Laboratory Management

Guide to Setup and Processing

INFINIUM SOFTWARE

Copyright © 2008 by Infinium® Software, Inc. and/or its affiliates.

All rights reserved. The word and design marks set forth herein are trademarks and/or registered trademarks of Infinium Software, Inc. and/or its affiliates. All rights reserved. All other trademarks listed herein are the property of their respective owners.

Important Notices

The material contained in this publication (including any supplementary information) constitutes and contains confidential and proprietary information of Infinium Software, Inc.

By gaining access to the attached, you acknowledge and agree that the material (including any modification, translation or adaptation of the material) and all copyright, trade secrets and all other right, title and interest therein, are the sole property of Infinium Software, Inc. and that you shall not gain right, title or interest in the material (including any modification, translation or adaptation of the material) by virtue of your review thereof other than the non-exclusive right to use the material solely in connection with and the furtherance of your license and use of software made available to your company from Infinium Software, Inc. pursuant to a separate agreement (“Purpose”).

In addition, by accessing the enclosed material, you acknowledge and agree that you are required to maintain such material in strict confidence and that your use of such material is limited to the Purpose described above.

Although Infinium Software, Inc. has taken due care to ensure that the material included in this publication is accurate and complete, Infinium Software, Inc. cannot warrant that the information contained in this publication is complete, does not contain typographical or other errors, or will meet your specific requirements. As such, Infinium Software, Inc. does not assume and hereby disclaims all liability, consequential or otherwise, for any loss or damage to any person or entity which is caused by or relates to errors or omissions in this publication (including any supplementary information), whether such errors or omissions result from negligence, accident or any other cause.

Publication Information

Release: Infinium LA Release 12.3

Publication Date: June 2008

Document Number: 20080421121309

Table of Contents

About This Guide

This section focuses on the following information:

- Purpose of this guide
- Conventions used in this guide

Intended Audience

This guide is written for personnel who analyze and create formulas in a laboratory environment.

Purpose of This Guide

This guide will show your laboratory personnel how to create test formulas, analyze active and test formulas for proper chemical attributes and cost factors, and create breakdown codes for incoming materials.

Organization of This Guide

This guide is divided into parts. Each part contains overview and detail information. Appendices in this guide contain additional reference information.

Conventions Used in This Guide

This section describes the following conventions we use in this guide:

- Fonts and wording
- Function keys
- Character-based vs. Graphical Interface
- Prompt and Selection Screens
- Promptable fields

- Infinium applications and abbreviations

Fonts and Wording

Convention	Description	Example
Italic typeface	Menu options and field names The guide uses the same abbreviations as the screen.	*Work With Controls* Use *Max Lnth* to specify the maximum length of alpha user fields.
Bold standard typeface	Used for notes, cautions and warnings	**Caution:** You must ensure that all Infinium Laboratory Management users are signed off before reorganizing and purging. If there are jobs in the queue, those files will not be reorganized.
Bold monospaced typeface	Characters that you type and messages that are displayed	Type **A** to indicate that the position is alphanumeric and type **N** to indicate that the position is numeric. The following message is displayed: **Company not found**
F2 through F24	Keyboard function keys used to perform a variety of commands.	Press F2 to display a list of available function keys.
F13 through F24	Function keys higher than F12 require you to hold down the Shift key and press the key that has the number you require minus 12.	Press F19 to work with project and activity comments.

Convention	Description	Example
Select	Choose a menu option or choose a record or field value after prompting.	Select *Work with Customers* and press Enter. Select **C** (capitalization), **E** (expense) or **B** (both) as the *Capitalization code* value.
Press Enter	Provide information on a screen and when you have finished, press Enter to save your entries and continue.	Press Enter to save your changes and continue.
Exit	Exit a screen or function, usually to return to a prior selection list or menu. May require exiting multiple screens in sequence.	Press F3 to return to the main menu.
Cancel	Cancel the work at the current screen or dialog box, usually to return to the prior screen.	Press F12 to cancel your entries.
Help	To access online help for the current context (menu option, screen or field), press Help (or the function key mapped for help). To move through the other applicable levels of help, press Enter at each help screen. To return directly to the screen from which you accessed help, exit the help screen by clicking Exit or by pressing F3.	Press Help for more information about the current field.

Convention	Description	Example
[Quick Access Code]	Quick access codes provide direct access to functions. Some quick access codes in Infinium Laboratory Management consist of the first letter of each word of the menu option name. Quick access codes are listed on the Menu Tree and in the path for each task next to the executable function.	Select *Work with Customers* [WWC].
Publication and course titles	Unless otherwise stated, titles refer to Infinium applications and use standard name and abbreviations.	*Infinium Order Processing Guide to Setup and Processing* is referred to as *Infinium OP Guide to Setup and Processing.*

Function Keys

Infinium AM function keys and universal Infinium LA function keys for the IBM System i are described in the following table. All Infinium LA function keys are identified at the bottom of each screen.

Function Key	Name	Description
F1	Help	Displays help text
F2	Function keys	Displays window of valid function keys
F3	Exit	Returns you to the main menu
F4	Prompt	Displays a list of values from which you can select a valid entry

Function Key	Name	Description
F10	Quick Access	Enables you to access another function from any screen Type the quick access code in *Level*. You can change the application designator, such as PA, GL, LA and so forth, by selecting another application.
F12	Cancel	Returns you to the previous screen
F22	Delete	Deletes selected item(s)
F24	More keys	Displays additional function keys at the bottom of the screen

Prompt and Selection Screens

A prompt screen, similar to Figure 1, is the screen in which you type information to access a record or a subset of records in a file.

A selection screen, similar to Figure 2, is the screen from which you select a record or records to perform an action.

When we first explain a task in this guide, we fully document how you access a prompt and selection screen. If a related task uses that prompt or selection screen, we include the prompt and selection steps in that task. However, we do not include the screen(s) again.

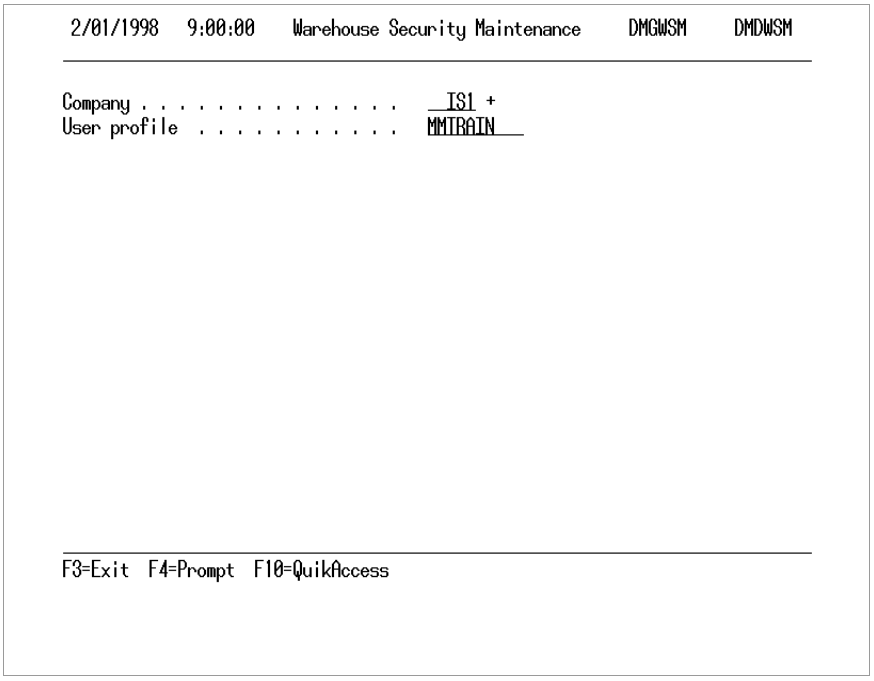


Figure 1: Warehouse Security Maintenance prompt screen

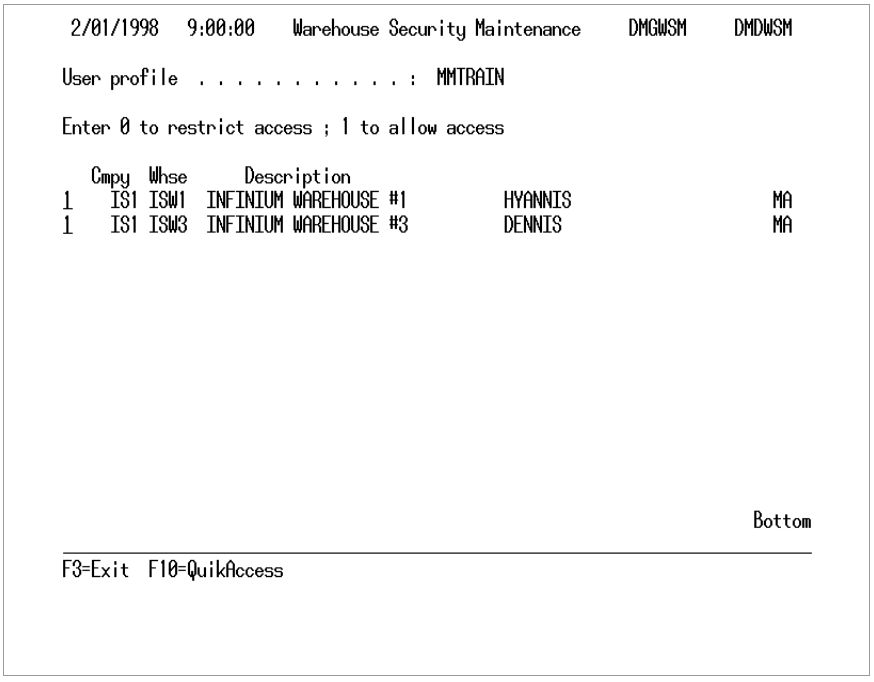


Figure 2: Warehouse Security Maintenance selection screen

Promptable Fields

A plus sign displayed next to a field indicates that you can choose your entry from a list of possible values. Place the cursor in the field and press F4 to display a list of values.

To select an entry perform one of the following:

- Position the cursor at the desired value, type `1` and press Enter.
- Type the value in the appropriate field.

Infinium Applications and Abbreviations

The following table lists Infinium names and the corresponding product abbreviations that are associated with this product.

Application	Abbreviation
Infinium Application Manager Infinium Application Manager Extended	Infinium AM Infinium AM/X
Infinium Query Infinium Query Extended	Infinium QY Infinium QY/X
Infinium Financial Management Suite	**Infinium FM**
Infinium Accounts Receivable	Infinium AR
Infinium Currency Management	Infinium CM
Infinium General Ledger	Infinium GL
Infinium Global Taxation	Infinium GT
Infinium Payables Ledger	Infinium PL
Infinium Project Accounting	Infinium PA
Infinium Purchasing/Payables Exchange	Infinium PX
Infinium Materials Management Suite	**Infinium MM**
Infinium Cross Applications	Infinium CA
Infinium Electronic Exchange	Infinium EX
Infinium Journal Processor	Infinium JP
Infinium Order Processing	Infinium OP
Infinium Purchase Management	Infinium PM
Infinium Process Manufacturing Suite	**Infinium PR**
Infinium Advanced Planning	Infinium MP

Application	Abbreviation
Infinium Formula Management	Infinium PF
Infinium Laboratory Management	Infinium LA
Infinium Manufacturing Control	Infinium MC
Infinium Regulatory Management	Infinium RM

Related Documentation

For further information about Infinium Laboratory Management, refer to the following documents:

- *Infinium Cross Applications Guide to System Controls and Materials Maintenance*
- *Program Reference Guide*
- *File/Field Descriptions*
- *Database Relations*
- Online Help

Chapter 1 Infinium Laboratory Management: An Overview

1

The chapter consists of the following topics:

Infinium Laboratory Management Overview

This section of the guide is an introduction to Infinium LA. Throughout this section, you learn about concepts that apply to laboratory management and the flow of the Infinium LA system.

Infinium LA and Infinium PF Integration

Infinium LA is a companion system to Infinium PF. Infinium LA encompasses formula analysis, chemical property calculations for formulas and raw materials, breakdown codes for incoming chemical substances, and the replacement of active formulas with test formulas for use in Infinium PF.

Infinium LA Files

Infinium LA uses three types of files:

- Control files, which you use to tailor the system to meet your needs.
- Utility files, which hold definitions that you enter for codes, such as breakdown codes and quality control test types.
- Master files, which hold information you enter for each raw material/resource, formula, and product.

You set up many of the control, utility and master files that affect Infinium LA in Infinium CA and Infinium PF.

Processing

Perform the functions listed below using Infinium LA. You learn about these topics in the Infinium PF class.

- Perform raw material and/or resource maintenance
- Create, modify, rebulk, copy, and replace formulas
- Enter formula descriptive information, material safety data sheet (MSDS) data, quality control target values, synonyms, and costs

Refer to the *Infinium Formula Management Guide to Formula Setup and Quality Control* for more information about the topics listed above.

You can also perform the functions listed below using Infinium LA. You learn about these topics in the Infinium LA class.

- Automatically reformulate to the percent solids, volatile organic compound (VOC), pigment volume concentration, or pigment-to-binder ratio you specify
- Perform “what-if” cost analyses

In Infinium LA, you can display and copy any existing formula; however, you can create and save changes to only those formulas/bills of material that have an active code of “test” or “remove.” This security feature helps you control the formulas/bills of material that are available for batch processing.

Formula Analysis Flow

Formula analysis allows you to perform a variety of simulations on active and test formulas, including ingredient substitutions and cost analyses. The diagram below illustrates the formula analysis processing flow of the Infinium LA system.

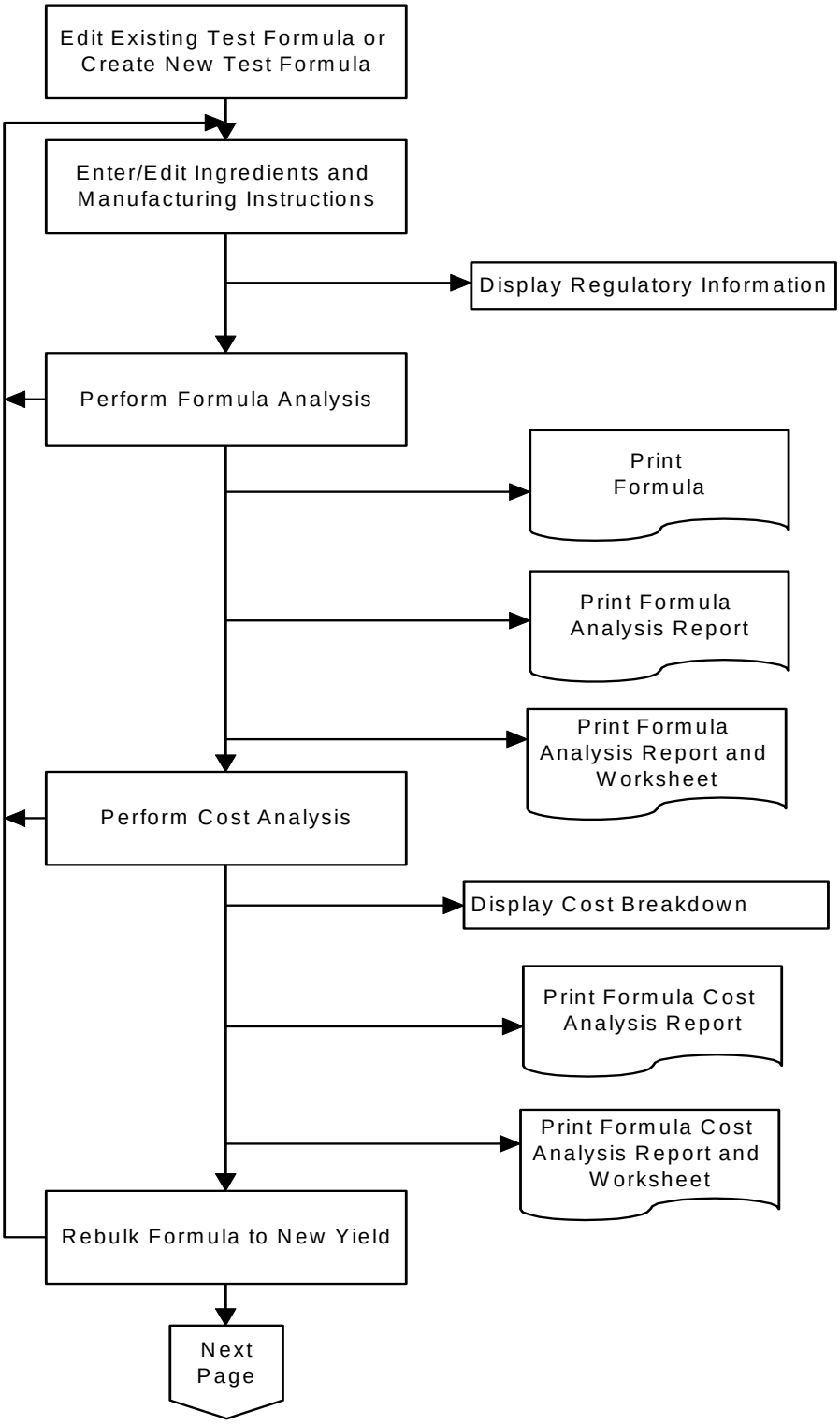


Figure 1-1: Formula Analysis Diagram

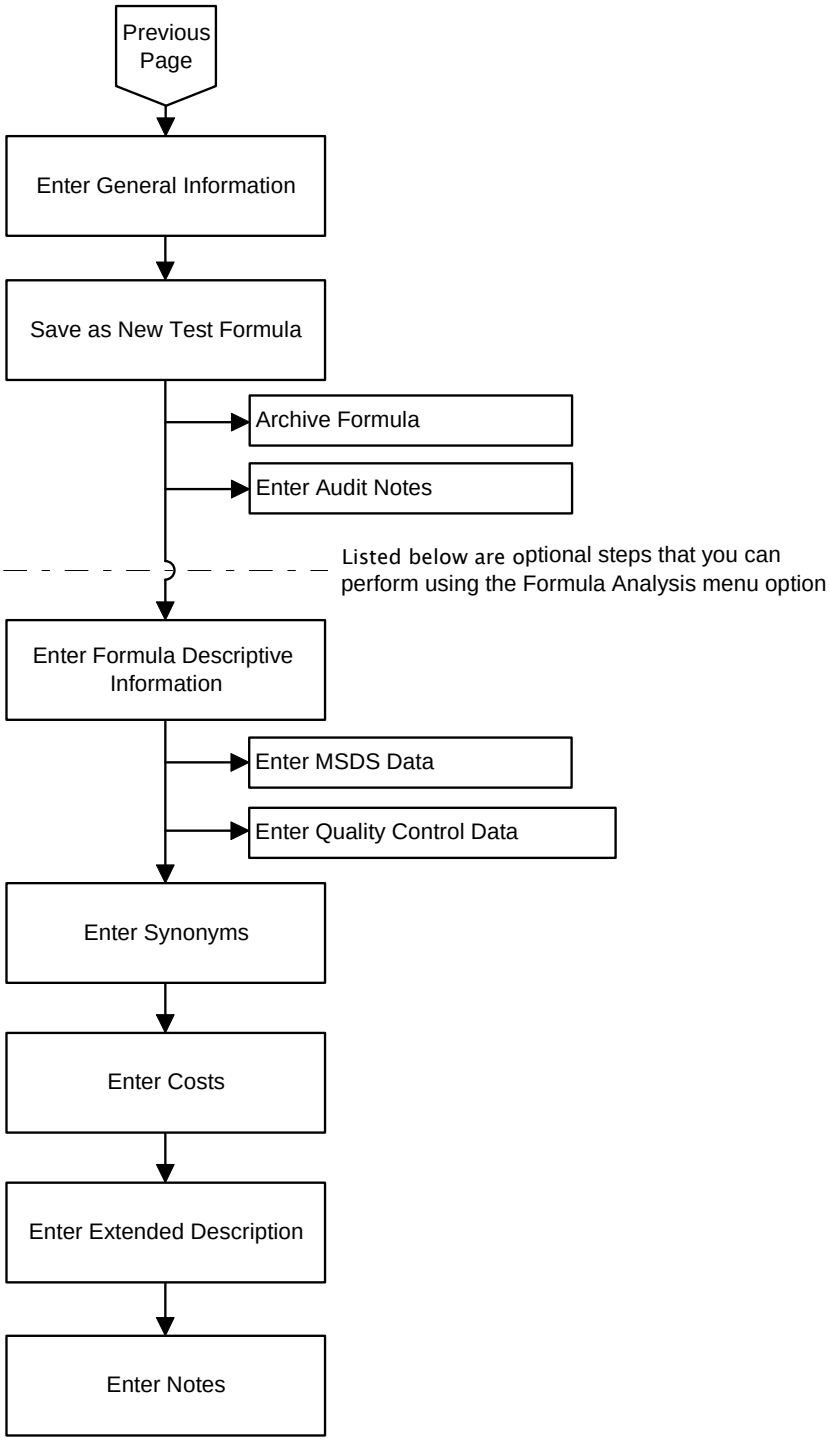


Figure 1-2: Formula Analysis Diagram continued

Formula Breakdown Analysis Flow

Raw material breakdown codes allow you to create formulas for raw materials, which themselves are compounds containing hazardous or regulated substances. Use these breakdown formulas to track the hazardous components using Infinium RM. The diagram below illustrates the formula breakdown analysis processing flow of the Infinium LA system.

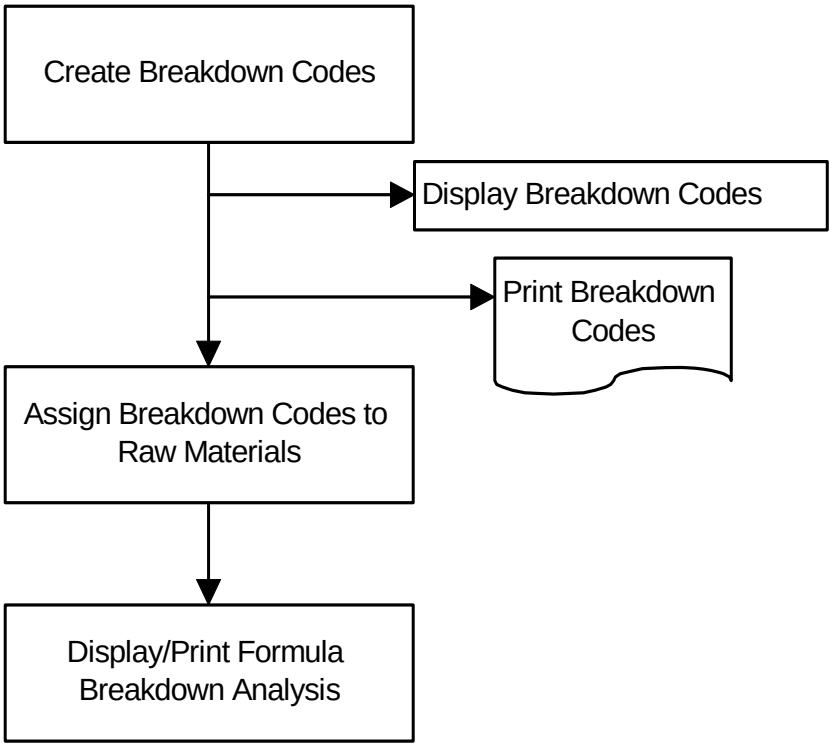


Figure 1-3: Formula Breakdown Analysis Diagram

Chemical Properties Flow

Use chemical property calculations to perform simulations using a variety of possible chemical attributes for a formula. These calculations can help you determine optimal ingredient combinations for desired target outcomes. The diagram below illustrates the chemical properties processing flow of the Infinium LA system.

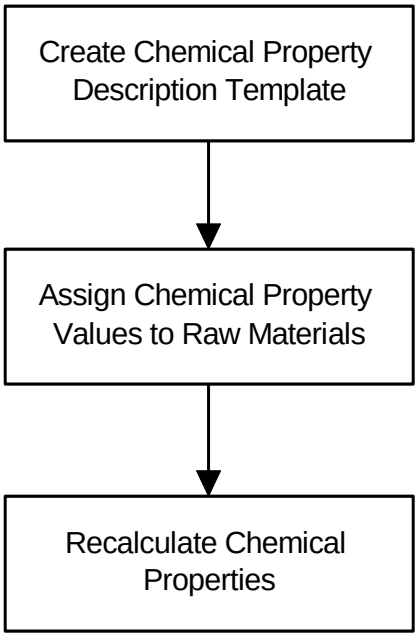


Figure 1-4: Chemical Properties Diagram

Displays and Reports

Use Infinium LA displays and reports to access the following formula information:

- Formula-level ingredient quantities at up to ten intermediate levels and at three user-defined nested breakdown levels
- Nested breakdown levels are discussed later in this guide.
- System-calculated formula values including VOC, weight and volume percent solids, solvent, exempt solvent, pigment, additive, resin, weight per gallon, and cost
- System-calculated values for each ingredient, including weight and volume percent, percent of cost, and percent of yield
- Formula comparisons
- Ingredient unit and extended costs
- Formula cost by warehouse, cost type, and cost code
- Quality control test template

System Utilities

Some of the Infinium CA and Infinium PF utilities that your system operator performs affect Infinium LA users. This guide reviews those utilities.

Terminology and Concepts

Active Code

An Active code is a code that indicates the status of a formula. Each formula in the Formula file has one of the following active codes:

1	Active
2	Test
3	Remove
4	Obsolete

When you use Infinium LA, you can display, work with, and copy any formula, but you can create and save only formulas that have an active code of “test“ or “remove.” Other implications of active codes include the following:

- You can use test formulas as ingredients in other formulas and assign them to products in the Product Master file. However, you cannot use test formulas/bills of materials in batches in Infinium MC.
- You cannot use a formula marked “remove” in other formulas/bills of materials, products, or production batches. When you run the Purge Formula Master File option, the system deletes formulas marked “remove” if the system does not use them in other formulas, products, or open production batches.
- To change the code of a formula to “active” or “obsolete,” use the Work with Formula option in Infinium PF. To replace an existing active formula with a test formula, use the *Replace Active Formula with Test* option in Infinium LA.

Additive

Additives are substances that are not part of the coating itself, but which you add to improve chemical properties. For example, use additives to prevent settling and freezing during storage, minimize foaming, adjust acidity and alkalinity (pH), and inhibit bacterial growth.

Binder

A binder is a resin, which binds the pigment into a continuous film and adheres the pigment to a surface.

Costing Program

The costing program is a program that runs continuously and automatically recalculates the cost and chemical properties of each affected raw material/resource, and/or product.

Your system operator must ensure that the costing program is running before users change fields related to cost or chemical properties. If you or an error end the costing program, the system does not keep costs and chemical properties up to date.

Coverage

Coverage is the amount of square footage a gallon spreads at 0.001 inch thickness.

Exempt Solvent

An exempt solvent is a solvent that is harmless to the environment, for example, water.

Extender

An extender is a carbonate or silicate pigment that has little hiding power unless used at high concentration and is used for flattening, color dilution, or thickening purposes.

Infinium LA uses the term “Pigment-Other” to identify an extender.

Entity Formula

A formula that is not associated with a specific company or warehouse. This formula is also referred to as a global formula.

Formula Instance

A single copy of a formula with the same formula identifier for which you modify its attributes to make it a unique formula. You create formula instances for formula variations. For example, you can create an instance of a formula and modify its ingredients, instructions, effective dates, and/or use by a specific location.

Formula/Bill of Material

Bills of material are groups of items that are assembled into a single item for inventory and sale. A bill of material can contain individual items or a subassembly that is another bill of material on file.

You can use Infinium LA to create and work with formulas and/or bills of material. The system treats a bill of material as a type of formula. Thus, the system is also referring to bills of material when fields and screens refer to “formula.”

Formula by Effective Date

You can create multiple instances of a formula with different effective dates. These formulas can be at the entity level or can be location-specific. You can use the same formula ID to create multiple instances of a formula and modify the effective dates and ingredients and/or instructions due to seasonal changes.

Formula by Location

These are formulas or bills of material that are specific to companies or warehouses. For example, you can create different versions of the same

formula or bill of material for a specific location using the same formula identifier or bill of material identifier.

Global Formula

A formula that is not associated with a specific company or warehouse. This formula is also referred to as an entity formula.

Formula Breakdown

A formula breakdown is a user defined and assigned ingredient code.

You can define 1-, 2-, and 3-digit breakdown codes and assign a breakdown code to each raw material/resource. Each digit of the code represents a nested level or sub-class, as shown in the following example:

P	Pigment
PO	Organic Pigments
POR	Organic Pigments, Red

In Infinium LA, you can print or display the breakdown of any formula. The breakdown report shows the total ingredient quantity at each nested level. The breakdown display shows only the first two levels.

Formula Cost

Formula cost is the cost of the formula.

The system tracks several costs for each formula and item. On some displays and reports, you specify which cost the system should use.

Unless you are using LIFO or FIFO costing, the system tracks up to nine cost types. They are:

Current	Previous
Anticipated	Weighted Average
Previous Year	Four User-Defined

You can specify a cost for each of these nine cost types for each raw material/ resource or purchased product using the *Formula Management* menu in Infinium PF. The system calculates the cost, by cost type, for each formula by totaling the costs for all the ingredients of the formula.

Unless you are using actual batch, LIFO, or FIFO costing, the system also tracks up to 28 user-defined cost codes, such as raw material, labor, burden, packaging, and freight. Assign cost codes to raw materials/resources and purchased products in Infinium PF. The system generates reports and displays that break the total cost of each formula and manufactured product into cost codes.

Entity, Company, Plant, and Warehouse Levels

The entity, company, plant, and warehouse hierarchy is the level at which you enter control information. The system follows a hierarchy when it retrieves this information. If you made an entry at the warehouse level, the system uses that value. If you did not make an entry at the warehouse level, but you made one at the plant level, the system uses the plant level value, and so on. If you did not enter lower-level information, Infinium LA uses the entity-level information. Thus, your lower-level entries override your higher-level entries.

When you are entering control information, start at the entity level. Specify information at a lower level only when you must override the entity-level value.

Infinium MM Suite

The Infinium MM Suite includes the following applications: Infinium CA, Infinium IC, Infinium PM, Infinium OP, and Infinium JP.

Infinium PR Suite

The Infinium PR Suite includes the following applications: Infinium PF, Infinium MP, Infinium RM, Infinium MC, and Infinium LA. Both the Infinium MM and Infinium PR suites use Infinium CA.

Non-Exempt Solvent

A non-exempt solvent is a volatile organic solvent that reacts in air to cause unfavorable atmospheric conditions. VOC calculations include non-exempt solvents.

