

E60858-01

March 2015

ORACLE®

Copyrights and Trademarks

Agile Product Lifecycle Management for Process

Copyright © 1995, 2015, Oracle and/or its affiliates. All rights reserved.

This software and related documentation are provided under a license agreement containing restrictions on use and disclosure and are protected by intellectual property laws. Except as expressly permitted in your license agreement or allowed by law, you may not use, copy, reproduce, translate, broadcast, modify, license, transmit, distribute, exhibit, perform, publish, or display any part, in any form, or by any means. Reverse engineering, disassembly, or decompilation of this software, unless required by law for interoperability, is prohibited.

The information contained herein is subject to change without notice and is not warranted to be error-free. If you find any errors, please report them to us in writing.

If this is software or related documentation that is delivered to the U.S. Government or anyone licensing it on behalf of the U.S. Government, the following notice is applicable:

U.S. GOVERNMENT END USERS: Oracle programs, including any operating system, integrated software, any programs installed on the hardware, and/or documentation, delivered to U.S. Government end users are "commercial computer software" pursuant to the applicable Federal Acquisition Regulation and agency-specific supplemental regulations. As such, use, duplication, disclosure, modification, and adaptation of the programs, including any operating system, integrated software, any programs installed on the hardware, and/or documentation, shall be subject to license terms and license restrictions applicable to the programs. No other rights are granted to the U.S. Government.

This software or hardware is developed for general use in a variety of information management applications. It is not developed or intended for use in any inherently dangerous applications, including applications that may create a risk of personal injury. If you use this software or hardware in dangerous applications, then you shall be responsible to take all appropriate fail-safe, backup, redundancy, and other measures to ensure its safe use. Oracle Corporation and its affiliates disclaim any liability for any damages caused by use of this software or hardware in dangerous applications.

Oracle and Java are registered trademarks of Oracle and/or its affiliates. Other names may be trademarks of their respective owners.

Intel and Intel Xeon are trademarks or registered trademarks of Intel Corporation. All SPARC trademarks are used under license and are trademarks or registered trademarks of SPARC International, Inc. AMD, Opteron, the AMD logo, and the AMD Opteron logo are trademarks or registered trademarks of Advanced Micro Devices. UNIX is a registered trademark of The Open Group.

This software or hardware and documentation may provide access to or information on content, products, and services from third parties. Oracle Corporation and its affiliates are not responsible for and expressly disclaim all warranties of any kind with respect to third-party content, products, and services. Oracle Corporation and its affiliates will not be responsible for any loss, costs, or damages incurred due to your access to or use of third-party content, products, or services.

Contents

PREFACE **6**
Audience 6
Variability of Installations 6
Documentation Accessibility 6
Access to Oracle Support 6
Software Availability 6

CHAPTER 1—INTRODUCING LIO **7**
Purpose 7
Overview 7
Key LIO Data 8

CHAPTER 2—INSTALLING LIO **9**
To install the LIO Solution Pack: 9
To setup the LIO Database: 9

CHAPTER 3—USING LIO **10**
Summary Tab 10
LIO Profile Section 10
Output Material Selection Section 10
Nutrient Profile Section 11

CHAPTER 4—LIO CONSTRUCTION TAB **12**
Restrictions 12
Constructing the LIO Tree 13
The LIO Construction Toolbar 14
Format 14
Combined 14
Multi-Part 16
Multi-Component 17
Understanding the Data Shown 18
Context Matters 19

© 2015 Oracle Corporation

Actions 20
Composition Includes 20
Sort Order 21
Precision 21
Reset LIO Tree 21
Declaration Options and Actions 22
Right Menu Actions 24
View 24
Add New Group 25
Rename Item 25
Refer to CC 25
Recon/Equiv 25
Delete Group 27
Annotate 27
Audit History 29
Divide 29
Declaration Descriptions 30
Item 30
Breakdowns and Context 31
LIO Operations 32
Refresh Operation 32
Preview Operation 32
Disclosure Operation 33
Grouping Operation 34
Audit Operation 34
Warning Conditions 35

© 2015 Oracle Corporation

CHAPTER 5—FINAL STATEMENT TAB 37
Ingredient Statement Options Section 37
Format Field 37
Style Field 37
Other Field 38
Precision 38
Final Ingredient Statement Section 38
Override 38

CHAPTER 6—LABEL COMPOSITION TAB 39

CHAPTER 7—CONFIGURING LIO 40
Enabling Features 40
LIO Versions 40
Final Statement Override 40
Sort By Control 41
Composition Includes Control 41
Precision Control 41
Inactive Element Control 42
Format Config 42
Customize Percentage Display 42
LIO Roles 43

APPENDIX A—WHAT DID THE INSTALLER DO? 44

© 2015 Oracle Corporation

Preface

Audience

This guide is intended for client programmers involved with integrating Oracle Agile Product Lifecycle Management for Process. Information about using Oracle Agile PLM for Process resides in application-specific user guides. Information about administering Oracle Agile PLM for Process resides in the *Oracle Agile Product Lifecycle Management for Process Administrator User Guide*.

Variability of Installations

Descriptions and illustrations of the Agile PLM for Process user interface included in this manual may not match your installation. The user interface of Agile PLM for Process applications and the features included can vary greatly depending on such variables as:

- Which applications your organization has purchased and installed
- Configuration settings that may turn features off or on
- Customization specific to your organization
- Security settings as they apply to the system and your user account

Documentation Accessibility

For information about Oracle's commitment to accessibility, visit the Oracle Accessibility Program website at http://www.oracle.com/pls/topic/lookup?ctx=acc&id=docacc.

Access to Oracle Support

Oracle customers have access to electronic support through My Oracle Support. For information, visit http://www.oracle.com/pls/topic/lookup?ctx=acc&id=info or visit http://www.oracle.com/pls/topic/lookup?ctx=acc&id=trs if you are hearing impaired.

Software Availability

Oracle Software Delivery Cloud (OSDC) provides the latest copy of the core software. Note the core software does not include all patches and hot fixes. Access OSDC at:

http://edelivery.oracle.com

© 2015 Oracle Corporation

Chapter 1—Introducing LIO

Purpose

This guide describes how to install, configure, and use the Label Ingredient Optimization Solution Pack. Solution packs are designed to be pluggable modules that can be added to the Agile PLM for Process application suite without modifying the existing release code base.

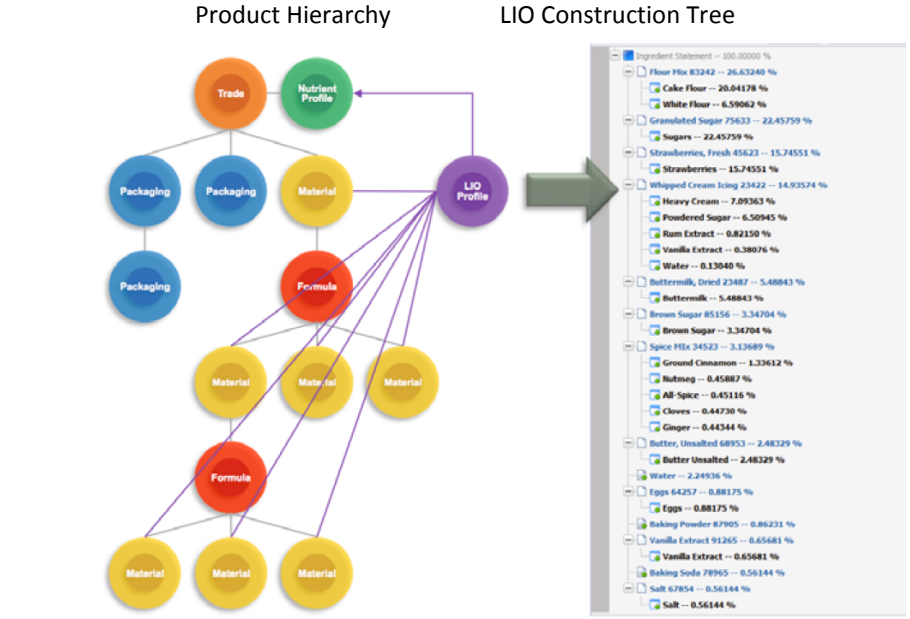
Overview

Label Ingredient Optimization (LIO) is the tool for labeling administrators to:

- View a food or beverage item based on its aggregated labeling composition;
- Manage the labeling composition to meet regulatory requirements using stored rules or manual overrides;
- Generate and push the final ingredient statement to a nutrient profile and/or material so that the broader organization can further augment and complete the labeling business process.

LIO uses information from material and formulation specifications to describe labeling composition. LIO allows you to transform a formulation hierarchy into a single ingredient statement that meets regulatory requirements.

Figure 1. LIO tool



Generated Ingredient Statement

STRAWBERRY CAKE:
SUGARS, CAKE FLOUR, STRAWBERRIES, WHITE FLOUR, BUTTERMILK, BROWN SUGAR, BUTTER UNSALTED, WATER, CONTAINS LESS THAN 2% OF THE FOLLOWING: GROUND CINNAMON, EGGS, BAKING POWDER, VANILLA EXTRACT, BAKING SODA, SALT, NUTMEG, ALL-SPICE, CLOVES, GINGER

WHIPPED CREAM ICING:
HEAVY CREAM, POWDERED SUGAR, CONTAINS LESS THAN 2% OF THE FOLLOWING: RUM EXTRACT, VANILLA EXTRACT, WATER

© 2015 Oracle Corporation

Key LIO Data

Taking advantage of all the features and functions of LIO requires the following data on the specifications used within the formulations.

1. Total Solids/Total Moisture must be defined on all % Breakdown Components of the selected breakdown or on each material specification's Summary tab. If there is missing Total Solids/Moisture data, you will not be able to use moisture specific features like moisture and solids adjusters and reconstitution.
2. LIO allows you to apply standardized labeling rules stored with each component catalog term. For example, if "Milk Powder" can be called "Milk" if it has been reconstituted to be 90% water. Or "Spice A" must be called "Spice A" if it is over 60% of the formulation; however if it's less than 20% it can be called "Spice" or "Natural Flavor". To take full advantage of these LIO features, breakdowns need to be defined on every material and breakdown components should be represented by component catalog terms versus free text attributes.

© 2015 Oracle Corporation

Chapter 2—Installing LIO

Oracle Agile PLM for Process 6.1.1.1.0 or above is required before installing LIO Solution Pack.

To install the LIO Solution Pack:

1. Create a backup of the PRODIKA_HOME directory.
2. Unzip the contents of ExtensibilityPack_v3.12_Release.zip.
3. Unzip the contents of SolutionPacks\LIO\LIO.zip and note the location.
4. Run LIOSetup.exe from the location where you unzipped the solution pack.

See Appendix A: What did the Installer do? for a list of tasks completed by the installer.

To setup the LIO Database:

1. Create a backup of the Prodika database.
2. Apply the Database scripts.
   a. SQL Server
      i. Open a command prompt and navigate to the directory where you unzipped the solution pack.
      ii. Change directories (cd) to the Database directory.
      iii. Apply the scripts using the following calls to the ApplyScripts.exe utility:

```
ApplyScripts -c "server=<database_server>;uid=<user>;
password=<password>;database=<database>" –f LIO.xml
```

      iv. After the ApplyScripts call, you can confirm that the database scripts have been applied successfully when the system prompts you with the following message:

```
"Complete - with no errors"
```

   b. Oracle
      i. Open a command prompt and navigate to the directory where you unzipped the solution pack.
      ii. Change directories (cd) to the Install\Database directory.
      iii. Apply the scripts using the following calls to the ApplyScripts.exe utility:

```
ApplyScripts -c "User Id=<user>;Password=<password>;Data
Source=<TNS Entry>" -dbvendor orcl –f LIO-orcl.xml
```

      iv. After the ApplyScripts call, you can confirm that the database scripts have been applied successfully when the system prompts you with the following message:

```
“Complete - with no errors”
```

3. Restart IIS.

© 2015 Oracle Corporation

Chapter 3—Using LIO

Summary Tab

The Summary tab consists of the following sections:

- LIO Profile
- Output Material Selection
- Nutrient Profile

Figure 2. Summary Tab



LIO Profile Section

Use the LIO Profile section to define the LIO profile. Key fields include:

- **LIO #** - Number assigned to the LIO profile by the system.
- **LIO Name** - Name of the LIO profile. The LIO name will often be very similar to the trade specification or nutrient profile name as you are usually labeling a finished good. This field is required.
- **Description** – Use this field to further describe the LIO profile if needed.
- **Status** – The status of the LIO profile. Use this field to indicate when a profile is in Draft, Review, Approved, Inactive or Archived.
- **Originator** – This is the user that created the LIO profile.

Output Material Selection Section

Use this section to define which material specification you will be labeling. Click the search icon ( ) to search for and select the Target Specification. The Context drop-down list allows you to select which

© 2015 Oracle Corporation

formulation specification to pull the child items from when generating the LIO tree. If context is left blank only the material's breakdowns will be available.

Note: If you change the target specification or the Context drop-down after the LIO tree has been generated, the system will automatically reset the tree after confirmation from the user.

Nutrient Profile Section

This section allows you to select which nutrient profile will be used if you decide to push the LIO data to the material and nutrient profile using the Push to Target functionality from the Final Statement tab. Click the clear icon () to remove the currently selected nutrient profile from the LIO profile.

© 2015 Oracle Corporation

Chapter 4—LIO Construction Tab

This tab is where a labeling administrator will perform a majority of work by grouping, overriding, formatting and in the end creating the ingredient statement.

In the LIO Construction tab you can manipulate formula items based on certain constraints imposed by each item's underlying specification or component catalog term and currently selected labeling restriction(s).

The first time you open the LIO tab of a profile, the LIO tree does not appear, because the system will not have generated it yet.

To prepare to generate the LIO tree:

1. In the action menu, click **Edit**. GSM reloads the page in editable mode.
2. Define any restrictions that apply to this Ingredient Statement.

Note: The Generate LIO Tree button is only displayed when a target specification has been selected on the summary tab.

Figure 3. LIO profile in edit mode



Restrictions

Restrictions are a configurable list that you can use to differentiate disclosures and groupings. Restrictions impact two major areas of functionality:

- **Component Catalog (CC)** - For example, in Canada you might be able to rename "salty beef" to "beef," but in the United States, because of tighter regulations around sodium, you could not. By setting the restrictions on the LIO tree to Canada, you could see disclosures and groupings set up in the Component Catalog with a restriction of Canada. LIO would be able to leverage this information to modify the ingredient statement in Canada to refer to "salty beef" as "beef." If you were creating an ingredient statement for the United States, the "salty beef" would have to be labeled as such. For more information on restrictions, disclosures and groupings, see Chapter 23 "Component Catalog" in the *Agile Product Lifecycle Management for Process Global Specification Management User Guide*.
- **Material Breakdown** - Similar to the Component Catalog, breakdowns can contain regional or regulatory differences. Therefore restrictions can be assigned to breakdowns and then filtered upon when using LIO.

