Oracle® Process Manufacturing

Production Management User's Guide

Release 11*i*

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Oracle Process Manufacturing Production Management User's Guide, Release 11*i*

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Preface

Welcome to the *Oracle Process Manufacturing Production Management User's Guide*. This user's guide includes the information you need to work with the Oracle Process Manufacturing (OPM) application effectively.

This preface explains how this user's guide is organized and introduces other sources of information that can help you.

Intended Audience

This guide assumes that you have working knowledge of your business area's processes and tools. It also assumes that you are familiar with OPM Production Management. If you have never used OPM Production Management, we suggest you attend one or more of the Oracle Process Manufacturing training classes available through Oracle World Wide Education.

This guide also assumes that you are familiar with the Oracle Applications graphical user interface. To learn more about Oracle Applications graphical user interface, read the *Oracle Applications User's Guide*.

About This Guide

This guide contains overviews as well as task and reference information. It includes the following:

Name	Description
Production Cycle in OPM	Provides an overview of the production cycle as recorded by OPM
Production Management Prerequisites	Provides the setups in other application that are necessary to use Production Management
Firm Planned Orders	Describes how to set up and use Firm Planned Orders
Creating and Editing Batches	Describes how to create and edit production batches.
Recording Batch Input and Output	Describes how to record batch input and output including allocations, lot picking and certification.
Partial Certification with Backflushing	Describes how partial certification works within OPM and provides different scenarios involving partial certification
Scaling and Theoretical Yield	Describes how to use the scaling and theoretical yield functions as part of production management
Online Inquiries and Reports	Describes the on line inquiries and reports that you can use to track your production data

Information Sources

You can choose from many sources of information, including documentation, training, and support services to increase your knowledge and understanding.

Online Documentation

Oracle Applications documentation is available on CD-ROM, except for technical reference manuals. User's guides are available in HTML format and on paper. Technical reference manuals are available on paper only. Other documentation is available on paper and sometimes in PDF format.

The content of the documentation remains the same from format to format. Slight formatting differences could occur due to publication standards, but such differences do not affect content. For example, page numbers are included on paper, but are not included in HTML.

The HTML documentation is available from all Oracle Applications windows. Each window is programmed to start your web browser and open a specific, context-sensitive section. Once any section of the HTML documentation is open, you can navigate freely throughout all Oracle Applications documentation.

Related Documents

Oracle Process Manufacturing shares business and setup information with other Oracle products. You may find the following Oracle Applications user's guides useful:

- *Oracle Applications User's Guide Release 11i*
- *Oracle Application's Flexfields Guide Release 11i*
- *Oracle Workflow User Guide*
- *Oracle Applications System Administrator's Guide Release 11i*
- *Oracle General Ledger User's Guide Release 11i*
- *Oracle Payables User's Guide Release 11i*
- *Oracle Receivables User's Guide Release 11i*
- *Oracle Human Resources North American User's Guide Release 11i*
- *Oracle Purchasing User's Guide Release 11i*

Oracle Process Manufacturing Guides

The following is a list of documentation in each product group for OPM Release 11*i*:

Financials

- *Oracle Process Manufacturing Accounting Setup User's Guide*
- *Oracle Process Manufacturing Cost Management User's Guide*
- *Oracle Process Manufacturing Manufacturing Accounting Controller User's Guide*
- *Oracle Process Manufacturing and Oracle Financials Integration User's Guide*

Inventory Control

- *Oracle Process Manufacturing EC Intrastat Reporting User's Guide*

- *Oracle Process Manufacturing Inventory Management User's Guide*
- *Oracle Process Manufacturing Physical Inventory User's Guide*

Logistics

- *Oracle Process Manufacturing Order Fulfillment User's Guide*
- *Oracle Process Manufacturing Purchase Management User's Guide*

Process Execution

- *Oracle Process Manufacturing Process Operation Control User's Guide*
- *Oracle Process Manufacturing Production Management User's Guide*

Process Planning

- *Oracle Process Manufacturing Capacity Planning User's Guide*
- *Oracle Process Manufacturing Capacity Planning with RHYTHM Factory Planner User's Guide*
- *Oracle Process Manufacturing MPS/MRP and Forecasting User's Guide*

Product Development

- *Oracle Process Manufacturing Formula Management User's Guide*
- *Oracle Process Manufacturing Laboratory Management User's Guide*
- *Oracle Process Manufacturing Quality Management User's Guide*

Regulatory

- *Oracle Process Manufacturing Regulatory Management User's Guide*

System Administration and Technical Reference

- *Oracle Process Manufacturing Implementation Guide*
- *Oracle Process Manufacturing System Administration User's Guide*
- Oracle Process Manufacturing Technical Reference Manuals

Training

Oracle offers a complete set of formal training courses to help you master Oracle Process Manufacturing and reach full productivity quickly. We organize these courses into functional learning paths, so you take only those courses appropriate to your area of responsibility.

You have a choice of educational environments. You can attend courses offered by Oracle Education Services at any one of our many Education Centers, or you can arrange for our trainers to teach at your facility. In addition, Oracle Training professionals can tailor standard courses or develop custom courses to meet your needs. For example, you may want to use your organization's structure, terminology, and data as examples in a customized training session delivered at your own facility.

Conventions

The following conventions are used in this guide:

Bolded Text

Buttons, fields, keys, menus, and selections are bolded in procedures only. For example: To access the next window, click **OK**. Otherwise, references to these features appear in regular type.

Additional Menu Options

Only nonstandard menu options are discussed. Standard menu bar options (such as Save) are not discussed. These standard options are described in the *Oracle Applications User's Guide Release 11i*. Only menu options unique to the use of the specific window are discussed.

Field References

References to fields within procedures are in bold type. References within the body of this guide appear in regular type.

Required Fields

The word Required appears as the last word in the field description of all required fields. When the field is required contingent on the entry in another field, or only in specific situations, "Required if..." is the last sentence of the field description.

Fields Reserved for Future Use

Fields with no current processing implications are referenced by the statement "This field is not currently used" or "Reserved for future use." Do not use these fields for your own reference data, because there are plans to link future functionality to these fields. Fields intended for informational purposes only are referenced by the statement "This field is for informational purposes only."

Pending/Completed Transactions

Discussions about processing transactions that use the words pending and completed refer to the status of a transaction. Pending and completed do not refer to the database tables that are updated as a result of transactions (for example, some completed transactions are stored in the Pending Transactions table).