Paint

A paint or coating consists of pigment that adds color and hides the surface and resin, which binds the pigment and provides adhesion, gloss, and durability. These materials are dispersed in solvents, which enable smooth and easy application, and evaporate as the film dries.

Pigment

A pigment is a fine, insoluble powder that imparts color and desired chemical properties, such as corrosion resistance, hardness, thickness, and flatness. Pigment coalesces into the resin binder.

Pigment-to-Binder Ratio

A pigment-to-binder ratio is the amount of pigment in relation to the amount of resin in a formulation. If you add more pigment to the resin, then the coating is less glossy.

PVC

PVC is the acronym for Pigment Volume Concentration, which is the percent by volume that the pigment occupies in the dry film. If the PVC increases, then the hiding properties increase.

Resin

Resin is a polymer used to impart hardness, flexibility, strength, adhesion, and chemical resistance in a variety of applications.

Resins vary according to the type of monomer (reactive chemical) used in the polymerization. Acrylic, alkyd, phenolic, epoxy, polyester, urea-formaldehyde, and melamine are common chemical types.

Solvent

A solvent is a volatile, liquid chemical that can dissolve solids and provide a thinner consistency.

Vehicle

A vehicle is the component of the paint or coating that carries the pigment, specifically resin and solvent.

VOC

VOC is the acronym for Volatile Organic Compounds, which evaporate and react in air to cause unfavorable atmospheric conditions. While these compounds are predominantly solvents, they can also be unreacted, volatile monomers.

The government regulates the amount of VOC allowed in products. Infinium LA uses calculation methods specified by the EPA.

Volatile Substance

A volatile substance is one that evaporates quickly.

Warehouse Security

Warehouse security within Infinium LA restricts the warehouse locations that a user can access. You can change the warehouse security restrictions for Infinium LA by using the Infinium CA *Work with User/Whse Security* function.

Notes

Chapter 2 Working with Formulas

2

The chapter consists of the following topics:

Overview of Formulas

This chapter of the guide discusses how you use formulas in Infinium LA.

After you complete this chapter, you should know how to do the following:

- Create a formula
- Add formula information
- Create synonyms
- Create extended formula descriptions
- Add formula item notes
- Modify, copy, and display formula records

Both Infinium LA and Infinium PF contain options for working with formulas.

The *Work with Formula Analysis* option in Infinium LA provides analytical capabilities and restricted access to the Formula Master file. Using this option, you can create new formula records and change, copy, rebulk, and display existing records.

The *Work with Formula* option in the *Formula Management* menu in Infinium PF is similar to *Work with Formula Analysis*, except that when you use the *Work with Formula Analysis* option, the following is true:

- You can create and save only formulas that have an active code of “test” or “remove.”
- You can access cost and chemical property analysis screens.
- You can perform automatic reformulation and “what-if” cost analyses.
- You cannot save cost changes.

Using the *Work with Formula Analysis* option in Infinium LA, you can create a formula only with an active code of “test” or “remove.”

The system displays several function keys at the bottom of the screens shown in this section, including F8 (Print), F13 (Formula Analysis) and F14 (FA Costing). These functions are discussed in the “Analyzing Formulas” chapter.

Formula by Effective Date (FBE)

You can create multiple instances (or variations) of a formula that are valid for specific timeframes only. You can use the same formula ID to create multiple instances of a formula and modify the effective dates and ingredients and/or instructions due to, for example:

- Seasonal changes
- Varying costs of raw materials

These formula instances can be entity level or location-specific formula instances.

In addition, you must define code values for the code type **FBE** to identify the purpose of the formula variation. You create these code values in *Code Value Maintenance* in Infinium CA. You then assign these code values to formula instances in *Work with Formula* in Infinium PF so that the combination of the FBE code value and formula ID is unique.

For example, you could define the formulas instances below for the Formula ID, Sugar Cookies.

Formula ID	FBE Code Value	Effective From Date	Effective Through Date
Sugar Cookies	Blank	Blank	Blank
Sugar Cookies	AUT	10/01/2002	11/30/2002
Sugar Cookies	WIN	12/01/02	12/31/2002
Sugar Cookies	VAL	01/01/2003	2/10/2003
Sugar Cookies	SPR	3/01/2003	04/30/2003

In the above example, if the manufacturing date is 10/9/2002, the system uses the formula instance with the FBE code, AUT. If the manufacturing date is 9/1/2002, the system uses the formula instance with the blank FBE code since no other instance contains effective dates that include the manufacturing date.

Throughout all of the MM/PR applications, if you have not implemented formula by location, the system resolves which formula instance to use by searching in the following order:

1. Formula with effective dates that include the date specified for the process you are performing
2. Formula that does not specify any effective dates

If the system does not find a formula with the specified formula ID in the formula heirarchy, the formula is invalid.

Formula by Location (FBL)

Depending on your user authority, you can create new instances of a formula that are specific to companies or warehouses. For example, you can create different versions of the same formula for a specific location using the same formula ID. This functionality gives you the ability to:

- Define formulas specific to a location that require different steps or resources
- Secure trade secrets by setting up location-specific formulas and securing them from other locations

In *Work with Formula* you can copy a formula for which you want to create a specific formula for a company and/or warehouse. This new copy of a formula is referred to as a formula instance. You can then specify the company and/or warehouse and make the necessary changes to the formula instance, such as, the ingredients, processing steps and resources.

When you specify a formula throughout most of the Infinium MM/PR applications, the system resolves which instance of the formula to use by searching in the following order

1. Formula at the warehouse level with effective dates
2. Formula at the warehouse level without effective dates
3. Formula at the company level with effective dates
4. Formula at the company level without effective dates
5. Formula at the entity level with effective dates
6. Formula at the entity level without effective dates

If the formula is not found within the heirarchy, the formula is invalid.

When creating a manufacturing batch in Infinium MC, the formula must be active; the system uses the same resolution when looking for the active formula to use.

For more information on setting up controls and security for formulas, refer to *Infinium CA Guide to System Controls and Materials Maintenance*.

Creating Formulas

When creating a formula, type information about formula ingredients, quality control data, and instructions, and then later add formula comments, cost data, and regulatory information.

Use the menu path below.

- *Work with Formula Analysis* [WWFA]

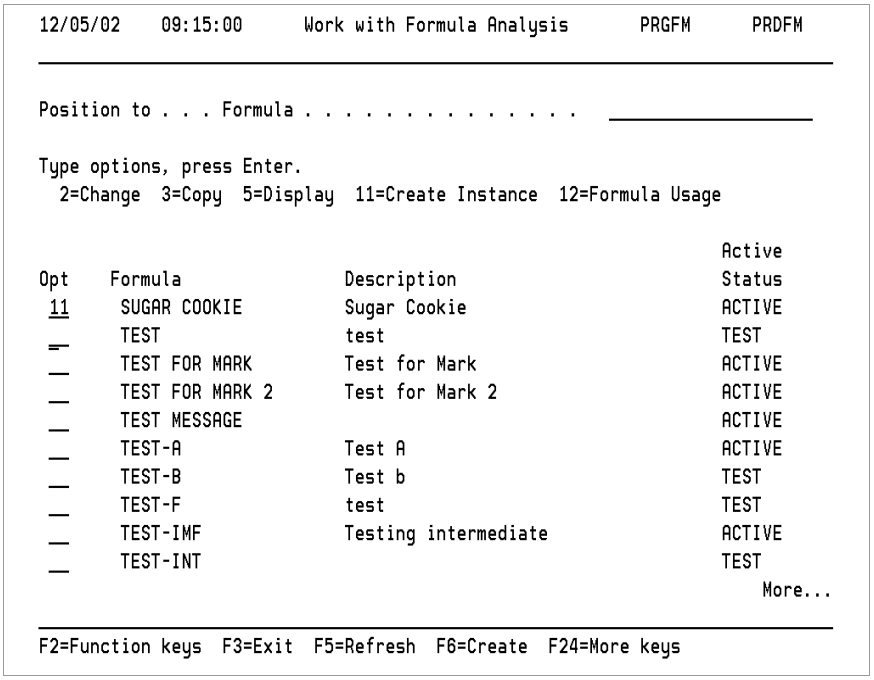


Figure 2-1: Work with Formula Analysis selection screen

To create an entity formula, type the identifier in the *Formula* field and press F6.

To create a new entity formula by copying an existing entity formula, type **3** beside the formula to copy.

To edit an existing formula, type **2** beside the formula and press Enter.

The ability to create, copy or change entity formulas is dependant on your user security.

Use Size Code

If you have set the *Use Size Code* field in the Infinium CA Control files to **N**, you cannot create a formula that has the same identifier as an existing product.

See the sections titled “Modifying Formulas,” “Copying Formulas,” and “Displaying Formulas,” for details on how to use those options to work with formula information.

Press F17 to access the Display Synonym screen. Type **6** in the *Opt* field on that screen to print a Formula Details report.

Refer to the *Infinium Formula Management Guide to Formula Setup and Quality Control* for detailed information about the Display Synonym screen and the Formula Details report.

Creating Formula Instances

You can create an instance of a formula using the Create Instance (**11**) option next to the entity formula on the Work with Formula Selection screen. You then select the formula instance and modify its attributes. You can define formulas that are:

- Location-specific
- Date-specific
- Location- and date-specific

Specifying Formula by Location Information

Before you can define a formula specific to a warehouse or company, you must first define the formula at the entity level.

To create a formula instance for a company and/or warehouse, type **11** (Create Instance) next to the entity formula on the Work with Formula Selection screen.

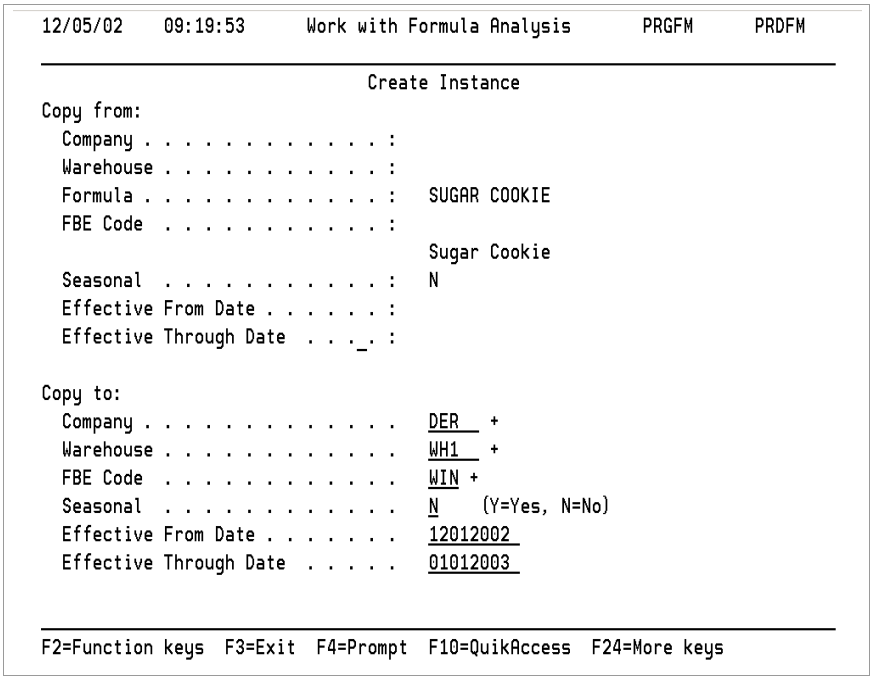


Figure 2-2: Create Instance screen

If no other instances of the formula exist, the system displays the Create Instance screen. If you have implemented formula by location, and you have the proper authority, you can override your default company and/or warehouse to specify the location for the new formula instance.

If one or more formula instances exist for the selected entity formula, the system displays the Formula Instance Selection screen from which you can select any instance of the formula to copy. If you have implemented formula by location and you have the proper authority, you can override your default company and/or warehouse to specify the location for the new formula instance on the Create Instance screen.

Specifying Formula by Effective Date Information

The fields below are used to define the timeframes that the formula instance is valid.

FBE Code

If an instance already exists at the same level within the formula hierarchy, you must specify a code value to identity the purpose of this formula instance. This value must be a valid value for the code type, **FBE**. You cannot assign the same value to an instance that is within the same level of the formula hierarchy.

Seasonal

Specify yes if this formula instance is a seasonal formula that you want to use each year during the specified effective dates; otherwise, specify no.

Effective From Date

Specify the month, day and year on which this formula instance becomes effective or leave blank for formulas that are not for a specific timeframe.

If this is a seasonal formula, this formula instance becomes effective each year on the month and day you specify.

Effective Through Date

Specify the month, day and year used to indicate the last day this instance is effective. Leave this field blank for formula instances where:

- A specific timeframe does not apply
- The effective timeframe has a beginning date and no ending date

If this is a seasonal formula, this formula instance is effective each year through the month and day you specify.

When you press Enter, the system returns you to the Work with Formula selection screen.

Modifying Other Attributes for the Formula Instance

To make additional changes to the formula instance you created, such as the ingredients, processing steps and resources, you must first select the entity formula with **2**.

If multiple formula instances exist for the formula you selected on Work with Formula selection screen, the system displays the entity formula and all of the formula instances to which you are authorized for that Formula ID on the Formula Instance Selection screen. Throughout the MM/PR applications, the system displays this screen when you select a formula that has one or more formula instances defined.

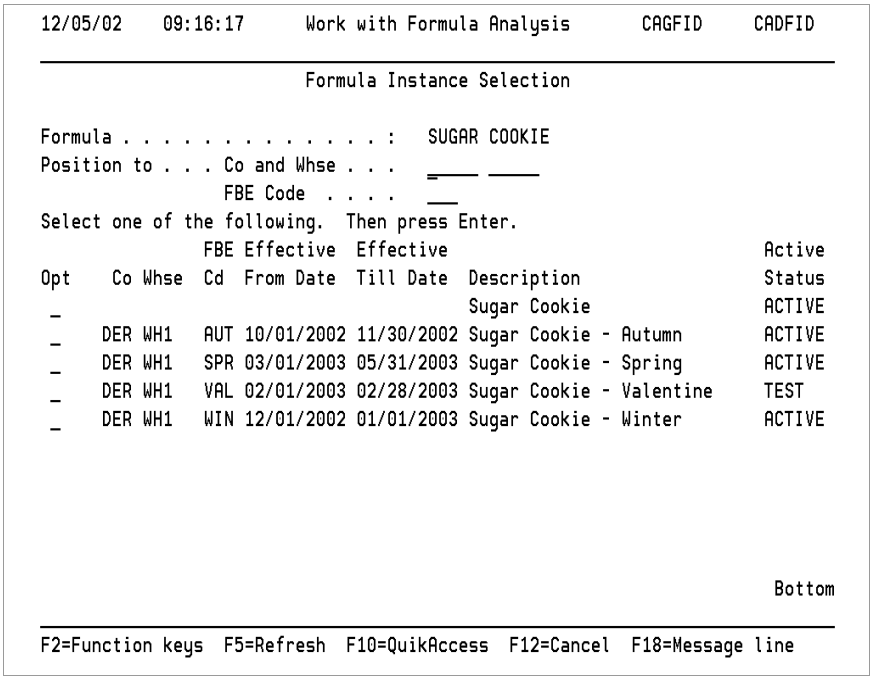


Figure 2-3: Formula Instance Selection screen

Select the formula that you want to modify.

Adding General Information to Formulas

The system displays the Formula Instance Selection screen in all of the MM/PR applications and functions if multiple formulas exist with the same Formula ID.

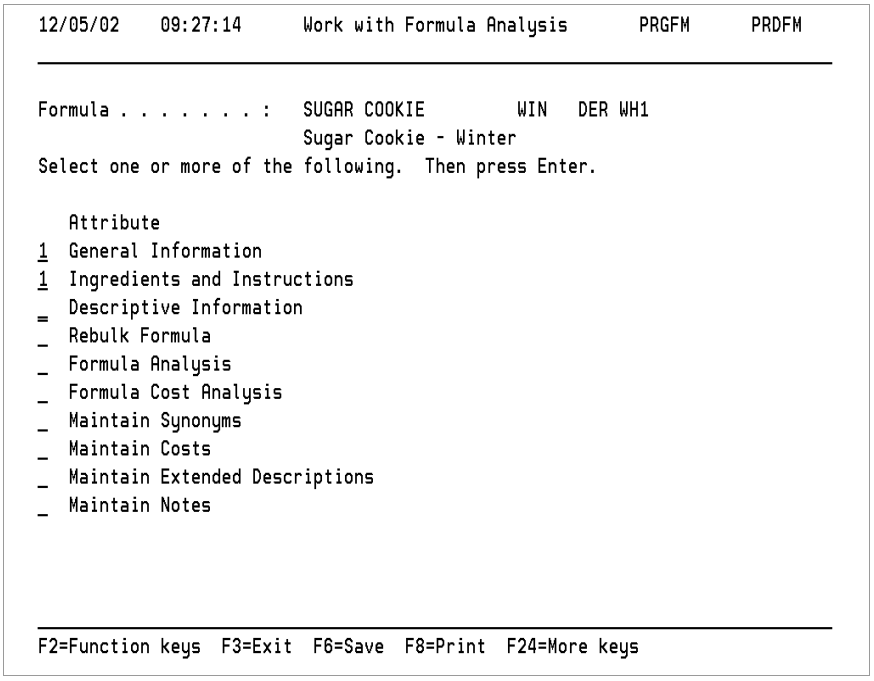


Figure 2-4 Work with Formula Analysis attribute selection screen

The system defaults to **1** in the field next to General Information because there are required fields associated with this attribute.

If you are modifying an instance of the formula that is location-specific, the FBE code, company and warehouse information displays next to *Formula* at the top of the screen.

Press Enter to add general information.

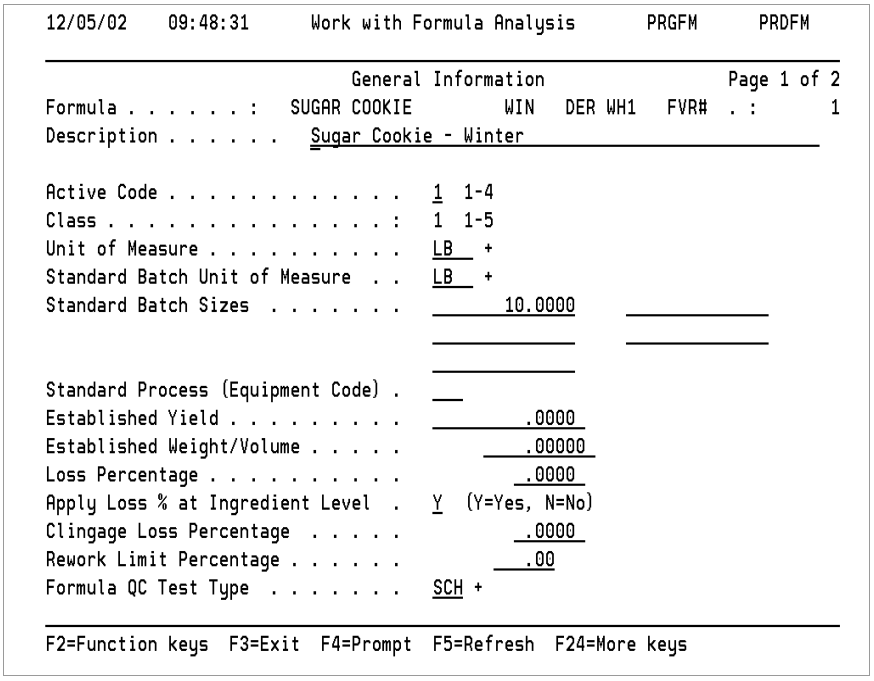


Figure 2-5: Work with Formula Analysis first general information screen

You must complete the *Active Code* and *Unit of Measure* fields. The system could also require an entry in the *Formula QC Test Type* field, depending on your system control settings.

FVR#

This field represents the current version number the system associates with the formula you selected. If you are creating a formula, the formula version number defaults to **0000**. The system automatically increases this field when you archive and/or save an audit record for this formula.

Description

The system adds the description you type in this field to the Synonym file.

Active Code

The default entry for this field is **2** (test). You can specify the *Active Code* for formula instances independently.

You can type **3** in this field to change the formula status to remove. Only the *Formula Management* menu in Infinium PF uses the active and obsolete codes, **1** and **4** respectively.

Class

This field designates formula categories. If you change the *Class* value in entity formulas and formula instances exist for the same formula ID, the system changes the *Class* value for those formula instances with the updated value you specified.

The following table defines class entries:

Code	Class	Description
1	Formula	Use this formula to manufacture a product. When maintaining formula instances, you cannot change this value. The value in this field must be the same for all formulas with the same Formula ID.
2	Raw Material Breakdown Formula	This formula defines a purchased raw material containing hazardous ingredients. If you can completely identify the percentages of all of the raw material components in the formula, create the formula here. If you do not know the entire composition of the formula, create the raw material breakdown formula in Infinium RM. Breakdown components are listed only on the Material Safety Data Sheet (MSDS); they are not costed or inventoried. Because the raw materials breakdown is not location specific, you cannot create location-specific formula instances for Class 2 formulas. Also, you cannot assign effective dates.
3	Intermediate Formula	Use this formula as an ingredient in other formulas/bills of material.

Code	Class	Description
4	Bill of Materials/Kit	This formula is the final formula in the kit hierarchy or this is a bill of materials. When a kit product is processed in Infinium OP, the formula you define here identifies the kit components. *Order Company* and *Line Item Ship-From Warehouse* are used to resolve the formula instances when processing kits.
5	Phantom Formula	Use this formula as an ingredient in other formulas/bills of materials. When you print a batch ticket for a formula containing this formula, the system lists the ingredients of this formula listed individually on the batch ticket.

Standard Batch Size Unit of Measure

The system uses this field in combination with the first *Standard Batch Sizes* field. The system uses only the first of the five standard batch size fields that are available.

Standard Batch Sizes

When you create a batch, the system copies the master formula into the batch, defaulting in the *Standard Batch Sizes* field value as the batch yield. You can change the batch yield and formula attributes for each batch without affecting the master formula.

Established Yield

If you leave the first *Standard Batch Sizes* field blank, the system first searches the *Established Yield* field for a value.

The system uses an established yield to account for a chemical reaction, evaporation, or any other condition that causes the theoretical batch yield to differ from the sum of the ingredient quantities.

Established Weight/Volume

The system defaults the calculated yield into the first *Standard Batch Sizes* field if you leave this and the *Established Yield* field blank. If you complete the *Established Yield* field, then you must also make an entry in the *Established Weight/Volume* field.

Loss Percentage

This field handles spillage. For example, you could include a permanent loss factor due to spillage. If you make an entry in this field, the system applies the loss factor in Infinium MC against the batch yield.

Apply Loss % at Ingredient Level

Use this field to indicate whether or not to apply a loss factor at the ingredient level. If you type **Y**, the system applies the loss factor you assigned at the individual ingredient level to calculate the required quantity of the item and its cost. Type **N** for the system to perform these calculations using the loss factor you assigned to the formula or batch.

Clingage Loss Percentage

If there is loss due to clingage, type the value that represents the percentage of total yield that is lost when this formula is packaged or used due to clingage.

Rework Limit Percentage

This field identifies the maximum percentage of rework that you can add to this formula during manufacturing control.

Formula QC Test Type

Specify the test type you are assigning to this formula in this field. You can set the *Formula QC Test Type* for formula instances independently.

To assign a test type to a formula, you must set up your system to validate quality control test types. To do this, select the *Work with Entity Controls* option from the *Control Files* menu in Infinium PF. Type **Y** in the *Validate Formula QC Type Code* field. The *Formula QC Test Type* field does not display if you set this control to **N**.

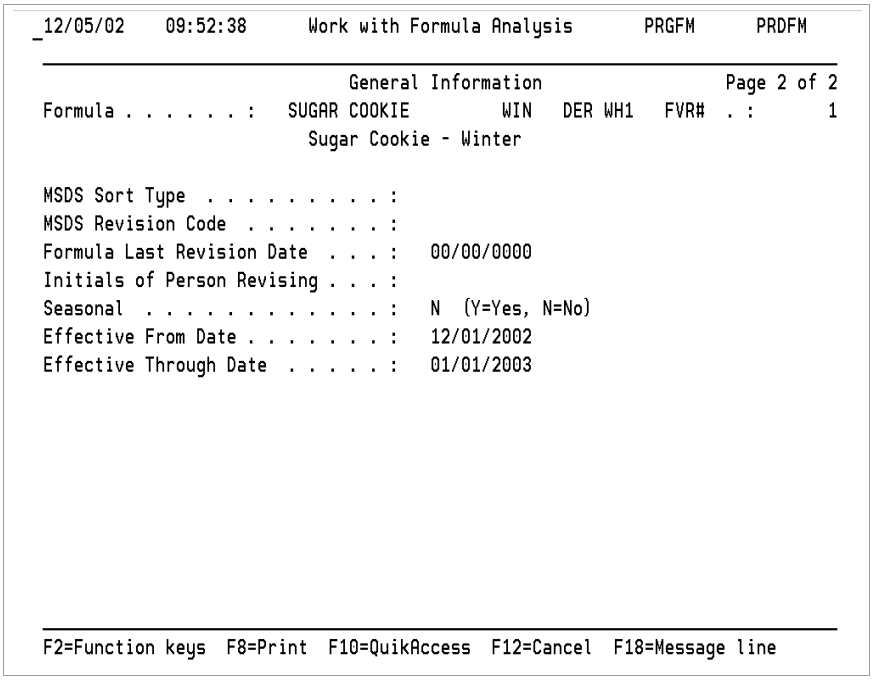


Figure 2-6: Work with Formula Analysis seond general information screen

Use this screen to define the following information:

- Regulatory data for the formula
- Effective date information

Infinium programs do not use the *MSDS Sort Type* field at this time.

MSDS Revision Code

This field is a print indicator for the Material Safety Data Sheet (MSDS). If you change this value, the next time a product made from this formula is ordered through Infinium OP, the system prints a new Material Safety Data Sheet. The MSDS revision code prints on your Material Safety Data Sheet and the system records the information in the history and archive files.

Formula Last Revision Date

The system displays the last date when you changed information that affects the MSD Sheet this formula generates. You can include this information on MSD Sheets.

Initials of Person Revising

Infinium programs do not use the *Initials of Person Revising* field at this time.

Press Enter to return to the Work with Formula attribute screen.

WARNING! If you produce products that require a unique MSDS due to ingredient differences in the hazardous raw materials, you must create a separate formula and product (finished good). This formula must be an entity level formula with no corresponding formula instances. In this scenario, Infinium RM generates the appropriate MSDS.

Specifying Formula by Effective Date Information

The fields below are used to define the timeframes that the formula instance is valid.

Seasonal

Specify yes if this formula instance is a seasonal formula that you want to use each year during the specified effective dates; otherwise, specify no.

Effective From Date

Specify the month, day and year on which this formula instance becomes effective or leave blank for formulas that are not for a specific timeframe.

If this is a seasonal formula, this formula instance becomes effective each year on the month and day you specify.

Effective Through Date

Specify the month, day and year used to indicate the last day this instance is effective. Leave this field blank for formula instances where:

- A specific timeframe does not apply
- The effective timeframe has a beginning date and no ending date

If this is a seasonal formula, this formula instance is effective each year through the month and day you specify.

Maintaining Formula Ingredients and Instructions

The system displays this screen when you type any character next to the Ingredients and Instructions attribute on the Work with Formula Analysis attribute screen.

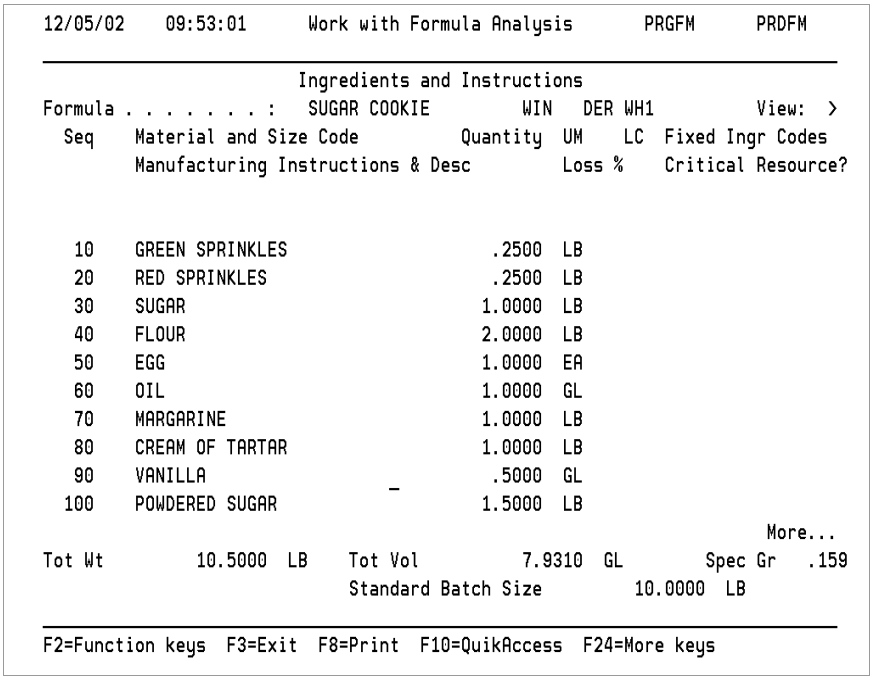


Figure 2-7: Work with Formula Analysis Ingredients and Instructions screen

Use this screen to build your formula. You must complete the *Seq*, *Quantity, UM* and *Critical Resource?* fields.

Seq

This field refers to the sequence number that you use to sort your formula information. When you type items on the first line and press Enter, the system moves them to their proper location by sequence number. You can also use the preset sequence number lines to type information.

You can type lines of ingredients, instructions, and comments in any sequence, as long as each line has a unique sequence number.

Material

Add ingredients to the formula by completing the *Material* field. Formula ingredients can include raw materials/resources, intermediate formulas, and products. If you add a product using size codes as an ingredient, you must also complete the *Size Code* field.

You can press F4 to display a list of ingredients from which you can select a valid entry.

If the material you type in the *Material* field is invalid, the system retrieves the Synonym file, where you can search for a material or intermediate formula. Press F16 to create or access a raw material record.

If you are maintaining an FBL formula and either add a hazardous material to the formula or delete a hazardous material from the formula, the system displays the following message:

> **Warning: Hazardous Material has been added/removed. Choose Override.**

You must press F21 to continue.

WARNING! If you produce products that require a unique MSDS due to ingredient differences in the hazardous raw materials, you must create a separate formula and product (finished good). This formula must be an entity level formula with no corresponding formula instances. In this scenario, Infinium RM generates the appropriate MSDS.

Quantity

Use this field to indicate the amount of this item to include in this formula.

UM

The *UM* field value defaults from the inventory unit of measure for the product or raw material. You can change the default value as long as you establish the conversion for the unit of measure in the Unit of Measure Conversion file.