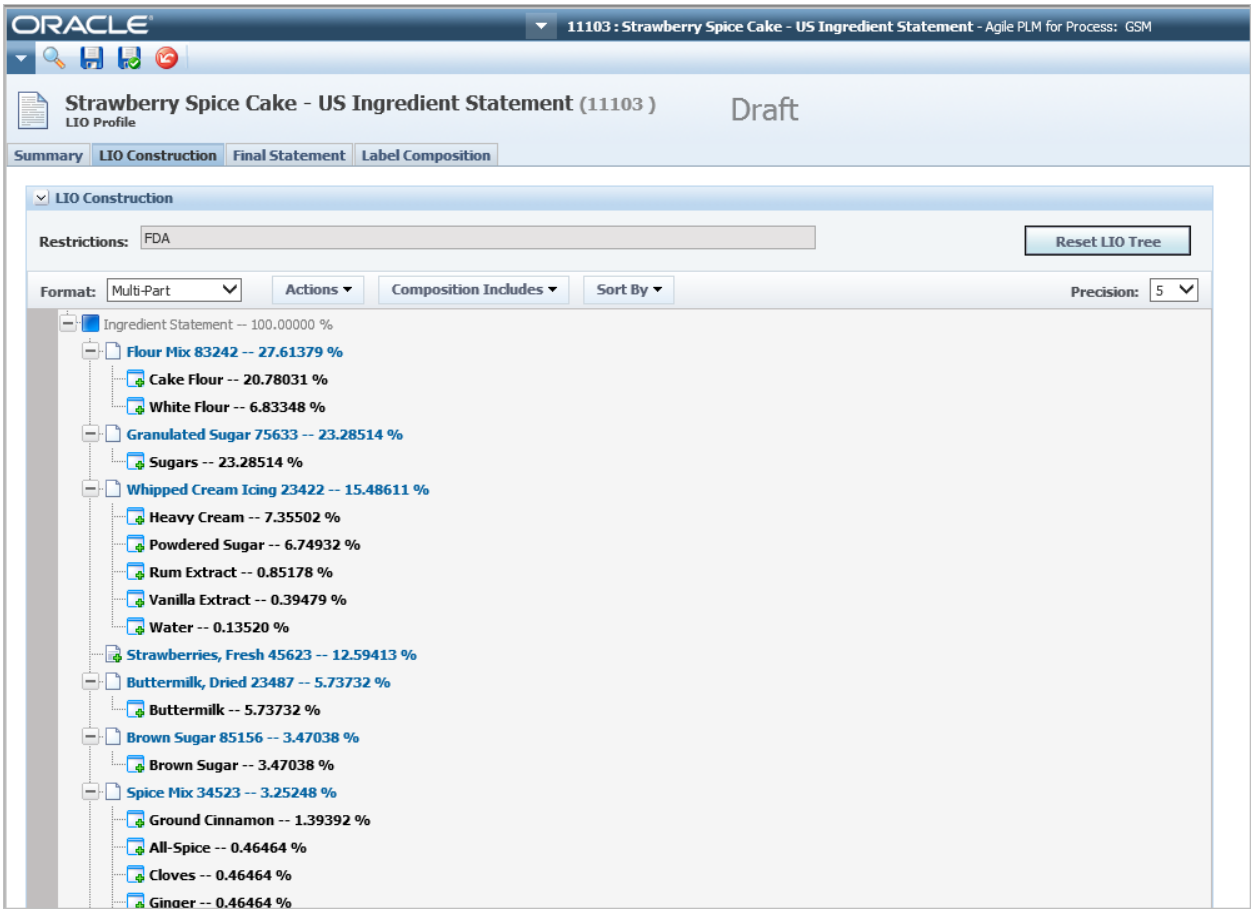
© 2015 Oracle Corporation

Note: Disclosures, Grouping and Breakdowns without any restrictions will always be available regardless of the restrictions selected.

Constructing the LIO Tree

Once you have defined the restrictions, click **Generate LIO Tree** to have the system create the requested tree. The tree is displayed directly under the LIO toolbar and will display the entire formula tree. By default, for each node in the tree the system will pull the % Breakdown marked with the tag of "Regulatory" and will use a default disclosure method of List…x,y. If no breakdown is found or allowed due to restrictions defined then LIO will display only the parent node. In the example below "Strawberries, Fresh 45623" doesn't have a regulatory breakdown defined so only the specification's name will appear.

Figure 4. LIO Tree



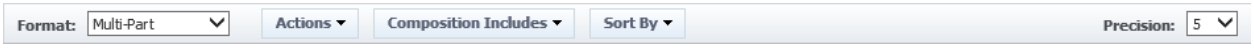
LIO pulls data from different locations based on what context is selected on the summary tab. If context is defined on the Summary tab, this tree data is pulled from the Basis on the formulation specification. If context is not defined, this information is pulled from the material specification.

© 2015 Oracle Corporation

The LIO Construction Toolbar

The LIO toolbar is available once a tree is generated. The options in the toolbar give you further ability to manipulate the tree.

Figure 5. LIO toolbar



Format

The format drop-down allows you to choose the intended ingredient statement format. After you change the format, LIO immediately displays the corresponding level of detail needed for the intended format as well as reformats the generated ingredient statement. There are three options:

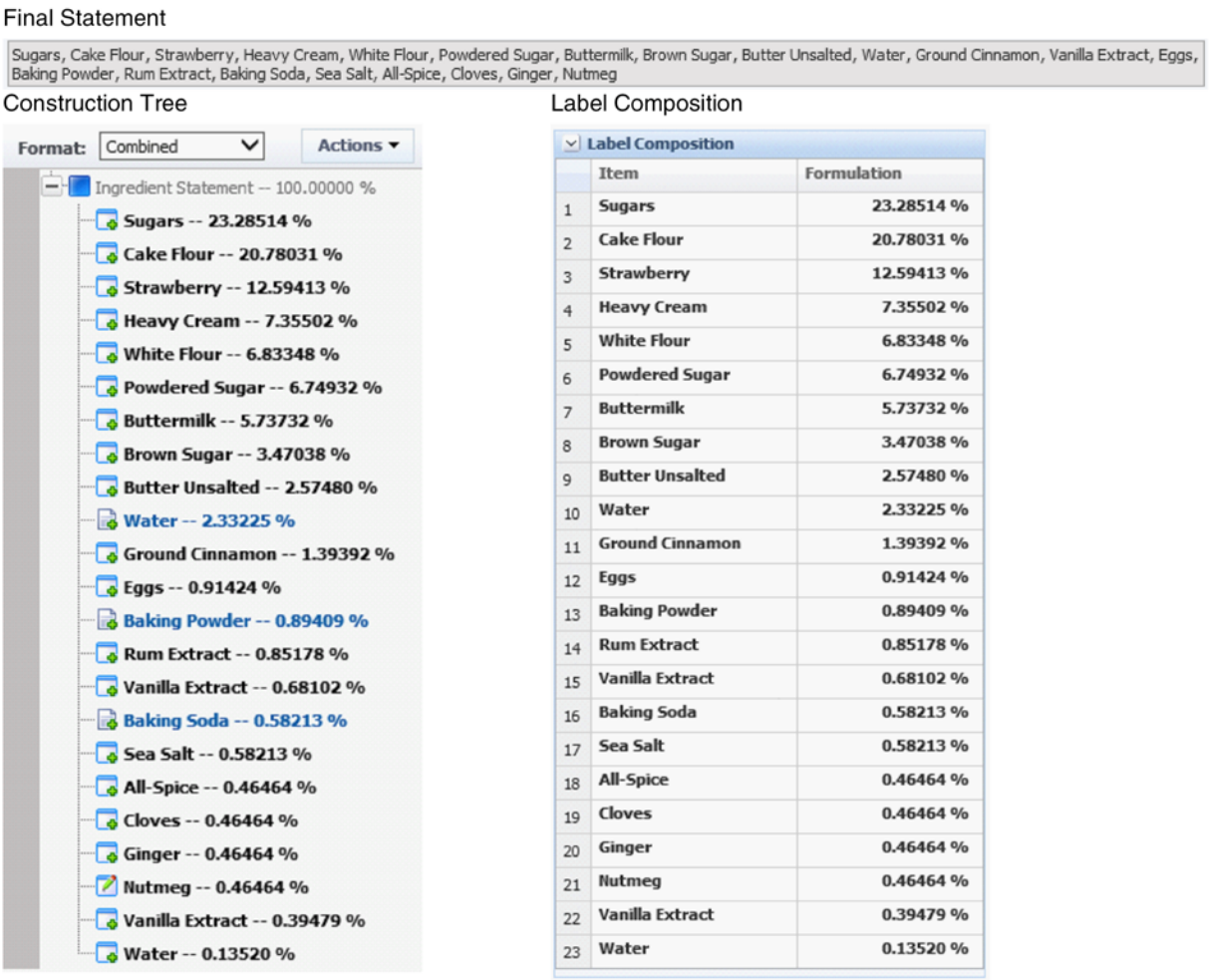
- Combined
- Multi-Part
- Multi-Component

Combined

Select this option when you want your final statement to be a single component simple statement like Spicy Sugar Water: “Sugar, Water, Salt, Pepper”. This format allows you to quickly see the tree’s lowest level items by omitting the top-level items in the LIO tree. For example, if you have the input “Seasoning” that has a percent breakdown of “Salt” and “Pepper”; the resulting tree will contain “Salt” and “Pepper” without reference to the parent “Seasoning”.

© 2015 Oracle Corporation

Figure 6. Combined option

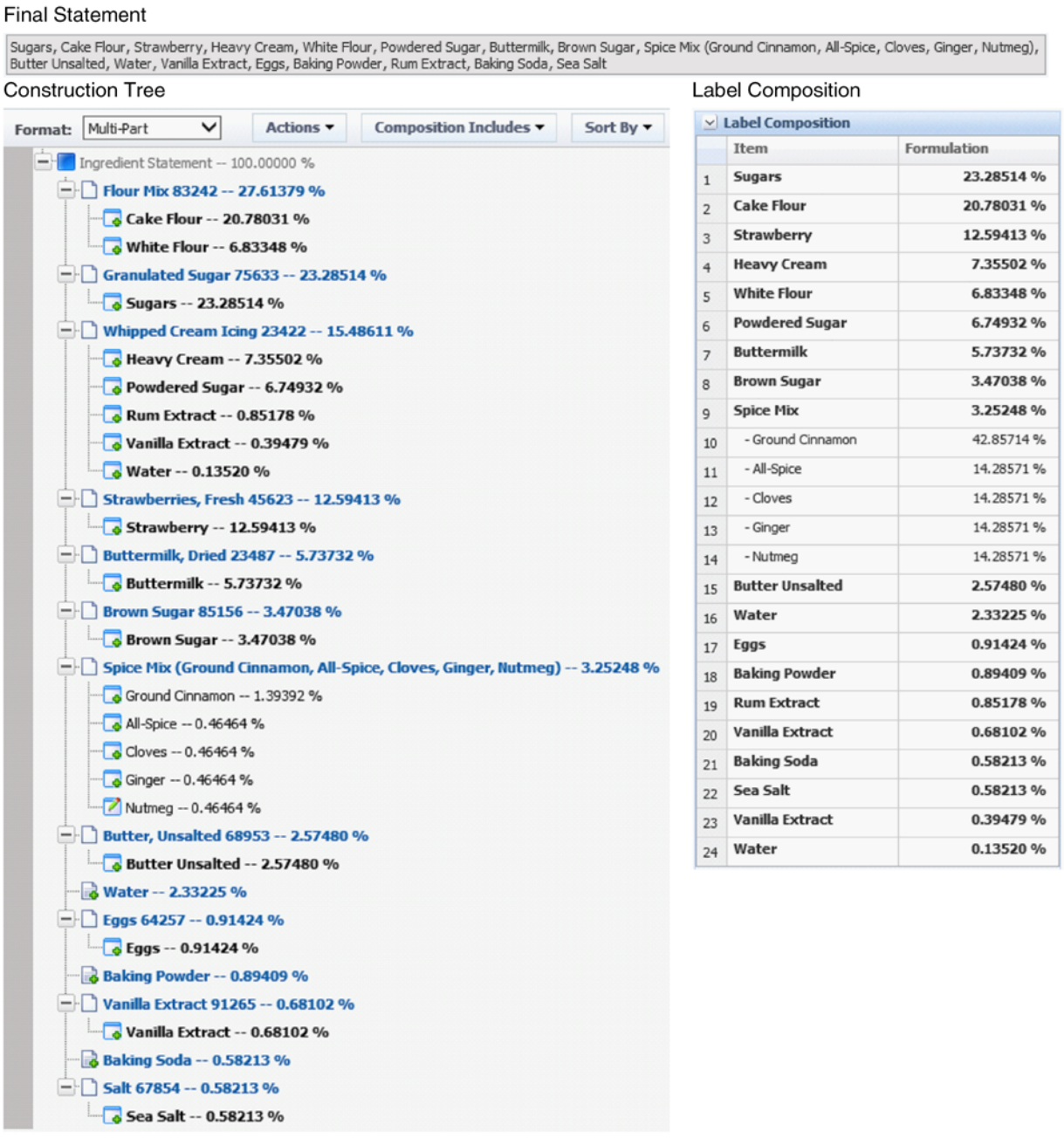


© 2015 Oracle Corporation

Multi-Part

Select this option when you want your final statement to be a single component multi-part statement like Spicy Sugar Water: “Sugar, Water, Seasoning (Salt, Pepper)”. This format allows you to see all levels in the LIO tree so you can go even further down the tree if you have intermediate formulations.

Figure 7. Multi-part option



© 2015 Oracle Corporation

Multi-Component

Select this option when you want your final statement to be a multi-component statement like Spicy Sugar Water: “Sugar Water: Sugar, Water” & “Seasoning: Salt, Pepper” This format allows you to see all levels in the LIO tree, however since you are labeling multiple components with a single LIO profile the percentages displayed will be based on each top level component.

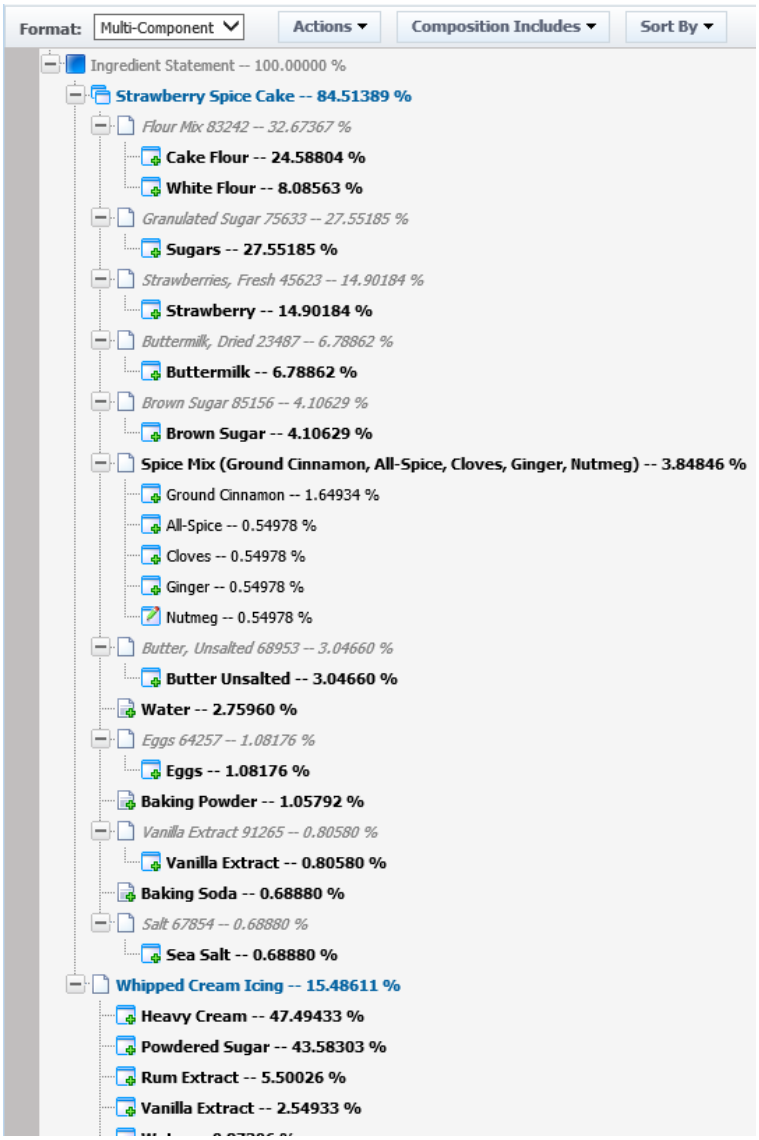
Figure 8. Multi-component option

Final Statement

Strawberry Spice Cake:
Sugars, Cake Flour, Strawberry, White Flour, Buttermilk, Brown Sugar, Spice Mix (Ground Cinnamon, All-Spice, Cloves, Ginger, Nutmeg), Butter Unsalted, Water, Eggs, Baking Powder, Vanilla Extract, Baking Soda, Sea Salt