Procedures

Most topics contain a procedure with numbered steps. Any actions which are subordinate to a step are assigned letters. You can customize your Oracle Application, therefore, all procedures are suggestive only. Navigate to windows and between responsibilities in a way that works best for your particular setup. Also note that fields may appear in a different order than they are discussed.

Use of the Word Character

The word character means an alphanumeric character. Characters that are numeric or alphabetic only are referenced specifically. Depending on your system security profile, you many not have access to all of the windows and functions described in this guide. If you do not see a menu option described in this guide, and you want access to it, contact your System Administrator.

Do Not Use Database Tools to Modify Oracle Applications Data

Oracle Applications tables are interrelated. As a result, any change you make using Oracle Applications can update many tables at once. If you modify the Oracle Applications data using anything other than Oracle Applications, you could change a row in one table without making corresponding changes in related tables. If your tables are not synchronized with each other, you risk retrieving erroneous information and receiving unpredictable results throughout Oracle Applications.

When you use Oracle Applications to modify your data, Oracle Applications automatically checks that your changes are valid. Oracle Applications also track who changes information. If you enter information into database tables using database tools, you could store invalid information. You also lose the ability to track who has changed your information because SQL*Plus and other database tools do not keep a record of changes.

Consequently, we strongly recommend that you never use SQL*Plus or any other tool to modify Oracle Applications data unless otherwise instructed by Oracle Support Services.

About Oracle

Oracle Corporation develops and markets an integrated line of software products for database management, applications development, decision support, and office automation, as well as Oracle Applications, an integrated suite of more than 45 software modules for financial management, supply chain management, manufacturing, project systems, human resources, sales, and service management.

Oracle Products are available for mainframes, minicomputers, personal computers, network computers, and personal digital assistants, allowing organizations to integrate different computers, different operating systems, different networks, and even different database management systems, into a single, unified computing, and information resource.

Oracle is the world's leading supplier of software for information management, and the world's second largest software company. Oracle offers its database, tools, and applications products, along with related consulting, education, and support services in over 140 countries around the world.

Thank You

Thank you for choosing Oracle Process Manufacturing and this user's guide.

We value your comments and feedback. At the beginning of this guide is a Reader's Comment Form that you can use to explain what you like or dislike about this user's guide. Mail your comments to the following address or call us directly at 650-506-7000.

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Production Cycle in OPM

The primary function of the OPM Production Management application is to record information about production batches. With this application, you can schedule production batches, create firmed planned orders (FPOs), convert FPOs into single or multiple production batches. In addition the PM application is used to allocate ingredients, record actual ingredient usage, certify and complete production batches and record actual product production quantities among other production processes.

Generally, you would use the PM application in conjunction with the OPM Material Requirement Planning (MRP) application to plan your production schedule. If you want to manage your production process by steps, you would use PM with the Process Operations Control (POC) application. An explanation of the production cycle is detailed in the sections that follow.

The following topics are discussed:

- MRP Planned Orders
- Production Cycle Steps
- Simultaneous Multi-user Batch Access
- Allocating Ingredients
- Releasing a Batch
- Allocating Products
- Certifying a Batch
- Closing a Batch
- Additional Batch Actions

MRP Planned Orders

When you run OPM MRP, it creates planned production orders, which are recommendations to manufacture a product. These planned orders are under the control of MRP; that is, if the demand which caused MRP to recommend an order is changed or canceled, MRP can resize, reschedule, or delete the planned order. Detailed discussion of MRP is outside the scope of this manual. See the Guide to Oracle Process Manufacturing MPS and MRP and the online help for more information about MRP and planned orders.

You do not have to run MRP and create planned orders to manufacture products. This is an optional step.

Production Cycle Steps

The steps in your production cycle are discussed.

Firm Planned Orders (Optional)

Creating firmed planned orders (FPOs) might be a first step you take in the production cycle. An FPO represents an intent to manufacture a product. Unlike an MRP planned order, FPOs are not controlled by MRP; that is, MRP cannot change or delete them. This is the sense in which they are "firm." An FPO can be created in one of two ways:

- You can create it from an MRP planned order by selecting Approve from the Action menu on the MRP Action Message Inquiry window

- You can enter it directly on the Firm Planned Order window

Generally, you would enter FPOs for MPS (master production schedule) items, which are generally finished goods or saleable items.

You do not have to enter an FPO to manufacture products. This is an optional step.

Creating a Batch

The first step you must take is to create a batch. Creating a batch is the same as scheduling the batch. There are three ways of creating a batch:

- It can be created from an MRP planned order by selecting Approve from the Action menu on the MRP Action Message Inquiry window.

- It can be converted from an FPO by selecting FPO to B~~atch from the Action menu on the Firm Planned Order window.

- It can be entered directly on the Create Batch/FPO dialog box and associated forms.

When you save a batch, it is given a status of Pending.

Simultaneous Multi-user Batch Access

Batch oriented production may require that more than one user simultaneously record user and/or yield for a batch. For example, a batch may pass through several work centers. Each of these may consume a subset of the ingredients, and at one or more of the steps, products or byproducts may be yielded. At each of these centers, the user needs to edit that batch step related information.

Multi-user Batch Access enables multiple users to retrieve and edit just the items associated with a single step. It allows them to edit the material data for a single step (record lot consumption, for example) without locking the entire batch; only the step being edited is locked.

Whole batch functions, such as releasing or certifying a batch, are disabled as long as any part of the batch is locked. If a single step has been retrieved on the Batch Input or Batch Output forms, OPM disables access to the Batches, Batch Ingredients, Batch Byproducts, and Batch Step forms.

Additional fields, Step and Step Status are added to the Batch Input and Output forms when you enable Multi-user Batch Access. To display this field you must turn on POC on for the plant.

When you enter a batch number and step, OPM retrieves only the items associated with that step will be retrieved and only locks that step. You can then record the consumption or yield for those items. At the same time another user can simultaneously enter the same batch number and a different batch step on the Batch Input or Batch Output forms.

Allocating Ingredients

If any of the ingredients in the batch are lot or location controlled, you must tell OPM the lots and locations from which the ingredients are taken to make the batch. You can set up ingredients to be allocated automatically or manually. Refer to the Batch Input and Output chapter, for more information on ways to allocate ingredients.

Timing Ingredient Allocation

In addition to allocating ingredients, you can choose when to allocate ingredients. You can allocate before releasing (or starting) the batch (while the batch has a status of Pending) or after it has been released (when the batch has a status of Work in Process or WIP). When you allocate before releasing, you are specifying the material that will be used in the batch. When you allocate after releasing, you are specifying the material that was used in the batch.