LC

This field contains the cost code. After you press Enter, the system defaults the cost codes associated with the ingredients or resources you used for this formula.

Fixed Ingr Codes

Fixed ingredient codes are hold codes the system uses during the rebulking process. Valid entries for the first fixed ingredient code field are listed below.

H Holds the quantity and cost of the line item constant when you rebulk the formula. Use this code mainly for catalysts.

S A standard hold for overhead items, holding the quantity and cost constant for this line item. Use this code if you want the system to calculate cost based on the standard batch size.

V A variable hold code that you assign in the *Formula Management* menu and use in Infinium MC to calculate a variable hold on an item. This code uses standard batch size for costing and also for quantity recalculation in Infinium MC.

F The only valid entry for the second *Fixed Ingr Codes* field. When you change the quantity of the ingredient with this code and then press F15, the system applies the percentage increase/decrease in the ingredient's quantity to all nonheld ingredients.

X This entry in the third fixed ingredient code acts the same as **H** does in the first, but only in Infinium LA.

Refer to the *Infinium Formula Management Guide to Formula Setup and Quality Control* for an in depth discussion of fixed ingredient codes.

Manufacturing Instructions & Desc

The system defaults the ingredient description in the *Manufacturing Instructions & Desc* field you made an entry in in the *Material* field.

To add comments or text to a formula, assign a sequence number and type the text or a comment code in the *Manufacturing Instructions & Desc* field.

You can create basic, variable, and subtotal comments, which the system maintains in a Comments file. All comment identifiers must begin with **CM** and can be up to 39 alphanumeric characters long.

Refer to the *Infinium Formula Management Guide to Formula Setup and Quality Control* for more information about creating formula comments.

Loss %

The system displays the loss percentage you assigned to this material in this field.

Critical Resource?

You can make an entry in the Control files so that the system defaults either **N** or **Y** in this field.

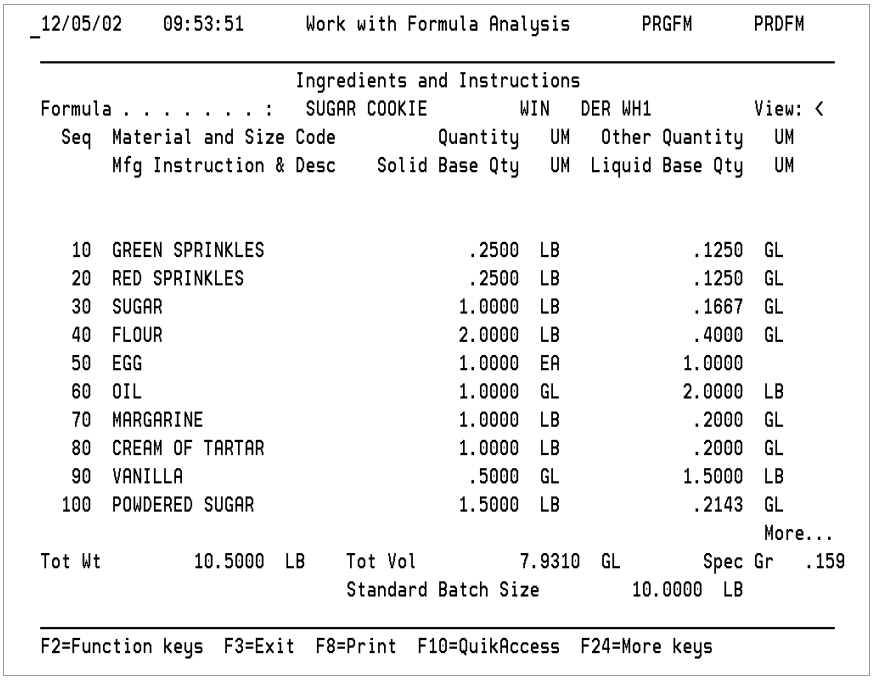
Infinium MP uses this field on the Rough Cut Capacity report. If you set the parameter for the report to **Y**, the system includes only products you mark as critical resources at the formula level on this report.

The total weight, total volume, and yield display at the bottom of this screen. After you save the formula, the system displays the standard batch size.

The system displays the specific gravity of the formula at the bottom of the screen only if you set the *Display Specific Gravity* field to **Y** in the Infinium PF Control files.

Formula Ingredients Alternate View

The system displays this screen when you press F20 from the Work with Formula Analysis Ingredients and Instructions screen.



```
_12/05/02    09:53:51      Work with Formula Analysis       PRGFM      PRDFM

                          Ingredients and Instructions
Formula . . . . . :   SUGAR COOKIE         WIN   DER WH1          View: <
  Seq  Material and Size Code          Quantity   UM   Other Quantity   UM
       Mfg Instruction & Desc    Solid Base Qty   UM  Liquid Base Qty   UM


   10  GREEN SPRINKLES                   .2500  LB             .1250  GL
   20  RED SPRINKLES                     .2500  LB             .1250  GL
   30  SUGAR                            1.0000  LB             .1667  GL
   40  FLOUR                            2.0000  LB             .4000  GL
   50  EGG                              1.0000  EA            1.0000
   60  OIL                              1.0000  GL            2.0000  LB
   70  MARGARINE                        1.0000  LB             .2000  GL
   80  CREAM OF TARTAR                  1.0000  LB             .2000  GL
   90  VANILLA                           .5000  GL            1.5000  LB
  100  POWDERED SUGAR                   1.5000  LB             .2143  GL
                                                                      More...
Tot Wt         10.5000  LB    Tot Vol          7.9310  GL        Spec Gr   .159
                              Standard Batch Size         10.0000  LB

F2=Function keys  F3=Exit  F8=Print  F10=QuikAccess  F24=More keys
```

Figure 2-8: Ingredients and Instructions alternate screen

Other Quantity

This field displays the quantity of the ingredient this formula uses in its companion unit of measure. If you established a companion unit of measure for the unit of measure you specified on the previous screen, the system calculates this field based on the unit of measure and companion unit of measure conversions.

Solid Base Qty

This field displays the quantity calculated from the base unit of measure you established for the unit of measure that defines the quantity of ingredients

this formula uses. When you type a quantity and unit of measure on the previous screen, if the unit of measure is different from its base unit of measure, the system calculates and displays the solid base quantity.

The calculation is based on the unit of measure conversion you established using the *Work with UM Conversions* option in Infinium CA.

Maintain units of measure and companion units of measure using the *Work with UM Definitions* option in Infinium CA. Maintain unit of measure conversions using the *Work with UM Conversions* option in Infinium CA.

Liquid Base Qty

This field displays the quantity calculated from the base unit of measure established for the unit of measure. This defines the quantity of ingredients this formula uses. When you type a quantity and unit of measure on the previous screen, if the unit of measure is different from its base unit of measure, the system calculates and displays the liquid base quantity.

The calculation is based on the unit of measure conversion established using the *Work with UM Conversions* option in Infinium CA.

Press F19 to return to the Ingredients and Instructions screen.

Press F3 to save this formula.

Formula Ingredients Exit Options

The system displays the Exit Options window when you press F3 if you are creating a new formula or changing an existing formula.

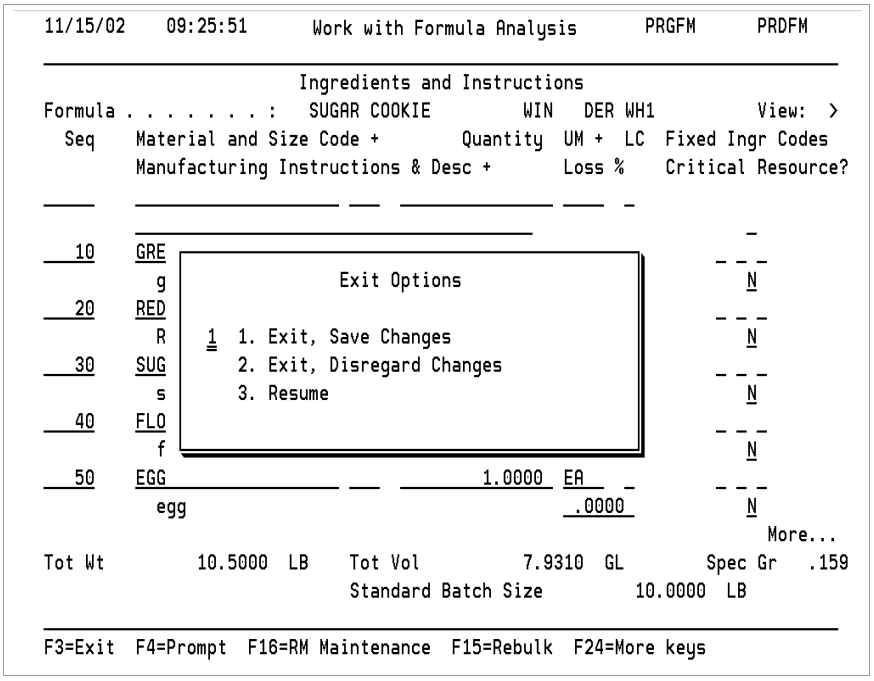


Figure 2-9: Exit Options window

Type the appropriate exit option and press Enter.

Formula Update Confirmation

The system displays the Work with Formula Analysis Formula Update Confirmation screen when you select an option from the Exit Options window.

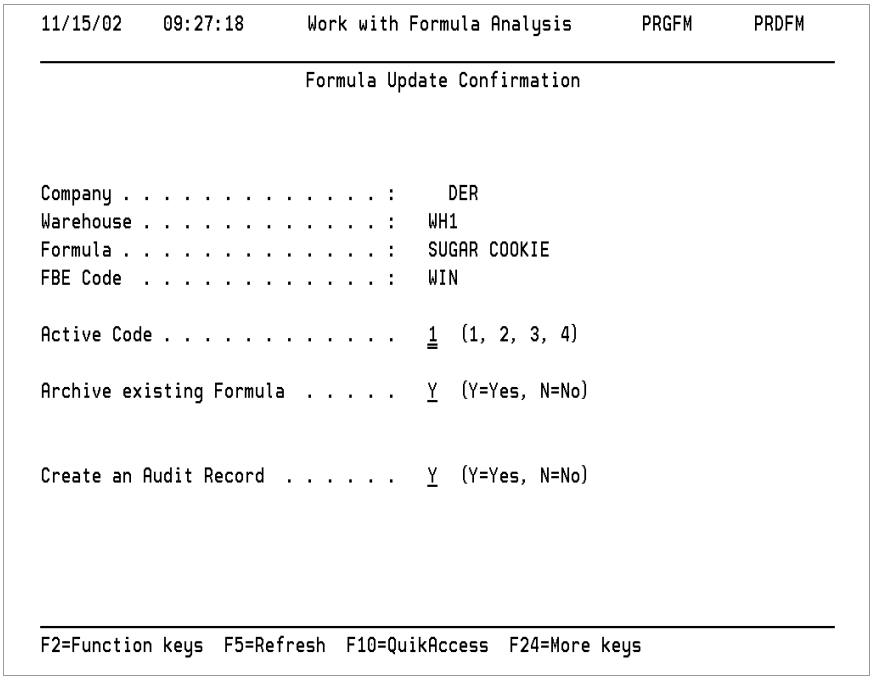


Figure 2-10: Formula Update Confirmation screen

Acitve Code

Only **2** (Test) or **3** (Remove) are valid entries for a laboratory formula.

Archive existing Formula
Create an Audit Record

If you type **Y** in either the *Archive existing Formula* or *Create an Audit Record* field, the formula version number increases. Formula instances are archived with their own version number.

Press Enter to record your entries.

Adding Formula Information

After you create a formula record, select the *Work with Formula Analysis* option to work with formula data.

Use the menu path below.

- *Work with Formula Analysis* [WWFA]

```
12/10/97     9:46:18      Work with Formula Analysis       PRGFM      PRDFM
_____________________________________________________________________________

Position to . . . Formula . . . . . . . . . . . . . .  _________________

Type options, press Enter.
  2=Change  3=Copy  5=Display  12=Formula usage

                                                                    Active
Opt     Formula             Description                             Status
 __     FORM11              Xynomune in Liquid X Solution           ACTIVE
 2_     FORM15              Laboratory Formula                      TEST
 __     GLG                 CONTAINER BOM FOR GOLF KIT BOX          ACTIVE
 __     GOLF IRONS          GOLF IRONS                              ACTIVE
 __     GOLF KIT FORMULA    GOLF KIT FORMULA                        ACTIVE
 __     GOLF WOODS          GOLF WOODS                              ACTIVE
 __     HAZRAW01            RAW MATERIAL BREAKDOWN                  ACTIVE
 __     IRB                 CONTAINER BOM FOR IRONS EA              ACTIVE
 __     WOB                 CONTAINER BOM FOR GOLF WOODS BOX        ACTIVE

                                                                      Bottom
_____________________________________________________________________________
F2=Function keys  F3=Exit  F5=Refresh  F6=Create  F24=More keys
```

Figure 2-11: Work with Formula Analysis selection screen

Type **2** in the *Opt* field and press Enter to modify an existing formula.

Formula Attributes

When you are working with an existing formula, the Work with Formula Analysis attribute screen displays additional attributes to help you further define your formula.

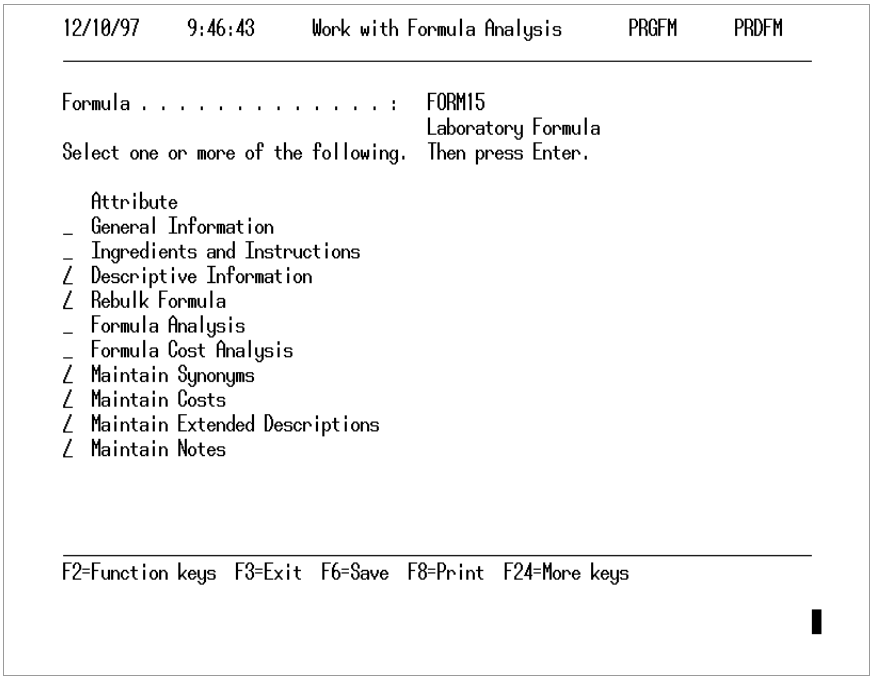


Figure 2-12: Work with Formula Analysis attribute screen

Type any character next to the attributes that you are selecting and press Enter, or press F9 and the system displays all attribute screens sequentially.

The Formula Analysis and Formula Cost Analysis attributes are discussed in the “Analyzing Formulas” chapter.

Adding Descriptive Formula Information

The system displays this screen when you select the Descriptive Information attribute from the Work with Formula Analysis attribute screen.

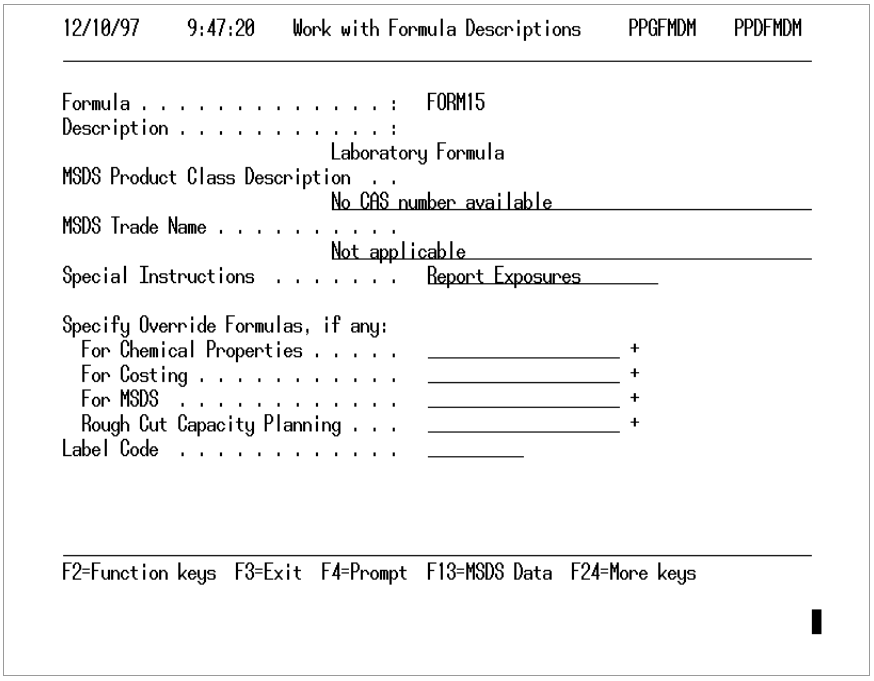


Figure 2-13: Work with Formula Descriptions screen

Description

The entry in this field defaults from the description you type on the Work with Formula Analysis General Information screen.

Material Safety Data Sheets use the *MSDS Product Class Description* and *MSDS Trade Name* field descriptions. These entries automatically become synonyms.

Specify Override Formulas, if any:

The override formula fields allow you to refer to other formulas for chemical property, costing, MSDS, and rough cut capacity planning information.

When materials are mixed, a chemical reaction can occur that alters the physical characteristics of the formula. If this happens, you must create an override chemical property and/or Material Safety Data Sheet formula so that the system can note the true breakdown of the original formula.

If you specify a chemical properties override for a formula, the system displays a message on several screens that an override exists. The system displays the message each time you access the formula.

You can override a formula for any instance but the formula used as an override must be an entity-level formula. If you specify an override for a formula instance, the override is used only for that specific instance of the

formula. That is, you can specify different overrides for formula instances that have the same formula ID.

The system resolves the formula using the resolution hierarchy below.

1 Override Formula at the entity level with effective dates

2 Override Formula at the entity level without effective dates

3 Original Formula

At the time of processing, if the overriding formula does not have dates that are effective for the production date and there is no entity-level formula without dates, the override is ignored and the original formula is used.

With the exception of the costing override, the system uses the entity level formulas when resolving the override formulas. If you specify an override formula in *For Costing*, the system resolves to the correct instance of the formula.

For Costing

Use this override field to have the system retrieve the cost of another formula.

Label Code

This field is for information only.

If you have Infinium RM, press F13 on this screen to access regulatory information. To access quality control information, press F14.

Refer to the *Infinium Regulatory Management Guide to Setup and Processing* for a detailed discussion of the MSDS fields. Refer to the *Infinium Formula Management Guide to Formula Setup and Quality Control* for a detailed discussion of quality control issues.

Press Enter to continue.

Rebulking a Formula

The system displays this screen if you select the *Rebulk Formula* attribute from the Work with Formula Analysis attribute screen.

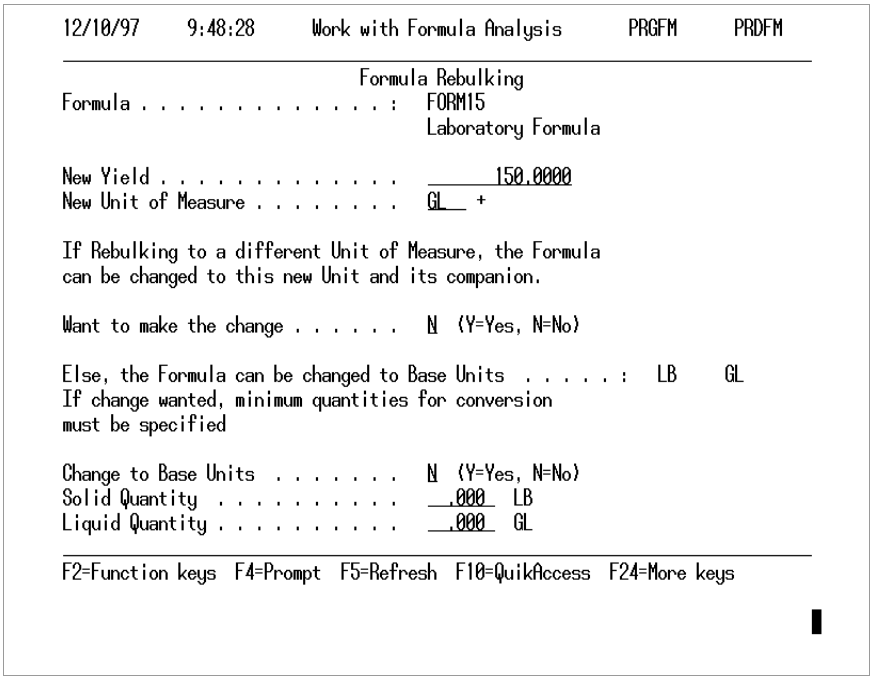


Figure 2-14: Formula Rebulking screen

When you rebulk a formula, you change the yield and/or the formula unit of measure. The ingredient proportions remain constant if you do not use fixed ingredient codes, which were discussed earlier in this topic.

New Yield

Complete this field to enter a new yield for this formula. The *New Yield* field value must be greater than zero.

New Unit of Measure

Complete this field to enter a new unit of measure for this formula.

To display the results of your changes, select the Ingredients and Instructions attribute on the Work with Formula Analysis attribute screen.

Want to make the change

The default entry for this field is **N**. Type **Y** for the system to rebulk your formula to a unit of measure other than its established unit of measure. This permanently changes the units of measure for the formula and the ingredients to the rebulking unit of measure and its companion unit of measure.

Change to Base Units

The default entry for this field is **N**, which indicates that the system will not change the ingredient units of measure during rebulking. Type **Y** to have the system convert the ingredient units of measure during rebulking to the base units of measure.

If you type **Y** in the *Change to Base Units* field, you must type **N** in the *Want to make change* field. The system does not accept **Y** in both fields at the same time.

Solid Quantity, Liquid Quantity

If you are changing the formula and ingredients to base units of measure, you can specify a minimum cutoff value in these fields. The system will not convert values less than the number you type here during the rebulking process.

Remember that quantities and costs are held constant in rebulking for ingredients with a fixed ingredient code of **H**, **S**, or **V**. The system costs ingredients coded **S** and **V** based on the standard batch size. Refer to the *Infinium Formula Management Guide to Formula Setup and Quality Control* for more information about fixed ingredient codes.

Press Enter to continue.

Maintaining Formula Synonyms

The system displays this screen if you select the Maintain Synonyms attribute from the Work with Formula Analysis attribute screen.

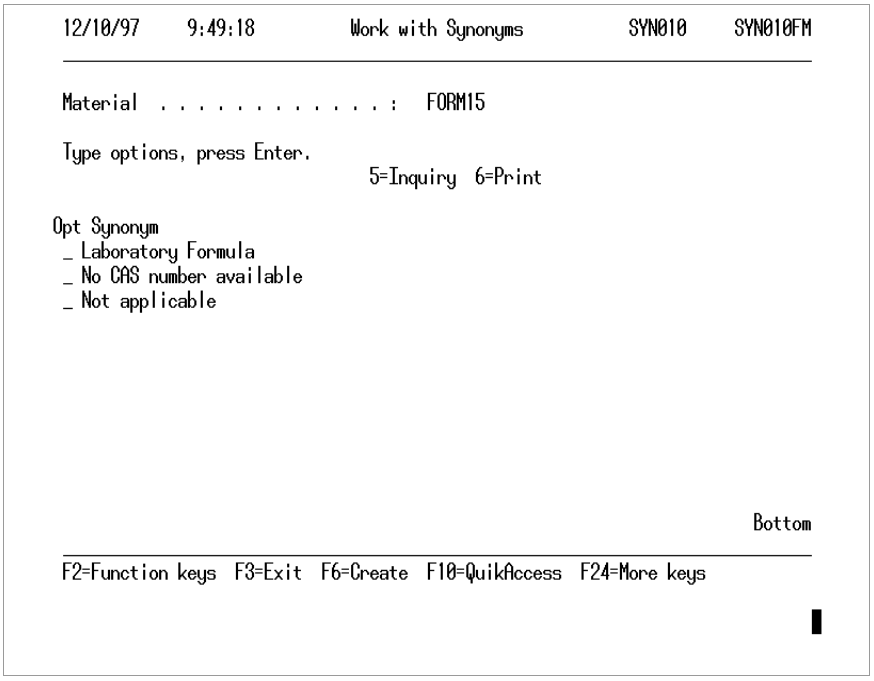


Figure 2-15: Work with Synonyms selection screen

Synonyms can be user-defined or system generated. Determine whether a synonym is user-defined or system generated by how it displays.

You cannot change or delete system-created synonyms from this screen, which display without an underline. To alter a system-created synonym, you must change the entry in the formula record. Refer to the *Infinium Formula Management Guide to Formula Setup and Quality Control* for more information about changing the formula record.

The synonym shown on the screen above is system-generated.

To display a synonym, type **5** in the *Opt* field and press Enter. To print a synonym, type **6** in the *Opt* field and press Enter.

Press F6 to create a user-defined synonym.

Creating a Synonym Identifier

The system displays this screen when you press F6 on the Work with Synonymns selection screen.

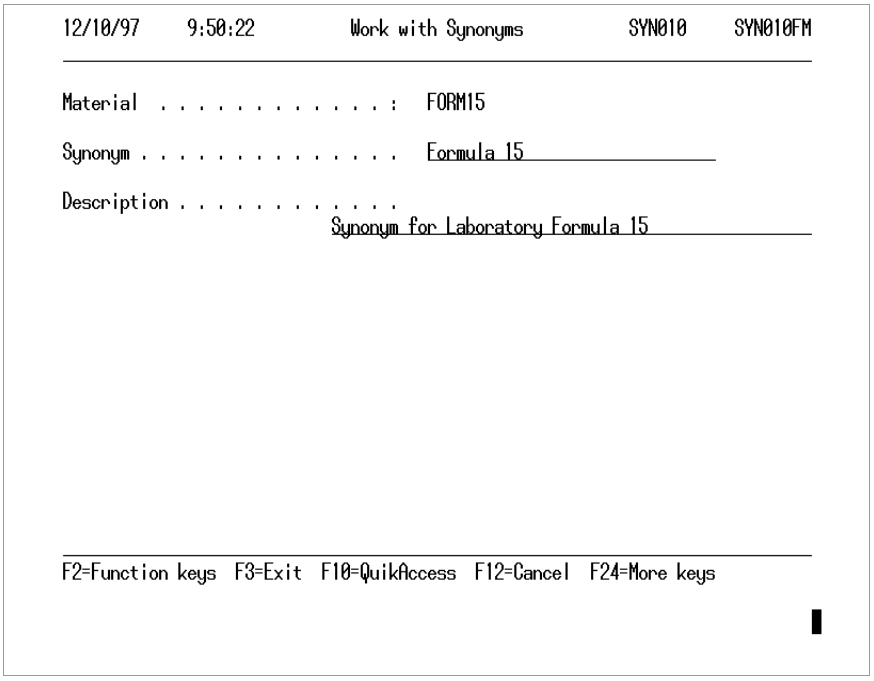


Figure 2-16: Work with Synonyms screen

Complete the *Synonym* field with the synonym identifier. The description you give this synonym becomes its text reference. Press Enter to add this synonym to the Synonym file.

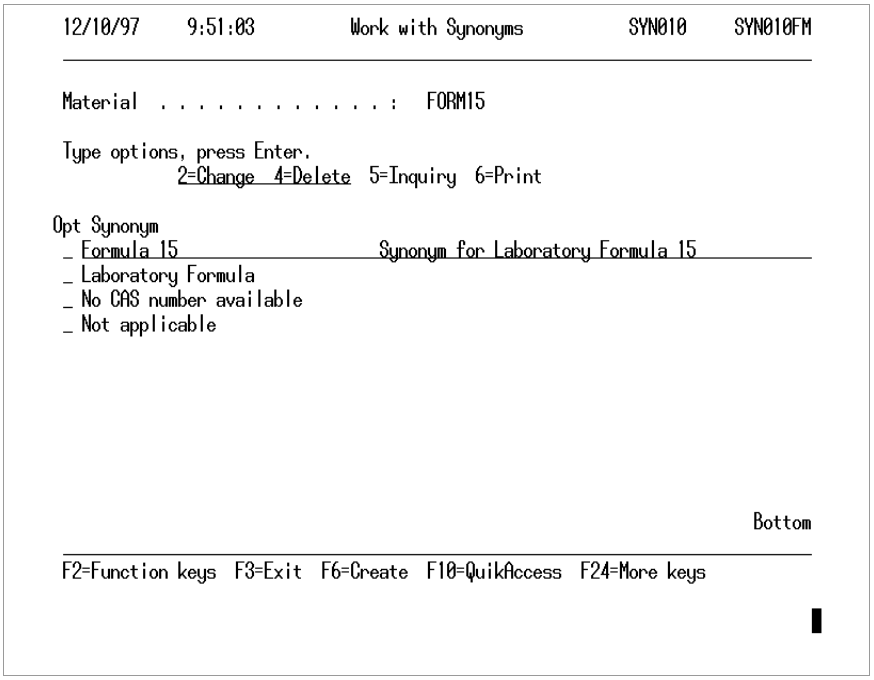


Figure 2-17: Work with Synonyms selection screen

Displaying Synonyms

When you press Enter on the Work with Synonyms screen, the system redisplays the Work with Synonyms selection screen, showing the synonym you created.

User-defined synonyms display with an underline. You can change and delete user-defined synonyms using the appropriate option choices on this screen.

To delete user-defined synonyms, select the synonym with a **4**, press Enter and then press F22.

Press F3 to continue.

Maintaining Formula Costs

The system displays this screen if you selected the Maintain Costs attribute from the Work with Formula Analysis attribute screen.