Whipped Cream Icing:
Heavy Cream, Powdered Sugar, Rum Extract, Vanilla Extract, Water

Construction Tree



Label Composition

Label Composition

	Item	Formulation
1	**Strawberry Spice Cake**	**84.51389 %**
2	- Sugars	27.55185 %
3	- Cake Flour	24.58804 %
4	- Strawberry	14.90184 %
5	- White Flour	8.08563 %
6	- Buttermilk	6.78862 %
7	- Brown Sugar	4.10629 %
8	- Spice Mix	3.84846 %
9	- Ground Cinnamon	42.85714 %
10	- All-Spice	14.28571 %
11	- Cloves	14.28571 %
12	- Ginger	14.28571 %
13	- Nutmeg	14.28571 %
14	- Butter Unsalted	3.04660 %
15	- Water	2.75960 %
16	- Eggs	1.08176 %
17	- Baking Powder	1.05792 %
18	- Vanilla Extract	0.80580 %
19	- Baking Soda	0.68880 %
20	- Sea Salt	0.68880 %
21	**Whipped Cream Icing**	**15.48611 %**
22	- Heavy Cream	47.49433 %
23	- Powdered Sugar	43.58303 %
24	- Rum Extract	5.50026 %
25	- Vanilla Extract	2.54933 %
26	- Water	0.87306 %

© 2015 Oracle Corporation

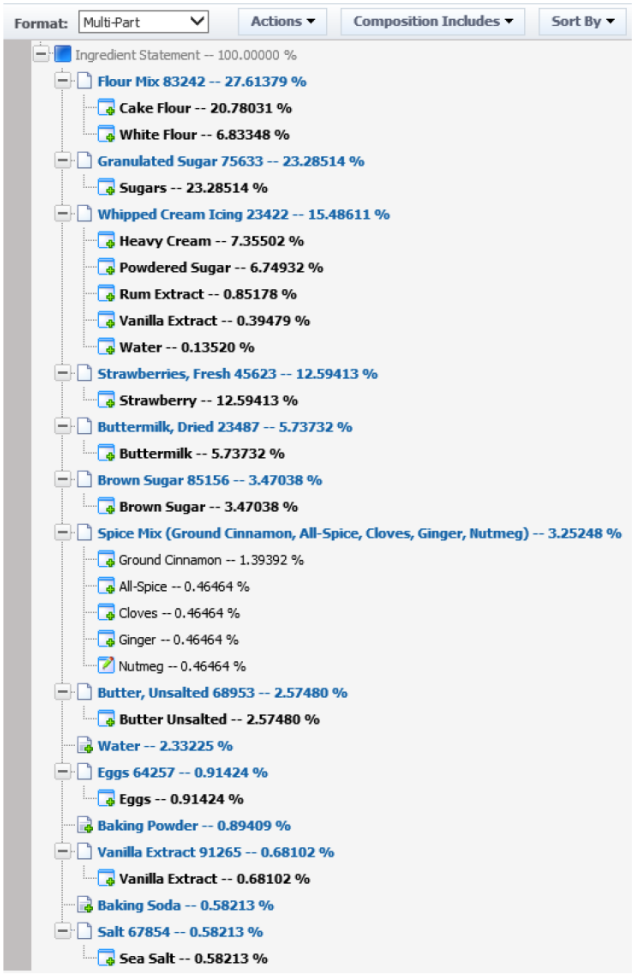
Understanding the Data Shown

The format determines the level of data as well as which composition percentages are being shown. Below are a few side by side examples to help explain the formats further.

Multi-Part

Notice how the tree displays the specifications used as formulation inputs as the parent nodes and their regulatory breakdowns appear below each parent node.

Water, Baking Powder and Baking Soda don't have a regulatory breakdown (or breakdowns matching the restrictions designation) so only the specification name is displayed.



Combined

Notice how all parent nodes are removed and the children are combined and displayed all at one level.

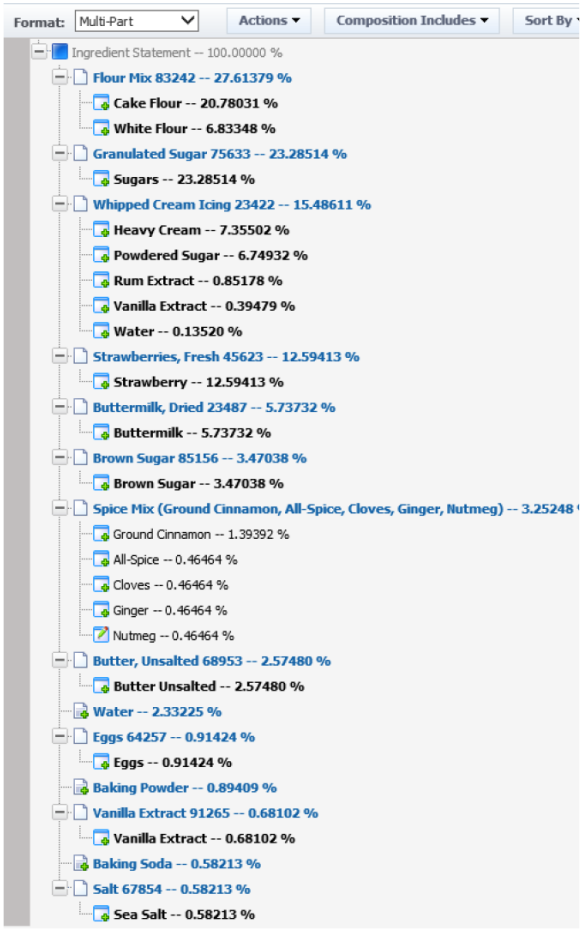
Notice that Water, Baking Soda and Baking Powder appear in a different color and with a different icon to help inform you that these are inputs instead of breakdown components.



© 2015 Oracle Corporation

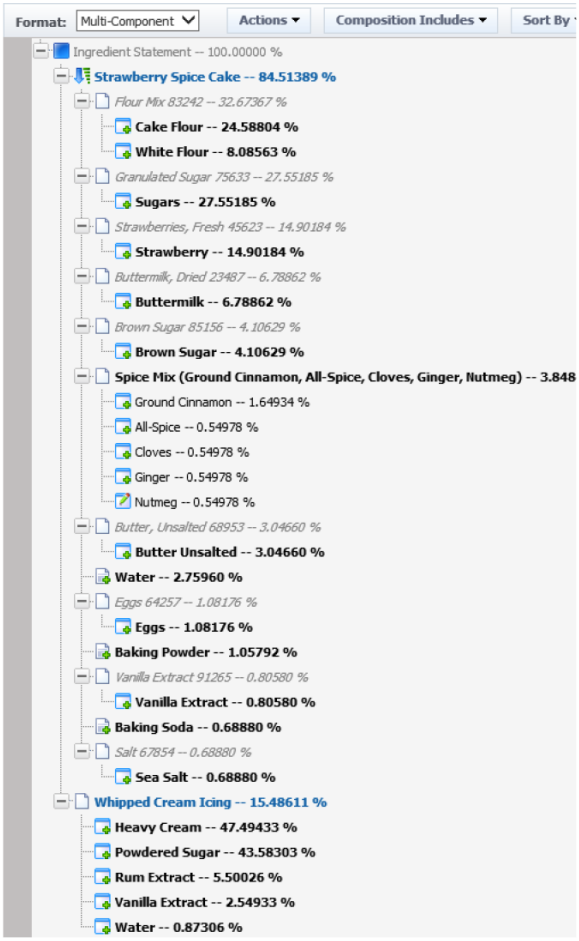
Multi-Part

Notice how the percentages displayed are the percentages based on the single component you are labeling. In the example below Strawberry Spice Cake WITH Icing is being labeled. For example, Cake Flour is 20% of the whole Strawberry Spice Cake WITH Icing but it is 24% of the Strawberry Spice Cake WITHOUT Icing.



Multi-Component

Notice how the percentages displayed relate to each component you are labeling. In the example below Strawberry Spice Cake AND Whipped Cream Icing are being labeled as separate components.

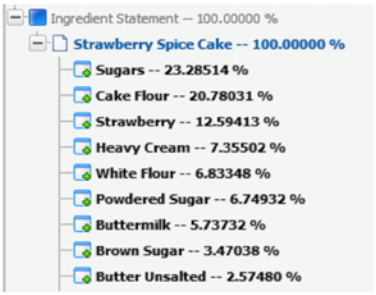


Context Matters

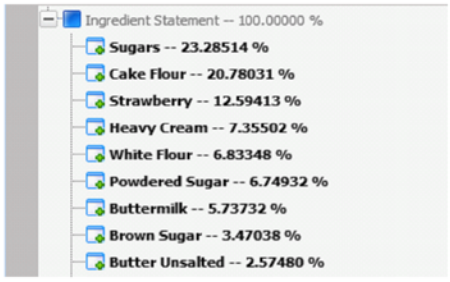
The format selected is not the only factor controlling which data is displayed; context also matters. If context is not selected on the summary tab then LIO will not be able to go further than the breakdowns on the target material specification. Notice how the same output material displays only the breakdown defined on the output material. Multi-Part and Multi-Component formats allow you to right click on the parent node “Strawberry Spice Cake” and select other breakdowns or context while the combined format just presents the breakdown with no other choices. If the calculated breakdown on the output material is sufficient for labeling and you don’t need to go further into the actual formulations then this is the fastest way to label your product.

© 2015 Oracle Corporation

Multi-Part/Multi-Component without Context Selected



Combined without Context Selected



Actions

Use the Actions button to decide if the tree will display or hide rows that are inactive. Inactive rows are gray in color and display a 0.0000 %. The main node is never hidden regardless of the selection on the Actions button. Hiding inactive rows is especially helpful if you are trying to pinpoint exactly what data will be shown in the ingredient statement.

Note: The default used by the system is to show inactive rows.

Composition Includes

Use the Composition Includes button to remove adjusters from the formulation percentages shown on the LIO tree. For example, if the formulation output was baked and water was lost during the process an adjuster would be applied to the formulation to reflect the moisture loss that occurred during the baking process. If you were allowed to label the product before moisture loss you would remove the moisture adjusters in the Composition Includes menu. This will adjust the percentages to reflect the product before it was baked.

Figure 9. Composition Includes button



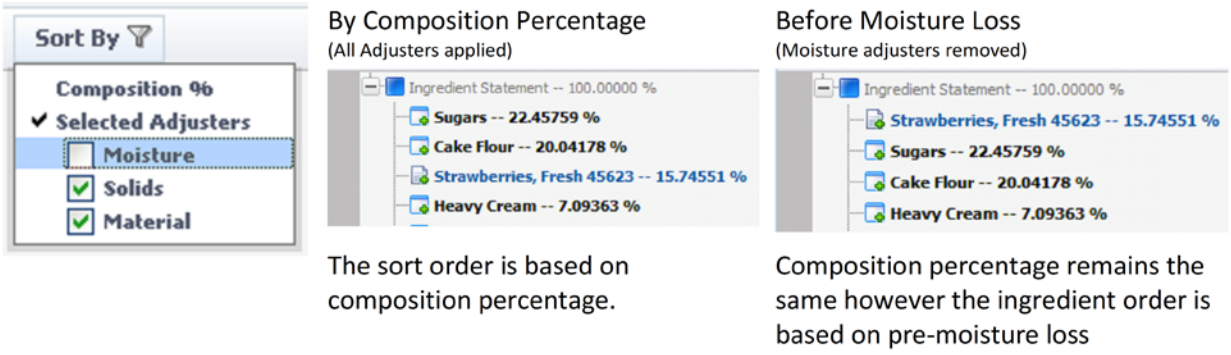
Note: The default used by the system is for all adjusters to be selected for composition. This feature can be configured off, see the Configuration Section for more information. If total solids/moisture is not declared on your specifications "Moisture Adjusters" and "Solids Adjusters" will be disabled.

© 2015 Oracle Corporation

Sort Order

By default the LIO tree is always sorted based on Composition %. Some regulatory bodies allow you to display an ingredient statement in the order of pre-loss composition %. Use the Sort By button to remove those adjusters.

Figure 10. Sort By button



Note: This feature can be configured off, see the Configuring LIO section for more information.

For all buttons, when you have changed the options from the default settings the button will show a filter icon to let everyone know the tree is generated with something other than the default.

Precision

Use the Precision drop-down to select how many decimal places are displayed for the Composition % in the LIO tree. The actual composition is stored in the database in complete form; the precision only affects the display in the UI. Certain precisions could cause a value of 0 to be displayed in the LIO tree. These elements will still be shown in the final statement since the 0 is a result of rounding and not the actual value. If the LIO tree is reset and generated, the precision values will reset to the default.

Note: The default used by the system is 5 digits of precision. Also note that changing the precision values shown in the tree could create a statement that doesn't add up to 100% due to rounding.See Precision Control on page 41 for more information.

Reset LIO Tree

Use the Reset LIO Tree button to start over from the beginning. This will remove anything that has been done to the tree and start fresh. This button is only displayed when the LIO profile is in edit mode.

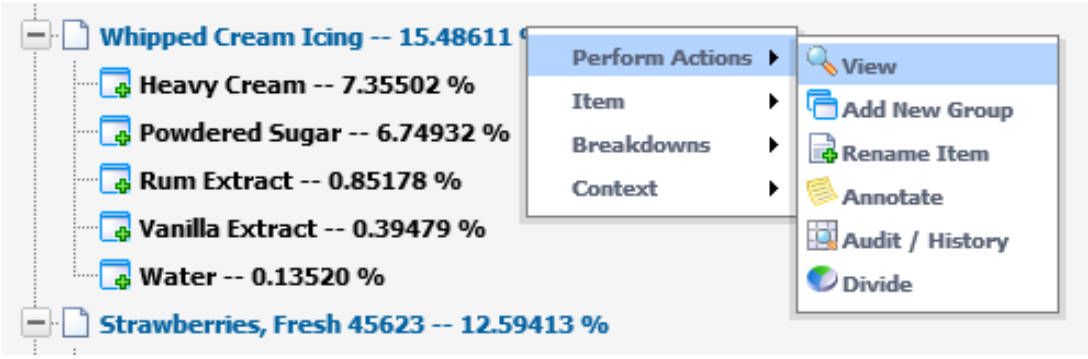
Note: The default values for all buttons and drop downs will be restored when clicking the reset button.

© 2015 Oracle Corporation

Declaration Options and Actions

Each item within the tree represents a material that may be considered for inclusion in the final ingredient statement. There are many options available to you to decide how you want to declare that node. Options and actions are available by right-clicking on the individual node.

Figure 11. Right-click options



These options are contextual, based on the type of item selected and the data inherited from its underlying specification, LIO profile, and the currently selected labeling restrictions. Using the described options/actions, you can build your ingredient statement.