The advantage to allocating before the batch has been released (before the batch has actually been started) is that you can print the Pick List, which provides lot and location information to those staging the material for a production run. You can also have OPM automatically allocate ingredients.

The advantage to allocating after the batch has been released (after production has begun) is that material picking decisions can be made on the floor, while picking.

Note that you can use different allocation methods and timing for different items in a batch. They do not have to be allocated at the same time or by the same method. Before you certify a batch (indicate that the batch is complete), you must allocate all ingredients.

Releasing a Batch

Releasing a batch indicates that the batch has been started. If your batches contains auto-release or incremental release ingredients then it also means that ingredients have been consumed. For ingredient lines set to automatic release, releasing a batch deletes the pending transactions associated with the ingredients and writes completed transactions instead. This action also changes the status of the batch from Pending to WIP (work in process). You release a batch by selecting Release from the Action menu on any of the batch forms (Batches, Batch Ingredients, Batch Byproducts, Batch Input, and Batch Output).

Allocating Products

If any of the products or by-products yielded by the batch are lot or location controlled, you must tell OPM the name of the lot(s) that was produced and the location into which the product was placed. As with ingredients, you can allocate products and by-products any time up until you certify the batch. The products must be allocated in order to certify.

Certifying a Batch

Certifying a batch indicates that the batch has been completed and the products and by-products have been yielded. For product and by-product lines set to automatic certification, certifying a batch converts the pending transactions associated with the products and by-products to completed transactions. This action also changes the status of the batch from WIP to Certified. You certify a batch by selecting Certify from the Action menu on any of the batch forms (Batches, Batch Ingredients, Batch Byproducts, Batch Input, and Batch Output).

If you have not yet allocated any of the ingredients, products, or by-products when you try to certify a batch, OPM will show you those items requiring allocation on the Unallocated Items window. You must allocate those items before the certification process can be completed.

You can still make adjustments to ingredient, product, and by-product quantities after a batch has been certified.

For information on manual or partial certification of product and by-product lines, see Recording Batch Input and Output.

Partial Certification

In continuous processing, ingredient quantities are often consumed incrementally and product quantities are yielded incrementally. In order for inventory levels to be updated in a timely manner, you want to record consumption and yield incrementally, as it happens. Also, you want to be able to calculate usage from the product yield.

Partial certification in OPM enables you to incrementally record production output as it occurs, prior to the batch being completed (partial certification) and then have OPM calculate the ingredient usage (backflushing).

You initiate partial certification in WIP batches by selecting Partial Cert from either the Production menu or the Edit menu on the any of the Batches forms (Batches, Batch Ingredients, Batch Byproducts, Batch Output or Batch Input forms). This displays the Partial Certification dialog box. At this dialog box, you can either enter an incremental quantity, a new actual quantity or a new percent of plan (Actual Quantity/Planned Quantity x 100). When the user selects Accept, a new actual quantity is calculated for all the items in the batch which have a release type of incremental. If you selected Partial Cert from the Production menu, OPM saves the batch. If you accessed Partial Certification from the Action menu on a window, OPM returns you to that window. You can then edit the calculated actual quantities or enter additional allocations, before saving.

Direct Certification

It is possible to skip many of the steps described above through the process of direct certification. You can perform direct certification on a batch which has a status of New (that is, a batch which has not yet been saved), or a batch which has a status of Pending (a batch which has not yet been released). Using direct certification on a New batch is generally used to record a batch which was run but had not been scheduled in Oracle OPM. To perform a direct certification on a New batch, you must access the Create Batch/FPO dialog box from the Batches window. You are returned to the Batches window after completing the dialog box, and the batch has a status of New. Do not save the batch. Instead, select Certify from the Action menu on any of the batch forms. The Batch will be saved with a status of Certified.

Although direct certification of new batches is simpler and quicker than the standard batch process, it should generally be used only for unscheduled batches which must be recorded after the fact. It is not recommended that this method be generally used, because it does not provide the scheduling and inventory commitment information which is provided by entering batches ahead of time.

For more information on partial certification, refer to the section, Partial Certification with Backflushing in the Entering and Editing Batches chapter.

Closing a Batch

The final step in the production cycle is closing the batch. Closing a batch prevents any further editing of the batch. This should be done after you are confident that all of the batch information has been recorded correctly. You close a batch by selecting Close from the Action menu on any of the batch forms.

Additional Batch Actions

There are two additional actions that can be performed on a batch, Canceling and Unreleasing.

Canceling a Batch

A batch can only be canceled if it has a status of Pending. Canceling a batch deletes all of the pending transactions associated with the batch. Cancel a batch by selecting Cancel from the Action menu on any of the batch forms.

Unreleasing a Batch

The other action that you can perform on a batch is unreleasing it. This reverses the completed transactions associated with the ingredients in the batch and writes pending transactions. You unrelease a WIP batch by selecting Unrelease from the Action menu on any of the batch forms. Note that if you have allocated any of the ingredients in the batch, unreleasing the batch will not delete the allocations, but it will change the transaction status from completed to pending. Since only Pending batches can be canceled, if you want to cancel a WIP batch, you must first unrelease the batch and then cancel it.

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Production Management Prerequisites

B You must set up certain data in other OPM applications before you can use the Production Management (PM) application. For example, units of measure must be set up in the OPM System application, items in the Inventory application, and formulas in the Formula Management application. Each of the prerequisites for PM are described below.

The following topics are discussed.

- OPM System Application Prerequisites

- Oracle Applications System Administration Application Prerequisites

- Inventory Management Application Prerequisites

- Production Management and Inventory Item Decisions

- Master Production Schedule Prerequisites

- Formula Management Prerequisites

- Plant/Warehouse/Item Relationships

- Allocation Parameters

- Setting Up POC

- Simultaneous Multi-User Batch Access

OPM System Application Prerequisites

The following data must be set up in the OPM System application before you can use PM. This will usually be done by the System Administrator. For more information about each of the functions described below, see the *Oracle Process Manufacturing Implementation Guide* and online help for the appropriate forms.

- Unit of Measure Types

  - This involves defining categories of units of measure, such as mass, volume, or count.

- Units of Measure

  - This involves defining units of measure. When you define a new unit of measure, you specify the UOM type to which it belongs, and a conversion factor to convert the new unit of measure to the reference unit of measure (the first unit of measure defined for that UOM type).