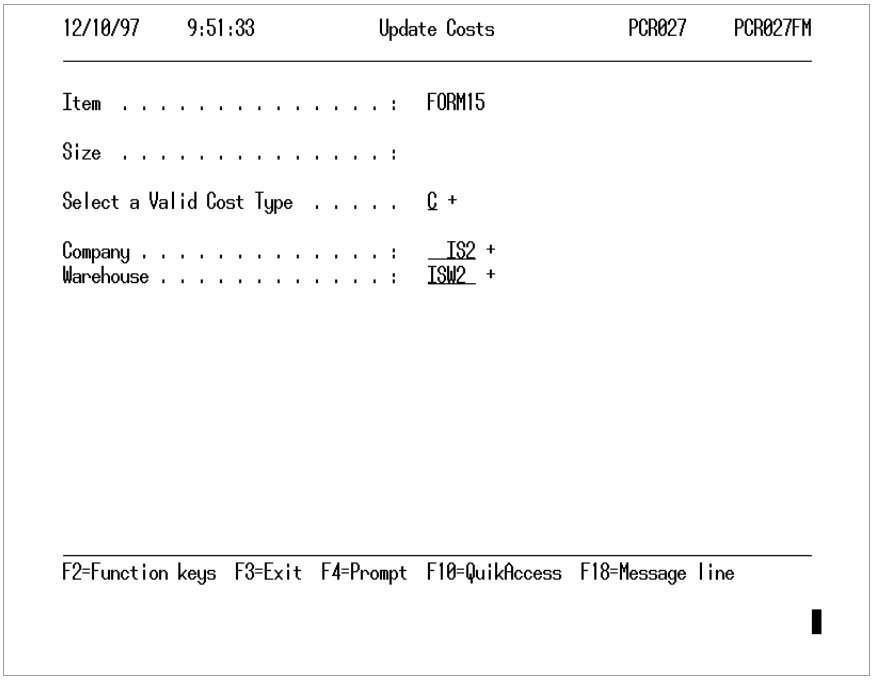


Figure 2-18: Update Costs prompt screen

Company, Warehouse

Company and *Warehouse* are required fields.

Select a Valid Cost Type

The field values on this screen default based on your Infinium CA Control file entries. You can override the *Select a Valid Cost Type*, *Company*, and *Warehouse* fields.

Press Enter to display costing information.

Remember that cost type refers to one of the nine costing methods, which are current, anticipated, previous, previous year, weighted average, and four user-defined.

Formula Cost Breakdown

This screen displays the costing breakdown of the formula by cost code. You can override this information.

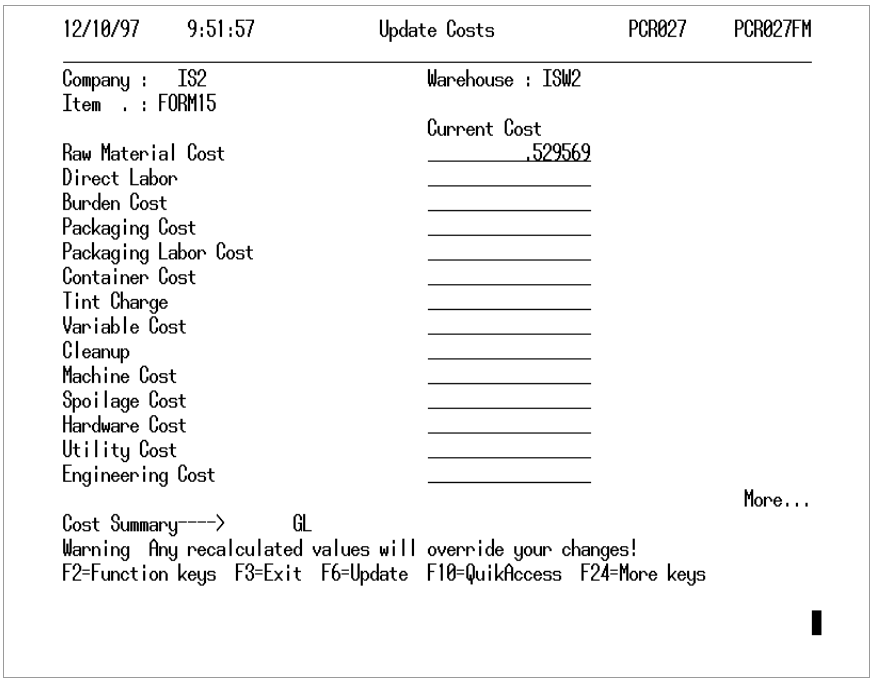


Figure 2-19: Update Costs Costing Breakdown screen

Keep in mind that if you are rolling up cost types, the system always checks each ingredient in the formula and validates each ingredient's cost, not the cost you type here. Use this screen mainly for entering formula cost data for non-rollup cost types.

Press PgDn to display the second screen of costing information.

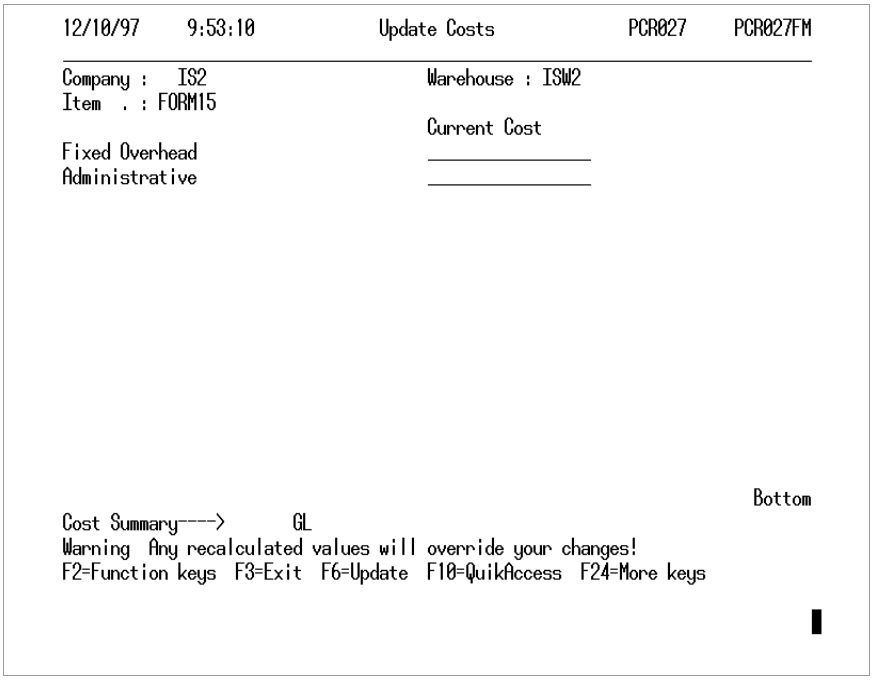


Figure 2-20: Update Costs Costing Breakdown screen 2

Additional Formula Cost Breakdown Information

This screen displays additional costing categories.

Press F6 to update costs.

Depending on how you set up your system cost controls, the values you type on the Update Costs Costing Breakdown screen may be outside an allowable cost change limit. If so, the system displays the following message:

Cost is outside the Control Variance. Press Function Key to Override.

To update the cost with the values you type, press F21 to override.

Press F3 to continue.

Creating Extended Formula Descriptions

The system displays this window if you select the Maintain Extended Descriptions attribute.

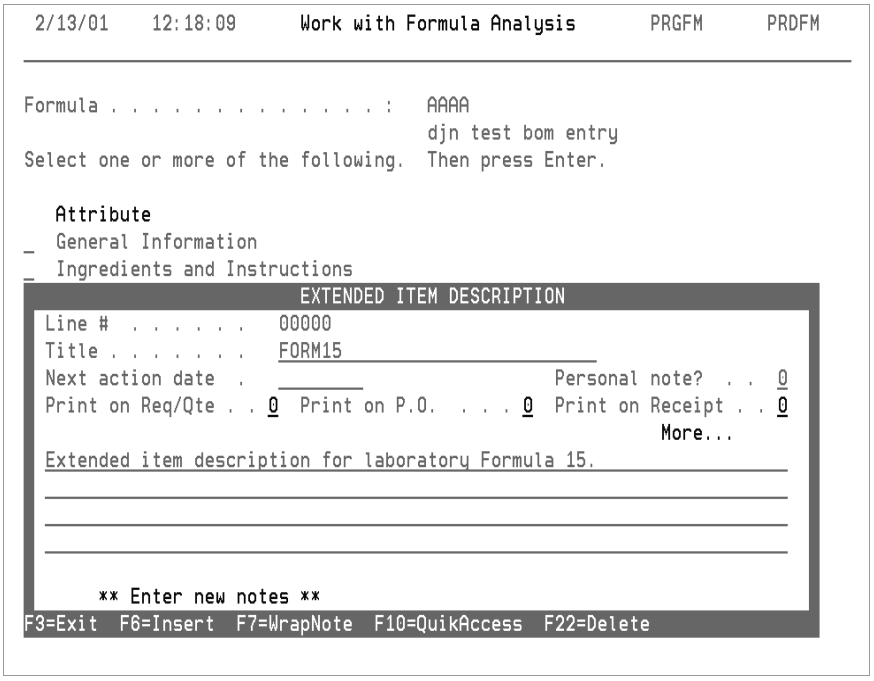


Figure 2-21: Extended Item Description entry window

Description

Use this window to record additional formula information if the *Description* field on the Work with Formula Analysis General Information screen is not sufficient.

To add an extended item description, type an identifier in the *Title* field before you type the description.

You can customize documents to print the extended item description. Keep in mind that you may also have to adjust your print programs.

Press F3 to save this information.

Displaying Extended Formula Descriptions

Once you create an extended item description, the system displays the window as shown in the screen below.

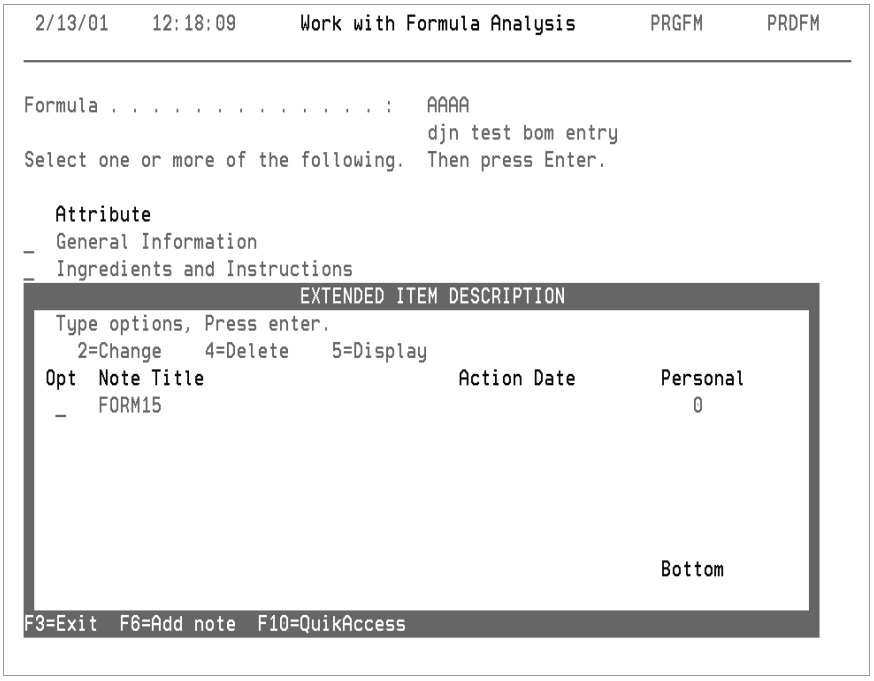


Figure 2-22: Extended Item Description prompt window

Press F6 to display the Extended Item Description entry window and create additional descriptions.

Type the appropriate option in the *Opt* field and press Enter to change, delete, or display the extended item description.

Press F3 to continue.

Creating Formula Item Notes

The system displays this window if you select the Maintain Notes attribute.

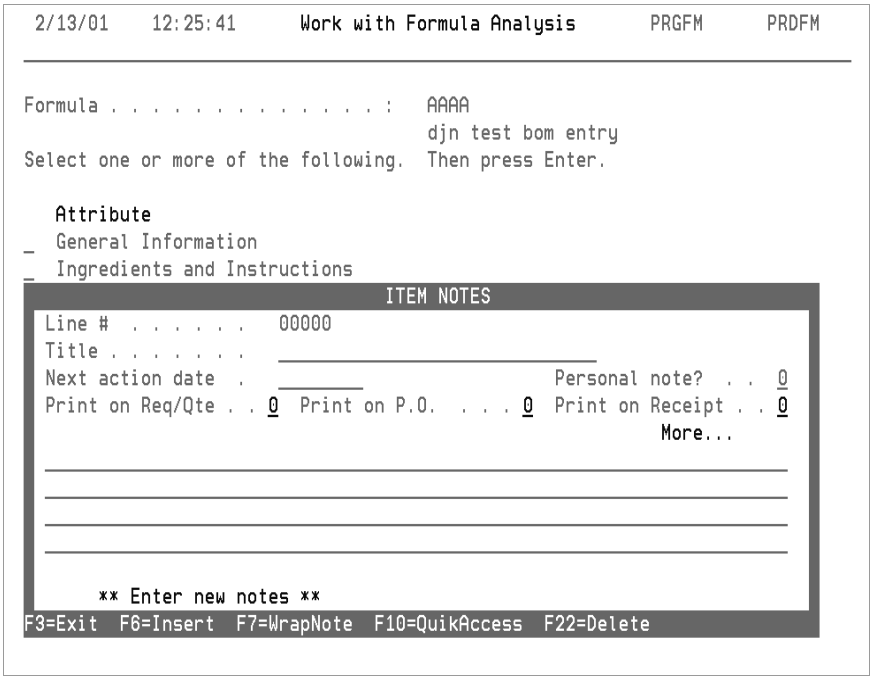


Figure 2-23: Item Notes entry window

Description

Use this window to record additional formula information if the *Description* field on the Work with Formula Analysis General Information screen is not sufficient.

Title

To add an item note, type an identifier in the *Title* field before you type the note information.

You can customize documents to print the item note. Keep in mind that you may also have to adjust your print programs.

Press F3 to save this information.

Displaying Formula Item Notes

Once you create an item note, the system displays the window as shown in the screen below.

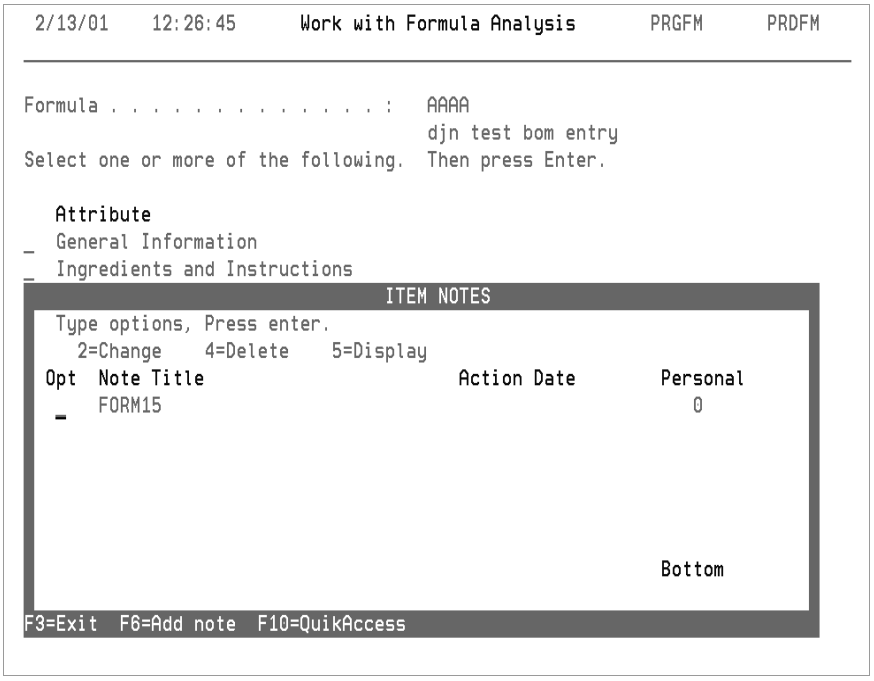


Figure 2-24: Item Notes selection window

Press F6 to display the Item Notes entry window and create additional notes.

Type the appropriate option in the *Opt* field and press Enter to change, delete, or display the extended item note.

Press F3 to return to the Work with Formula Analysis attribute screen.

Modifying Formula Records

Modify an existing formula using the *Work with Formula Analysis* option.

Use the menu path below.

- *Work with Formula Analysis* [WWFA]

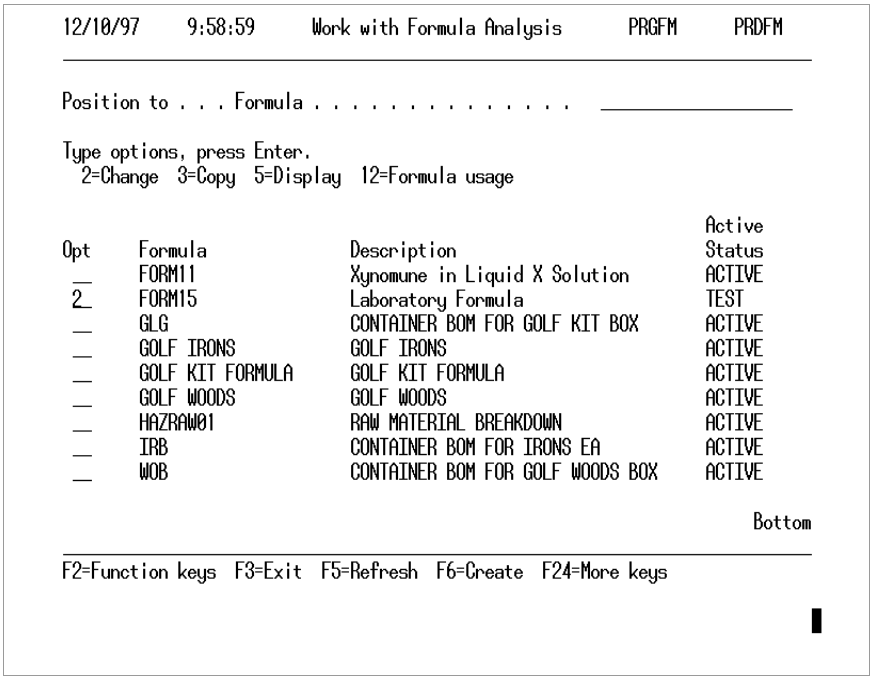


Figure 2-25: Work with Formula Analysis selection screen

To modify a formula, type **2** in the *Opt* field and press Enter.

The system displays the Work with Formula Analysis attribute screen. You can select any attribute to change the appropriate information for this formula. Use the information provided earlier in this topic to work with particular attributes.

If you did not specify a value in the first *Standard Batch Sizes* field on the General Information screen when you created the formula, the system uses the established or calculated yield as a default entry. If you change the calculated or established yield from this screen, the system does not update the *Standard Batch Sizes* field.

Press F3 when you are finished modifying this formula.

Confirming Formula Changes

The system displays this screen if you save formula changes.

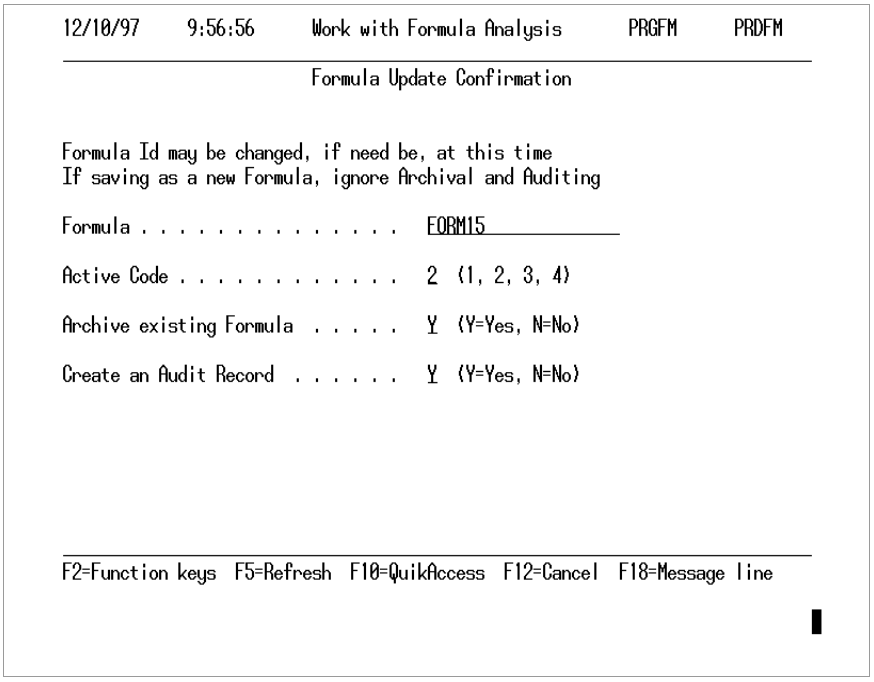


Figure 2-26: Work with Formula Analysis Formula Update Confirmation screen

When you are modifying a formula, you must complete the *Archive existing Formula* and *Create an Audit Record* fields. These fields do not display when you are creating a formula.

Archive existing Formula

Leave the default value **Y** if you want the system to save the original formula in the Formula Archive file. At the same time, the system increases the *FVR#* field by one for the changed version and saves it to the Formula file.

Create an Audit Record

Leave the default value **Y** if you want the system to increase the *FVR#* field by one and create an audit record. The audit record specifies the formula, FVR number, company, warehouse, date and time of revision, program, workstation, and user.

Depending on your Control file entries, the default value **Y** may cause the system to display the Work with Audit Notes screen automatically.

If both the *Archive existing Formula* and *Create an Audit Record* field values are **Y**, the following screen displays when you press Enter.

Formula Audit Notes

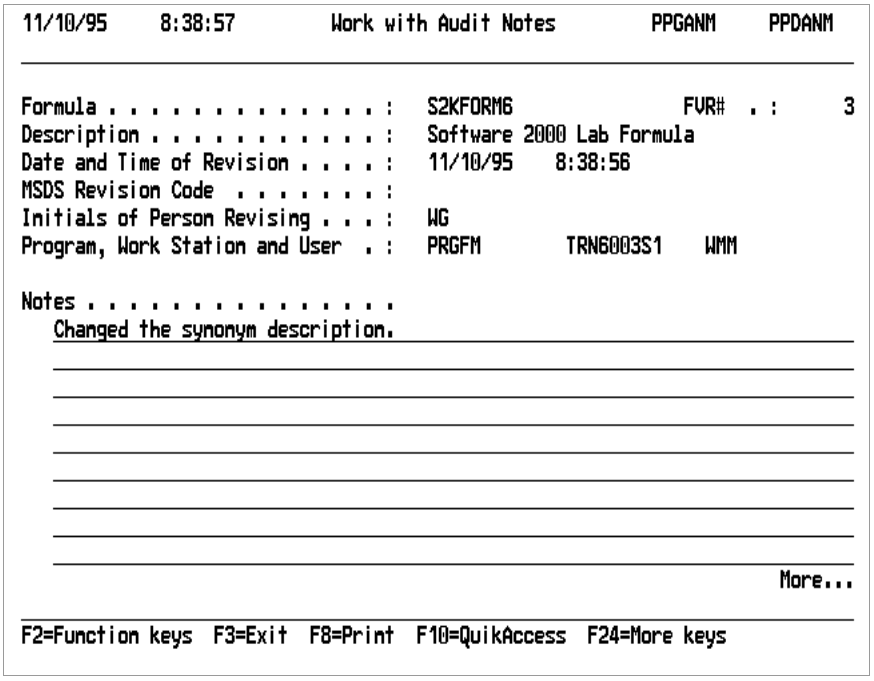


Figure 2-27: Work with Audit Notes screen

You can type additional information about this audit note on the Notes lines.

Press F8 from this screen to print the Formula Audit Record and Notes report.

Copying Formulas

You can copy any formula, regardless of its active code.

Remember that the copy function does not copy synonyms or costs. Depending on your Control file entries, the system may automatically calculate costs for the copy-to formula.

Use the menu path below.

- *Work with Formula Analysis* [WWFA]

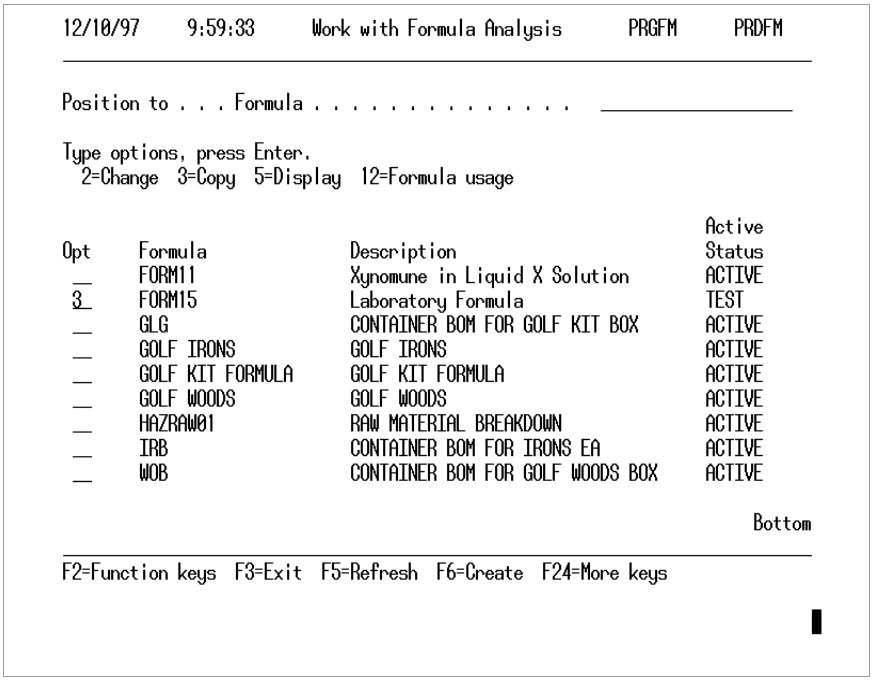


Figure 2-28: Work with Formula Analysis selection screen

Type **3** in the *Opt* field to select the formula to copy and press Enter.

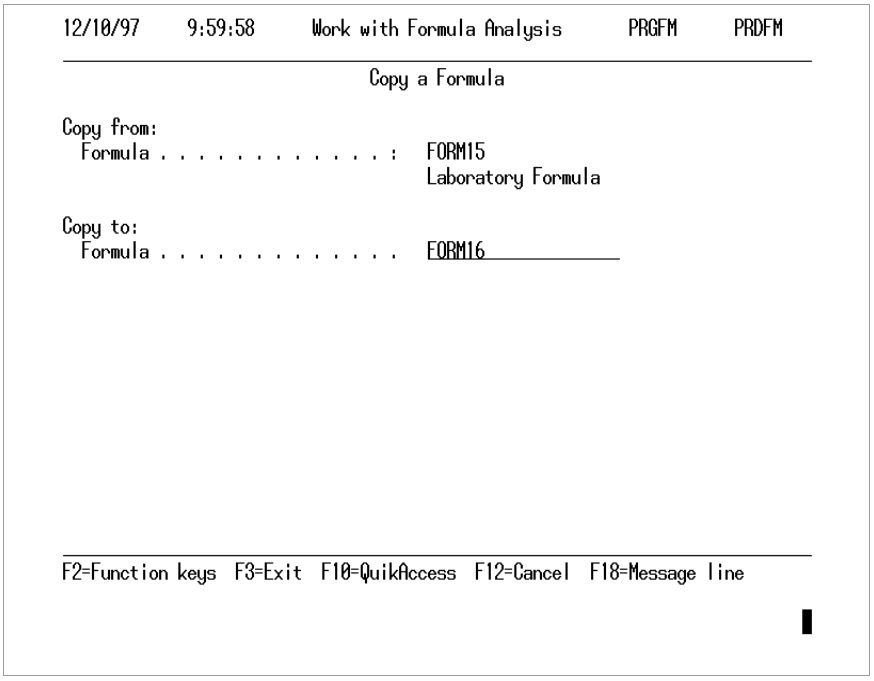


Figure 2-29: Work with Formula Analysis Copy a Formula screen

Type the new formula identifier in the *Copy to: Formula* field and press Enter.

Displaying Formula Records

Use the *Work with Formula Analysis* option to view formulas without changing information.

Use the menu path below.

- *Work with Formula Analysis* [WWFA]

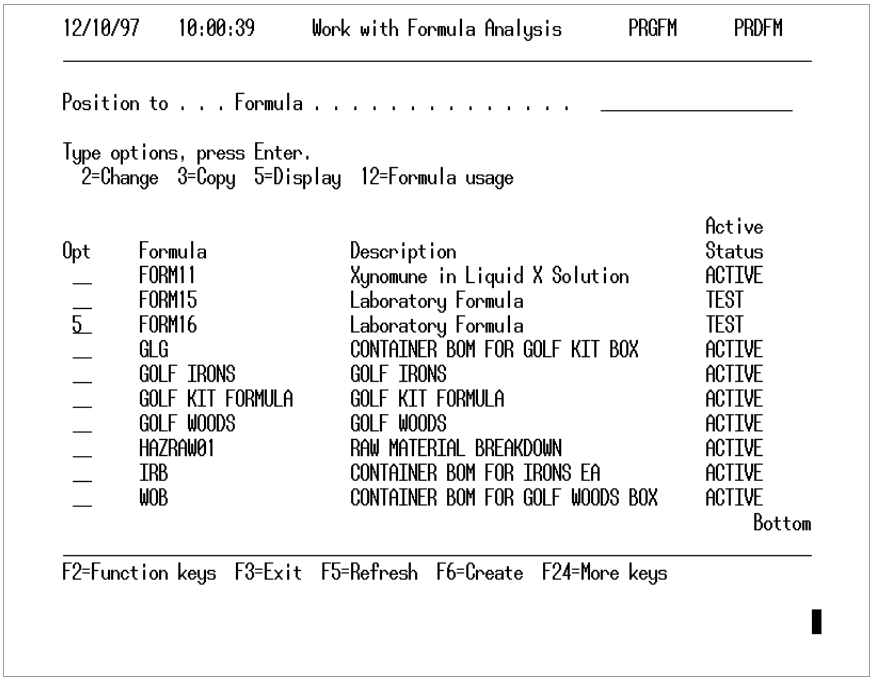


Figure 2-30: Work with Formula Analysis selection screen

Type **5** in the *Opt* field to select a formula and press Enter.