The table below describes the various presentations/methods for disclosing each LIO item and the corresponding declaration options and actions available:

Icon	Current Method for Disclosure	Declaration Options/Actions
	Base level for LIO authoring (does not appear in LIO)	Perform Actions » Add New Group
	Material that is listed as a single item in the LIO	Perform Actions > View Perform Actions > Add New Group Perform Actions > Recon/Equiv Perform Actions > Rename Item Perform Actions > Annotate Perform Actions > Audit/History Perform Actions > Divide Item > Name Only Item > Name (% of Item) Item > Name (% of Total) Item > Ingredient Statement Item > Do Not Declare
	Material that is broken out into separate sub items in the LIO	Perform Actions > View Perform Actions > Add New Group Perform Actions > Rename Item Perform Actions > Annotate Perform Actions > Audit/History Perform Actions > Divide Item > Name Only Item > Name (% of Item) Item > Name (% of Total) Item > Ingredient Statement Item > Do Not Declare

© 2015 Oracle Corporation

Icon	Current Method for Disclosure	Declaration Options/Actions
		Breakdown > List ... x, y Breakdown > List …i(x,y) Breakdowns > List ... i (x%, y%) of Item Breakdowns > List ... i (x%, y%) of Total Context > List …x,y Context > List …i(x,y) Context > List ... i (x%, y%) of Item Context > List ... i (x%, y%) of Total
	Material that is flagged as "Do Not Declare" and will not appear in the LIO	Perform Actions > View Perform Actions > Add New Group Perform Actions > Rename Item Perform Actions > Annotate Perform Actions > Audit/History Perform Actions > Divide Item > Name Only Item > Name (% of Item) Item > Name (% of Total) Item > Ingredient Statement Item > Do Not Declare Breakdown > List ... x, y Breakdown > List …i(x,y) Breakdowns > List ... i (x%, y%) of Item Breakdowns > List ... i (x%, y%) of Total Context > List …x,y Context > List …i(x,y) Context > List ... i (x%, y%) of Item Context > List ... i (x%, y%) of Total
	Component that is listed as a single item in the LIO	Perform Actions > View Perform Actions > Recon / Equiv Perform Actions > Refer to CC Perform Actions > Rename Item Perform Actions > Annotate Perform Actions > Audit/History Perform Actions > Divide Item > Name Only Item > Name (% of Item) Item > Name (% of Total) Item > Do Not Declare
	Component that is listed as a single item in the LIO, and its title has been manually edited	Perform Actions > View Perform Actions > Recon / Equiv Perform Actions > Refer to CC Perform Actions > Rename Item Perform Actions > Annotate Perform Actions > Audit/History Perform Actions > Divide Item > Name Only Item > Name (% of Item) Item > Name (% of Total) Item > Do Not Declare

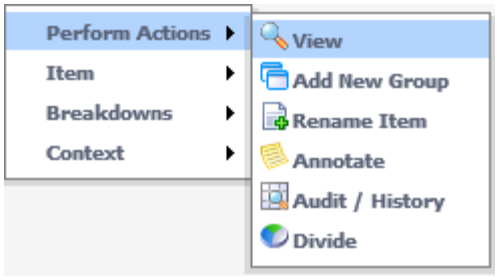
© 2015 Oracle Corporation

Icon	Current Method for Disclosure	Declaration Options/Actions
	Component that is flagged as "Do Not Declare" and will not appear in the LIO	Perform Actions > View Perform Actions > Refer to CC Perform Actions > Rename Item Perform Actions > Annotate Perform Actions > Audit/History Perform Actions > Divide Item > Name Only Item > Name (% of Item) Item > Name (% of Total) Item > Do Not Declare
	Group which has been added during the LIO process	Perform Actions > Add new Group Perform Actions > Rename Item Perform Actions > Delete Group Perform Actions > Annotate Perform Actions > Audit/History Perform Actions > Divide Item > Name Only Item > Name (% of Item) Item > Name (% of Total) Item > Do Not Declare Breakdowns > List ... x, y Breakdowns > List ... i (x, y) Breakdowns > List ... i (x%, y%) of Item Breakdowns > List ... i (x%, y%) of Total

Right Menu Actions

View

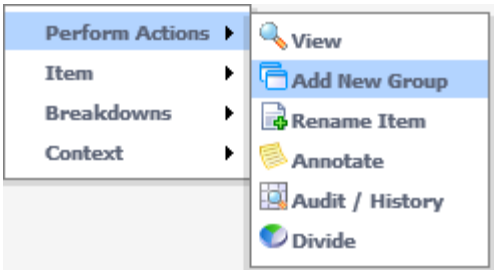
View will allow you to see the specification or component catalog term associated with that node.



© 2015 Oracle Corporation

Add New Group

Create a new group directly under the current item. Once the group is created, you can delete it (if empty) or relocate it via drag-and-drop. As groups can not be seen in Combined format, all group creation tasks should be done in Multi-Part or Multi-Component format.

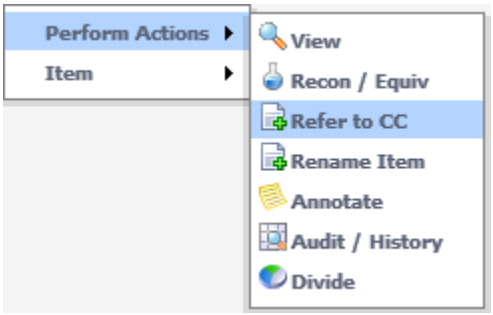


Rename Item

Allows you to rename the item manually instead of using the component name or component catalog disclosure.

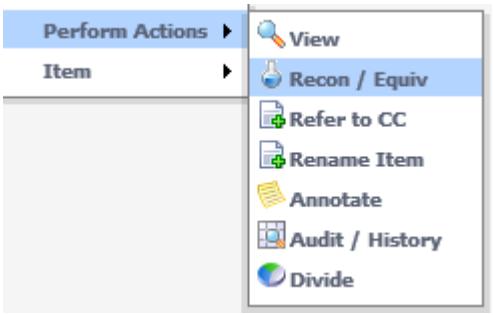
Refer to CC

Refer to Component Catalog to see the available disclosures for the item based on the Component Catalog profile and restrictions for the current item. You can see all disclosures available for all nodes by using the Disclosures button below the tree.



Recon/Equiv

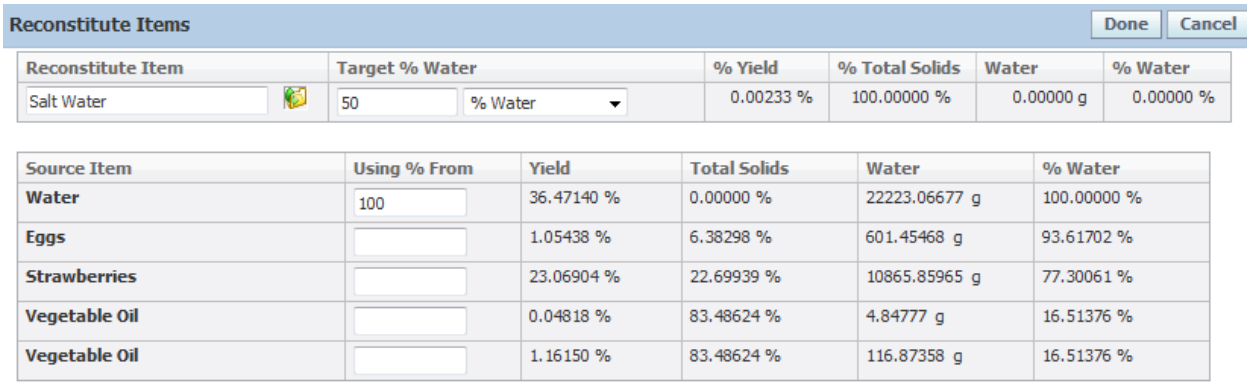
LIO allows you to work with reconstitution and equivalency factors that will adjust the moisture content of the current item. For example, if “Powdered Milk” can be called “Milk” once it has a Total Solids of 90%, Recon/Equiv allows you to reallocate water to “Powdered Milk” so it can be called “Milk”.



Once selected, the Reconstitute Items dialog box is displayed.

© 2015 Oracle Corporation

Figure 12. Reconstitute Items dialog box



From this dialog box you can manually adjust the moisture content for the selected item by moving moisture from other components. To do so, first define a target % Water. There are several approaches you can select when defining your target:

- % Water – Provide the target % water amount and LIO will pull water from the specific components until it reaches its target or there is no water left to pull. The % Water is entered as a value greater than 0 and less than 100. As an example the user is stating they want the % Water for the Blueberry Flavor to change from its current value of 35% to 40%. Using the % Water calculation the user enters “40”. The calculation than balances based on the item containing 40% water.
- Factor (of total) – Factor allows the user to enter a value greater than one to increase the yield by adding water. The size of the yield is based on the parent item. As an example, a user can add 2.5 times more water to “Seasoned Cooked Beef” and label it as “Seasoned Beef (Beef, Salt)”. Using the Factor (of Total) calculation the user enters “2.5”. The calculation is performed as follows: “Seasoned Cooked Beef”, 1 lb * Factor, 2.5 = “Seasoned Beef (Beef, Salt)”, 2.5 Lb.
- Factor (of item) – The Factor (of item) calculation is similar to the Factor (of total) except the size of the yield is based on the item being reconstituted rather than the yield of the parent.
- % Yield (of total) – % Yield allows the user to describe the percent of an item they wish to yield after adding water. The % Yield is entered as a value greater than 0 and less 100. The size of the yield is based on the parent item. As an example, a user must yield 40% “Seasoned Cooked Beef” in order to label the item as “Seasoned Beef (Beef, Salt)”. Using the %Yield calculation the user enters “40”. The calculation is performed as follows: “Seasoned Cooked Beef”, 1lb / %Yield, .40 = “Seasoned Beef (Beef, Salt) 2.5 lb.
- % Yield (of item) – The %Yield (of item) calculation is similar to the %Yield (of total) except the size of the yield is based on the item being reconstituted rather than the yield of the parent.

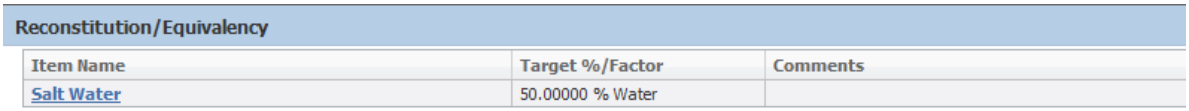
Once a target % Water is defined, you then must declare where water should be taken from in the “Using % From” column. In the example above all water will be taken from just the “Water” component and moved into “Salt Water”. Click **Done**. The results of your reconstitution appear in the LIO tree. If there is not enough water available to hit your target an error message will appear.

© 2015 Oracle Corporation

Once an item has been affected by a reconstitution action the reconstitution icon will appear to the left of the node.



If one or more conversion factors have been previously defined for the current item, you can access/select a predefined factor by clicking the import data icon ( ), displayed to the right of the field in the Reconstitute Item column. Click the icon to open the pre-defined reconstitution rules popup.

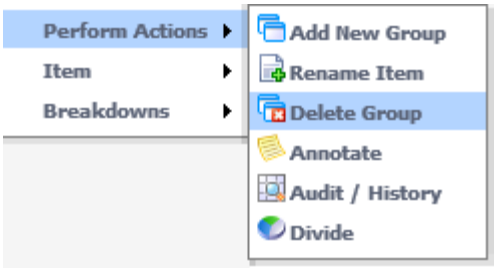


The Reconstitution/Equivalency options for a given item are managed within the item's corresponding Component Catalog Term. LIO will use the selected Target %/Factor to populate the reconstitution popup.

Note: Once an item has been reconstituted, the parent node for the reconstituted item and the parent node for the item the water was removed from will only be allowed to use the declaration method at the time of reconstitution. If total solids/moisture is not declared on item this option will not be available.

Delete Group

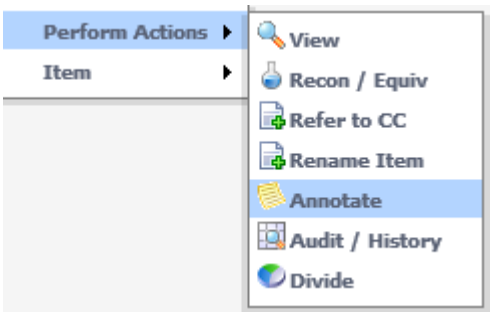
Delete the selected group. You can delete a group only if it is empty (0%).

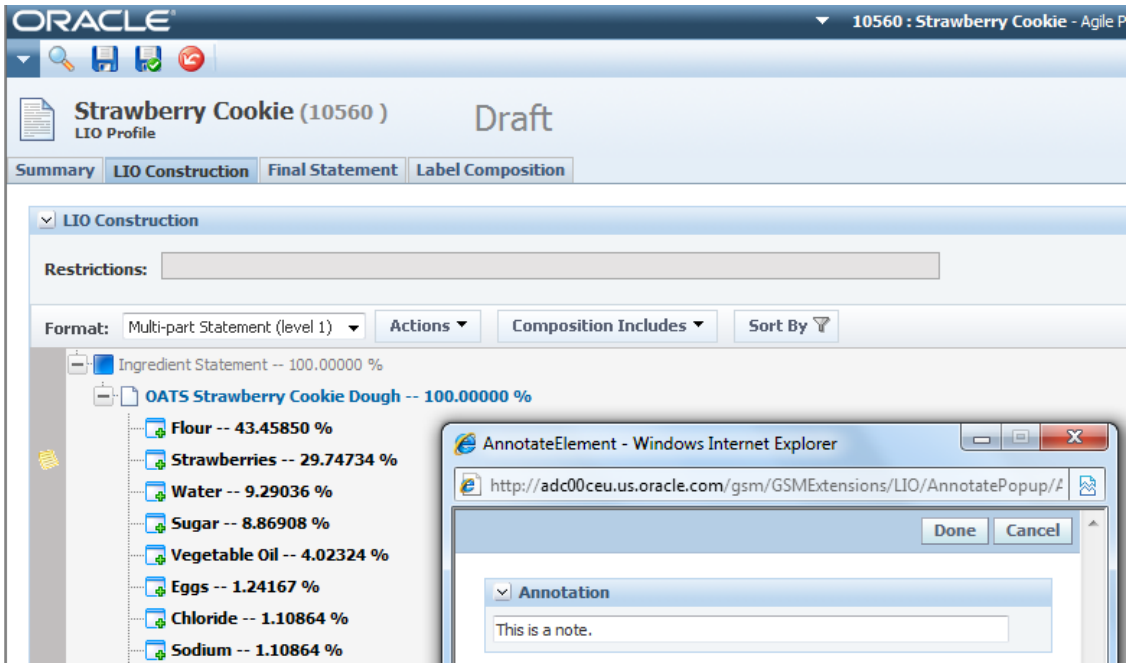


Annotate

Add a narrative comment to the item. Annotations are typically used to provide additional explanation/rationale to help others understand the decisions made during the LIO process. Any item containing an annotation will be denoted with a special icon in the left margin of the LIO tree, as shown below.