- Organizations

  - This involves setting up the plant(s) in which production batches are made. Warehouses are then linked to the plants for inventory transaction purposes

- Document Ordering

  - This involves defining the way documents, such as production batches, are numbered. You specify whether they will be numbered automatically (sequentially) or manually. If you choose automatic document ordering, you also specify the length of the document numbers. You must define document ordering for the following document types before they can be used in PM:

- PROD - Production batches

- FPO - Firm planned orders

Oracle Applications System Administration Prerequisites

If necessary, change the Release Type System Profile Option in Oracle Applications System Administration Application.

In order to use partial certification with backflushing, lines in formulas and production batches must be set up for incremental release. One way to do this is to set the GMD:Default Release Type to 2.

Inventory Management Application Prerequisites

The following data must be set up in the Inventory Management application before you can use PM. For more information about the Inventory Management application, see the *Oracle Process Manufacturing Inventory Management User's Guide* and the online help for the appropriate forms.

- The Inventory Calendar

    - You must set up an inventory calendar to enter transactions in OPM.

- Items

    - This involves setting up the items which will be the ingredients, products, and byproducts in your batches. Among other things, you specify the following characteristics:

- Whether the item will use single or dual unit of measure control

- The item's primary inventory unit of measure (and secondary unit of measure if dual-UOM controlled)

- Whether the item is lot/sublot-controlled

- Whether the item is location-controlled

See the Inventory Item Decisions topic later in this section for more information about lot and location control.

- Whether the item is status-controlled

- The item's allocation class

    - Item/Lot Unit of Measure Conversions

    - This involves setting up unit of measure conversions between units of measure of different unit of measure types. Although unit of measure conversions within UOM types are set up globally in the System application (on the Unit of Measure window), conversions across UOM types must be set up at the item, lot, or sublot level. For example, the conversion from pounds to gallons (mass to volume) is different for water than for ethanol because they have different densities.

- Warehouses

    - This involves defining the warehouses in which items are stored.

- Allocation Classes

    - This is used to link items with allocation parameters. This is only required if you are using automatic (rule-based) allocation. See the *Allocation Parameters* topic and the Batch Input and Output section for more information on automatic allocation and allocation classes.

- Allocation Parameters

    - This involves defining the rules by which OPM will perform automatic (rule-based) allocations. See the Allocation Parameters topic later in this section and the Batch Input and Output section for more information on automatic allocation and allocation parameters.

- Production Rules

    - This allows you to specify a standard production quantity for your items. This will control the default batch size when you create batches. You can also specify fixed and variable leadtimes for your items. OPM will use these to calculate the completion date and time of a batch if you enter the start date on the Create Batch/FPO dialog box.

    - These production rules provide default values; it is not necessary to set them up in order to create batches.

Production Management and Inventory Item Decisions

This section discusses inventory item decisions and their specific impact on the PM application.

Inventory Item Decisions - Lot/Sublot Control in PM

When an ingredient in a batch is lot controlled, you must either tell OPM which lot was used in the batch (manual allocation) or have OPM tell you which lot to use in the batch (auto-allocation). Likewise, when a product in a batch is lot controlled, you must tell OPM which lot was produced. The different methods of allocating are discussed in the *Recording Batch Input and Output* section.

Inventory Item Decisions - Allocation Method in PM

For lot-controlled items which will be ingredients in your batches, you must decide whether to use automatic auto-allocation, user-initiated auto-allocation, or manual allocation. If you are going to use one of the auto-allocation methods, you must associate the item with an allocation class. The allocation class, in turn, must be associated with allocation parameters that specify the rules OPM will use to allocate.

The Allocating Ingredients topic in the *Recording Batch Input and Output* section provides guidelines for deciding which allocation method to use.

Master Production Schedule Prerequisites

The following data must be set up in the Master Production Schedule (MPS) application. For more information about MPS, see the *Oracle Process Manufacturing MRP/MPS User's Guide* and the online help.

- Plant/Warehouse/Item Relationships

    - This involves specifying the warehouse from which a plant consumes each item when it is used as an ingredient in a batch, and the warehouse which a plant replenishes with each item when it is a product of a batch. See the Plant/Warehouse/Item topic later in this section for more information.

Formula Management Prerequisites

The following data must be set up in the Formula Management application before you can use PM. Formulas are the basis for production batches. They contain the ingredients, ingredient quantities, products, product quantities, byproducts and byproduct quantities. If desired you can associate a routing (steps in the formula) to a formula. Routings For more information on formulas see the *Oracle Process Manufacturing Formula Management User's Guide* and the online help for the appropriate forms.

- Formulas

  - This involves defining the formulas upon which batches are based. Formulas specify the ingredients consumed and the products and the products and by products yielded by batches, and the quantities of each.

- Routings (optional)

  - This involves specifying the process or steps that are taken to manufacture a product. To define a routing you must do the following:

- Define Activities on the Activities window

  - This involves defining the actions performed during production, for example, mixing or cooling. Activities should be divided by logical breakpoints in the manufacturing process.

- Define Operations on the Operations window

  - An operation is a combination of activities performed in production and the resources used to perform those activities. A resource is any noninventory item used in production, such as an oven

- Define Routing Steps on the Routing window

Formula Management Application - Effectivities

This involves specifying which formula(s) can be used to make a certain product under a given set of conditions. Among the parameters you can specify are the following:

- The first and last dates the formula can be used.

- The minimum and maximum product quantities that can be produced with the formula.

- The purpose for which the formula can be used - production, planning (MRP and firm planned orders), or costing.

- The routing to be used.

Plant/Warehouse/Item Relationships

For each item which is used as an *ingredient* in a batch, you must specify the warehouse from which that ingredient is *consumed.* For each item which is used as a *product* or by-product, you must specify the warehouse which is *replenished* by the plant. Since items can be both ingredients and products, you can specify both consumption and replenishment warehouses for each item.

Use the Plant Warehouses window to specify the warehouses from which a plant consumes ingredients and the warehouses which the plant replenishes. The consumption warehouse specified for an item on this window will be used as the *default* on transactions when you enter a batch which uses this item as an ingredient. If the item is auto-allocated, this is the warehouse from which OPM will attempt to allocate the ingredient quantity. If you want the batch to consume from a different warehouse, you can edit the warehouse on the transaction using the Batch Input window.

The replenishment warehouse specified for an item on this window will be used as the *default* on transactions when you enter a batch which produces this item. If you want to replenish a different warehouse, you can edit the warehouse on the transaction on the Batch Output window.