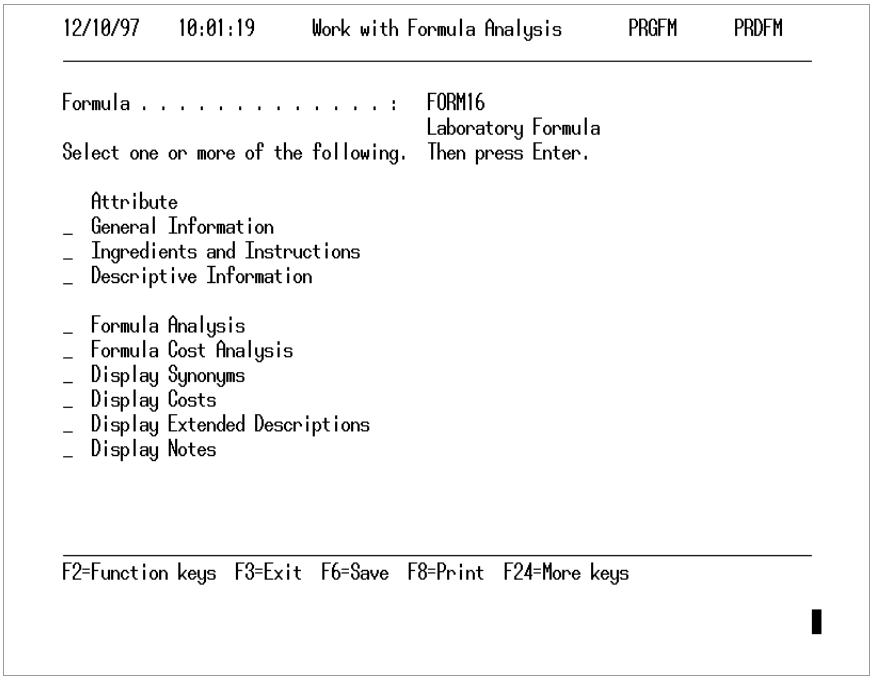


Figure 2-31: Work with Formula Analysis display attribute screen

Type any character next to the attributes to select and press Enter, or press F9 for the system to display all attribute screens sequentially.

Attribute screens contain the same information as described earlier in this topic, except that in display mode you cannot change any information.

Notes

Chapter 3 Analyzing Formulas

3

The chapter consists of the following topics:

Overview of Formula Analysis

This chapter of the guide focuses on Infinium LA options that you can use to do the following:

- Display and print analyses based on chemical properties, ingredient costs, and ingredient comparisons
- Perform “what-if” cost changes
- Automatically reformulate to the percent solids, pigment volume concentration, pigment-to-binder ratio, or VOC that you specify

After you complete this chapter, you should know how to:

- Use the Formula Analysis screen to analyze formula records
- Use the Formula Cost Analysis screen to analyze formula records
- Compare formula records

Working with Formula Analysis

Use the Formula Analysis screen to do the following:

- View the formula analysis
- Automatically reformulate
- Access the Formula Cost Analysis screen
- Print the Formula Listing, Formula Analysis Report, or Formula Worksheet

When you print reports from the Formula Analysis screen or the Formula Cost Analysis screen, they include any changes you make on the screen.

Use the menu path below.

- *Work with Formula Analysis* [WWFA]

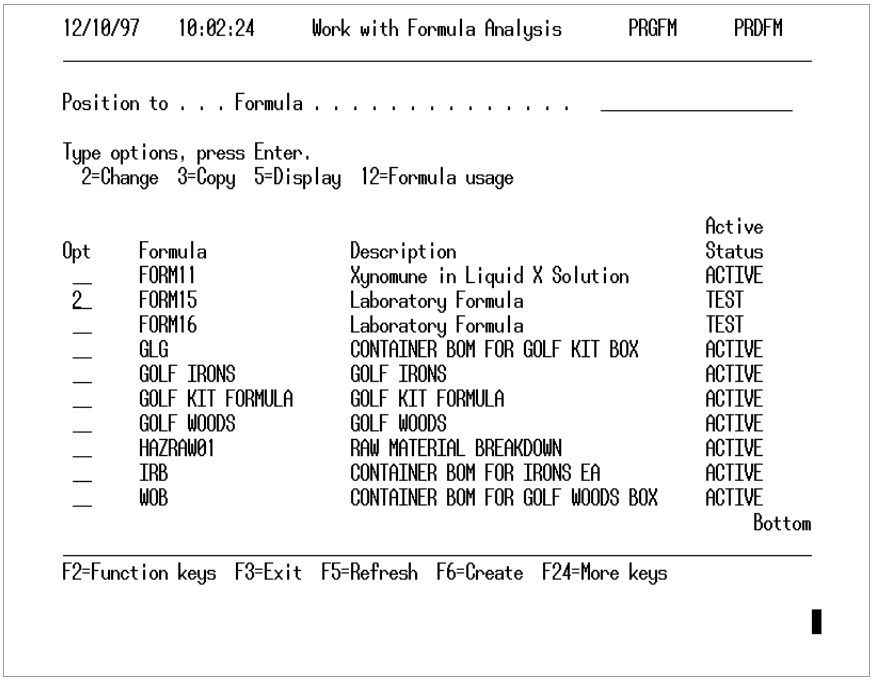


Figure 3-1: Work with Formula Analysis selection screen

Type **2** or **5** in the *Opt* field to edit or display the analysis for any formula, regardless of its active status, and press Enter.

Formula Attributes

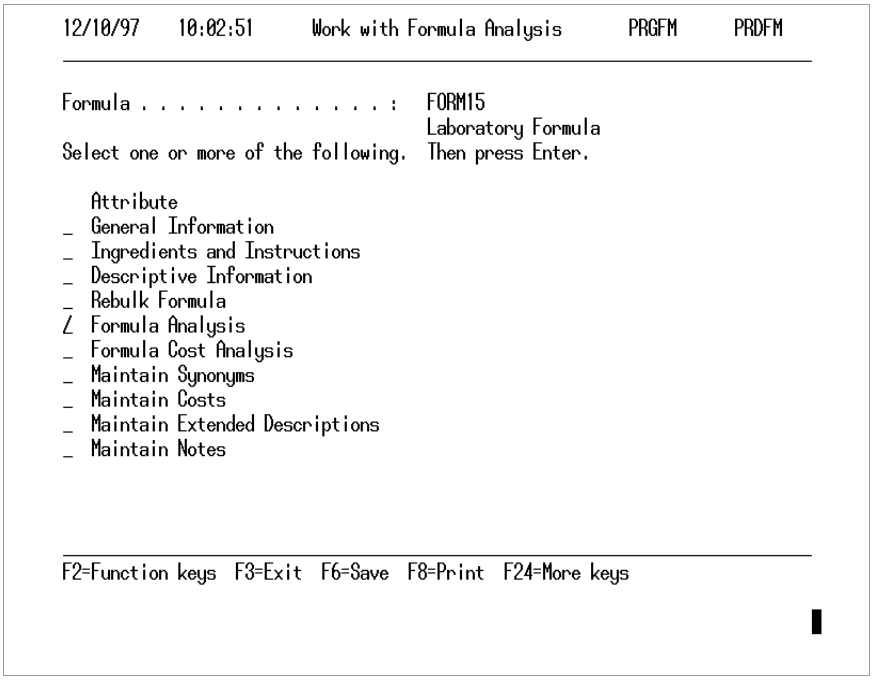


Figure 3-2: Work with Formula attribute screen

Type any character next to the Formula Analysis attribute and press Enter.

Viewing a Formula Analysis

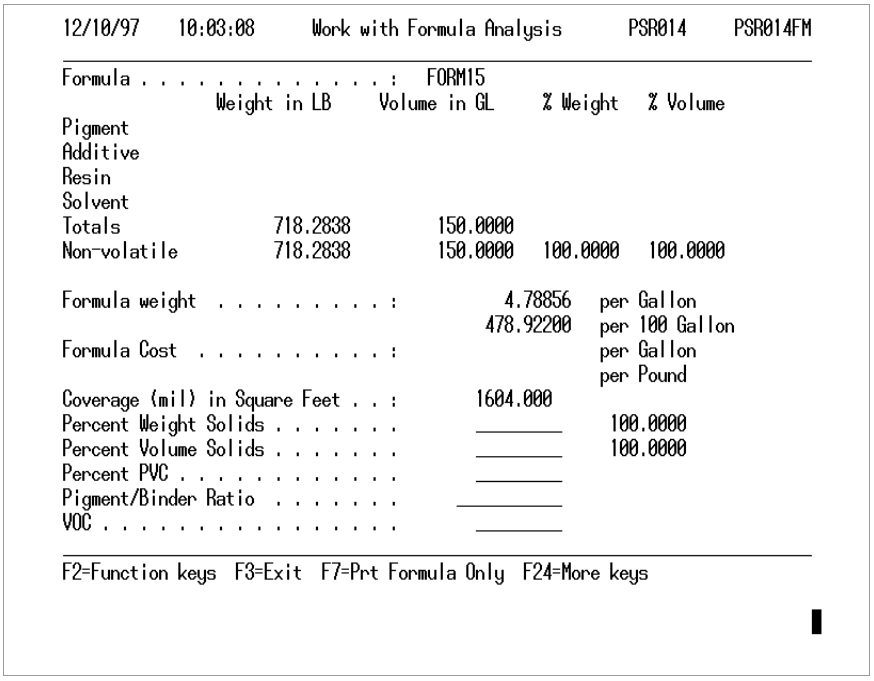


Figure 3-3: Work with Formula Analysis screen

Except for the automatic reformulation fields, all the fields on this screen are display only.

Reformulating

Using Master file information, the system calculates the value for each field using the ingredient information specified in the Raw Material/Resource file.

Refer to the “Infinium LA Calculations” appendix for a listing of the equations the system uses to complete these calculations.

Percent Weight Solids, Percent Volume Solids, Percent PVC, Pigment/Binder Ratio, VOC

To automatically reformulate, type a target value in the *Percent Weight Solids*, *Percent Volume Solids*, *Percent PVC*, *Pigment/Binder Ratio*, or *VOC* field and press Enter. The system changes the ingredient quantities to get as close to the target value as possible. The system also updates the fields on this screen to reflect the analysis of the formula that changed. To view these changes, press F3 to access the Ingredients and Instructions screen.

Infinium recommends that you reformulate in small increments. For example, to change 5% to 85%, first make the change to 20%, then 40%, then 60%, and finally 85%. This helps the system retain decimal precision.

You can have the system hold the quantity of one or more ingredients constant during automatic reformulation. To do this, press F3 to display the Ingredients and Instructions screen and type **x** in the third *Fixed Ingr Cds* field. Then redisplay this screen and type a target value.

The **x** you type in the fixed ingredient code field does not stay on file and affects only one reformulation.

Printing Reports

Press F7 to print the Formula Listing, F8 to print the Formula Analysis report and the Formula Worksheet, or F9 to print only the Formula Analysis report. Sample reports are discussed in the “Printing Infinium LA Reports” appendix.

Press F13 to access the Work with Formula Analysis screen from the General Information, Ingredients and Instructions, or Formula Cost Analysis screens.

Press F14 to access the Formula Cost Analysis screen, which is discussed later in this topic.

Press F3 to continue.

Working with Formula Cost Analysis

Use the Formula Cost Analysis screen to do the following:

- View the formula cost analysis by warehouse and cost type
- Perform “what-if” cost changes
- Access the Formula Analysis screen
- Print the Formula Listing, Formula Analysis report, and Formula Worksheet

Use the menu path below.

- *Work with Formula Analysis* [WWFA]

```
12/10/97    10:04:24      Work with Formula Analysis       PRGFM      PRDFM
_____________________________________________________________________________

Position to . . . Formula . . . . . .  _________________

Type options, press Enter.
  2=Change  3=Copy  5=Display  12=Formula usage

                                                                    Active
Opt     Formula             Description                             Status
 __     FORM11              Xynomune in Liquid X Solution           ACTIVE
 2_     FORM15              Laboratory Formula                      TEST
 __     FORM16              Laboratory Formula                      TEST
 __     GLG                 CONTAINER BOM FOR GOLF KIT BOX          ACTIVE
 __     GOLF IRONS          GOLF IRONS                              ACTIVE
 __     GOLF KIT FORMULA    GOLF KIT FORMULA                        ACTIVE
 __     GOLF WOODS          GOLF WOODS                              ACTIVE
 __     HAZRAW01            RAW MATERIAL BREAKDOWN                  ACTIVE
 __     IRB                 CONTAINER BOM FOR IRONS EA              ACTIVE
 __     WOB                 CONTAINER BOM FOR GOLF WOODS BOX        ACTIVE
                                                                        Bottom
_____________________________________________________________________________
F2=Function keys  F3=Exit  F5=Refresh  F6=Create  F24=More keys
```

Figure 3-4: Work with Formula Analysis selection screen

Type **2** or **5** in the *Opt* field to edit or display the cost analysis for any formula, regardless of its active status, and press Enter.

Formula Attributes

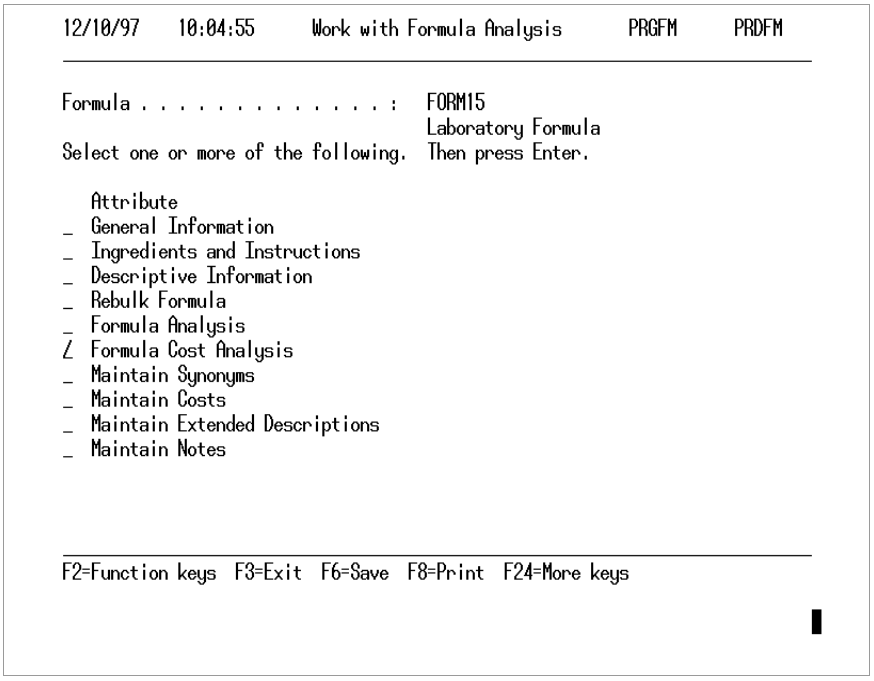


Figure 3-5: Work with Formula Analysis attribute screen

Type any character next to the Formula Cost Analysis attribute and press Enter.

Performing Cost Changes

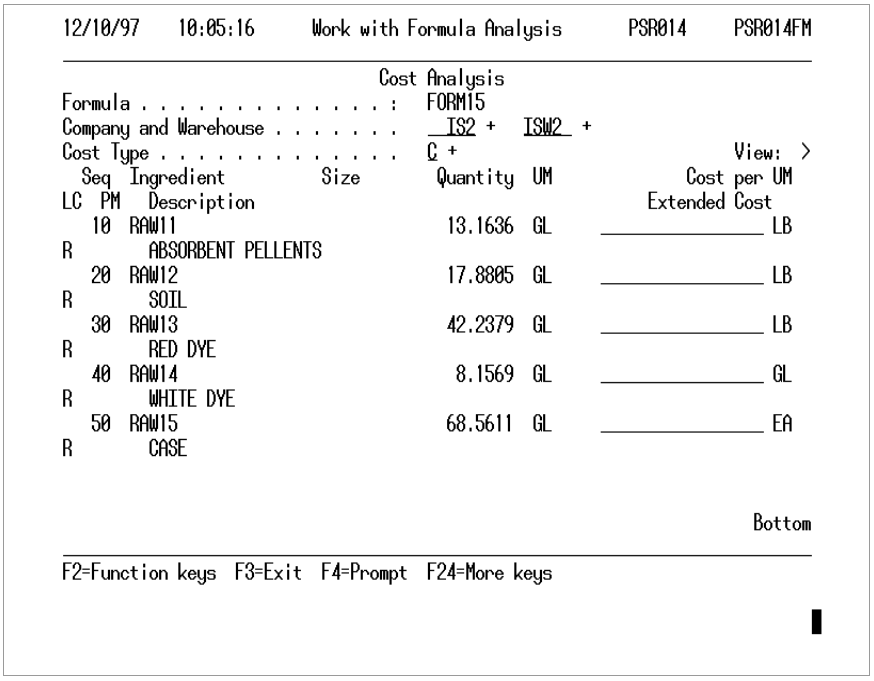


Figure 3-6: Work with Formula Analysis Cost Analysis screen

Company, *Warehouse*, *Cost Type*, and *Cost per UM* are the only input fields on this screen. If your control file entries limit your access, *Company* and *Warehouse* are display only fields.

To perform “what-if” cost changes, type new ingredient unit costs and press Enter. The system updates only the fields on this screen and on reports that you print from this option. Your entries do not affect the formula and you cannot save your entries.

Printing Reports

Press F7 to print the Formula Listing, F8 to print the Formula Analysis report and the Formula Worksheet, or F9 to print only the Formula Analysis report. Sample reports are discussed in the “Printing Infinium LA Reports” appendix.

Press F13 to access the Work with Formula Analysis screen or F12 to cancel the cost analysis and continue with the formula analysis.

You can also access this screen from the Work with Formula Analysis attribute screen or by pressing F14 on the General Information, Ingredients and Instructions, or Formula Analysis screens.

Press F20 to display the Work with Formula Cost Analysis detail view screen, shown on the next page.

Press F21 to display the Cost Breakdown window.

Viewing Formula Cost Analysis Detail

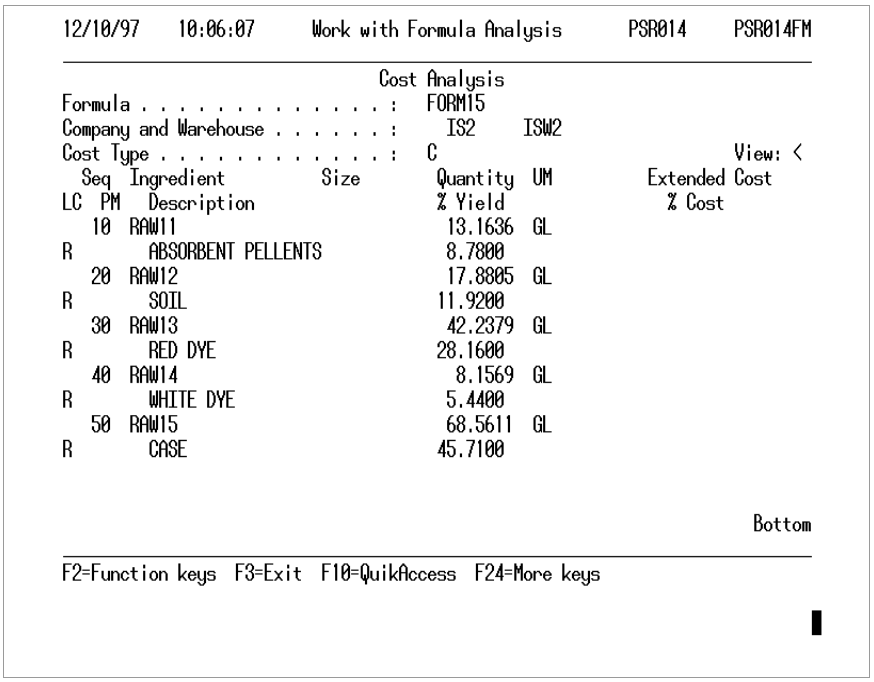


Figure 3-7: Work with Formula Cost Analysis detail view screen

All fields on this screen are display only.

Quantity UM, Extended Cost

The *Quantity UM* and *Extended Cost* fields display the same information shown on the Work with Formula Cost Analysis screen.

% Yield

A value in this field indicates the percent this ingredient represents of the total formula yield.

% Cost

A value in this field indicates the percent the extended cost for this ingredient represents compared to the total cost of the formula.

Press F19 to return to the Work with Formula Cost Analysis screen and then F13 to exit.

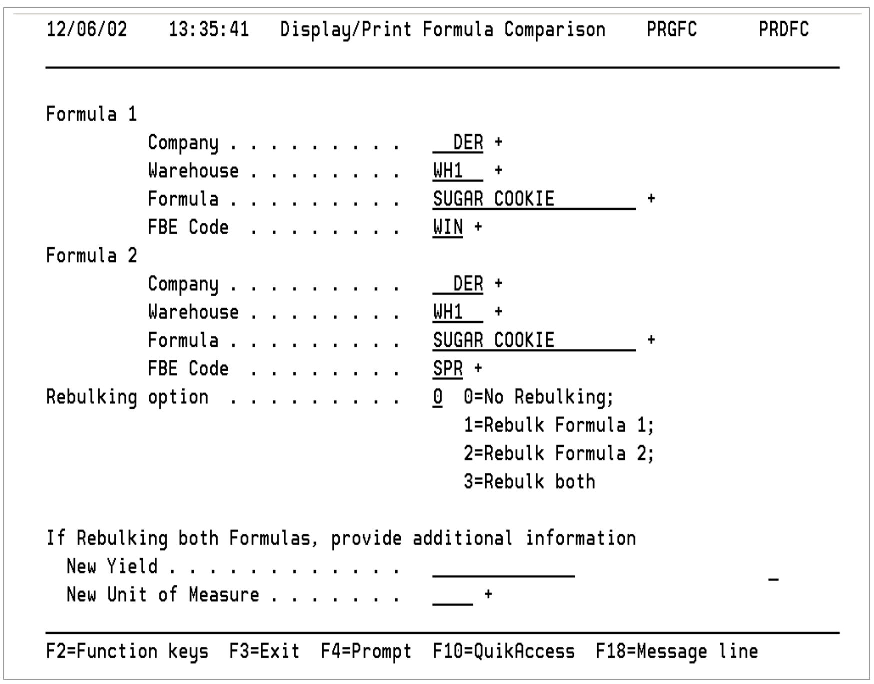
Comparing Formula Records

Use the *Display/Print Formula Comparison* option to view or print a comparison of the ingredients, ingredient quantities, and total quantities of two formulas. Specify whether the system rebulks one or both formulas on the display and report.

Use the menu path below.

- *Display/Print Formula Comparison* [DPFC]

Setting Up a Formula Comparison



```
12/06/02    13:35:41   Display/Print Formula Comparison    PRGFC      PRDFC

Formula 1
          Company . . . . . . . . .    DER +
          Warehouse . . . . . . . .   WH1   +
          Formula . . . . . . . . .   SUGAR COOKIE         +
          FBE Code  . . . . . . . .   WIN +
Formula 2
          Company . . . . . . . . .    DER +
          Warehouse . . . . . . . .   WH1   +
          Formula . . . . . . . . .   SUGAR COOKIE         +
          FBE Code  . . . . . . . .   SPR +
Rebulking option  . . . . . . . . .   0  0=No Rebulking;
                                         1=Rebulk Formula 1;
                                         2=Rebulk Formula 2;
                                         3=Rebulk both

If Rebulking both Formulas, provide additional information
  New Yield . . . . . . . . . . . .   ______________
  New Unit of Measure . . . . . . .   ____ +

F2=Function keys  F3=Exit  F4=Prompt  F10=QuikAccess  F18=Message line
```

Figure 3-8: Display/Print Formula Comparison prompt screen

You must complete the Formula 1 and Formula 2 sections with the two formulas you are comparing.

Company, Warehouse

If you have implemented formula by location, specify the company and warehouse that identifies the instance of each of the formulas you are comparing.

FBE Code

For each of the formulas you are comparing, specify the FBE code value that identifies the instance of the formula you want to compare.

Rebulking Option

You can rebulk one, both, or neither of the formulas. Complete the *Rebulking option* field with the appropriate number.

New Yield, New Unit of Measure

To have the system rebulk both formulas, you must complete the *New Yield* and *New Unit of Measure* fields. The Master Formula file is not affected when you use this option to rebulk formulas.

Press Enter to continue.

Displaying/Printing a Formula Comparison

```
_12/06/02    13:53:32   Display/Print Formula Comparison    PRGFC      PRDFC

                                                                    View:  >
Formula 1 . . . . . . . . . . . . :   SUGAR COOKIE         WIN   DER WH1
 Line   Material and Size Code          Quantity  UM    Other Quantity  UM
   10   GREEN SPRINKLES                    .2500  LB            .1250  GL
   20   RED SPRINKLES                      .2500  LB            .1250  GL
   30   SUGAR                             1.0000  LB            .1667  GL
   40   FLOUR                             2.0000  LB            .4000  GL
   50   EGG                               1.0000  EA           1.0000
                                                                   More...
Tot Wt         10.5000  LB    Tot Vol          7.9310  GL

Formula 2 . . . . . . . . . . . . :   SUGAR COOKIE         SPR   DER WH1
   10   MFC-RAW02                          .2500  LB            .0296  GL
   20
   30
   40
   50
                                                                   More...
Tot Wt                  EA    Tot Vol

F2=Function keys  F3=Exit  F8=Print  F10=QuikAccess  F24=More keys
```

Figure 3-9: Display/Print Formula Comparison screen

The system displays Formula 1 on the top half of the screen and Formula 2 on the bottom half. To scroll through the entire formula, position your cursor on the formula and press PgDn.

Press F8 to print the Formula Comparison Listing.

Press F20 to display the Display/Print Formula Comparison Base Quantities screen, shown next.

Press F12 to cancel.

Displaying/Printing a Base Quantities Comparison

```
_12/06/02    13:54:15   Display/Print Formula Comparison    PRGFC      PRDFC
 ____________________________________________________________________________
                                                                      View: <>
Formula 1 . . . . . . . . . . . . :   SUGAR COOKIE        WIN   DER WH1
 Line   Material and Size Code    Solid Base Qty  UM   Liquid Base Qty  UM
   10   GREEN SPRINKLES                   .2500  LB            .1250  GL
   20   RED SPRINKLES                     .2500  LB            .1250  GL
   30   SUGAR                            1.0000  LB            .1667  GL
   40   FLOUR                            2.0000  LB            .4000  GL
   50   EGG                                      LB           5.0000  GL
                                                                    More...
Tot Wt         10.5000  LB    Tot Vol          7.9310  GL
 ____________________________________________________________________________
Formula 2 . . . . . . . . . . . . :   SUGAR COOKIE        SPR   DER WH1
   10   MFC-RAW02                                EA
   20
   30
   40
   50
                                                                    More...
Tot Wt                  EA    Tot Vol
 ____________________________________________________________________________
F2=Function keys  F3=Exit  F8=Print  F10=QuikAccess  F24=More keys
```

Figure 3-10: Display/Print Formula Comparison base quantities screen

The *Solid Base Qty* column lists the amounts of ingredients in this formula, in the base unit of measure, for which your system is configured to represent solid quantities.

Liquid Base Qty

The *Liquid Base Qty* column lists the same ingredients, in the base unit of measure, for which your system is configured to represent liquid quantities.

Press F20 to display the Display/Print Formula Comparison Descriptions screen, shown next.

Press F19 to return to the Display/Print Formula Comparison screen.

Displaying/Printing Comparison Descriptions

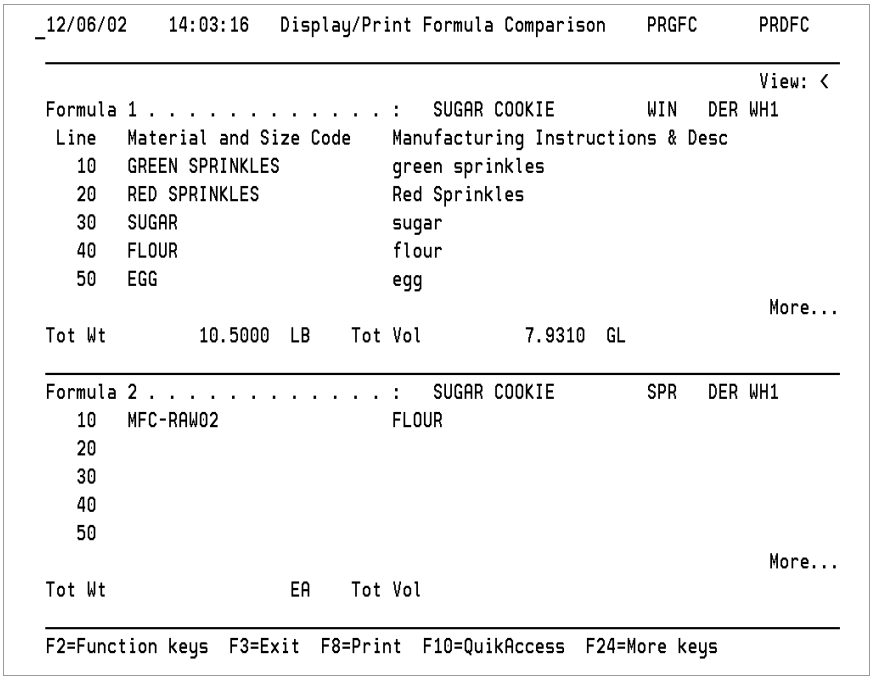


Figure 3-11: Display/Print Formula Comparison descriptions screen

The system displays the description for each ingredient for both formulas in the *Manufacturing Instructions & Desc* column. If your formulas contain manufacturing instructions, the system lists them in this column also.

Press F19 to return to the Display/Print Formula Comparison Base Quantities screen.

Press F3 to exit.

Notes

Chapter 4 Working with Additional Laboratory Options

4

The chapter consists of the following topics:

Overview of Additional Laboratory Options

This chapter of the guide discusses additional functions you can perform using the Infinium LA options.

After you complete this chapter, you should know how to do the following:

- Use the *Recalculate Chemical Properties* option
- Perform a formula replacement
- Analyze raw material chemical properties
- Copy raw material chemical properties
- Work with breakdown codes

Recalculating Chemical Properties

Use this option to do the following:

- Recalculate the chemical properties for one or more formulas (for example, if the costing program was not running when users changed formulas)
- Print the Summary of Chemical Properties report for one or more formulas
- Display any formula

Define headings for the chemical properties' fields in your Control files. Enter weight and volume percents for each chemical property in the Raw Material/Resource file. The system uses your entries in the Raw Material/Resource file to calculate chemical properties for each formula. When the costing program is running, the system automatically performs these calculations each time you update a raw material or formula.

If in the Control files you set the *Maintain Material Chemical Props* field to **N**, the system does not update chemical properties for raw material breakdown formulas.

Use this option to recalculate or print formula chemical properties or to display formulas.

Use the menu path below.