© 2015 Oracle Corporation

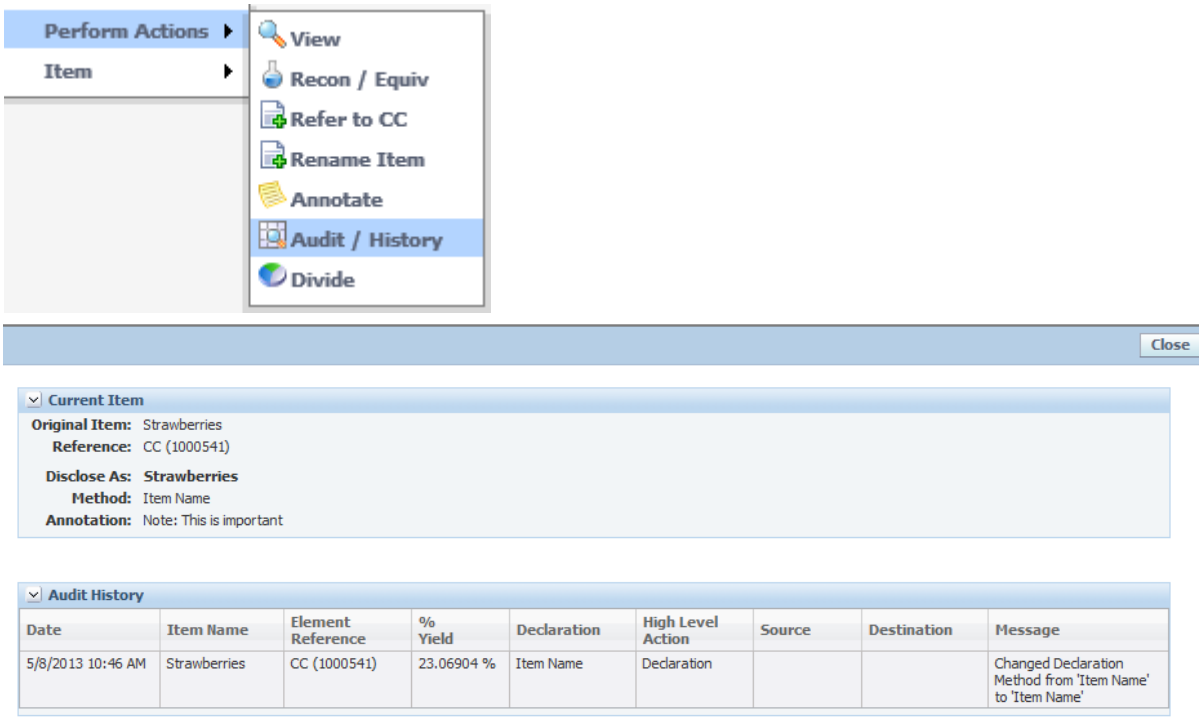




© 2015 Oracle Corporation

Audit History

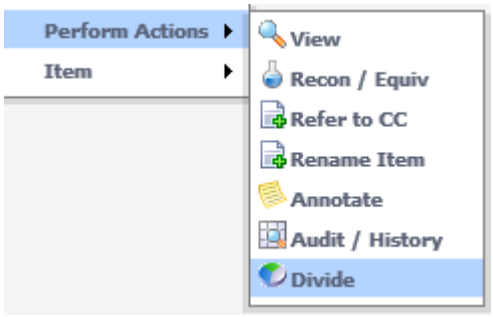
Get an accounting of the current disclosure method and any relevant actions that have been performed against the selected item.



To see the audit information for the all items, click the **Audit** button below the tree.

Divide

Create a new instance of the current item based on a percent or quantity of the original item (that is, to split an item into two separate instances). GSM prompts you to indicate a percentage or a quantity. Once you have created the new item, it will appear at the same level as the original item in the LIO hierarchy and you can move it via drag-and-drop to another area. Any item affected by a "divide" action will be flagged with a special divide icon ( ) in the LIO tree left margin.



Note: Once an item has been divided, the parent node for the divided item will only be allowed to use the declaration method at the time of division.

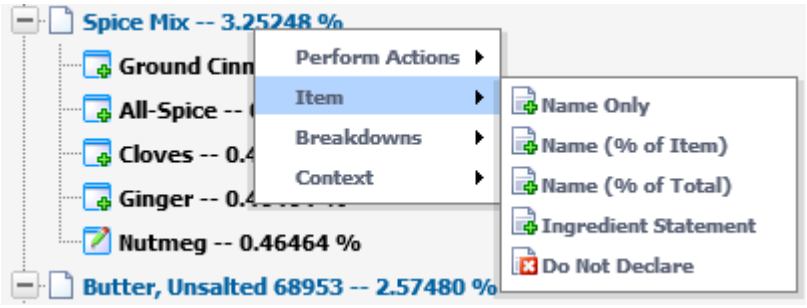
© 2015 Oracle Corporation

Declaration Descriptions

In addition to disclosures available through Component Catalog, there are many more options for how you can declare an item.

Item

The “Item” options represent the single level you are selecting while breakdown and context allow you to go further into the tree and open up more levels.



In the example above the user right clicked on “Spice Mix”. This happens to be an intermediate formulation so all three choices (Item, Breakdowns & Context) are available. Notice how the node is currently displaying the regulatory breakdown below. If anything was selected from the Item menu, this breakdown would be removed and only the top-level node would remain. Item contains the following options:

Item > Name Only

List the item as a single entry in the LIO using the default name of the current item. In the example above this would leave the node “Spice Mix” with no child items.

Item > Name (% of Item)

List the % of the item based on the amount of the parent node only in the LIO. This option would display just the parent node like “Name Only” but it would also display the percentage of that node based on its parent. “Spice Mix (100%)” This option is more valuable when used on a secondary node. For example, if used on “Ginger” it would display “Ginger (14%)” because Ginger is 14% of the Spice Mix.

Item > Name (% of Total)

List the % of the item based on the total formulation amount in the LIO. This option would display just the parent node like “Name Only” but it would also display the percentage of that node based on the total formula “Spice Mix (3%)”

Ingredient Statement

List the item as a single entry in the LIO using the combined ingredient statement of the current item (if available). If this was selected in the example above it would replace “Spice Mix” with “Natural Flavors, Cloves, Ginger". This is valuable if you always want the item to appear as a specific way regardless of the breakdown defined or specification name. For example, this specific “Spice Mix” specification may be proprietary and you always want it to display as “Natural Flavors, Cloves, Ginger” to hide the other proprietary elements in “Natural Flavors”. This field can also be used when performing very complex labeling scenarios. For example,

© 2015 Oracle Corporation

assume you had a tray of baked goods: Chocolate Chip Cookies, Oatmeal Cookies and Peanut Butter Cookies. You would have a separate LIO profile for each type of cookie, pushing the final statement to each then you could combine them in the “Baked Goods Tray” LIO profile.

Do Not Declare

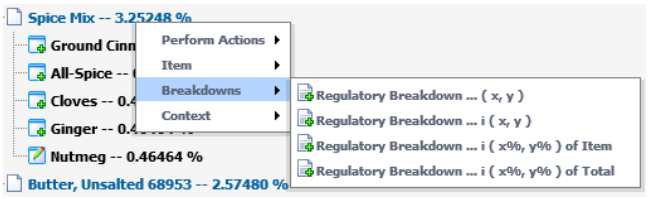
Do not disclose this item in the LIO. Items marked as "Do Not Declare" will not appear in the final ingredient statement.

Breakdowns and Context

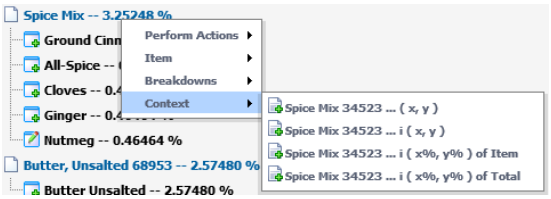
Depending on the item and available data you may see a “Breakdowns” option and a “Context” option, both allow you to expand the selected node and display children.

Figure 13. Breakdowns and Context options

Breakdowns



Context



Breakdowns will list all available breakdowns, in the example above the “Spice Mix” only has one breakdown, “Regulatory Breakdown” however if it had more breakdowns defined they would appear here. When selected this will pull the breakdown components into the tree underneath the selected parent. In the example, “Ground Cinnamon, Nutmeg, All-Spice, Cloves and Ginger” are the breakdown components in the regulatory breakdown on “Spice Mix”.

Context will appear if the item you selected is an output of a formulation. This option lists all formulation specifications that could have made the selected item. In the example above “Spice Mix” was only made by one formulation specification “Spice Mix 34523”. When selected this will pull the formulation inputs into the tree underneath the selected parent. If these inputs are also intermediate formulations you will be allowed to go even further into the tree.

There are secondary descriptions on each breakdown or context menu listing, (x,y), i(x,y), i(x%,y%) of Item and i(x%,y%) of Total. Each of these options represents how the parent node will be displayed. The word "List..." below is just a placeholder. The UI will actually display the name of the breakdown or formulation specification.

List... (x, y)

This option will display the children underneath the parent. For example, if you had “Spice Mix” selected as item name only, this selection would pull the breakdown components or formulation inputs in underneath “Spice Mix”.

© 2015 Oracle Corporation

List... i (x, y)

This option will display the item as a combined statement using the current item and its lower-level items, that is, "Item Name (item one, item two, item three)". In the example above, this would display “Spice Mix (Ground Cinnamon, Nutmeg, All-Spice, Cloves, Ginger).

List... i (x%, y%) of Item

This option will display the item as a combined statement with percentages using the current item and its lower-level items, that is, "Item Name (item one %, item two %, item three %)". In the example above, this would display “Spice Mix (Ground Cinnamon 43%, Nutmeg 15%, All-Spice 14%, Cloves 14%, Ginger 14%)”. The percentages shown will be the percentage the lower level items make up of the parent “Spice Mix”. For example Ground Cinnamon is 43% of the Spice Mix, but only 1% of the total formula.

List... i (x%, y%) of Total

This option will also display the item as a combined statement with percentages using the current item and its lower-level items, however it will use percentages based on the total formula. In the example above, this would display “Spice Mix (Ground Cinnamon 1%, Nutmeg 0.46 %, All-Spice 0.45%, Cloves 0.45%, Ginger 0.44%)”.

LIO Operations

During the LIO process, when the profile is in edit mode, you can perform a number of operations using the row of buttons beneath the LIO tree view.

Refresh Operation

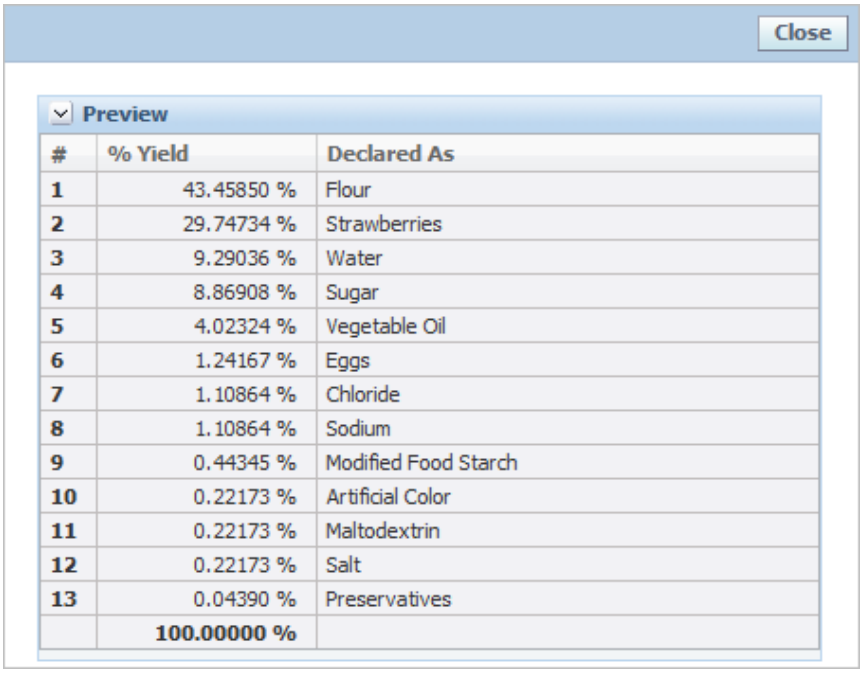
While generally not needed, a few of the declaration options and actions are not executed immediately within the LIO tree view. Click **Refresh** to perform multiple actions before posting the tree view back to the server for rendering. For example, click **Refresh** after drap and drop actions to update the right mouse click options.

Preview Operation

When you click **Preview**, LIO opens the Preview dialog box with a table in it. This table indicates the order in which each LIO item will appear in the final ingredient statement.

© 2015 Oracle Corporation

Figure 14. Preview



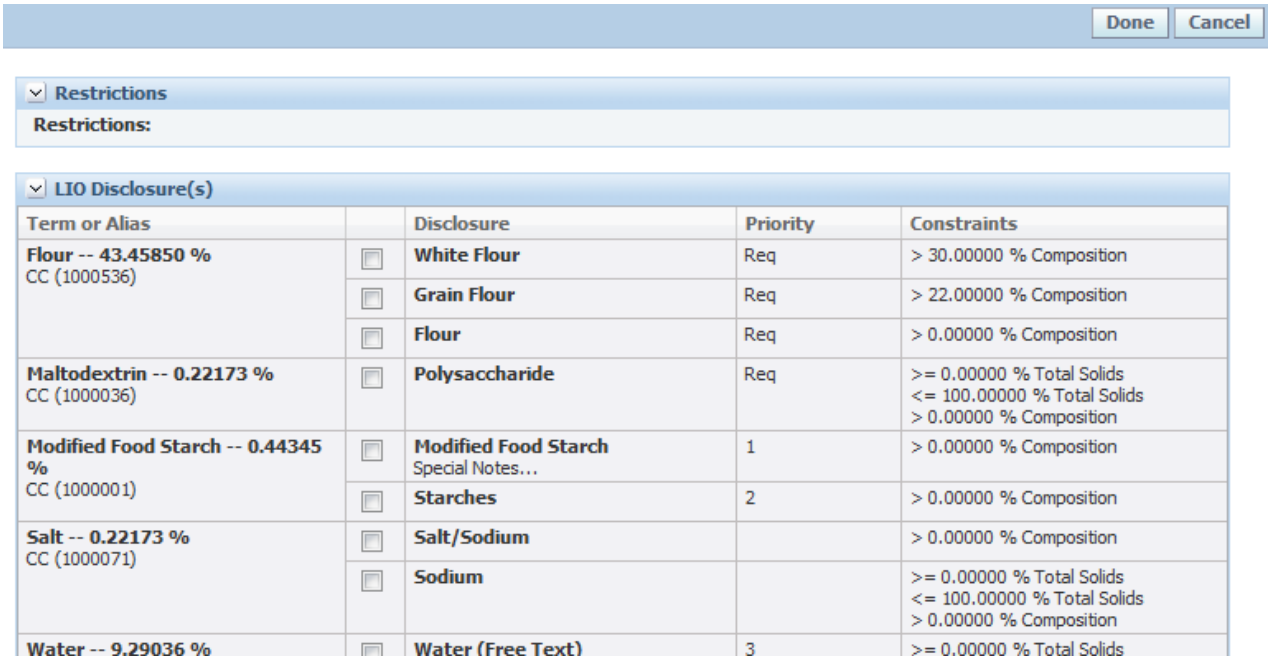
#	% Yield	Declared As
1	43.45850 %	Flour
2	29.74734 %	Strawberries
3	9.29036 %	Water
4	8.86908 %	Sugar
5	4.02324 %	Vegetable Oil
6	1.24167 %	Eggs
7	1.10864 %	Chloride
8	1.10864 %	Sodium
9	0.44345 %	Modified Food Starch
10	0.22173 %	Artificial Color
11	0.22173 %	Maltodextrin
12	0.22173 %	Salt
13	0.04390 %	Preservatives
	100.00000 %	

In addition, the Preview section shows the adjusted percent yield of each item (based on suppressed items). The preview will automatically combine like items (including group designations) based on LIO item name in the currently selected language.

Disclosure Operation

Click **Disclosure** to open the Disclosure dialog box.