Multiple Consumption/Replenishment Warehouses

For each plant, you can set up multiple consumption and replenishment warehouses for each item. If you set up more than one consumption or replenishment warehouse for an item, OPM will select one to use as the default for batch transactions. OPM selects the warehouse code which comes first in ASCII sort sequence (blanks, non-alphanumeric characters, numeric characters, upper case alphabetic characters, lower case alphabetic characters). If you want to use a different warehouse, you can edit the warehouse on the transaction as described above.

The definition of consumption and replenishment warehouses does not restrict what warehouses you can use if you edit the warehouse on a transaction. For example, you can change the warehouse on an ingredient transaction to one which is not specified as a consumption warehouse for that item.

Multiple Items Plant Warehouses Shortcut

If you have multiple items which have the same consumption and replenishment warehouses, you can use a shortcut to enter the consumption and replenishment rules, rather than entering each item individually on the Plant Warehouses window. When you enter the items on the Items window, enter one code in the Warehouse Item field for all of the items which share the same consumption and replenishment rules. Then, use that warehouse item code in the Warehouse Item field on the Plant Warehouses window, and the consumption and replenishment rules will apply to all of the items which use that warehouse item code.

If all of your items use the same consumption and replenishment warehouses, leave the Warehouse Item field on the Plant Warehouses window blank.

The consumption and replenishment rules you set up do not take effect until you log out of OPM and log back in.

For more information on the Plant Warehouses window, refer to the *Oracle Process Manufacturing MPS/MRP and Forecasting User's Guide.*

Allocation Parameters

For more information on Allocation Parameters set up, refer to the *Oracle Process Manufacturing Inventory Management User's Guide.*

You define the rules which OPM uses for auto-allocation on the Allocation Parameters window. This is also where you specify whether an automatically allocated item will use fully automatic auto-allocation (in which allocation is performed when the batch is first saved) or user-initiated auto-allocation. Refer to the Batch Input and Output section for more information on auto-allocation.

The rules you define on this window will apply to an allocation class/warehouse combination. Each item can belong to only one allocation class. However, since you can associate different allocation parameters to an allocation class for different warehouses; items which belong to an allocation class can be allocated according to different rules in different warehouses.

Setting Up POC

The Process Operation Control (POC) application enables you to record more detailed production data. POC provides the ability to collect production data by step. In addition it records the actual consumption of non-material resources, such as labor, machine time and utilities.

Setting Up POC Procedure

If you decide to use POC, you must do the following:

1. Turn on POC for the Plant

2. Create Routings

3. Associate Routing Steps with Formula Items

Turn on POC for the Plant Procedure

On the Organizations window, you must designate an organization as a plant and activate POC for an plant in which you want to use.

1. You must set the **Plant Indicator** field to **Manufacturing Plant.**

2. You must set the **Process Operation Control** indicator to **Data Collected**.

In order to turn on Simultaneous Multi-user Batch Access, you must turn this indicator on for the plant.

Create Routings

Routings define the processes or steps that are taken to manufacture a product. For more information on how to create routings, refer to the *Oracle Process Manufacturing Formula Management User's Guide.*

Associate Routing Steps with Formula Items

The Routing Step/Formula Items window is used to associate the routings steps of a manufacturing process to items that are introduced into a process (ingredients) or yielded from (products) the production process. For more information on this window, refer to the *Oracle Process Manufacturing Process Operations Control User's Guide* online help.

Simultaneous Multi-User Batch Access

To use the simultaneous multi-user batch access, you must turn on POC for the plant. You must also define routings and associate the routings with formulas through formula effectivities. Items in the formulas (ingredients, products, and/or byproducts) must be associated with routing steps using the Routing Step/Formula Items window.

When a batch is created, each routing step becomes a batch step, and the associations are copied, so that each routing step/formula item association becomes a batch step/batch item association. Batch items can also be associated with batch steps using the Batch Step/Batch Items window (for items or steps added to the batch that were not in the formula or routing). These item/step associations group the items in the batch by step.

When you turn on POC, the Step field is displayed on the Batch Input and Batch Output window. When you enter a batch number and step, only the items associated with that step will be retrieved, and only that step will be locked. You can then record consumption or yield for those items. As you are doing this, another user will be able to simultaneously enter the same batch number and a different batch step on Batch Input or Batch Output, and work with the items associated with that batch step.

Whole batch functions, however, will be disabled as long as any part of the batch is locked. Whole batch functions are those functions which affect an entire batch, such as releasing or certifying a batch, as opposed to single-step functions, such as entering allocations for the items associated with a step. If a single step has been retrieved on the Batch Input or Batch Output forms, access to the Batches, Batch Ingredients, Batch Byproducts, and Batch Steps forms will be disabled, since these forms are not keyed by step.

Setting Up Simultaneous Multi-User Batch Access Procedure

1. Turn on POC for your plant on the Organizations window.

2. Define formulas on the Formulas window (as in previous versions of OPM

3. Define resources on the Resource window

4. Define activities on the Activities window

5. Define operations, linking resources and activities, on the Operations window

6. Define routings on the Routings window. There should be as many steps in the routing as there are subsets of items into which you want to divide your batches. For example, there are three workcenters, and you want to edit the batch lines associated with each workcenter together without locking the batch lines of other workcenters, create three steps in the routing.

7. Associate formulas with routings on the Maintain Effectivities window.

8. Associate items in the formulas with steps in the routings on the Routing Step/Formula Items window. This is how you group the items.

3

Firm Planned Orders

Firm planned orders (FPOs) represent a plan to manufacture a product. They are firm in the sense that MRP cannot change or delete them. The following topics are discussed:

- Firm Planned Orders Overview
- Defining FPO Header and Product Information
- Viewing FPO Ingredients
- Viewing FPO Byproducts
- Selecting Effectivities
- Rescheduling FPOs
- Converting an FPO to a Batch

Firm Planned Orders Overview

FPOs are designed for medium and long range production planning. An FPO is similar to a production batch in the sense that it creates the notion of time-phased supply and demand (and creates pending transactions), but it will not establish commitments against current on-hand inventory. This effectively separates medium and long range demand from close range batch demand. Since an FPO does not commit current inventory, you cannot allocate inventory to it. When a planner is confident that an FPO will be executed and is ready to commit materials to it, the FPO can be converted into one or more batches.

Since you can convert an FPO into multiple, simultaneous or consecutive batches, FPOs can be used for aggregate production planning and as a multi-batch entry tool.