- *Recalculate Chemical Properties* [RCP]

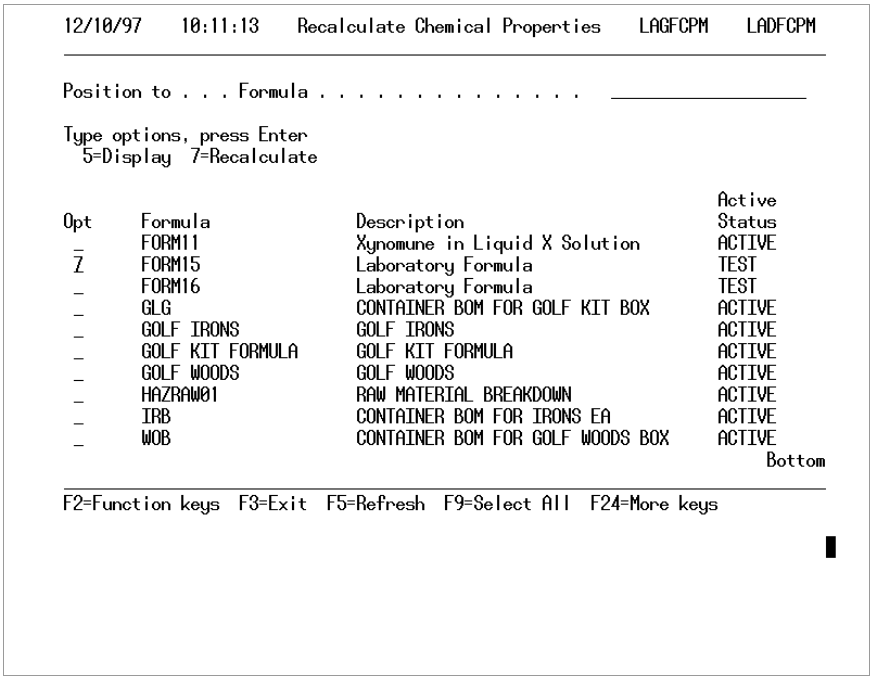


Figure 4-1: Recalculate Chemical Properties screen

Type **7** in the *Opt* field to recalculate chemical properties for one or more formulas, or press F9 to recalculate chemical properties for all formulas. The system automatically prints the Summary of Chemical Properties report for the formulas you select.

Type **5** in the *Opt* field to display any formula. Refer to the *Infinium Formula Management Guide to Formula Setup and Quality Control* for more information about the screens that display.

Sample Summary and Exception reports are shown in the “Printing Infinium LA Reports” appendix.

Performing a Formula Replacement

In Infinium LA, formula replacement occurs when the system copies the contents and attributes of an existing active formula and replaces them with those of a test formula. Laboratory formulators can use this function to quickly update an active formula with test formula information.

Use the menu path below.

- *Replace Active Formula with Test* [RAFWT]

Replacing an Active Formula with a Test Formula

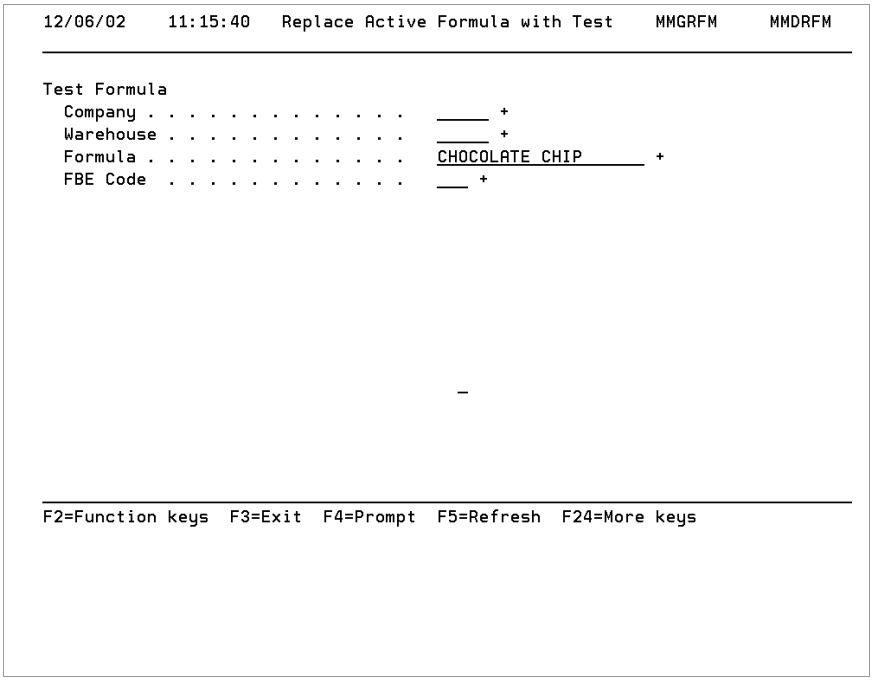


Figure 4-2: Replace Active Formula with Test – test formula screen

The data in the formula you specify on this screen replaces the data in the formula you specify on the next screen.

Company, Warehouse

Specify the company and warehouse that identifies the instance of the formula you want to use.

Formula

The system deletes the formula identifier you type in the *Test Formula* field. This formula will no longer exist in the Formula Master files.

FBE Code

Specify the FBE code value that identifies the instance of the formula you want to use.

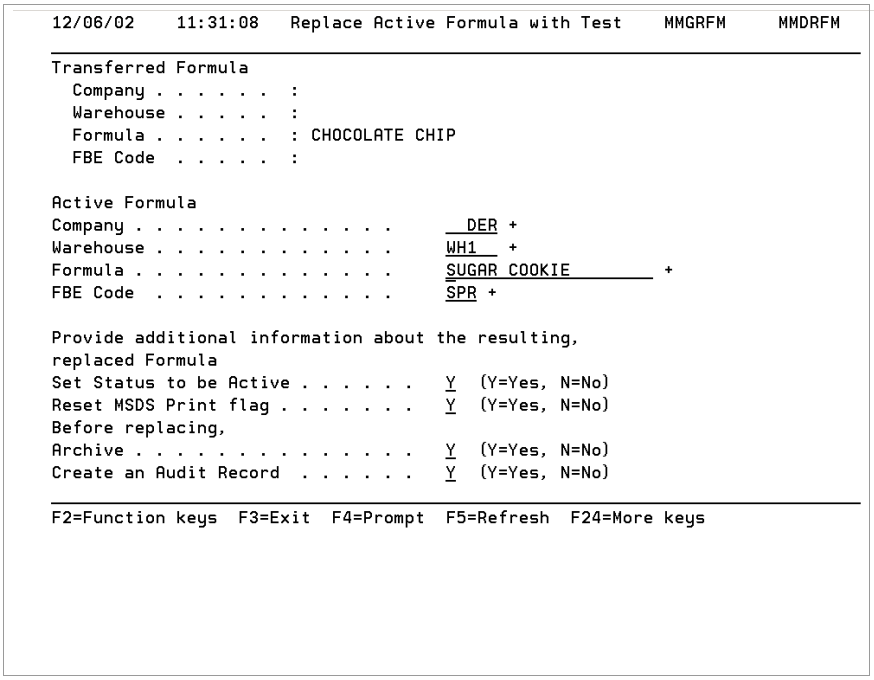


Figure 4-3: Replace Active Formula with Test – active formula screen

Company, Warehouse

Specify the company and warehouse that identifies the instance of the active formula whose contents you want to replace.

Formula

The formula identifier that you type in the *Active Formula* field remains active in the system, but it contains test formula information.

FBE Code

Specify the FBE code value that identifies the instance of the active formula whose contents you want to replace.

Set Status to be Active

To ensure that the formula stays active after replacement, do not change the default field value of **Y** in *Set Status to be Active*. Type an **N** in this field to change the formula status to test, after replacement.

Reset MSDS Print flag

Type **Y** in the *Reset MSDS Print flag* field to have Infinium RM generate a new MSDS when you sell a product using the replacement formula.

Archive, Create an Audit Record

Type **Y** in the *Archive* and *Create an Audit Record* fields to archive the active formula and create an audit record. If you type **N** in these fields, the system overrides the contents and ingredients of the active formula with those of the test formula when you press Enter on the Replace Active Formula with Test screen.

Formula by Location

If you have implemented formula by location, you cannot specify an entity formula in the Test Formula section if lower level formulas exist for that formula ID.

If you specify an entity formula in the Active Formula section and lower level formula instances exist for the same formula ID, the system displays a warning message to alert you that formulas exist that are lower in the formula resolution hierarchy and may need to be updated. Press F21 to override the message and continue.

Creating an Audit Record

This screen displays if you type **Y** in the *Create an Audit Record* field on the Replace Active Formula with Test active formula screen.

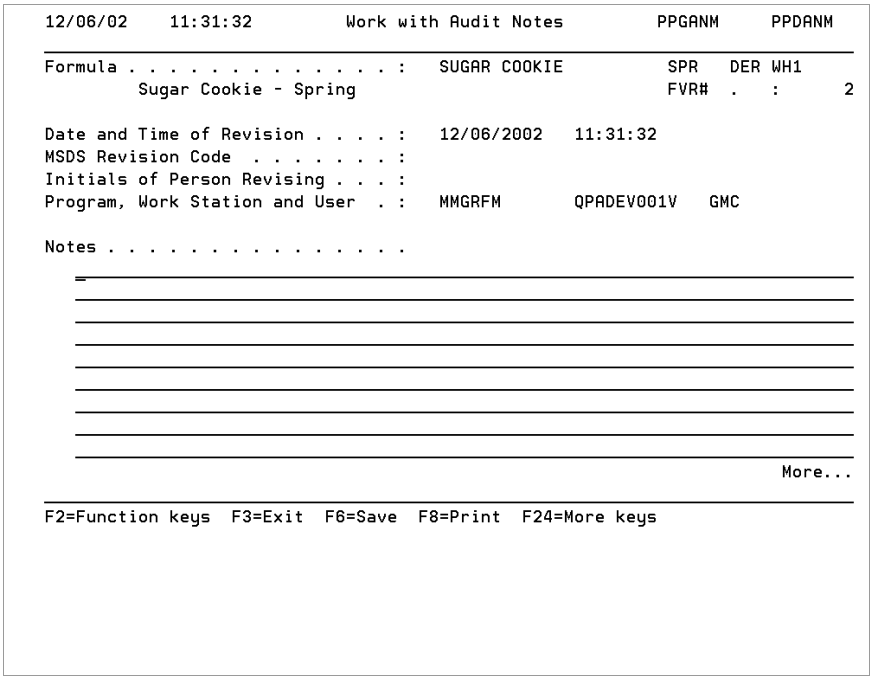


Figure 4-4: Work with Audit Notes screen

Type the information for the audit record.

When you press F3, the system records your entry and completes the replacement.

Working with Raw Material Chemical Properties

You can modify and display certain information about raw materials using the *Work with Raw Material Chem Prop* option. The information you can access is a subset of what is available using the *Work with Raw Material/Resource* option in either Infinium PF or Infinium CA.

Use the menu path below.

- *Work with Raw Material Chem Prop* [WWRMCP]

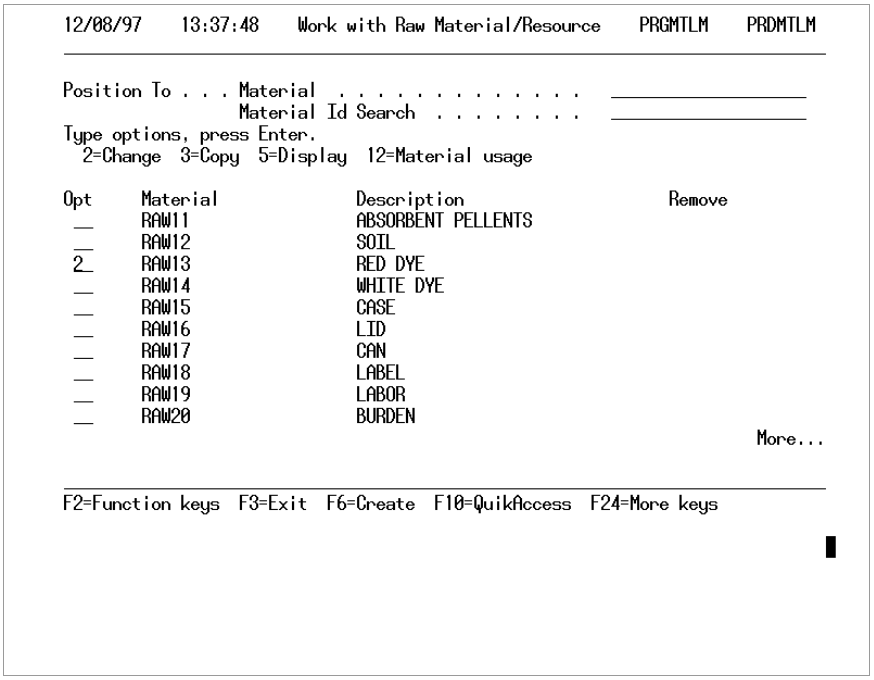


Figure 4-5: Work with Raw Material/Resource chemical properties selection screen

Type **2** or **5** in the *Opt* field next to the raw material you are modifying or displaying and press Enter.

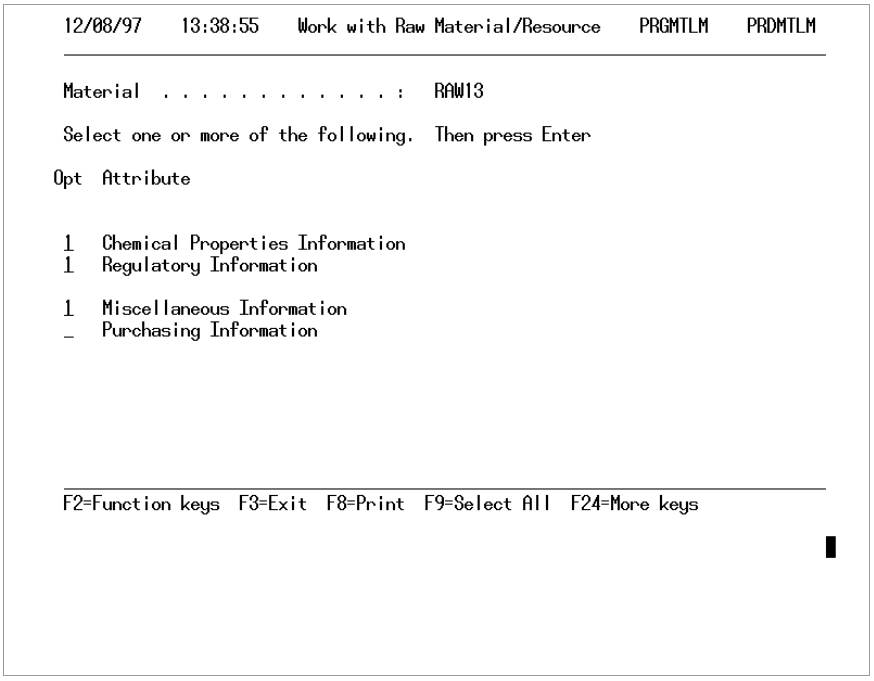


Figure 4-6: Work with Raw Material/Resource chemical properties attribute screen

In Infinium LA you can change chemical properties, regulatory, and miscellaneous information only for a raw material. Select the *Work with Raw Material/Resource* option in either Infinium PF or Infinium CA if these attributes do not meet your needs.

If you typed **5** to display raw material information on the Raw Material Chemical Properties selection screen, you cannot change attribute information.

The screens associated with the attributes that display on this screen are identical to those in the *Work with Raw Material/Resource* option in Infinium PF or Infinium CA. Refer to the *Infinium Formula Management Guide to Formula Setup and Quality Control* and the *Infinium Cross Applications Guide to System Controls and Materials Maintenance* for additional information about working with these attributes.

The Purchasing Information attribute displays only if you have Infinium PM installed. Refer to the *Infinium Purchase Management Guide to Setup and Processing* and *Infinium Cross Applications Guide to System Controls and Materials Maintenance* for more details.

Copying Raw Material Chemical Properties

Copy raw material chemical properties information using the *Work with Raw Material Chem Prop* option.

Use the menu path below.

- *Work with Raw Material Chem Prop* [WWRMCP]

```
12/08/97    13:39:42    Work with Raw Material/Resource    PRGMTLM    PRDMTLM

Position To . . . Material  . . . . . .  _____________________
                  Material Id Search  . . . . . .  _____________________
Type options, press Enter.
  2=Change  3=Copy  5=Display  12=Material usage

Opt     Material            Description                    Remove
 __     RAW09               PIE TIN COVER
 __     RAW10               PIE TIN
 __     RAW11               ABSORBENT PELLENTS
 __     RAW12               SOIL
 3_     RAW13               RED DYE
 __     RAW14               WHITE DYE
 __     RAW15               CASE
 __     RAW16               LID
 __     RAW17               CAN
 __     RAW18               LABEL
                                                              More...

F2=Function keys  F3=Exit  F6=Create  F10=QuikAccess  F24=More keys
```

Figure 4-7: Work with Raw Material/Resource chemical properties selection screen

To copy raw material information, type **3** in the *Opt* field next to the raw material to copy and press Enter.

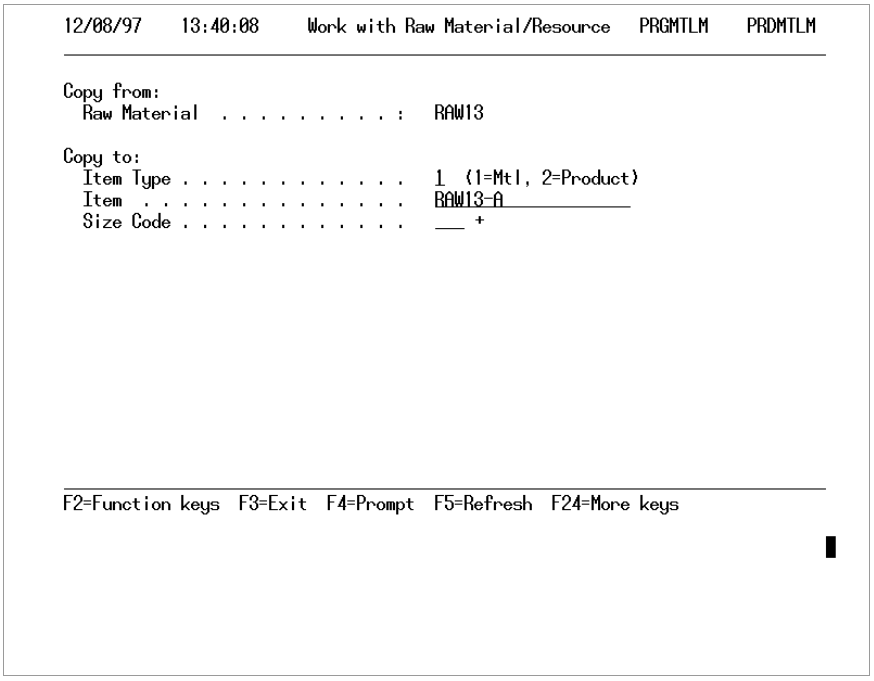


Figure 4-8: Work with Raw Material/Resource chemical properties copy screen

Complete the *Item Type* field with a **1** or **2** to indicate the type of record to have the system create.

Item

To copy the information from one raw material to another, type a new identifier in the *Item* field.

Size Code

If you set up your system so that a size code is a required part of product identifiers and you are creating a new product record, you must also complete the *Size Code* field.

Press Enter to complete the copy process and return to the Raw Material Chemical Properties selection screen.

Working with Breakdown Codes

Breakdown codes are one-, two-, or three-character codes that you define. You assign breakdown codes to raw materials using the Miscellaneous Information attribute of the *Work with Raw Material/Resource* option in Infinium CA.

After you assign breakdown codes and create formulas, use Infinium LA displays or reports to view formula breakdowns and identify ingredients for use in these formulas.

Use the menu path below.

- *Work with Breakdown Codes* [WWBC]

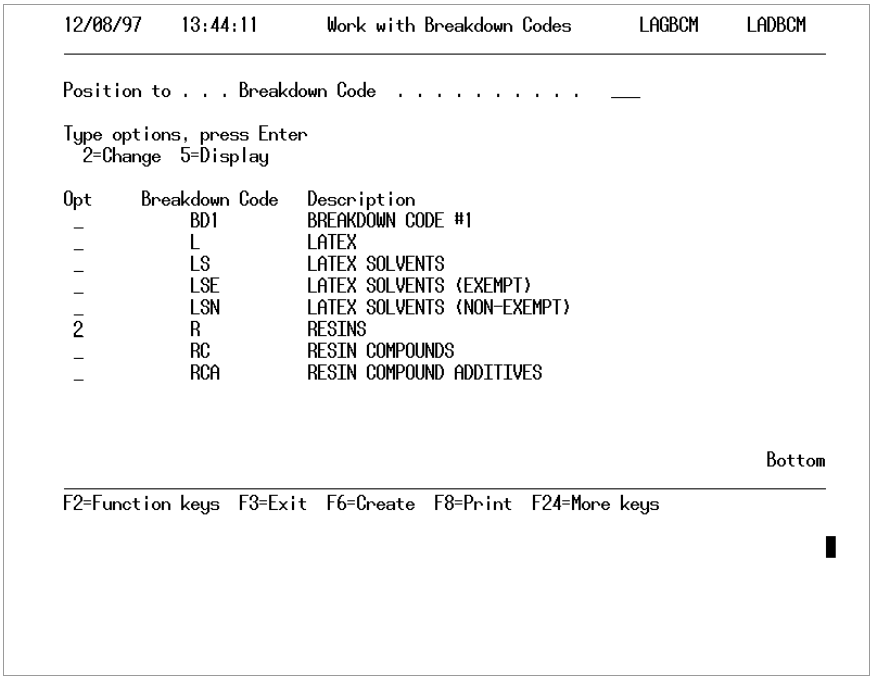


Figure 4-9: Work with Breakdown Codes selection screen

Type **2** or **5** in the *Opt* field to modify or display an existing breakdown code and press Enter.

Breakdown Code

To create a new breakdown code, type the new code in the *Breakdown Code* field and press F6.

The system groups all codes with the same first character under the category that character identifies. The system groups all codes with the same first two characters under a category those characters identify.

For example, on the Work with Breakdown Codes selection screen, the **A** denotes an additive and the **AD** denotes an additive that is also a defoamer. You can use a third character to further refine the code structure; however, the first two characters still represent a category of the first two characters.

Press F8 to print the list of established breakdown codes.

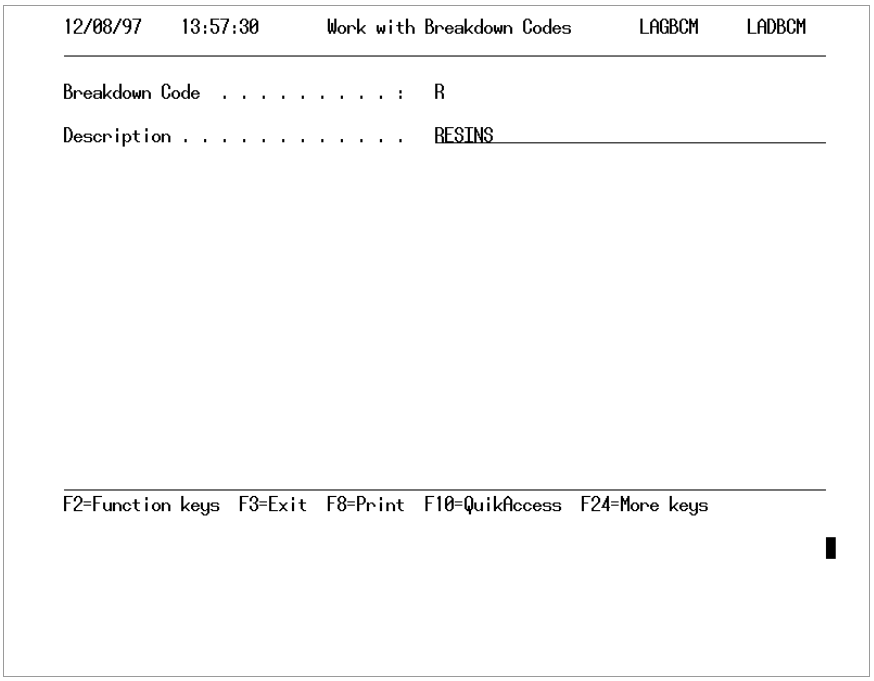


Figure 4-10: Work with Breakdown Codes screen

If you are defining a breakdown, complete the *Breakdown Code* and *Description* fields and press Enter.

To include this code on a breakdown listing, press F8.

To delete this breakdown code, press F22. The system displays a confirming message. Press F22 again to complete the deletion.

Appendix A Printing Infinium LA Reports

A

The appendix consists of the following topics:

Printing the Formula Comparison Listing

The Formula Comparison Listing is a side-by-side comparison of two formulas that the system has rebulked according to your specifications.

Use the menu path below.

- *Display/Print Formula Comparison* [DPFC]

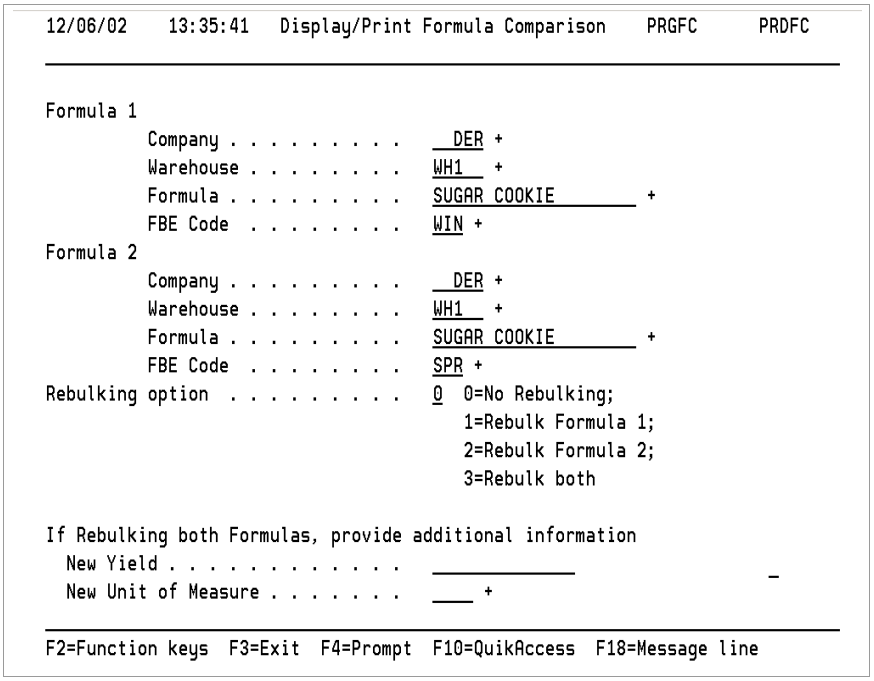


Figure A-1: Display/Print Formula Comparison prompt screen

Setting Up a Formula Comparison

The Formula 1 and Formula 2 sections are required.

Company, Warehouse

If you have implemented formula by location, specify the company and warehouse that identifies the instance of each of the formulas you are comparing.

FBE Code

For each of the formulas you are comparing, specify the FBE code value that identifies the instance of the formula you want to compare.

Rebulking Option

Type the appropriate rebulking code in the *Rebulking option*. The system defaults `0` for no rebulking to occur if you leave the *Rebulking option* field blank.

New Yield, New Unit of Measure

If you are rebulking one or both of the formulas, you must complete the *New Yield* and *New Unit of Measure* fields to define the new measurements.

Choosing to rebulk one or both of these formulas does not affect the Formula file.

Press Enter to continue.

```
_12/06/02    13:53:32   Display/Print Formula Comparison    PRGFC      PRDFC
                                                                          View:  >
Formula 1 . . . . . . . . . . . . :   SUGAR COOKIE         WIN   DER WH1
 Line   Material and Size Code          Quantity  UM    Other Quantity  UM
   10   GREEN SPRINKLES                    .2500  LB             .1250  GL
   20   RED SPRINKLES                      .2500  LB             .1250  GL
   30   SUGAR                             1.0000  LB             .1667  GL
   40   FLOUR                             2.0000  LB             .4000  GL
   50   EGG                               1.0000  EA            1.0000
                                                                        More...
Tot Wt         10.5000  LB    Tot Vol          7.9310  GL
Formula 2 . . . . . . . . . . . . :   SUGAR COOKIE         SPR   DER WH1
   10   MFC-RAW02                          .2500  LB             .0296  GL
   20
   30
   40
   50
                                                                        More...
Tot Wt                  EA    Tot Vol
F2=Function keys  F3=Exit  F8=Print  F10=QuikAccess  F24=More keys
```

Figure A-2: Display/Print Formula Comparison screen

Displaying a Formula Comparison

This screen displays the comparison of the two formulas you selected.

Press F8 to print the listing.

A sample Formula Comparison Listing is shown on the next page.

```
PRGFC     PRTFC                                          F O R M U L A   C O M P A R I S O N   L I S T I N G
12/08/97   14:01:45
WMM
----------------------------------------------------------------------------------------------------------------------------------------
                            _________________
                            Company
                            Warehouse
                            Formula 1    Regular Formula
                            FBE Code
                            Company
                            Warehouse
                            Formula 2    Raw Material Breakdown Formula
                            FBE Code
                            Rebulking option
                            Formula 2 . . . . . . . . . . . . . .
                            Rebulking option  . . . . . . . . . 0                    0=No Rebulking;
                                                                                     1=Rebulk Formula 1;
                                                                                     2=Rebulk Formula 2;
                                                                                     3=Rebulk both

PRGFC      PRTFC                                                              F O R M U L A   C O M P A R I S O N   L I S T I N G
PAGE
12/08/97   14:01:45
WMM
----------------------------------------------------------------------------------------------------------------------------------------
       FORMULA 1 . . . . . . . . . . . . . :   FORM01                                   | FORMULA 2 . . . . . . . . . . . . . :   FORM04
   SEQ   MATERIAL AND SIZE CODE          QUANTITY  UM       QTY IN LB       QTY IN GL   |   MATERIAL AND SIZE CODE          QUANTITY  UM
QTY IN LB       QTY IN GL
    10   RAW01                            30.0000  GL        249.9000         30.0000   |   HAZRAW10                          6.0000  GL
45.0000         6.0000
           WATER                                                                        |     TOULENE
    20   RAW11                            40.0000  LB         40.0000          4.2105   |   RAW01                             2.0000  GL
16.6600         2.0000
           ABSORBENT PELLENTS                                                           |     WATER
    30   HAZRAW08                         34.0000  GL        221.0000         34.0000   |   HAZRAW02                          2.0000  GL
14.0000         2.0000
           AROMATIC                                                                     |     XYLENE
    40   HAZRAW01                         12.0000  GL        101.4000         12.0000   |
           ALCOHOL                                                                      |
    50   HAZRAW10                          5.0000  GL         37.5000          5.0000   |
           TOULENE                                                                      |
    60   HAZRAW05                         10.0000  GL         82.3000         10.0000   |
           CHLORINE                                                                     |
    70   HAZRAW09                          5.0000  GL         36.5000          5.0000   |
           FORMALDEHYDE                                                                 |
                                                 TOTAL       768.6000        100.2105   |                                              TOTAL
75.6600        10.0000                                  ********** END OF REPORT **********
```

Printing Formula Breakdowns

Use the *Display/Print Formula Breakdown* option to view a two-level breakdown of a formula and to print a three-level Formula Breakdown Listing.