Figure 15. Disclosure dialog box



Term or Alias		Disclosure	Priority	Constraints
Flour -- 43.45850 % CC (1000536)	☐	**White Flour**	Req	> 30.00000 % Composition
	☐	**Grain Flour**	Req	> 22.00000 % Composition
	☐	**Flour**	Req	> 0.00000 % Composition
Maltodextrin -- 0.22173 % CC (1000036)	☐	**Polysaccharide**	Req	>= 0.00000 % Total Solids <= 100.00000 % Total Solids > 0.00000 % Composition
Modified Food Starch -- 0.44345 % CC (1000001)	☐	**Modified Food Starch** Special Notes...	1	> 0.00000 % Composition
	☐	**Starches**	2	> 0.00000 % Composition
Salt -- 0.22173 % CC (1000071)	☐	**Salt/Sodium**		> 0.00000 % Composition
	☐	**Sodium**		>= 0.00000 % Total Solids <= 100.00000 % Total Solids > 0.00000 % Composition
Water -- 9.29036 %	☐	**Water (Free Text)**	3	>= 0.00000 % Total Solids

© 2015 Oracle Corporation

The Disclosure dialog box provides you with options for aliasing based on the labeling rules of each item derived from its corresponding Component Catalog profile and its disclosures. LIO filters disclosure options based on matching restrictions and displays them in order of priority (also defined within the CC Term). See the "Component Catalog" chapter in the *Agile Product Lifecycle Management for Process Global Specification Management User Guide* for more information.

Grouping Operation

Click **Grouping** to display the grouping dialog box.

Figure 16. Grouping dialog box



The grouping dialog box provides you with options for grouping based on each the labeling rules of each item derived from its corresponding Component Catalog term and its groupings. GSM filters grouping options based on matching restrictions and displays them in order of priority (also defined within the CC Term). See the “Component Catalog” chapter in the *Agile Product Lifecycle Management for Process Global Specification Management User Guide* for more information. If a method is not defined, in Component Catalog, on the grouping it will not appear in this list.

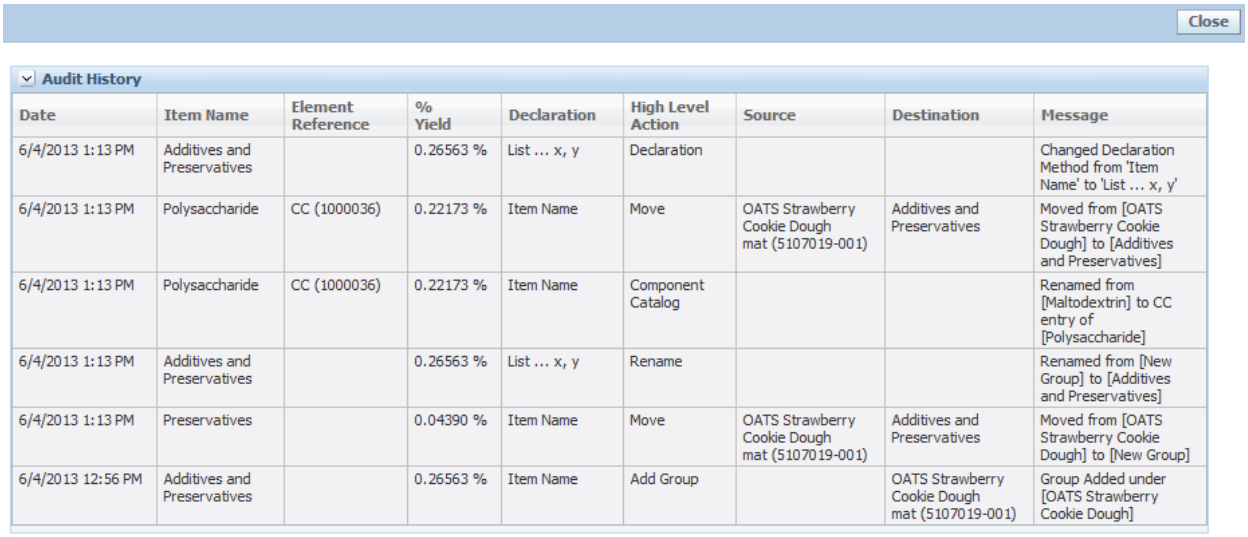
Note: You can manually group LIO items using the drag-and-drop feature. The drag-and-drop feature uses asynchronous calls to help with performance so you will see some updates to the tree being made while you are performing drag-and-drop.

Audit Operation

Similarly to the Preview operation, the Audit operation opens a dialog box with a table that denotes the composition % of each item with an accounting of the current disclosure method and any relevant actions that have been performed against that item. Audit only shows items that have had manual actions. All items are not listed.

© 2015 Oracle Corporation

Figure 17. Audit History dialog box



Close

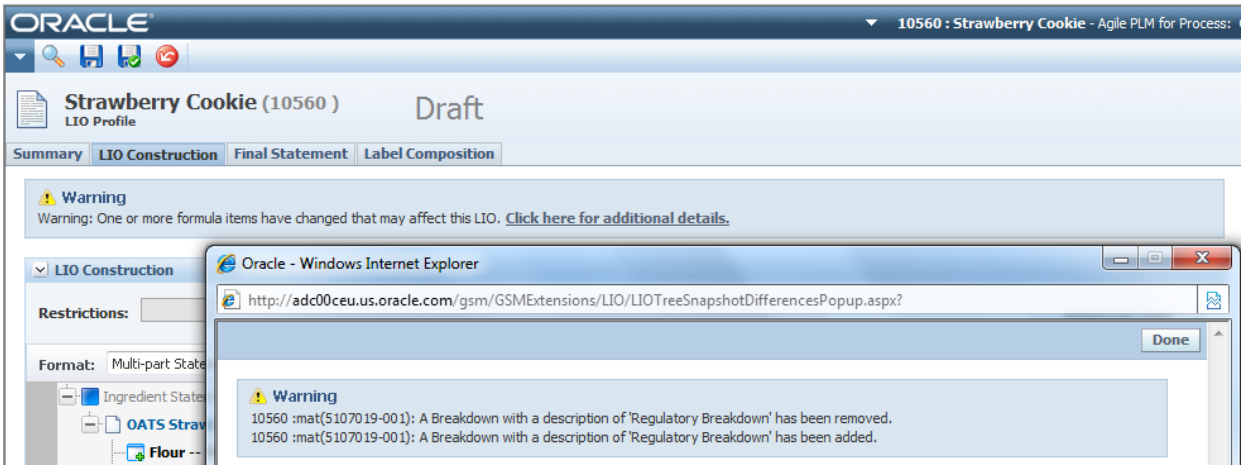
Audit History

Date	Item Name	Element Reference	% Yield	Declaration	High Level Action	Source	Destination	Message
6/4/2013 1:13 PM	Additives and Preservatives		0.26563 %	List ... x, y	Declaration			Changed Declaration Method from 'Item Name' to 'List ... x, y'
6/4/2013 1:13 PM	Polysaccharide	CC (1000036)	0.22173 %	Item Name	Move	OATS Strawberry Cookie Dough mat (5107019-001)	Additives and Preservatives	Moved from [OATS Strawberry Cookie Dough] to [Additives and Preservatives]
6/4/2013 1:13 PM	Polysaccharide	CC (1000036)	0.22173 %	Item Name	Component Catalog			Renamed from [Maltodextrin] to CC entry of [Polysaccharide]
6/4/2013 1:13 PM	Additives and Preservatives		0.26563 %	List ... x, y	Rename			Renamed from [New Group] to [Additives and Preservatives]
6/4/2013 1:13 PM	Preservatives		0.04390 %	Item Name	Move	OATS Strawberry Cookie Dough mat (5107019-001)	Additives and Preservatives	Moved from [OATS Strawberry Cookie Dough] to [New Group]
6/4/2013 12:56 PM	Additives and Preservatives		0.26563 %	Item Name	Add Group		OATS Strawberry Cookie Dough mat (5107019-001)	Group Added under [OATS Strawberry Cookie Dough]

Warning Conditions

If the data on the target specification changes after a tree is generated, the user will receives a message letting them know what data has changed. This message is letting you know that the data in your tree may no longer be accurate. Review the additional details to make sure you correct the problem.

Figure 18. Warning message



The following changes cause the message to be displayed:

- The source item in the LIO tree has been removed from the formulation tree
- The amount of a source item has changed in the formulation tree
- The ingredient statement value changed in the source item
- The density value changed in the source item
- The total solid value changed in the source item
- The source items % breakdown has been removed from the formulation tree

© 2015 Oracle Corporation

- The description of the % breakdown on the source item changed
- A new restriction was added to the % breakdown on the source item
- A restriction was removed from the % breakdown on the source item
- The source item in the LIO tree was removed from the formulation tree
- The name of the % breakdown was changed
- The % breakdown composition was changed
- The total solid values changed on a % breakdown
- The % breakdown referenced item was changed

Note: If a full basis refresh is performed on the formulation specification the LIO profile will display this message.

© 2015 Oracle Corporation

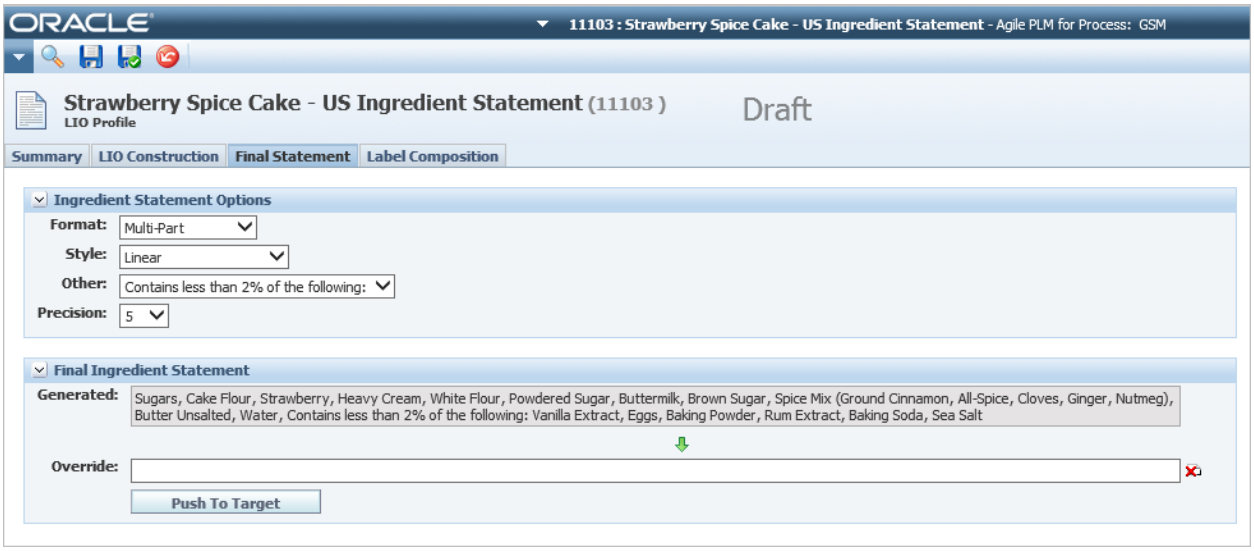
Chapter 5—Final Statement Tab

This Final Statement tab consists of the following sections:

- Ingredient Statement Options
- Final Ingredient Statement

In the Final Statement tab you can further manipulate the generated statement for final label production. Once you have completed the LIO construction process, you can produce and edit the final ingredient statement using features found within the tab, then push the changes to the specification.

Figure 19. Final Statement tab



Ingredient Statement Options Section

When editing the final statement, you can modify the statement using the Format, Style, Other and Precision fields. With each change, the page is immediately refreshed to reflect your changes.

Format Field

LIO supports the following formats:

- Combined - Example: Sugar, Water, Salt, Pepper
- Multi-Part- Example: Sugar, Water, Spices (Salt, Pepper)
- Multi-Component – Example: Sugar Water: Sugar, Water & Spices: Salt, Pepper

Note: The Format drop down is shared between the Construction and Final Statement tab. Changing it on either tab affects both places.

The combined and multi-part format will return the same results on the Final Statement and Label Composition Tab. The differences between these formats is only seen on the LIO Construction tab.

Style Field

LIO supports the following styles:

- **Columnar**—Arranges the final statement in a columnar list, separating each item with a new line

© 2015 Oracle Corporation

- **Columnar - Uppercase**—Arranges the final statement in a columnar list, separating each item with a new line, and converts all text to upper case
- **Linear**—Default setting that arranges the final statement as a linear paragraph
- **Linear - Uppercase**—Arranges the final statement as a linear paragraph and converts all text to upper case

Other Field

LIO supports the following other options:

- **None**—Default setting
- **Contains Less than 2% of...**—Inserts "Contains Less than 2% of the following:" at the appropriate point in the statement based on the percent composition of each item
- **Contains Less than 3% of...**—Inserts "Contains Less than 3% of the following:" at the appropriate point in the statement based on the percent composition of each item

Precision

Adjust the precision used in the final statement. By default 5 decimals are shown. If you prefer to see composition % whole numbers, set your precision to 0.

Note: Please note that changing precision could create a statement that doesn't add up to 100% due to rounding. Customized Rounding rules can be applied; see the Configuring LIO section for more information.

Final Ingredient Statement Section

Once you have set the fields in the Ingredient Statement Options section and the generated LIO is displayed, you can choose to push this statement to the material specification and/or nutrient profile by using the **Push to Target** button. If override is blank, it will push the Generated statement. Otherwise, it will push the Override statement.

Override

Depending on your configuration settings and role, you may have the option to override the generated statement. You can click the Arrow to move the generated statement into the **Override** field. At that time you can make any manual adjustments that are necessary.

Note: The ability to edit the final statement is controlled by a system configuration and a role. Please refer to the configuration section above for more information.

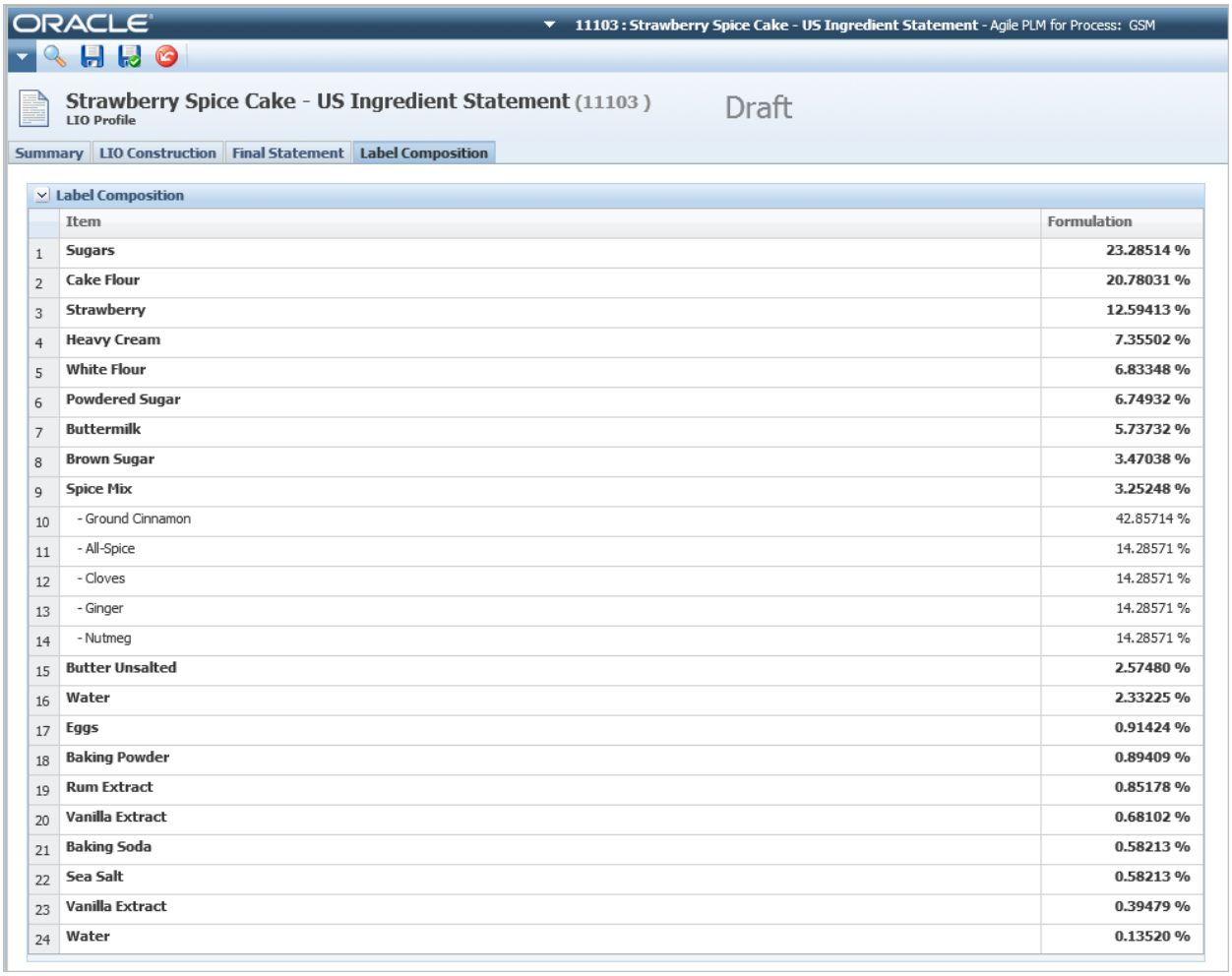
© 2015 Oracle Corporation

Chapter 6—Label Composition Tab

This tab displays the final label composition created from the generated LIO tree. If you haven't generated an LIO tree, this section will be blank.