For example, to use an FPO for aggregate production planning, you could model a weeks worth of production with one FPO. The FPO could start Monday morning, end Friday evening, and consume and yield the equivalent of five batches. For medium and long range planning, this is an efficient way to model intended production. The FPO can later be converted into five batches to provide a more accurate close range plan.

You can create an FPO as follows:

- Create it from an MRP planned order by clicking Approve on the MRP Actions Message Inquiry window.

- Enter it using the Create Batch/FPO box. See the discussion on the *Create Batch/FPO box*.

When it comes time to manufacture your product, convert an FPO to one or more batches using the Firm Planned Order to Batch Conversion box. FPOs are not converted to batches. Rather, FPOs serve as a guide for the batches, automating the creation of the new batches and eliminating the necessity of entering them manually.

When you convert the FPO to one or more batches, OPM selects the formula effectivity to use for the batches if only one qualifies. This may or may not be the one used for the FPO. For example, if the FPO was based on a formula version which is effective for planning but not for production, that formula version cannot be used for the batches. Likewise, if the date or quantity of the batch is outside of the range specified by the effectivity used for the FPO, a different effectivity must be used for the batches.

While OPM selects the effectivity to use for the batches if only one qualifies, you must select an effectivity record if more than one qualifies. OPM displays the valid effectivity records on the View Effectivities window, and you select the one to use for the batches. If you are converting the FPO to more than one batch, you have the option of using one effectivity record for all of the batches, or selecting different effectivity records to be used for different batches. You would select different effectivity records for different batches if some batches were to be manufactured using one routing and others using another. Likewise, if you wanted to use different formula versions for the different batches, you would have to select different effectivity records for the different batches.

Because the batches created from FPOs are based on a formula as it was set up in the Formula Management application, and not on the FPO itself, you cannot edit the products, ingredients, or byproducts on an FPO. You also cannot directly edit the quantities of these items. Since the batch is based on a formula, not directly on the FPO, if you were permitted to edit these fields on the FPO, the changes would be lost when you converted the FPO to a batch

You can, however, scale the FPO. This is permissible because the batch is based on the FPO product quantity. Therefore, the batch is automatically scaled when it is created.

You can also perform a theoretical yield calculation on an FPO. This changes the product quantity without changing ingredient quantities. You should be careful if you use this with FPOs, because when you convert the FPO to a batch, the batch will not automatically have the same yield percent as the FPO. It will have the same product quantity as the FPO (unless you specify a different quantity on the Firm Planned Order to Batch Conversion box), but the ingredients will be scaled. If you want the batch to look like the FPO, enter the original FPO product quantity (prior to calculating theoretical yield) in the Qty Per Batch field on the Firm Planned Order to Batch Conversion box. Then, after the batch has been created, perform the same theoretical yield calculation on the batch that you performed on the FPO.

Defining FPO Header and Product Information

Use the Firm Planned Order window to enter header and product information for a FPO.

Note: This window has the Attachments option and Descriptive Flexfields. For more information refer to the *Oracle Applications User's Guide*.

Defining FPO Header and Product Information Procedure

1. Navigate to the **Firm Planned Order** window.

2. If you are creating a new FPO, press **Tab**. The **Create/FPO Batch** window is displayed. See the *Creating Batches or FPOs* section.

3. Complete the fields as described.

4. Save the window.

You cannot directly edit the product quantity fields on this window. To change quantities, select Scale Batch from the Actions menu.

Firm Planned Order Field References

[ ]

The double brackets identify a descriptive flexfield that you can use to add data to this window without programming. You can enter a Workcenter and Batch Type.

Firm Planned Order

To edit an existing FPO, enter the FPO number using Query Find or Query Enter.

To enter a new FPO, proceed accordingly:

- If you are using automatic document numbering proceed to the next field. The word "New" is displayed and the Create Batch/FPO box is displayed. This box is described in the *Creating and Editing Batches* section. When you save the FPO, an FPO number will be assigned and displayed in this field.

- If you are using manual document numbering for FPOs, enter the new FPO number. The Create Batch/FPO box is displayed. This box is described in the *Creating and Editing Batches* section.

Note that the FPO number is preceded by your default organization code. The combination of this code and the FPO number uniquely identify an FPO.

Status

The current status of the FPO (New, Pending, Converted FPO, or Canceled) is displayed. The Create Batch/FPO box is displayed. This box is described in the *Creating and Entering Batches* section.

Formula

Displays the formula and version on which you want the batch based. Enter the formula code in this field. This field cannot be edited.

(Unlabeled)

Displays the formula version field. Enter the version number in this field. This field cannot edited.

WIP Warehouse

Enter the code of the warehouse used for work in process. The description associated with the warehouse code is displayed.

Planned Start

Displays the date and time you plan the batch to start. The system current date and time is the default when you enter the FPO. You can not edit this field.

Planned Completion

Displays the date and time you plan the batch to be completed. The planned start date is the default. You cannot edit this field.

Required Completion

Enter the date and time by which the batch must be completed. This field is for informational purposes only. The planned completion date is the default. Required.

FPO Products:Seq

This field displays the line number for each product line. This field cannot be edited.

FPO Products:Item

This field displays the code for the item to be produced by the batch.

FPO Products:Description

This field displays the description associated to the product's item code.

FPO Products:Planned Qty

The product quantity defaults from the formula. You cannot edit this field.

FPO Products:UOM

The unit of measure in which the quantity is expressed is displayed. You cannot edit this field.

FPO Products:Products

The number of products produced by the FPO is displayed.

FPO Products:Byproducts

The number of byproducts produced by the FPO is displayed. You cannot edit this field.

FPO Products:Ingredient

The number of ingredients produced by the FPO is displayed. You cannot edit this field.

Firm Planned Order Window - Buttons

Byproducts

Accesses the FPO By-products window.

Ingredients

Accesses the FPO Ingredients window.

FPO Header and Products - Actions Menu

Additional Edit

Accesses the Additional Edit box which allows you to enter additional information, such as scale type and release type, for each ingredient line.

Scale Batch

Accesses the Scale Batch box which allows you to scale the quantities of the ingredients, products, and byproducts in the FPO.

Theoretical Yield

Accesses the Calculate Theoretical Yield box which allows calculation of the product quantities based on the ingredient quantities and a yield factor. You can only use this option when entering a new FPO. Note that the theoretical yield you enter is not automatically carried over to batches based on the FPO.