The Breakdown Display shows ingredient quantities at two nested levels. Define these levels with the first and second digits of the breakdown codes.

Establish breakdown codes using the *Work with Breakdown Codes* option. Each raw material or resource has a breakdown code.

The table below shows an example of defining, assigning, and displaying of breakdown codes.

Breakdown Code	Breakdown Description/Type	Breakdown Display Information
AAX	Additive, anti-cake, type X	The total quantity of anti-cake additives (AAX plus AAZ) on one line.
AAZ	Additive, anti-cake, type Z	The total quantity of defoamer additives (ADW) on a second line.
ADW	Additive, defoamer, type W	The total quantity of all additives (AAX, AAZ, and ADW) on a third line.

If you define and assign breakdown codes for resins and colorants, the system displays quantities for those codes as well. Thus, you can use the Breakdown Display to understand the quantity of ingredients in each meaningful category that you define as a breakdown code.

The Formula Breakdown Listing shows the same information as the Breakdown Display, except that it prints information at the three nested levels that the three-digit breakdown codes define. The report also lists percentages and quantities at each level, rather than quantities alone.

On the Formula Breakdown listing, the Level 2 column shows total quantities for all ingredients assigned to breakdown codes with the same first two digits. The Level 1 column shows total quantities for all ingredients assigned to breakdown codes with the same first digit.

Use the menu path below.

- *Display/Print Formula Breakdown* [DPFB]

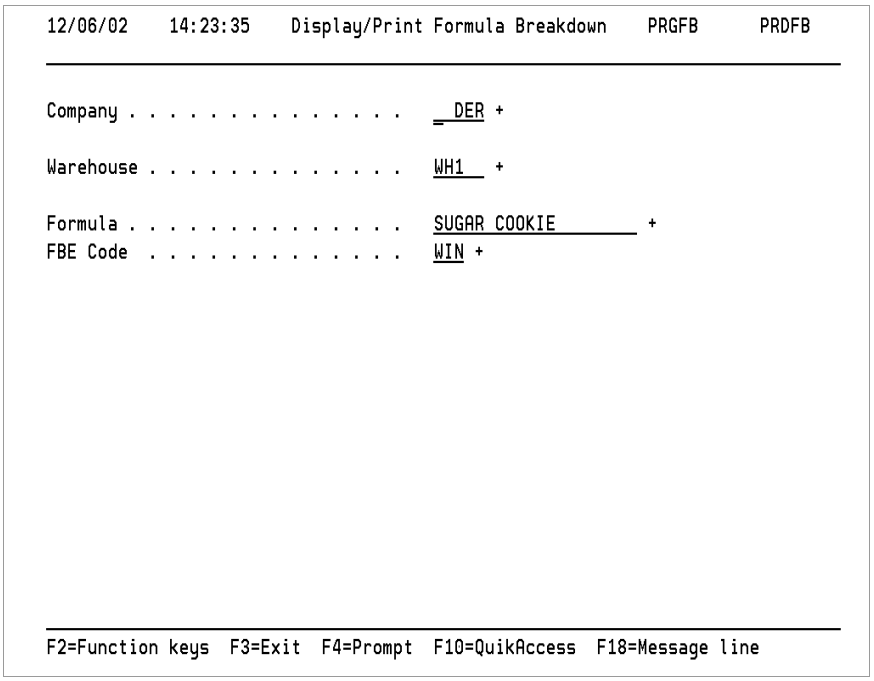


Figure A-3: Display/Print Formula Breakdown prompt screen

Company, Warehouse

If you have implemented formula by location, specify the company and warehouse that identifies the instance of the formula to use.

FBE Code

If you have multiple instances of a formula, specify the FBE code value that identifies the instance you want to use.

Formula

Type the formula you want to display or print in the *Formula* field and press Enter.

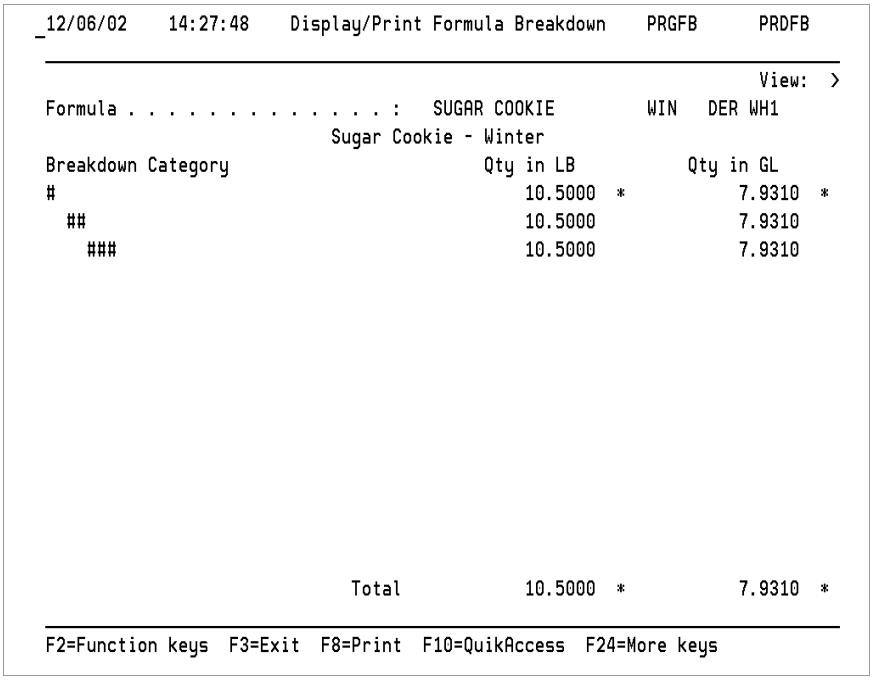


Figure A-4: Display/Print Formula Breakdown screen

Formula Breakdown Code Information

If you have not assigned a breakdown code to any quantities for ingredients, the Breakdown Category column displays with an **#**.

Press F3 to return to the main menu, or F12 to return to the Display/Print Formula Breakdown prompt screen.

Press F20 to view corresponding percentages in more detail. The Formula Breakdown Percentages screen is shown next.

Press F8 to print the listing from this screen.

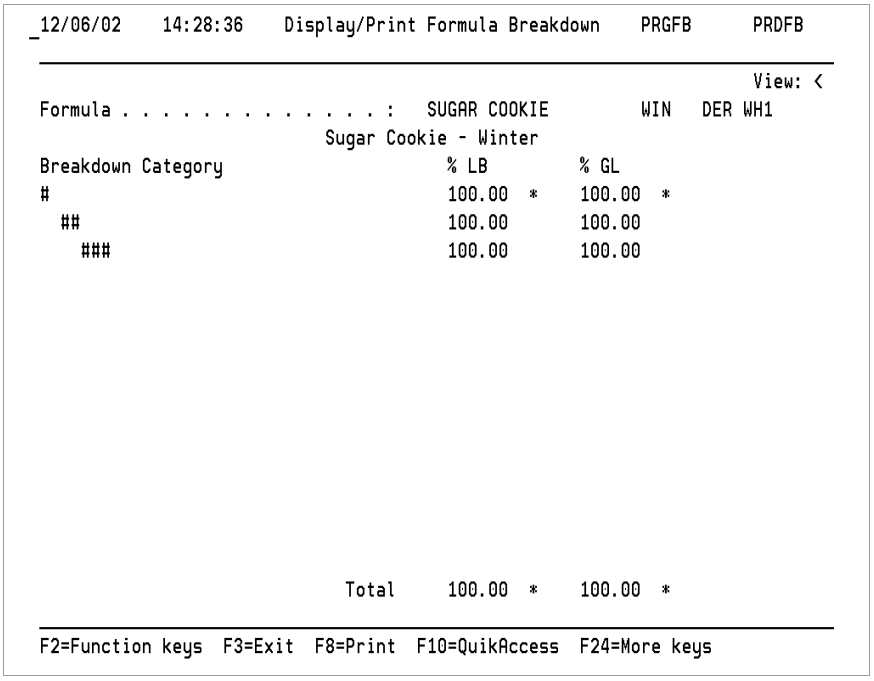


Figure A-5: Display/Print Formula Breakdown percentages screen

Formula Breakdown Percentages

This screen displays the percentages that correspond to the quantities on the Display/Print Formula Breakdown screen.

If a formula has products as part of its ingredients, the totals on this screen may be less than 100%. The system does not process product ingredients during breakdown code analysis.

A sample Formula Breakdown Listing is shown on the next page.

```
PRGFB      PRTFB                                        F O R M U L A   B R E A K D O W N   L I S T I N G
12/08/97   14:15:11
WMM
------------------------------------------------------------------------------------------------------------------------------------------------------------------------
-----------------------------------------------
                           _________________
                           Company
                           Warehouse
                           Formula . . . . . . . . . . . . . . FORM04
                           FBE Code . . . . . . . . . . . . . .
PRGFB      PRTFB                                                F O R M U L A   B R E A K D O W N   L I S T I N G
PAGE
12/08/97   14:15:11
WMM
------------------------------------------------------------------------------------------------------------------------------------------------------------------------
----
 FORMULA . . . . . . . . . . . . . . :   FORM04                RAW MATERIAL BREAKDOWN FORMULA
 UNIT OF MEASURE . . . . . . . . . . :   GL
                                       -------------------- LEVEL 1 --------------------   -------------------- LEVEL 2 --------------------   --------
------------ LEVEL 3 --------------------
 BREAKDOWN CATEGORY                       QTY IN LB        QTY IN GL     % LB     % GL        QTY IN LB        QTY IN GL     % LB     % GL        QTY
IN LB        QTY IN GL     % LB     % GL
 #                                         75.6600          10.0000   100.00   100.00
   ##                                                                                          75.6600          10.0000   100.00   100.00
     ###
75.6600          10.0000   100.00   100.00
                         TOTAL  ***         75.6600          10.0000
                                                                                  ********** END OF REPORT **********
```

•

Printing the Breakdown Code Listing

The Breakdown Code Listing shows the breakdown codes and descriptions that are in the Breakdown Codes file. The system displays the description for only one code at a time. You can print one or all breakdown codes, depending on the screen from which you initiate the print request.

You can also display or print breakdown codes using the *Work with Breakdown Codes* and *Display Breakdown Codes* options.

Use the menu path below.

- *Print Breakdown Codes* [PBC]

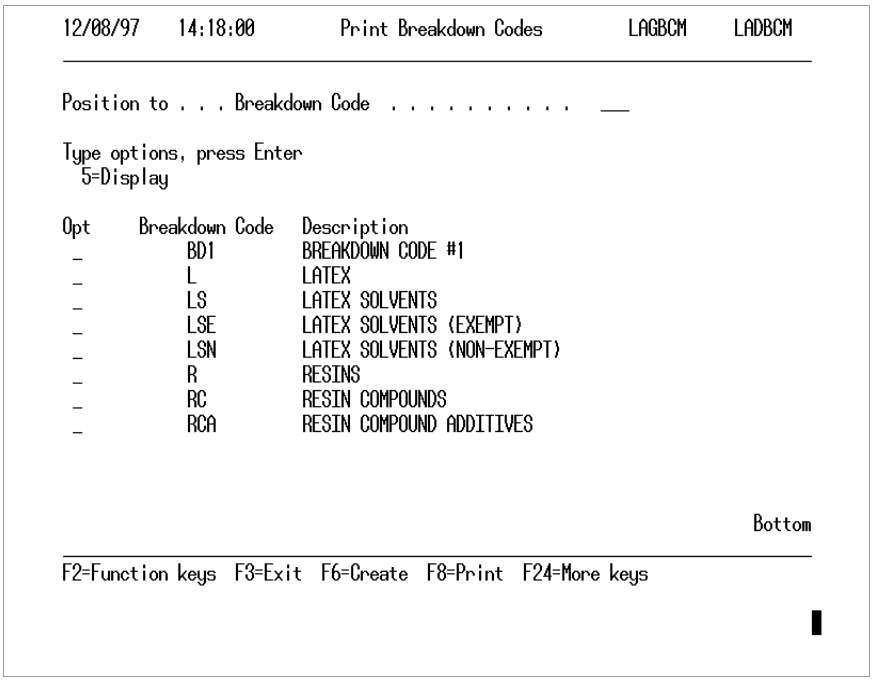


Figure A-6: Print Breakdown Codes selection screen

Printing Formula Breakdown Codes

This screen displays the entire list of breakdown codes and their descriptions.

To display and/or print a breakdown code description, type **5** in the *Opt* field to select a breakdown code to view.

F6 (Create) and F22 (Delete) are not valid function keys on this screen.

Press F8 to print the entire Breakdown Code file.

A sample Breakdown Code Listing is shown on the next page.

```
LAGBCM     LATBC                          B R E A K D O W N   C O D E   L I S T I N G                          PAGE    1
12/08/97   14:18:00
-------------------------------------------------------------------------------------------------------------------------
 BREAKDOWN CODE   DESCRIPTION
     BD1          BREAKDOWN CODE #1
     L            LATEX
     LS           LATEX SOLVENTS
     LSE          LATEX SOLVENTS (EXEMPT)
     LSN          LATEX SOLVENTS (NON-EXEMPT)
     R            RESINS
     RC           RESIN COMPOUNDS
     RCA          RESIN COMPOUND ADDITIVES
                        ***** RECORDS SELECTED  . .  000008
                                      ********** END OF REPORT **********
```

•

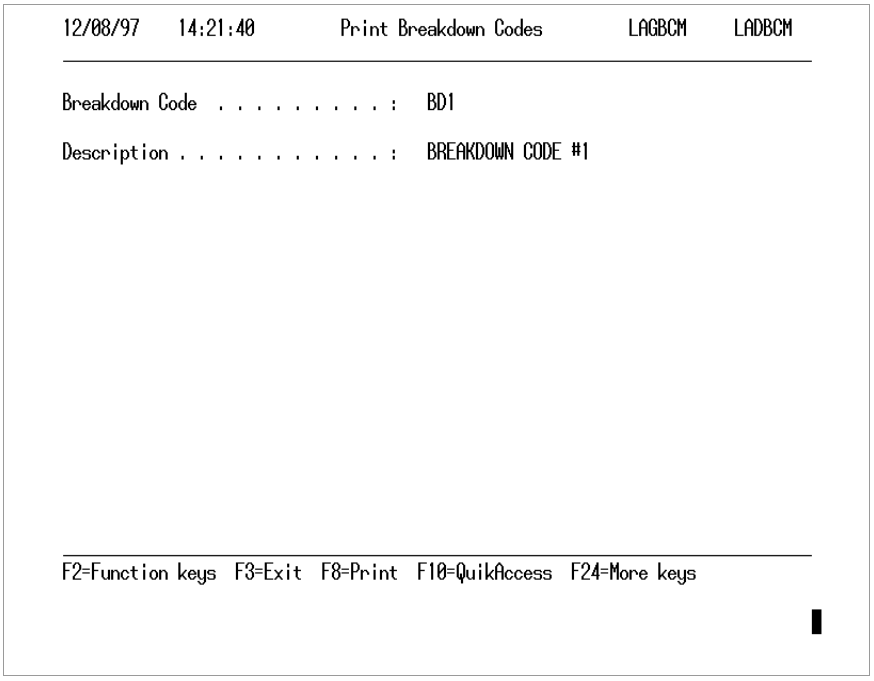


Figure A-7: Print Breakdown Codes description screen

Printing Breakdown Code Descriptions

The system displays this screen if you typed **5** on the Print Breakdown Codes selection screen. This screen shows the description for the breakdown code you selected.

Description

Description is a display only field.

Press F8 to print the description for this breakdown code.

A sample Breakdown Code Listing is shown on the next page.

```
LAGBCM     LATBC                          B R E A K D O W N   C O D E   L I S T I N G                          PAGE    1
12/08/97   14:21:07
-------------------------------------------------------------------------------------------------------------------------
 BREAKDOWN CODE   DESCRIPTION
     BD1          BREAKDOWN CODE #1
                        ***** RECORDS SELECTED  . .  000001
                                      ********** END OF REPORT **********
```

•

Printing the Indented Formula Listing

The Indented Formula Listing shows the expanded or exploded view of a formula by listing ingredients for up to ten levels of intermediates.

Use the menu path below.

- *Print Indented Formula List* [PIFL]

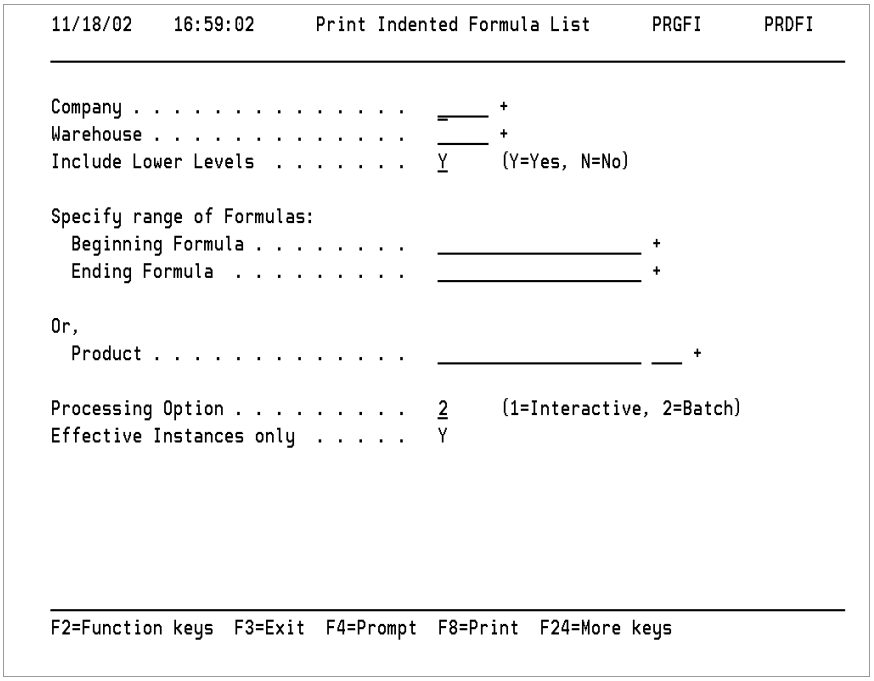


Figure A-8: Print Indented Formula List prompt screen

Formula Selection Criteria

To print the Indented Formula listing for one formula, complete the *Beginning Formula* field. To print the listing for a range of formulas, complete both the *Beginning Formula* and *Ending Formula* fields.

Effective Instances only

The system selects only the instance that is currently in effect as of the system date for each formula in the range you specified. This field is display-only and cannot be changed.

Formula by Location

Company, *Warehouse* and *Include Lower Levels* are used to further define the formula selection criteria for the range of formulas specified in *Beginning Formula* and *Ending Formula*. The tables below describe the various formula selection criteria for printing the report for effective instances.

Use the table below to specify the selection criteria for only the formula that is currently in effect as of the system date for each formula in the range you specified.

To print…	You must…
Formula instances for a specific warehouse	Specify *Company* and *Warehouse* Type either **Y** or **N** in *Include Lower Levels*
Formula instances for a specific company and all of its warehouses	Specify *Company* Leave *Warehouse* blank Type **Y** in *Include Lower Levels*
All Formula instances including the entity formulas	Leave *Company* and *Warehouse* blank Type **Y** in *Include Lower Levels*
Company formula instances only	Specify *Company* Leave *Warehouse* blank Type **N** in *Include Lower Levels*
Entity formula instances only	Leave *Company* and *Warehouse* blank Type **N** in *Include Lower Levels*

Product Information

If you complete the *Product* field, the system prints the report for the formula that the product uses.

Printing the List

To print the listing immediately, type a **1** in the *Processing Option* field. To submit the listing into a queue for processing, type **2**. The default for this field is **2**.

Press F8 to print the report.

A sample Indented Formula Listing is shown on the next page.

PRGFI PRTFI I N D E N T E D F O R M U L A L I S T I N G

1/23/98 15:02:45 WMM

Company	IS1
Warehouse	ISW1
Include Lower Levels	Yes
Beginning Formula Number	FORM03
Ending Formula Number	FORM03
Effective Instances Only	No

PRGFI PRTFI I N D E N T E D F O R M U L A L I S T I N G

PAGE

1/23/98 15:02:45 WMM

FORMULA . . . . : FORM03 REGULAR FORMULA 3 - APPLE PIE

UNIT OF MEASURE . . . . : LB

LEVEL 1				OTHER LEVELS				
COMPONENT	DESCRIPTION	QTY IN LB	QTY IN GL	LEVEL	COMPONENT	DESCRIPTION	QTY IN LB	QTY IN GL
RAW07	APPLES	4.0000	.4494					
RAW13	RED DYE	1.0000	.1200					
RAW01	WATER	33.3200	4.0000					
FORM05	INTERMEDIATE FORM1 - CHE	12.0000	1.4788					
				2.......	RAW01	WATER	9.4035	1.1289
				2.......	RAW02	FLOUR	1.1289	.1411
				2.......	RAW03	BUTTER	.1129	.0148
				2.......	RAW04	SUGAR	.7902	.1188
				2.......	RAW08	CHERRIES	.5644	.0753
				2.......	RAW19	LABOR	.1129 HR	Y
		--------------	--------------					
			50.3200	6.0482				

***** RECORDS SELECTED . . 000001

********** END OF REPORT **********

Printing the Formula Details Report

The Formula Details Report lists formula information from the Formula Header Information, Ingredients and Instructions, and Descriptive Information screens.

Use the menu path below.

- *Work with Formula Analysis* [WWFA]

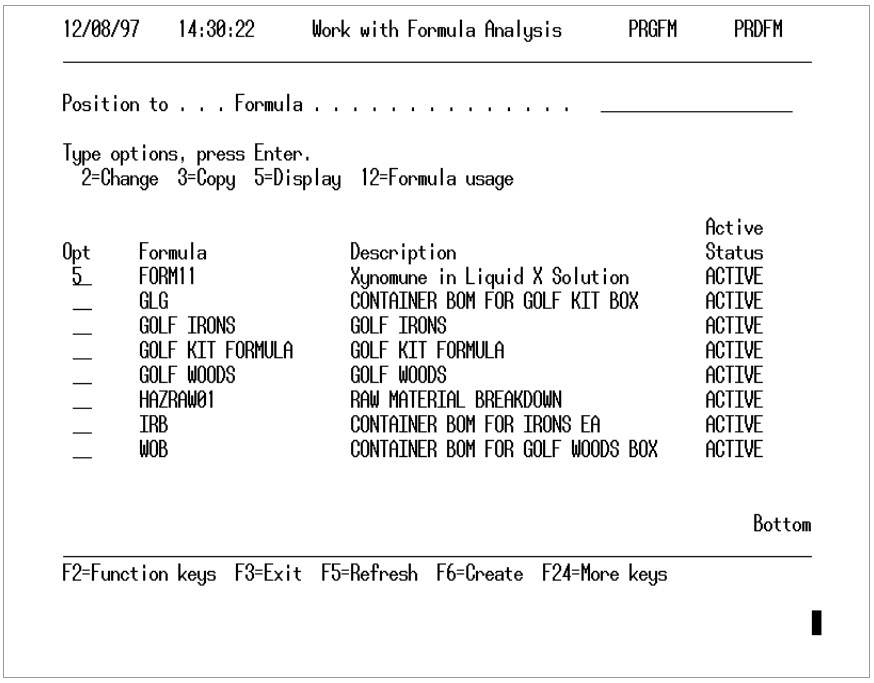


Figure A-9: Work with Formula selection screen

Type **5** in the *Opt* field to select a formula and press Enter.

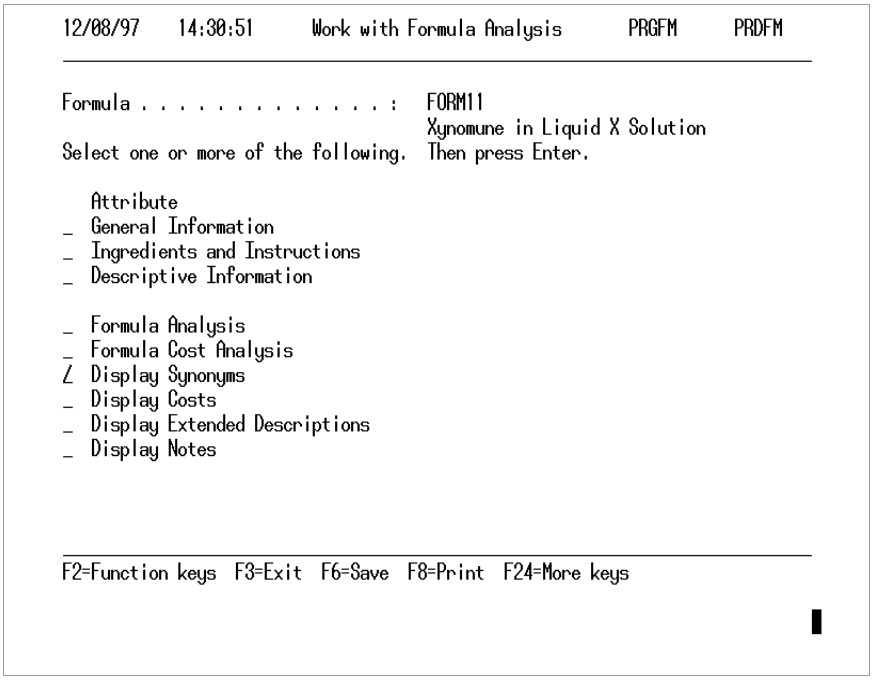


Figure A-10: Work with Formula attribute screen

Formula Attributes

Type any character next to the Display Synonyms attribute and press Enter.

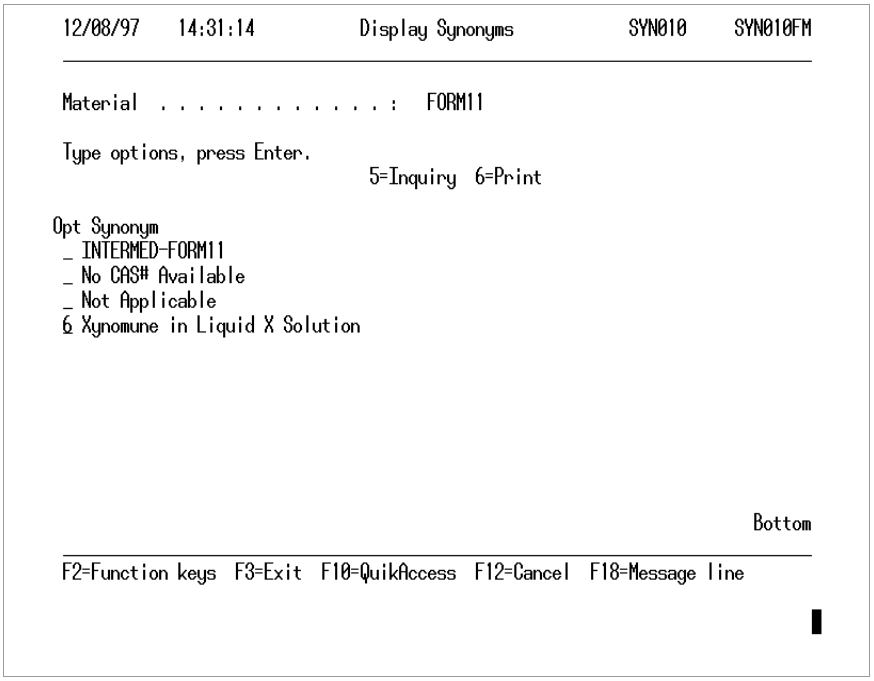


Figure A-11: Display Synonyms screen

Displaying Synonyms

Type **6** in the *Opt* field to select a Synonym and press Enter to print the report.

A sample Formula Details report is shown next.

```
PSR220    PSR220PR                                   F O R M U L A   D E T A I L S   R E P O R T
12/08/97   14:31:59
WMM
------------------------------------------------------------------------------------------------------------------------------------------------------------
------------------------------

                          _______________
                          Beginning Formula . . . . . . . . . FORM11
                          Ending Formula  . . . . . . . . . .
                          Beginning Product Category  . . . .
                          Ending Product Category . . . . . .
                          Formula Class to Report . . . . . .     ALL
PSR220     PSR220PR                                                F O R M U L A   D E T A I L S   R E P O R T
PAGE
12/08/97   14:31:59
WMM
------------------------------------------------------------------------------------------------------------------------------------------------------------
------------------------------
 COMPANY AND WAREHOUSE LOCATION  . :     IS1   ISW1
 FORMULA . . . . . . . . . . . . . :   FORM11                Xynomune in Liquid X Solution                                    FVR#  :   0002
 ACTIVE CODE . . . . . . . . . . . :   1     ACTIVE                                        ESTABLISHED YIELD . . . . . . . . . . :
 CLASS . . . . . . . . . . . . . . :   1     FORMULA                                       ESTABLISHED WEIGHT PER VOLUME . . . . :
 UNIT OF MEASURE . . . . . . . . . :   GL                                                CALCULATED WEIGHT PER VOLUME  . . . . :
9.66178
 PERCENTAGE LOSS . . . . . . . . . :                                                     CHEMICAL PROPERTIES OVERRIDE  . . . . :
 CLINGAGE LOSS . . . . . . . . . . :                                                     COST OVERRIDE FORMULA . . . . . . . . :
 FORMULA QC TYPE . . . . . . . . . :   CON   CONCENTRATION TEST                         MSDS OVERRIDE FORMULA . . . . . . . . :
 LABEL CODE  . . . . . . . . . . . :                                                     ROUGH CUT CAPACITY PLANNING FORMULA . :
 FORMULA LAST REVISION DATE  . . . :   00/00/0000                                      REVISION CODE AND INITIALS  . . . . . :
 ------------------------------------------------------------------- INGREDIENTS AND INSTRUCTIONS ----------------------------------------------------
------------------------------
                                 WEIGHT/        -- SOLID --           -- LIQUID --         SOLID - BASE          LIQUID - BASE
FIX ING CRITICAL
SEQ       INGREDIENT                  VOLUME         QUANTITY  UM          QUANTITY  UM          QUANTITY  UM          QUANTITY  UM    DESCRIPTION
CODE  RESOURCE
10    R  RAW11                     9.50000         230.3332  LB           24.2456  GL          230.3332  LB           24.2456  GL    ABSORBENT
PELLENTS                        N
20    R  RAW12                     9.70000         319.4550  LB           32.9335  GL          319.4550  LB           32.9335  GL    SOIL
N
30    R  RAW13                     8.33000         648.0482  LB           77.7969  GL          648.0482  LB           77.7969  GL    RED DYE
N
40    R  RAW14                     8.33000         125.1499  LB           15.0240  GL          125.1499  LB           15.0240  GL    WHITE DYE
N
50    R  RAW15                                     126.2808  LB                    GL          126.2808  LB                    GL    CASE
N
------------------------------------------------------------------------------------------------------------------------------------------------------------
------------------------------
                                    9.66178                          ACCUMULATED TOTALS       1449.2671  LB          150.0000  GL
```

	ESTABLISHED TOTALS	LB	GL
9.66178	CALCULATED TOTALS	LB	GL

********** END OF REPORT **********

Printing Formula Analysis Reports

Use the *Work with Formula Analysis* option to print the Formula Listing, Formula Analysis report, and Formula Worksheet.