Label Composition, the sole section in the Label Composition tab, displays the composition of the specification for labeling purposes. This information can be pushed to the nutrient profile from the LIO process. The data pushed to the nutrient profile is read only and displays on the Label Composition grid on the Label Composition tab. This information will be used to complete the Regulatory Filings stored on a trade specification.

Figure 20. Label Composition tab



	Item	Formulation
1	**Sugars**	**23.28514 %**
2	**Cake Flour**	**20.78031 %**
3	**Strawberry**	**12.59413 %**
4	**Heavy Cream**	**7.35502 %**
5	**White Flour**	**6.83348 %**
6	**Powdered Sugar**	**6.74932 %**
7	**Buttermilk**	**5.73732 %**
8	**Brown Sugar**	**3.47038 %**
9	**Spice Mix**	**3.25248 %**
10	- Ground Cinnamon	42.85714 %
11	- All-Spice	14.28571 %
12	- Cloves	14.28571 %
13	- Ginger	14.28571 %
14	- Nutmeg	14.28571 %
15	**Butter Unsalted**	**2.57480 %**
16	**Water**	**2.33225 %**
17	**Eggs**	**0.91424 %**
18	**Baking Powder**	**0.89409 %**
19	**Rum Extract**	**0.85178 %**
20	**Vanilla Extract**	**0.68102 %**
21	**Baking Soda**	**0.58213 %**
22	**Sea Salt**	**0.58213 %**
23	**Vanilla Extract**	**0.39479 %**
24	**Water**	**0.13520 %**

© 2015 Oracle Corporation

Chapter 7—Configuring LIO

This section outlines important configurations and roles used to enable the solution pack. The installation process handles the initial setup of the configurations for you but you may want to modify it based on your implementation. The new roles will need to be added by you using UGM.

Note: When reviewing the xml files after the installer runs, it is possible the order of the elements listed in the documentation will differ from the files on your system. XML is not particular about order, so simply verify the elements are the same from a content standpoint.

Enabling Features

The CustomerSettings.config file is located in the [InstallDirectory]\Config\Custom folder and is where the LIO features will be turned on or off.

Note: The Installer may reformat some of the lines in this file.

LIO Versions

This LIO Solution pack replaces the legacy LIO tool in the core PLM4P suite. All LIO profiles created before this solution pack was installed will continue to be accessible using LIO version 1 to open and adjust LIO profiles. Once this solution pack is installed all new LIO profiles will use LIO version 2.

This block within the customersettings.config file changes LIO to use the new version and directs the application based on which LIO version it encounters.

```
<LIO>
        <LIOSettings>
          <currentVersion value="2"/>
           <defaultLIOFormatLookupItemPkid value="22106EF83216-75C6-4643-8BCB-
0483FFEBD6E2"/>
            <defaultPrecision value="22106E9CB770-5E28-45D6-B28A-C16BD77A4596" />
            <versionURLRedirect configChildKey="version">
                <redirect version="1" url="../baseforms/frmLIOProfile.aspx"/>
                <redirect version="2" url="../LIO/baseforms/frmAdvancedLIOProfile.aspx"/>
            </versionURLRedirect>
                <setting key="LIO.BreakdownComposition.UpperBoundary" value="100"/>
                <setting key="LIO.BreakdownComposition.LowerBoundary" value="100"/>
                <setting key="LIO.InactiveElement.Threshold" value="0.0000001"/>
        </LIOSettings>
</LIO>
```

Final Statement Override

<add key="GSM.LIO.FinalIngredientStatement.Editing.Enabled" value="true"/>

This configuration allows you to turn off the ability to edit the final statement in LIO. By default all users are allowed to override the generated statement by LIO. If this configuration is set to false users will need the [LIO_STATEMENT_EDITOR] role to override the generated statement.

© 2015 Oracle Corporation

Sort By Control

<add key="GSM.LIO.SortOrder.Enabled" value="true"/>

By default ingredient statements are sorted by composition percentage. Some regulatory bodies allow you to adjust the sort order without certain processing losses applied. This feature allows you change the sort order by removing moisture, solids and/or material formulation adjusters. The user will need the [LIO_SORTORDER] role to adjust the sort order. If this feature is unnecessary for your regulatory requirements, you can use this configuration to turn it off and hide the Sort By button.

Composition Includes Control

<add key="GSM.LIO.Composition.Enabled" value="true"/>

By default LIO calculates composition percentages with all formulation adjusters applied. This feature allows you to calculate the composition percentage without certain processing losses applied. The user will need the [LIO_COMPOSITION] role to adjust what is included in the composition percentages. If this feature is unnecessary for your regulatory requirements, you can use this configuration to turn it off and hide the Composition Includes button.

Precision Control

<add key="GSM.LIO.ConstructionTab.Precision.Enabled" value="true"/>

<add key="GSM.LIO.FinalStatement.Precision.Enabled" value="true"/>

LIO allows the user to adjust this precision. These configurations allow you to turn this feature off on the construction tab or final statement tab.

By default LIO displays composition percentage using 5 decimal places. However, this default is configurable inside the <LIOSettings> node.

<defaultPrecision value="22106E9CB770-5E28-45D6-B28A-C16BD77A4596" />

This can be adjusted to any precision by specifying the pkid of the requested precision. The following table defines the IDs and corresponding precisions:

ID	Precision Value
2210B1A4F3E4-7C5D-42F9-86A0-181E21E1D33C	0
2210E61426BD-D339-424A-ABE4-8BEC360266DF	1
2210B0902E88-B0A5-4C3C-A35E-9B1A6145F0D5	2
2210CC34D15E-E4C2-46E4-9E13-BA8072BA32B2	3
2210D52E1302-88DF-4FB4-8BC1-952AD5485345	4
22106E9CB770-5E28-45D6-B28A-C16BD77A4596	5
221030FA4997-01F4-4EF0-AF8E-832E35AD96F4	6
22103A415574-7D38-4471-B982-39CDB5AF6CBF	7
2210138BF883-5623-4AEC-88EB-B3FF5580DFB8	8
2210E81A4CFF-013A-46D6-A1B2-2C29D473004A	9
221087CA5725-D42D-42F6-A062-1CAD4F359546	10
221032BF13FF-811F-4B9C-928C-9E42C7D30504	11
2210CDD3C8C6-45B1-41E6-9874-F4416F8B9EFA	12
22108F98BCE4-1B66-4C50-AD00-F3D3BD664CBF	13

© 2015 Oracle Corporation

Inactive Element Control

<setting key="LIO.InactiveElement.Threshold" value="0.0000001"/>

By default the LIO inactive element threshold percentage is 0.0000001. This value is used when LIO determines what is considered as an inactive (what shows up as gray) element and what is included in the final statement generation. However, LIO allows the user to adjust this threshold inside the <LIOSettings> node.

Format Config

You can change the default format in LIO using the format configuration:

<defaultLIOFormatLookupItemPkid value="22106EF83216-75C6-4643-8BCB-0483FFEBD6E2"/>

The default is Multi-Part. The PKIDS for the options are as follows:

PKID	Format
22106EF83216-75C6-4643-8BCB-0483FFEBD6E2	Multi-Part
22101E4E58CC-184A-4C6C-A89B-1D4D11CF03C6	Combined
221092235A0D-3D43-4194-AECF-DDFC8641A288	Multi-Component

Customize Percentage Display

The application allows displaying percent for each node in a custom manner. For example, you could apply your own rounding rules based on the precision selected. For example, you can say if the user selects the precision of 0, but the composition percentage is greater than 0 but less than 1 then display 5 decimals.

This feature utilizes server side javascript code that is executed by the Jint engine. The code is stored in javascript files located in PRODIKA_HOME\config\extensions\lio\. A separate file is used for each location of precision implemented in LIO: Construction.js is used to display percentages on the Construction tab and FinalStatement.js is used to display percentages on the Final Statement tab. The content of these files is cached.

The following variables/methods are provided out of the box:

- **element** – a variable representing the current node object implementing Oracle.PLM4P.LIO.Lib.Elements.ILIOAdvancedElement interface. This variable is null if the current element is the root node.
- **root** – a variable representing the root object that implements Oracle.PLM4P.LIO.Lib.ILIORoot interface.
- **percent** – a variable representing a decimal for a particular node. Depending on the current node display format selection the decimal can represent a percentage of the item or a percentage of the total.
- **GetPercentFormat** – a method that accepts an integer or a string of desired precision and returns a string representing the percentage format of the desired precision in the form of “{0:P<precission>}”. If the passing parameter represents a negative integer-, “{0:P0}” will be returned which indicates the whole number percentage.

© 2015 Oracle Corporation

LIO Roles

Specific user roles are needed in order to create, read and use specific features of an LIO Profile.

[LIO_CREATOR] – This role will allow the user to create new LIO profiles.

[LIO_READER] – This role will allow users to read LIO profiles. The user will also need read access to the specifications associated to the LIO profile.

[LIO_STATEMENT_EDITOR] – This role will allow a user to override the generated statement within LIO. Without this role, the Copy arrow and the editable Override box will not be displayed. This role only comes into play when the GSM.LIO.FinalIngredientStatement.Editing.Enabled configuration key is set to false.

[LIO_SORTORDER] – This role will allow a user to adjust the sort order of the LIO tree components based on the moisture, solids and material losses applied to the formulation. When the user doesn't have this role the Sort By button will be read only.

[LIO_COMPOSITION] – This role will allow a user to adjust Composition percentage based on the moisture, solids and material losses applied to the formulation. When the user doesn't have this role the Composition Includes button will be read only.

© 2015 Oracle Corporation

Appendix A—What did the Installer do?

The installer will perform the following tasks for you:

1. Changing the LIOSettings node in PRODIKA_HOME\Config\DeployedConfig.config.
   <LIOSettings configExtends="file:%CONFIG_HOME%\Core\CoreAppSettings.config, CoreAppSettings/LIO/LIOSettings" configExtends2="file:%CONFIG_HOME%\Custom\CustomerSettings.config,CustomerSettings/LIO/LIOSettings" />

   Note: The Installer may reformat some of the lines in this file.
2. Changing the LIO Version in PRODIKA_HOME\config\Custom\CustomerSettings.config.

```
<LIO>
  <LIOSettings>
    <currentVersion value="2"/>
        <defaultLIOFormatLookupItemPkid value="22106EF83216-75C6-4643-8BCB-0483FFEBD6E2"/>
        <defaultPrecision value="22106E9CB770-5E28-45D6-B28A-C16BD77A4596" />
        <versionURLRedirect configChildKey="version">
            <redirect version="1" url="../baseforms/frmLIOProfile.aspx"/>
            <redirect version="2" url="../LIO/baseforms/frmAdvancedLIOProfile.aspx"/>
      </versionURLRedirect>
        <setting key="LIO.BreakdownComposition.UpperBoundary" value="100"/>
        <setting key="LIO.BreakdownComposition.LowerBoundary" value="100"/>
        <setting key="LIO.InactiveElement.Threshold" value="0.0000001"/>
  </LIOSettings>
</LIO>
```

3. Adding a new feature configuration to PRODIKA_HOME\Config\Custom\CustomerSettings.config.

   <add key="GSM.LIO.Composition.Enabled" value="true" configDescription="Allows user to adjust composition percentage by removing adjusters from formulation. When false button is hidden."/>

   <add key="GSM.LIO.SortOrder.Enabled" value="true" configDescription="Allows user to adjust sort order by removing adjusters from formulation. When false button is hidden."/>

   <add key="GSM.LIO.ConstructionTab.Precision.Enabled" value="true" configDescription="Allows user to set the display precision of composition percentage values on Construction Tab."/>

   <add key="GSM.LIO.FinalIngredientStatement.Editing.Enabled" value="true" configDescription="Allows user to override generated ingredient statement. When false user needs LIO_STATEMENT_EDITOR role."/>

   <add key="GSM.LIO.FinalStatement.Precision.Enabled" value="true" configDescription="Allows user to set the display precision of composition percentage values on Final Statement

© 2015 Oracle Corporation

Tab."/><add key="GSM.LIO.SortOrder.Enabled" value="true" configDescription="Allows user to adjust sort order by removing adjusters from formulation. When false button is hidden."/>

Note: The Installer may reformat some of the lines in this file.