Edit Parent

Accesses the parent batch and allows you to edit it if you are editing a phantom batch.

FPO to Batch

Accesses the Firm Planned Order to Batch Conversion box. You use this to convert an FPO into one or more batches.

Cancel

Cancels the FPO. An FPO can only be canceled if it has a Pending status. Canceling an FPO deletes the pending transactions associated with the FPO.

Reschedule

Accesses the Reschedule box, where you can reschedule the FPO.

Reroute

Accesses the View effectivities window from which you can select an effectivity with a different routing.

Effectivity

Accesses the View Effectivity window which allows you to view the effectivity upon which the Firmed Planned Order is based. An effectivity record specifies under what conditions a formula/routing can be used. You must have the cursor in the header or the dates panels for this option to display on the Actions menu.

See: The View Effectivity topic for detailed information.

Viewing FPO Ingredients

Use the FPO Ingredients window to view ingredients and ingredient quantities for an FPO. The ingredients from the formula on which the FPO is based default to this window. None of the fields on this window can be edited directly. To change item quantities throughout the FPO, select Scale Batch from the Actions menu.

The number of products, byproducts, and ingredients in the formula are displayed at the bottom of the window. These fields cannot be accessed.

Firm Planned Order Ingredients Field Reference

Batch
The Organization code and the FPO number are displayed.

Status
The status of the FPO (New, Pending, Converted FPO, or Canceled) is displayed.

Product1
The first product made by this FPO is displayed.

Ingredients

Seq
This field displays the line number for each ingredient line.

Item
The item codes of the ingredients in this FPO display from the formula on which the FPO is based.

Description
The item description of the ingredients defaults from the item master table.

Plan Quantity

The ingredient quantity for the FPO is displayed. This is based on the ingredient quantity from the formula on which the FPO is based. It may have been scaled if you created the FPO for a quantity other than the formula quantity.

UOM

The unit of measure in which the quantity is expressed is displayed.

Firm Planned Order Ingredients Window - Buttons

Byproducts

Accesses the Firm Planned Order Byproducts window.

Products

Accesses the Firm Planned Order window.

Firm Planned Ingredients Window - Actions Menu

Additional Edit

Accesses the Additional Edit box which allows you to enter additional information, such as scale type and release type, for each ingredient line.

Scale Batch

Accesses the Scale Formula box which allows you to scale the quantities of the ingredients, products, and byproducts in the FPO.

Theoretical Yield

Accesses the Calculate Theoretical Yield box which allows calculation of the product quantities based on the ingredient quantities and a yield factor. You can only use this option when entering a new FPO. Note that the theoretical yield you enter is not automatically carried over to batches based on the FPO.

Edit Parent

Accesses the parent batch and allows you to edit it if you are editing a phantom batch.

Edit Phantom

If the cursor is on a phantom ingredient, this retrieves the phantom batch.

Create Phantom

If the cursor is on an unexploded phantom, this option accesses the Create FPO box on which you can create the phantom FPO.

Viewing FPO Byproducts

Use the FPO Byproducts window to view byproducts and byproduct quantities for an FPO. The byproducts from the formula on which the FPO is based default on this window. Byproducts are items produced by a formula, but differ from products in that you do not plan your production to make byproducts, and you cannot cost byproducts. None of the fields on this window can be edited directly. To change item quantities throughout the FPO, select Scale Batch from the Actions menu.

The number of products, byproducts, and ingredients in the formula are displayed at the bottom of the window. These fields cannot be accessed.

Firm Planned Order Byproducts Field Reference

This section describes the fields on the Firm Planned Order Byproducts window.

Batch
The Organization code and the FPO number are displayed.

Status
The status of the FPO (New, Pending, Converted FPO, or Canceled) is displayed.

Product1
The first product made by this FPO is displayed.

FPO Byproducts

Seq
This field displays the line number for each product line. This field cannot be edited.

Item
This field displays the code for the byproduct produced by the batch.

Description
This field displays the description associated to the byproduct's item code.

Planned Qty

The byproduct quantity defaults from the formula. This is based on the byproduct quantity from the formula on which the FPO is based. It may have been scaled if you created the FPO for a quantity other than the formula quantity.

UOM

The unit of measure in which the quantity is expressed is displayed. You cannot edit this field.

Products

The number of products produced by the batch is displayed.

Byproducts

The number of byproducts produced by the batch is displayed. You cannot edit this field.

Ingredient

The number of ingredients produced by the batch is displayed. You cannot edit this field.

Firm Planed Order By-products Window - Buttons

Ingredients

Accesses the Firm Planned Ingredients window.

Product

Accesses the Firm Planned Order window.

Firm Planned Order By-products - Actions Menu

Additional Edit

Accesses the Additional Edit box which allows you to enter additional information, such as scale type and release type, for each ingredient line.

Scale Batch

Accesses the Scale Formula box which allows you to scale the quantities of the ingredients, products, and byproducts in the FPO.

Theoretical Yield

Accesses the Calculate Theoretical Yield box which allows calculation of the product quantities based on the ingredient quantities and a yield factor. You can only use this option when entering a new FPO. Note that the theoretical yield you enter is not automatically carried over to batches based on the FPO.

Edit Parent

Accesses the parent batch and allows you to edit it if you are editing a phantom batch.

Selecting Effectivities

The View Effectivities window allows you to select the effectivity record you want to use in creating an FPO or batch. An effectivity record links a formula with a routing and specifies the time period during which the formula/routing can be used, the quantities it can be used to produce, and the purpose for which it can be used (production, planning, costing).

The View Effectivities window is displayed in the following circumstances:

- When you complete the Create Batch/Firm Planned Order box and select OK. This window will list effectivities which satisfy the criteria specified on the Create Batch/FPO box.

- When you convert an FPO to one or more batches. This window will list effectivity records for all formulas which can be used to produce the specified quantity of the item on the specified start date.

If you are entering an FPO, this window will display planning effectivity records as well as production effectivity records. If you are converting an FPO to one or more batches, or are entering a batch, this window will only display production effectivity records. Highlight the indicator box of the formula you want to use.

The View Effectivities window is only displayed if more than one effectivity record qualifies.

For more information on effectivity records, see the *Oracle® Process Manufacturing Formula Management User's Guide* and online help.

View Effectivities Field Reference

Organization
The organization code for this effectivity record is displayed. If this field is blank, the effectivity record applies to all organizations.

Min Qty
The minimum production quantity for which this formula is effective is displayed.

Max Qty
The maximum production quantity for which this formula is effective is displayed.