Use the menu path below.

- *Work with Formula Analysis* [WWFA]

```
12/10/97    10:02:24      Work with Formula Analysis       PRGFM      PRDFM
_____________________________________________________________________________

Position to . . . Formula . . . . . . . . . . . . . .  ________________

Type options, press Enter.
  2=Change  3=Copy  5=Display  12=Formula usage

                                                                    Active
Opt     Formula             Description                             Status
 __     FORM11              Xynomune in Liquid X Solution           ACTIVE
 2_     FORM15              Laboratory Formula                      TEST
 __     FORM16              Laboratory Formula                      TEST
 __     GLG                 CONTAINER BOM FOR GOLF KIT BOX          ACTIVE
 __     GOLF IRONS          GOLF IRONS                              ACTIVE
 __     GOLF KIT FORMULA    GOLF KIT FORMULA                        ACTIVE
 __     GOLF WOODS          GOLF WOODS                              ACTIVE
 __     HAZRAW01            RAW MATERIAL BREAKDOWN                  ACTIVE
 __     IRB                 CONTAINER BOM FOR IRONS EA              ACTIVE
 __     WOB                 CONTAINER BOM FOR GOLF WOODS BOX        ACTIVE
                                                                        Bottom
_____________________________________________________________________________
F2=Function keys  F3=Exit  F5=Refresh  F6=Create  F24=More keys
```

Figure A-12: Work with Formula Analysis selection screen

Type **2** or **5** in the *Opt* field to select or display the analysis for the formula for which you want to print the reports and press Enter.

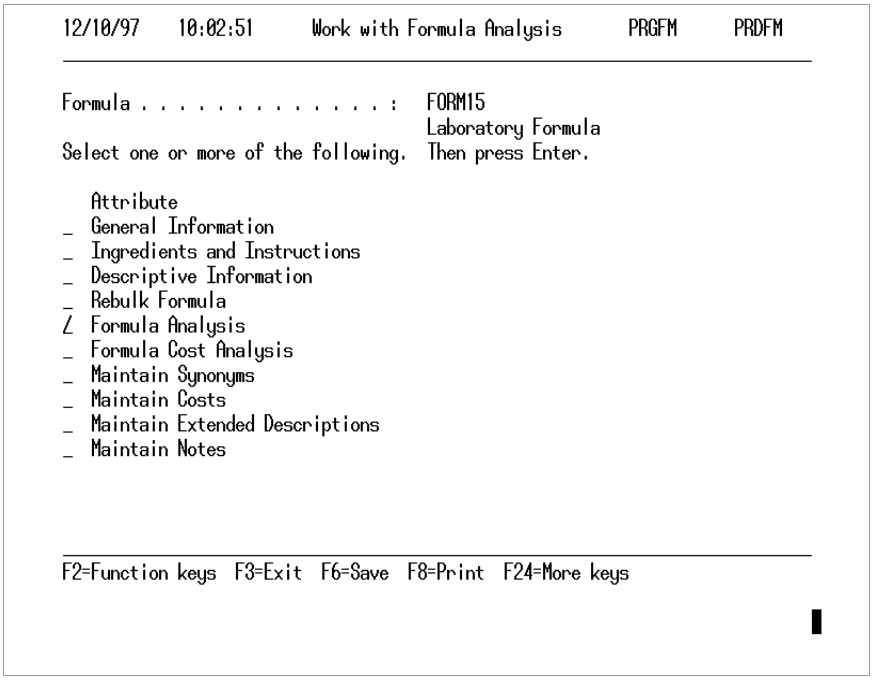


Figure A-13: Work with Formula attribute screen

Type any character next to the Formula Analysis attribute and press Enter.

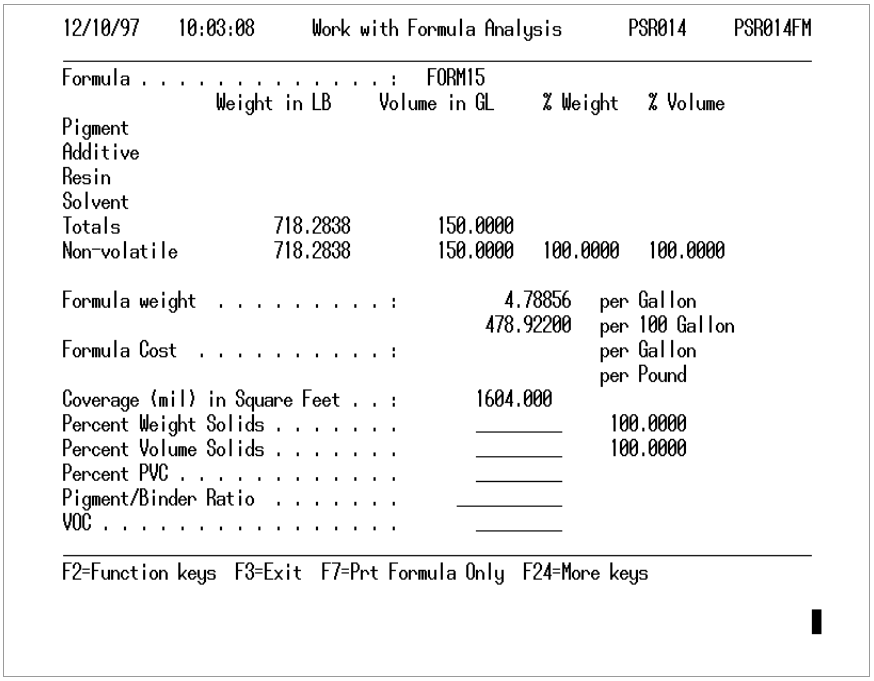


Figure A-14: Work with Formula Analysis screen

Press F7 to print the Formula Listing, F8 to print the Formula Analysis report and the Formula Worksheet, or F9 to print only the Formula Analysis report.

```
PSR014     LATFA2                         F O R M U L A   L I S T I N G
12/10/97   13:20:43                                                                                             WMM
-------------------------------------------------------------------------------------------------------------------------------------

                            Formula . . . . . . . . . . . . . . FORM15
PSR014     LATFA2                         F O R M U L A   L I S T I N G                                         PAGE    1
12/10/97   13:20:43                                                                                             WMM
-------------------------------------------------------------------------------------------------------------------------------------
 FORMULA . . . . . . . . . . . . . . :   FORM15
 DESCRIPTION . . . . . . . . . . . . :   Laboratory Formula
 ACTIVE CODE . . . . . . . . . . . . :   2  TEST
 REVISION CODE AND DATE  . . . . . . :
 LOSS FACTOR . . . . . . . . . . . . :
 ESTABLISHED YIELD . . . . . . . . . :                 GL
   INGREDIENT                DESCRIPTION                                      POUNDS           GALLONS      % LB       % GL
   RAW11                     ABSORBENT PELLENTS                             125.0542           13.1636   17.4101     8.7757
   RAW12                     SOIL                                           173.4409           17.8805   24.1466    11.9203
   RAW13                     RED DYE                                        351.8417           42.2379   48.9837    28.1586
   RAW14                     WHITE DYE                                       67.9470            8.1569    9.4596     5.4379
   RAW15                     CASE                                                              68.5611               45.7074
-------------------------------------------------------------------------------------------------------------------------------------
 TOTAL POUNDS  . . . . . . . . . . . :         718.2838
 TOTAL GALLONS . . . . . . . . . . . :         150.0000
 ACTUAL GALLONS  . . . . . . . . . . :         150.0000
 WEIGHT PER GALLON . . . . . . . . . :          4.78856
 PERCENT WEIGHT SOLIDS . . . . . . . :         100.0000
 PERCENT VOLUME SOLIDS . . . . . . . :         100.0000
 PERCENT PVC . . . . . . . . . . . . :
 VOC . . . . . . . . . . . . . . . . :                   LB/GL
 FLASH POINT . . . . . . . . . . . . :                   °F
 COVERAGE (MIL) IN SQUARE FEET . . . :         1604.000
 THESE VALUES WERE CALCULATED IN THE FORMULA ANALYSIS FUNCTION.
                                          ********** END OF REPORT **********
```

•

PSR014 LATFA1 F O R M U L A A N A L Y S I S R E P O R T
12/10/97 12:58:51
WMM

Formula . . . . : FORM15
Laboratory Formula

PSR014 LATFA1 F O R M U L A A N A L Y S I S R E P O R T
PAGE
12/10/97 12:58:51
WMM

FORMULA . . . . : FORM15 Not applicable
ACTIVE CODE . . . . : 2 TEST MSDS SORT TYPE . . . . :
CLASS . . . . : 1 FORMULA MSDS REVISION CODE . . . . :
UNIT OF MEASURE . . . . : GL FORMULA LAST REVISION DATE . . . . :
LOSS PERCENTAGE . . . . : INITIALS OF PERSON REVISING . . . . :

----------- SOLVENT ------
------- NON-VOLATILE ---------
SEQ INGREDIENT WT/VOL WEIGHT IN LB VOLUME IN GL % WEIGHT LB / 100 GL % VOLUME WT IN LB (VLW) VOL IN GL (VLV)
SOLID-WT IN LB SOLID-VOL IN GL
UNIT COST UM EXTENDED COST
10 R RAW11 9.50000 125.0542 13.1636 17.4101 83.36915 8.7757
125.0542 13.1636
LB
ABSORBENT PELLENTS
20 R RAW12 9.70000 173.4409 17.8805 24.1466 115.62691 11.9203
173.4409 17.8805
LB
SOIL
30 R RAW13 8.33000 351.8417 42.2379 48.9837 234.56114 28.1586
351.8417 42.2379
LB
RED DYE
40 R RAW14 8.33000 67.9470 8.1569 9.4596 45.29771 5.4379
67.9470 8.1569
GL
WHITE DYE
50 R RAW15 68.5611 45.7074
68.5611
EA
CASE
TOTAL 718.2838 150.0000 100.0000 478.85491 99.9999
718.2838

```
        150.0000

PIGMENT        ADDITIVE           RESIN         SOLVENT    NON-VOLATILE           LEAD        CHROMATE
 TOTAL WEIGHT IN POUNDS  . . . . . :           718.2838                                                    718.2838
 PERCENT WEIGHT  . . . . . :                                                                               100.0000
 TOTAL VOLUME IN GALLONS . . . . . :           150.0000                                                    150.0000
 PERCENT VOLUME  . . . . . :                                                                               100.0000
 TOTAL EXEMPT SOLVENT  . . . . . :                     LB    (        %)                    GL    (        %)
-------------------------------------------------------------------------------------------------------------------
```

```
PSR014     LATFA1                              F O R M U L A   A N A L Y S I S   R E P O R T                              PAGE
12/10/97   12:58:51                                                                                                        WMM
-------------------------------------------------------------------------------------------------------------------------------------
 FORMULA . . . . . . . . . . . . . :   FORM15              Not applicable
 ACTIVE CODE . . . . . . . . . . . :   2  TEST                                MSDS SORT TYPE  . . . . . . . . . :
 CLASS . . . . . . . . . . . . . . :   1  FORMULA                             MSDS REVISION CODE  . . . . . . . :
 UNIT OF MEASURE . . . . . . . . . :   GL                                   FORMULA LAST REVISION DATE  . . . :
 LOSS PERCENTAGE . . . . . . . . . :                                        INITIALS OF PERSON REVISING . . . :
-------------------------------------------------------------------------------------------------------------------------------------
                                                                                                                  PRODUCTION AND
QUALITY CONTROL      ENVIRONMENTAL REPORT
   % PIGMENT WEIGHT =  (                /       718.2838 ) X 100 =                          CTG DENSITY       4.78855  L
   % LEAD WEIGHT    =  (                /       718.2838 ) X 100 =                          SOL DENSITY                L
   % CHROMATE WEIGHT = (                /       718.2838 ) X 100 =                          DENS.SOLIDS       4.78856  L
   % EXTENDER WEIGHT = (                /       718.2838 ) X 100 =                          VOC
   % ADDITIVE WEIGHT=  (                /       718.2838 ) X 100 =                          VOLUME SOLIDS   100.0000   %
   % RESIN WEIGHT   =  (                /       718.2838 ) X 100 =                          SOLVENT VOLUME             %
   % WEIGHT SOLIDS  =  (       718.2838 /       718.2838 ) X 100 =  100.0000
   % VOLUME SOLIDS  =  (       150.0000 /       150.0000 ) X 100 =  100.0000
   WEIGHT / GALLON  =       4.78856  LB
   FORMULA COST     =                   PER GL        RAW MTL COST     =                  PER GL
                                        PER LB                                          PER LB
   % PVC            =  (                /                ) X 100 =
   P/B RATIO        =  (                /                ) =
   VOC  1 = ((      718.2838  -                 )/(       150.0000  -                ))*(          /( 100-          ))
          =           LB/GL
          =           GM/L
   COVERAGE (MIL THICK)  =    100.0000  X    16.04  =    1604.000 SQ FT
```

```
PSR014    LATFA1                                                F O R M U L A   W O R K S H E E T                                                PAGE
12/10/97   12:58:51
WMM
-------------------------------------------------------------------------------------------------------------------------------------------------------
 FORMULA . . . . . . . . . . . . . . :   FORM15               Laboratory Formula  UNIT OF MEASURE . . . . . . . . . . :   GL
   SEQ     INGREDIENT                DESCRIPTION
                              WEIGHT   PIGMENT WEIGHT   FACTOR  ADDITIVE WEIGHT  FACTOR    RESIN WEIGHT   FACTOR  SOLVENT WEIGHT   FACTOR  NON-
VOLATILE WT  FACTOR    LEAD  CHROME
                              VOLUME   PIGMENT VOLUME           ADDITIVE VOLUME            RESIN VOLUME           SOLVENT VOLUME           NON-
VOLATILE VOL
    10   R RAW11           ABSORBENT PELLENTS
                              125.0542
125.0542   1.0000
                               13.1636
13.1636   1.0000
    20   R RAW12           SOIL
                              173.4409
173.4409   1.0000
                               17.8805
17.8805   1.0000
    30   R RAW13           RED DYE
                              351.8417
351.8417   1.0000
                               42.2379
42.2379   1.0000
    40   R RAW14           WHITE DYE
                               67.9470
67.9470   1.0000
                                8.1569
8.1569   1.0000
    50   R RAW15           CASE

1.0000
                               68.5611
68.5611   1.0000
 TOTAL EXEMPT SOLVENT  . . . . . . :                      LB    (        %)                    GL    (        %)
-------------------------------------------------------------------------------------------------------------------------------------------------------
                                                                                                                                                PRODUCTION AND
QUALITY CONTROL      ENVIRONMENTAL REPORT
   % PIGMENT WEIGHT =  (               /       718.2838 ) X 100 =
CTG DENSITY       4.78855  L
   % LEAD WEIGHT    =  (               /       718.2838 ) X 100 =
SOL DENSITY               L
   % CHROMATE WEIGHT = (               /       718.2838 ) X 100 =
DENS.SOLIDS       4.78856  L
```

```
   % EXTENDER WEIGHT = (                /       718.2838 ) X 100 =
VOC
   % ADDITIVE WEIGHT=  (                /       718.2838 ) X 100 =
VOLUME SOLIDS   100.0000   %
   % RESIN WEIGHT   =  (                /       718.2838 ) X 100 =
SOLVENT VOLUME             %
   % WEIGHT SOLIDS  =  (       718.2838 /       718.2838 ) X 100 =  100.0000
   % VOLUME SOLIDS  =  (       150.0000 /       150.0000 ) X 100 =  100.0000
   WEIGHT / GALLON  =       4.78856  LB
   FORMULA COST     =                   PER GL        RAW MTL COST     =                   PER GL
                                        PER LB                                             PER LB
   % PVC            =  (                /                ) X 100 =
   P/B RATIO        =  (                /                ) =
   VOC  1 = ((      718.2838  -                 )/(       150.0000  -                ))*(          /( 100-          ))
          =           LB/GL
          =           GM/L
   COVERAGE (MIL THICK)  =    100.0000  X    16.04  =    1604.000 SQ FT
                                                                          ********** END OF REPORT **********
```

•

Recalculating Chemical Properties Summary/Exception Reports

Use this option to recalculate or print formula chemical properties or to display formulas.

Use the menu path below.

- *Recalculate Chemical Properties* [RCP]

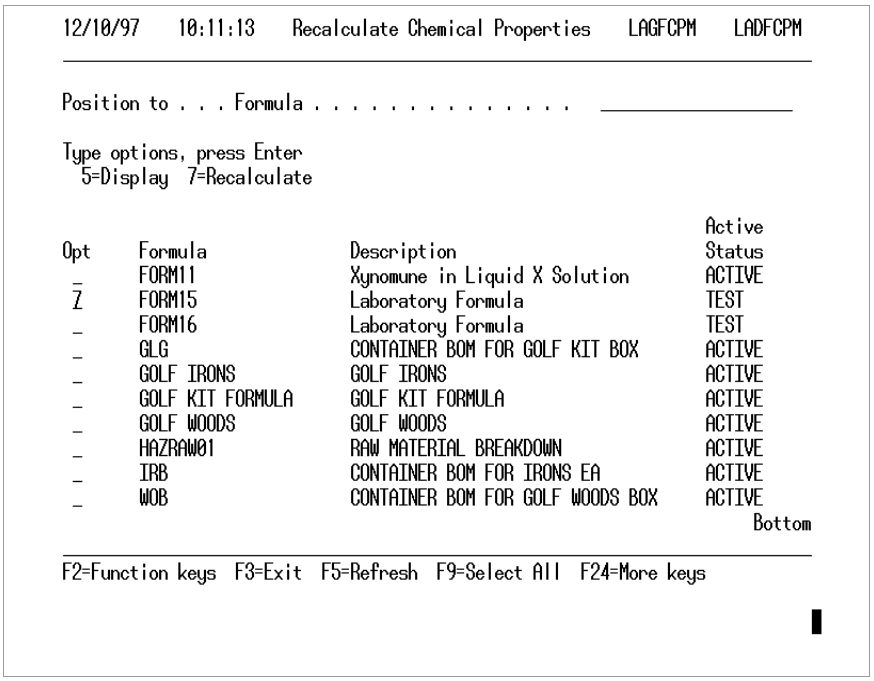


Figure A-14: Recalculate Chemical Properties screen

Press F9 to recalculate chemical properties for all formulas. The system automatically prints the Summary of Chemical Properties report for the formulas you select.

The Summary report lists the formula and its ingredients. The nine columns that display next to each ingredient correspond to the headings for each chemical property and its calculated amount in that formula.

Define column headings using the *Work with Entity Controls* option in Infinium CA.

The Exceptions report lists any formulas that have a product as an ingredient, since you only set up chemical property information for raw materials.

The first page of a sample Summary report, and an Exception report are shown on the next two pages.

PSR110 PST110 **SUMMARY OF CHEMICAL PROPERTIES**

```
 1/26/98   14:52:05                                                                                                                WMM
-----------------------------------------------------------------------------------------------------------------------------------------
                            _________________
                            Company . . . . . . . . . . . . . .  IS1         INFINIUM SOFTWARE (INSTRUCTOR)
                            Warehouse . . . . . . . . . . . . . . ISW1
                            Formula . . . . . . . . . . . . . . . ALL
                            Requesting Job  . . . . . . . . . . . WMGERHARDF
                            Requesting User . . . . . . . . . . . WMM
                            _______________
                            (1)  % PIGMENT LEAD FREE
                            (2)  % PIGMENT WITH LEAD
                            (3)  % PIGMENT CHROMATE
                            (4)  % PIGMENT OTHER
                            (5)  % ADDITIVE
                            (6)  % RESIN
                            (7)  % EXEMPT
                            (8)  % NON-EXEMPT
SUM OF FACTORS

PSR110     PST110                                S U M M A R Y   O F   C H E M I C A L   P R O P E R T I E S                   PAGE
 1/26/98   14:52:05                                                                                                                 WMM
-----------------------------------------------------------------------------------------------------------------------------------------
FORMULA: FORMTRANSFER         REGULAR FORMULA 3 - APPLE PIE
             (1)         (2)         (3)         (4)         (5)          (6)             (7)             (8)             (9)         FORMULA
FORMULA
RAW MATERIAL  WT          WT          WT          WT          WT           WT              WT              WT              WT    BASE SOLID UM  BASE
LIQUID UM
UM WT/VOL P  VOL         VOL         VOL         VOL         VOL          VOL             VOL             VOL             VOL            LB
GL
RAW07      .0000       .0000       .0000       .0000       .0000        .0000           .0000           .0000           .0000
  LB     8.90000       .0000       .0000       .0000       .0000        .0000           .0000           .0000           .0000           .0000
           .0000       .0000       .0000       .0000       .0000        .0000           .0000           .0000                       4.0000
.4494
           .0000       .0000       .0000       .0000       .0000        .0000           .0000           .0000
RAW13      .0000       .0000       .0000       .0000       .0000        .0000           .0000           .0000           .0000
  LB     8.33000       .0000       .0000       .0000       .0000        .0000           .0000           .0000           .0000           .0000
           .0000       .0000       .0000       .0000       .0000        .0000           .0000           .0000                      1.0000
.1200
           .0000       .0000       .0000       .0000       .0000        .0000           .0000           .0000
RAW01      .0000       .0000       .0000       .0000       .0000        .0000           .0000           .0000           .0000
  GL     8.33000       .0000       .0000       .0000       .0000        .0000           .0000           .0000           .0000           .0000
           .0000       .0000       .0000       .0000       .0000        .0000           .0000           .0000                      33.3200
4.0000
           .0000       .0000       .0000       .0000       .0000        .0000           .0000           .0000
FORM05     .0000       .0000       .0000       .0000       .0000        .0000           .0000           .0000           .0000
```

```
  LB     8.11445       .0000       .0000       .0000       .0000       .0000       .0000       .0000       .0000       .0000
          .0000        .0000       .0000       .0000       .0000       .0000       .0000       .0000                12.0000
1.4788
          .0000        .0000       .0000       .0000       .0000       .0000       .0000       .0000
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- -
                                                                                                                        50.3200
6.0482
TOTAL
WEIGHT    .0000        .0000       .0000       .0000       .0000       .0000       .0000       .0000       .0000

TOTAL
VOLUME    .0000        .0000       .0000       .0000       .0000       .0000       .0000       .0000       .0000
  WT/VOL  8.31983
  PERCENT
  WEIGHT  .00          .00         .00         .00         .00         .00         .00         .00         .00
  PERCENT
VOLUME    .00          .00         .00         .00         .00         .00         .00         .00         .00
  % WT  ADJUSTED BY
  % VOL ADJUSTED BY
PSR110     PST110E            S U M M A R Y   O F   C H E M I C A L   P R O P E R T I E S
 1/26/98   14:52:14                                EXCEPTIONS REPORT                                        WMM
------------------------------------------------------------------------------------------------------------------------------------
                            _________________
                            Company . . . . . . . . . . . . . .   IS1         INFINIUM SOFTWARE (INSTRUCTOR)
                            Warehouse . . . . . . . . . . . . . . ISW1
                            Formula . . . . . . . . . . . . . . . ALL
                            Requesting Job  . . . . . . . . . . . WMGERHARDF
                            Requesting User . . . . . . . . . . . WMM


PSR110     PST110E            S U M M A R Y   O F   C H E M I C A L   P R O P E R T I E S                   PAGE    1
 1/26/98   14:52:14                                EXCEPTIONS REPORT                                        WMM
------------------------------------------------------------------------------------------------------------------------------------
FORMULA . . . . . . . . . . . . . . :   GOLF KIT FORMULA     GOLF KIT FORMULA
    CONTAINS THE INVALID INGREDIENT   GOLF BAG             EA
                                                   ********** END OF REPORT **********
```

•

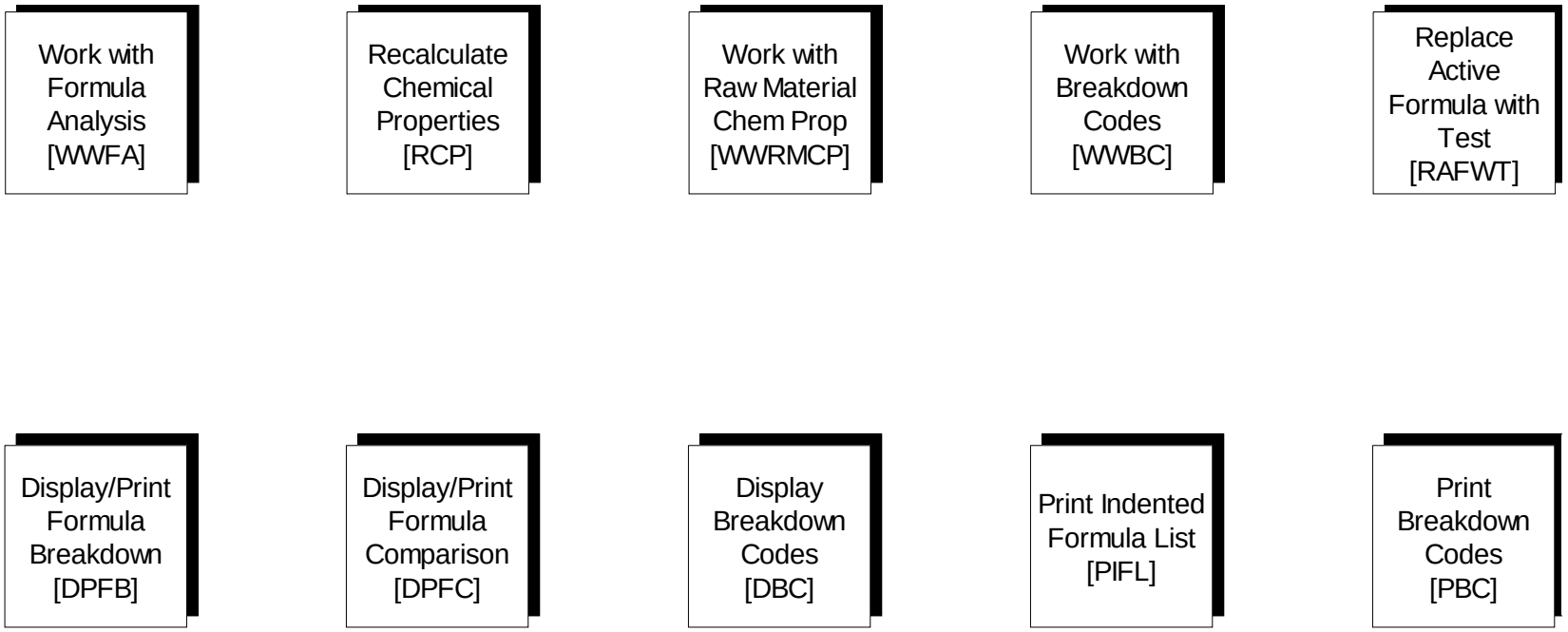
Notes

Appendix B Infinium Laboratory Management Menu Tree

B

This appendix contains the menu tree for Infinium LA.

Infinium Laboratory Management Tree



Appendix C Infinium Laboratory Management Calculations

C

The table in this section lists the equations the system uses to calculate values shown on the Formula Analysis display and report, and on the Formula Worksheet. Equations are shown in the sequence in which they appear or print on displays and reports.

In these calculations, the pigment, additive, and resin components refer to a particular chemical properties template field, as noted below.

- Pigment lead-free refers to the first
- Pigment with lead refers to the second
- Pigment chromate refers to the third
- Pigment other refers to the fourth
- Additive refers to the fifth
- Resin refers to the sixth

Use Control File fields to change the headings of these template fields; however, but you cannot change the way the system uses them in laboratory analysis calculations.

Value	Is Calculated As
Pigment weight percent	100 x (weight of pigment lead-free + weight of pigment with lead + weight of pigment chromate + weight of pigment other) / total formula weight
Pigment volume percent	100 x (volume of pigment lead-free + volume of pigment with lead + volume of pigment chromate + volume of pigment other) / total formula volume
Additive weight percent	100 x additive weight / total formula weight

Value	Is Calculated As
Additive volume percent	100 x additive volume / total formula volume
Resin weight percent	100 x resin weight / total formula weight
Resin volume percent	100 x resin volume / total formula volume
Solvent weight percent	100 x solvent weight / total formula weight
Solvent volume percent	100 x solvent volume / total formula volume
Non-volatile weight percent	100 x non-volatile weight / total formula weight
Non-volatile volume percent	100 x non-volatile volume / total formula volume
Percent pigment weight	100 x (weight of pigment lead-free + weight of pigment with lead + weight of pigment chromate + weight of pigment other) / total formula weight
Percent lead weight	100 x (weight of pigment with lead / total formula weight)
Percent chromate weight	100 x (weight of pigment chromate / total formula weight)
Percent extender weight	100 x (weight of pigment other / total formula weight)
Percent additive weight	100 x additive weight / total formula weight
Percent resin weight	100 x resin weight / total formula weight
Percent weight solids	100 x non-volatile weight / total formula weight
Percent volume solids	100 x non-volatile volume / total formula volume
Percent Pigment Volume Concentration (PVC)	100 x (pigment volume / (pigment volume + resin volume))
P/B (pigment-to-binder) Ratio	pigment weight / resin weight

Value	Is Calculated As
VOC	The system calculates VOC using one of the following equations, depending on your control file entries: VOC = ((total formula weight - exempt solvent weight) / (total formula volume - exempt solvent volume)) x (non-exempt solvent weight percent / (100 - exempt solvent volume percent)) VOC = (total formula weight / total formula volume) x (non-exempt solvent weight percent / (100 - exempt solvent volume percent)) VOC = non-exempt solvent weight / total formula volume Exempt solvents are those with `w` in the *Solvent Type* field on the Miscellaneous Information screen in the *Work with Raw Materials/Resource* option.
Coverage	Percent volume solids x 16.04

Notes