4. Updating the LIO right click context menus in PRODIKA_HOME\Config\Extensions\SiteMapExtensions.xml.

<ContextMenu ID="UniversalLIOContextMenuAdvanced" DisplayText="--TopMenu" ContextMenu="Custom" Orientation="Vertical" SecurityProfileRef="" SkinRef="" TranslationRef="" Target="" NavigateUrl="" Sortable="true">
<MenuItem ID="lblPerformActions" SortOrder="5" Sortable="true" CssClass="hasIcon cssxIcoPerformActions" DisplayText="Perform Actions" Look-RightIconWidth="16" Look-RightIconHeight="16" Look-RightIconUrl="../images/menus/media_play_green.gif" SecurityProfileRef="" SkinRef="DefaultSkin" TranslationRef="" Target="" NavigateUrl="">
<MenuItem ID="lblView" SortOrder="10" CssClass="hasIcon cssxIcoView" DWBId="A" DisplayText="View" ClientSideCommand="ViewItem()" Look-LeftIconWidth="16" Look-LeftIconHeight="16" Look-LeftIconUrl="../images/menus/view.gif" SecurityProfileRef="" SkinRef="DefaultSkin" TranslationRef="" Target="" NavigateUrl="" />
<MenuItem ID="lblAddNewGroup" SortOrder="20" CssClass="hasIcon cssxIcoAddNewGroup" DWBId="B" DisplayText="Add New Group" ClientSideCommand="AddNewGroupPopup()" Look-LeftIconWidth="16" Look-LeftIconHeight="16" Look-LeftIconUrl="../images/LIO/Groups.png" SecurityProfileRef="" SkinRef="DefaultSkin" TranslationRef="" Target="" NavigateUrl="" />
<MenuItem ID="lblReconEquiv" SortOrder="30" CssClass="hasIcon cssxIcoReconEquiv" DWBId="D" DisplayText="Recon/Equiv" ClientSideCommand="ShowItemReconEquiv()" Look-LeftIconWidth="16" Look-LeftIconHeight="16" Look-LeftIconUrl="../images/menus/potion_blue.gif" SecurityProfileRef="" SkinRef="DefaultSkin" TranslationRef="" Target="" NavigateUrl="" />
<MenuItem ID="lblReferToFIC" SortOrder="40" CssClass="hasIcon cssxIcoReferToFIC" DWBId="E" DisplayText="Refer To FIC" ClientSideCommand="ReferToFIC()" Look-LeftIconWidth="16" Look-LeftIconHeight="16" Look-LeftIconUrl="../images/menus/document_add.gif" SecurityProfileRef="" SkinRef="DefaultSkin" TranslationRef="" Target="" NavigateUrl="" />
<MenuItem ID="lblRenameItem" SortOrder="50" CssClass="hasIcon cssxIcoRenameItem" DWBId="F" DisplayText="Rename Item" ClientSideCommand="RenamePopup()" Look-LeftIconWidth="16" Look-LeftIconHeight="16" Look-LeftIconUrl="../images/menus/document_add.gif" SecurityProfileRef="" SkinRef="DefaultSkin" TranslationRef="" Target="" NavigateUrl="" />
<MenuItem ID="lblDeleteGroup" SortOrder="60" CssClass="hasIcon cssxIcoDeleteGroup" DWBId="G" DisplayText="Delete Group" ClientSideCommand="DeleteGroup()" Look-LeftIconWidth="16" Look-LeftIconHeight="16" Look-LeftIconUrl="../images/menus/document_error.gif" SecurityProfileRef="" SkinRef="DefaultSkin" TranslationRef="" Target="" NavigateUrl="" />
<MenuItem ID="lblAnnotate" SortOrder="70" CssClass="hasIcon cssxIcoAnnotate" DWBId="H" DisplayText="Annotate" ClientSideCommand="AnnotateItem()" Look-LeftIconWidth="16" Look-LeftIconHeight="16" Look-LeftIconUrl="../images/menus/note.gif" SecurityProfileRef="" SkinRef="DefaultSkin" TranslationRef="" Target="" NavigateUrl="" />
<MenuItem ID="lblAuditHistory" SortOrder="80" CssClass="hasIcon cssxIcoAuditHistory" DWBId="I" DisplayText="Audit History" ClientSideCommand="ShowItemAuditHistory()" Look-LeftIconWidth="16" Look-LeftIconHeight="16" Look-LeftIconUrl="../images/menus/table_view.gif" SecurityProfileRef="" SkinRef="DefaultSkin" TranslationRef="" Target="" NavigateUrl="" />

© 2015 Oracle Corporation

```
        <MenuItem ID="lblDivide" SortOrder="90" CssClass="hasIcon cssxIcoDivide" DWBId="J"
DisplayText="Divide" ClientSideCommand="ShowDivideItemPopup()" Look-LeftIconWidth="16" Look-
LeftIconHeight="16" Look-LeftIconUrl="../images/menus/pie-chart.gif" SecurityProfileRef=""
SkinRef="DefaultSkin" TranslationRef="" Target="" NavigateUrl="" />
    </MenuItem>
                <MenuItem ID="lblItem" SortOrder="10" Sortable="true" CssClass="hasIcon
cssxIcoItem" DisplayText="Item" ClientSideCommand="ItemNameDeclaration()" Look-
RightIconWidth="16" Look-RightIconHeight="16" Look-
RightIconUrl="../images/menus/media_play_green.gif" SecurityProfileRef="" SkinRef="DefaultSkin"
TranslationRef="" Target="" NavigateUrl="">
                <MenuItem ID="lblSPItemName" SortOrder="20" CssClass="hasIcon
cssxIcoItemName" DWBId="K" DisplayText="Item Name" ClientSideCommand="ItemNameDeclaration()"
Look-LeftIconWidth="16" Look-LeftIconHeight="16" Look-
LeftIconUrl="../images/menus/document_add.gif" SecurityProfileRef="" SkinRef="DefaultSkin"
TranslationRef="" Target="" NavigateUrl="" />
                <MenuItem ID="lblDispPerofItem" SortOrder="21" CssClass="hasIcon
cssxIcoDispPerofItem" DWBId="S" DisplayText="Display % of Item"
ClientSideCommand="DispPercentofItem()" Look-LeftIconWidth="16" Look-LeftIconHeight="16" Look-
LeftIconUrl="../images/menus/document_add.gif" SecurityProfileRef="" SkinRef="DefaultSkin"
TranslationRef="" Target="" NavigateUrl="" />
                <MenuItem ID="lblDispPerofTotal" SortOrder="22" CssClass="hasIcon
cssxIcoDispPerofTotal" DWBId="T" DisplayText="Display % of Total"
ClientSideCommand="DispPercentofTotal()" Look-LeftIconWidth="16" Look-LeftIconHeight="16" Look-
LeftIconUrl="../images/menus/document_add.gif" SecurityProfileRef="" SkinRef="DefaultSkin"
TranslationRef="" Target="" NavigateUrl="" />
                <MenuItem ID="lblIngredientStatement" SortOrder="30" CssClass="hasIcon
cssxIngredientStatement" DWBId="L" DisplayText="Ingredient Statement"
ClientSideCommand="IngStmtDeclaration()" Look-LeftIconWidth="16" Look-LeftIconHeight="16" Look-
LeftIconUrl="../images/menus/document_add.gif" SecurityProfileRef="" SkinRef="DefaultSkin"
TranslationRef="" Target="" NavigateUrl="" />
                <MenuItem ID="lblDeclare" SortOrder="70" CssClass="hasIcon
cssxIcoDeclare" DWBId="N" DisplayText="Declare" ClientSideCommand="DeclareItem()" Look-
LeftIconWidth="16" Look-LeftIconHeight="16" Look-LeftIconUrl="../images/menus/document_add.gif"
SecurityProfileRef="" SkinRef="DefaultSkin" TranslationRef="" Target="" NavigateUrl="" />
                <MenuItem ID="lblDoNotDeclare" SortOrder="60" CssClass="hasIcon
cssxIcoDoNotDeclare" DWBId="M" DisplayText="Do Not Declare"
ClientSideCommand="DoNotDeclare()" Look-LeftIconWidth="16" Look-LeftIconHeight="16" Look-
LeftIconUrl="../images/menus/document_error.gif" SecurityProfileRef="" SkinRef="DefaultSkin"
TranslationRef="" Target="" NavigateUrl="" />
                </MenuItem>
                <MenuItem ID="lblListItems" SortOrder="40" Sortable="true" CssClass="hasIcon
cssxListItems" DWBId="0" DisplayText="List Items" Look-RightIconWidth="16" Look-
RightIconHeight="16" Look-RightIconUrl="../images/menus/media_play_green.gif" SecurityProfileRef=""
SkinRef="DefaultSkin" TranslationRef="" Target="" NavigateUrl="" >
                <MenuItem ID="lblXYZ" SortOrder="10" DWBId="1" DisplayText="XYZ"
ClientSideCommand="ListXYZDeclaration()" Look-LeftIconWidth="16" Look-LeftIconHeight="16" Look-
LeftIconUrl="../images/menus/document_add.gif" SecurityProfileRef="" SkinRef="DefaultSkin"
TranslationRef="" Target="" NavigateUrl="" />
```

© 2015 Oracle Corporation

```
                    <MenuItem ID="lblIXYZ" SortOrder="20" DWBId="2" DisplayText="I(XYZ)"
ClientSideCommand="ListI_XYZDeclaration()" Look-LeftIconWidth="16" Look-LeftIconHeight="16" Look-
LeftIconUrl="../images/menus/document_add.gif" SecurityProfileRef="" SkinRef="DefaultSkin"
TranslationRef="" Target="" NavigateUrl="" />
                    <MenuItem ID="lblIXYZ_PCT" SortOrder="30" DWBId="3"
DisplayText="I(XYZ%)" ClientSideCommand="ListI_XYZ_PDeclaration()" Look-LeftIconWidth="16" Look-
LeftIconHeight="16" Look-LeftIconUrl="../images/menus/document_add.gif" SecurityProfileRef=""
SkinRef="DefaultSkin" TranslationRef="" Target="" NavigateUrl="" />
                    <MenuItem ID="lblIXYZ_PCT_T" SortOrder="40" DWBId="4"
DisplayText="I(XYZ%)" ClientSideCommand="ListI_XYZ_TDeclaration()" Look-LeftIconWidth="16" Look-
LeftIconHeight="16" Look-LeftIconUrl="../images/menus/document_add.gif" SecurityProfileRef=""
SkinRef="DefaultSkin" TranslationRef="" Target="" NavigateUrl="" />
                </MenuItem>
                <MenuItem ID="lblListContext" SortOrder="50" Sortable="true" CssClass="hasIcon
cssxIcoListContext" DWBId="O" DisplayText="List Context Items" Look-RightIconWidth="16" Look-
RightIconHeight="16" Look-RightIconUrl="../images/menus/media_play_green.gif" SecurityProfileRef=""
SkinRef="DefaultSkin" TranslationRef="" Target="" NavigateUrl="" >
                    <MenuItem ID="lblXYZ" SortOrder="10" DWBId="1" DisplayText="XYZ"
ClientSideCommand="ListXYZDeclaration()" Look-LeftIconWidth="16" Look-LeftIconHeight="16" Look-
LeftIconUrl="../images/menus/document_add.gif" SecurityProfileRef="" SkinRef="DefaultSkin"
TranslationRef="" Target="" NavigateUrl="" />
                    <MenuItem ID="lblIXYZ" SortOrder="20" DWBId="2" DisplayText="I(XYZ)"
ClientSideCommand="ListI_XYZDeclaration()" Look-LeftIconWidth="16" Look-LeftIconHeight="16" Look-
LeftIconUrl="../images/menus/document_add.gif" SecurityProfileRef="" SkinRef="DefaultSkin"
TranslationRef="" Target="" NavigateUrl="" />
                    <MenuItem ID="lblIXYZ_PCT" SortOrder="30" DWBId="3"
DisplayText="I(XYZ%)" ClientSideCommand="ListI_XYZ_PDeclaration()" Look-LeftIconWidth="16" Look-
LeftIconHeight="16" Look-LeftIconUrl="../images/menus/document_add.gif" SecurityProfileRef=""
SkinRef="DefaultSkin" TranslationRef="" Target="" NavigateUrl="" />
                    <MenuItem ID="lblIXYZ_PCT_T" SortOrder="40" DWBId="4"
DisplayText="I(XYZ%)" ClientSideCommand="ListI_XYZ_TDeclaration()" Look-LeftIconWidth="16" Look-
LeftIconHeight="16" Look-LeftIconUrl="../images/menus/document_add.gif" SecurityProfileRef=""
SkinRef="DefaultSkin" TranslationRef="" Target="" NavigateUrl="" />
                </MenuItem>
  </ContextMenu>

        <ContextMenu ID="FormulationContextMenuPrototypeAdvanced" Expanded="True"
DisplayText="--TopMenu" Orientation="Vertical" SecurityProfileRef="" SkinRef="" TranslationRef=""
Target="" NavigateUrl="" Sortable="true">
    <MenuItem ID="lblXYZ1" SortOrder="10" CssClass="hasIcon cssxIcoContext" DWBId="1"
DisplayText="{0} ... ( x, y )" ClientSideCommand="FormulationContextDeclaration( '{0}', 'IND_ITEM' )"
Look-LeftIconWidth="16" Look-LeftIconHeight="16" Look-
LeftIconUrl="../images/menus/document_add.gif" SecurityProfileRef="" SkinRef="DefaultSkin"
TranslationRef="" Target="" NavigateUrl="" />
    <MenuItem ID="lblIXYZ1" SortOrder="20" CssClass="hasIcon cssxIcoContext" DWBId="2"
DisplayText="{0} ... i ( x, y )" ClientSideCommand="FormulationContextDeclaration( '{0}', 'CMB_STMT' )"
Look-LeftIconWidth="16" Look-LeftIconHeight="16" Look-
```

© 2015 Oracle Corporation

```
LeftIconUrl="../images/menus/document_add.gif" SecurityProfileRef="" SkinRef="DefaultSkin"
TranslationRef="" Target="" NavigateUrl="" />
    <MenuItem ID="lblIXYZ_PCT1" SortOrder="30" CssClass="hasIcon cssxIcoContext" DWBId="3"
DisplayText="{0} ... i ( x%, y% ) of Item" ClientSideCommand="FormulationContextDeclaration( '{0}',
'CMB_STMT_PCT' )" Look-LeftIconWidth="16" Look-LeftIconHeight="16" Look-
LeftIconUrl="../images/menus/document_add.gif" SecurityProfileRef="" SkinRef="DefaultSkin"
TranslationRef="" Target="" NavigateUrl="" />
                <MenuItem ID="lblIXYZ_PCT_T" SortOrder="40" CssClass="hasIcon cssxIcoBreakdown"
DWBId="4" DisplayText="{0} ... i ( x%, y% ) of Total"
ClientSideCommand="FormulationContextDeclaration( '{0}', 'CMB_STMT_PCT_T' )" Look-
LeftIconWidth="16" Look-LeftIconHeight="16" Look-LeftIconUrl="../images/menus/document_add.gif"
SecurityProfileRef="" SkinRef="DefaultSkin" TranslationRef="" Target="" NavigateUrl="" />
  </ContextMenu>

        <ContextMenu ID="RootLIOContextMenuAdvanced" DisplayText="--TopMenu"
ContextMenu="Custom" Orientation="Vertical" SecurityProfileRef="" SkinRef="" TranslationRef=""
Target="" NavigateUrl="">
    <MenuItem ID="lblPerformActions" DisplayText="Perform Actions" Look-RightIconWidth="16"
Look-RightIconHeight="16" Look-RightIconUrl="../images/menus/media_play_green.gif"
SecurityProfileRef="" SkinRef="DefaultSkin" TranslationRef="" Target="" NavigateUrl="">
      <MenuItem ID="lblAddNewGroup" DWBId="Y" DisplayText="Add New Group" CssClass="hasIcon
cssxIcoAddNewGroup" ClientSideCommand="AddNewGroupPopup()" Look-LeftIconWidth="16" Look-
LeftIconHeight="16" Look-LeftIconUrl="../images/LIO/Groups.png" SecurityProfileRef=""
SkinRef="DefaultSkin" TranslationRef="" Target="" NavigateUrl="" />
    </MenuItem>
  </ContextMenu>
```

5. Adding a new LIO folder under PRODIKA_HOME\Config\Extensions
6. Adding js files for customizing displayed precision to PRODIKA_HOME\Config\Extensions\LIO\
7. Adding extensions folder to PRODIKA_HOME\web\css
8. Adding LIO.css to PRODIKA_HOME\web\css\extensions\
9. Updating web.config file in PRODIKA_HOME\web\gsm\
   - <LIOSettings handler="Class:Oracle.PLM4P.LIO.Lib.Config.AdvancedLIOSettingsConfigHandler,LIOLibrary" configExtends="file:%CONFIG_HOME%\DeployedConfig.config,DeployedConfig/Common/LIOSettings"/>
   - <Services>
     <LIOProfileService refscope="Session" factory="Singleton:Oracle.PLM4P.LIO.Service.LIOProfileServiceFactory,LIO"/>
10. Adding Jint.dll, LIO.dll and LIOLibrary.dll files in PRODIKA_HOME\web\gsm\bin\
11. Copy new LIO folder into PRODIKA_HOME\web\gsm\
12. Added LIO folder to PRODIKA_HOME\web\images

Note: If you use the Installer to "Remove" the LIO solution pack, the Jint.dll file will remain in PRODIKA_HOME\web\gsm\bin since it is used by multiple solution packs.

© 2015 Oracle Corporation