UOM

The unit of measure in which the minimum and maximum quantities are expressed is displayed.

Formula

The formula with which this effectivity record is associated is displayed.

Version

The version of the formula with which this effectivity record is associated is displayed.

Routing

The routing specified in this effectivity record is displayed.

Version

The version of the routing specified in this effectivity record is displayed.

Start Date

The first date the formula is effective is displayed.

End Date

The last date the formula is effective is displayed.

Standard Qty

The standard quantity for the effectivity record is displayed.

Customer

The customer code specified on the effectivity record is displayed.

Preference

The preference number for the effectivity record is displayed. This prioritizes effectivity records when multiple effectivity records are valid for a given set of conditions. The lower the preference number, the higher the priority.

Formula Use

The purpose for which the formula can be used (Production, Planning, Costing or Regulatory) is displayed.

Rescheduling FPOs

Use the Reschedule box to change the schedule of an FPO. You can change the planned start date and time on an FPO that has a status of New or Pending, and the planned completion date and time of a FPO that has a status of New, Pending, or WIP.

Changing the planned start date and time changes the date and time on the pending ingredient transactions. Changing the planned completion date and time changes the date and time on the pending product and byproduct transactions.

If you change one field, OPM will ask if you want to apply the change to the other field. If you answer Yes, OPM calculates the difference between the original date and time and the new date and time, and applies that to the other field. For example, if you push the planned start date three days ahead, OPM will also push the planned completion date three days ahead.

Rescheduling FPOs Procedure

1. Navigate to the **Reschedule** box.
2. Complete the fields as described.
3. Click **OK**.

Reschedule Box Field References

Planned Start

Enter the new planned start date for the FPO. You can only edit this field if the FPO has a status of New or Pending.

Planned Complete

Enter the new planned completion date for the FPO.

Converting an FPO to a Batch

Use the Firm Planned Order to Batch Conversion box to create one or more batches based on the FPO. Select Actions FPO to Batch from the Firm Planned Order window. The top portion of this window is populated with data referring to the parent FPO and the lower portion of the window holds data that refers to individual production batches.

You cannot edit the lower portion of the window until you complete the upper portion. Once the cursor leaves the upper portion you can no longer edit it.

Edit the batch creation detail lines data such as Qty per Batch, Start Date, or Planned Completion Date until satisfied. Then select 'Accept' to begin processing the batches. Once you have selected 'Accept' the system:

- Examines each batch creation line

- Performs effectivity validation

- Checks for inventory shortages

- Assigns and displays a batch number

- Auto-allocates lots where inventory is available if auto-allocation is set up

Since an FPO can be based on a planning formula (that is, a formula with an effectivity record that specifies Planning rather than Production as the formula use), which cannot be used as the basis for a batch, the View Effectivities window is displayed once you complete the Firm Planned Order to Batch Conversion box. The View Effectivities window is only displayed if more than one effectivity record qualifies.

Firm Planned Order to a Batch Conversion Field Reference

Product1
The item code for the first product produced by the FPO displays.

Qty Per Batch
Enter the quantity of the product to be made by each batch created from the FPO or press the Return key to accept the default shown.

Batches
Specify the number of batches to be made from the FPO. The default is `1`.

Leadtime

Enter the number of hours required to make one batch. This is added to the start date of each batch to calculate the completion date. This will default from Production Rules.

Offset Type

This function is only available when multiple batches are being scheduled. Enter the code indicating the multiple batch scheduling method you want to use. Two scheduling options are available.

If you select Start to Start, the offset you specify in the Batch Offset field will be added to the start date/time of one batch to calculate the start date/time of the next batch.

If you select End to Start, the offset will be added to the end date/time of one batch to calculate the start date/time of the next.

Batch Offset

Enter the amount of time, in hours, between batches. This field is dependent upon the scheduling method selected in the Offset Type field.

If Start to Start (parallel) is selected as the offset type, the value entered indicates the number of hours from the start of one batch to the start of another batch.

For example, if 2 is entered and Batch#1 starts at 1:00PM, the system will schedule the next batch to begin at 3:00PM.

If End to Start (serial scheduling) is selected as the offset type, the value entered indicates the number of hours from the end of one batch to the start of another batch.

For example, if 2 is entered and Batch#1 is planned to be completed at 2:00PM, the system will schedule the next batch to begin at 4:00PM.

This field is only accessible if you are creating multiple batches.

FPO Quantity

The quantity of the product from the FPO is displayed.

Assigned

This field displays the quantity per batch multiplied by the number of batches. It may exceed the original FPO quantity.

Unassigned

This field displays the difference between the FPO Quantity and Assigned fields.

Seq

This field displays the sequential number for each batch.

Plant

This field displays the plant ID code.

This field is only accessible if you are using manual numbering for batches. Enter the new batch number. For auto numbering, this field will be updated after the conversion process is completed.

Batch numbers may not be sequential when phantom batches are being used.

Batch Quantity

Enter the quantity of the product to be produced by the batch. The quantity you entered in the Qty Per Batch field is the default.

Planned Start

Accept or change the planned start date of the batch on this line. If you are forward scheduling, the date entered in the Start Date field is the default for the first batch. Subsequent batch start defaults are dependent on the offset time and offset type.format.

Planned Complete

Accept or change the end date of the batch on this line. The default is calculated based on the default start or end date, the number of hours you entered in the Total Leadtime field, the offset type and offset time.

Planned Dates

Start

Enter a new batch start date, or press Tab to accept the default shown. If you enter a date in this field or accept the default the system will forward schedule (compute the end date from working forward from the start date), all batches associated with the current FPO. Once you press Tab, the Completion Date field is no longer accessible. The completion dates of the batches are automatically calculated.

Completion

Accept or change the completion date of the batch on this line. The default is the
FPO completion date. If you enter a value in this field or accept the default, the
system will back schedule (compute the start date by working backward from the
end date), all the batches associated with the current FPO.

4

Creating and Editing Batches

Batches in OPM are the primary documents in the Production Management application. They record information about scheduled, in process, and completed manufacturing events.

The following topics are discussed:

- Creating Batches or FPOs
- Editing Batch Header and Products Information
- Entering and Editing Batch Ingredients
- Entering and Editing Batch Byproducts
- Adding Additional Attributes to a Batch Line
- Checking Inventory Shortages
- Rescheduling Batches
- Viewing Effectivities
- Phantom Batches

Creating Batches or FPOs

A batch can be created in one of three ways:

- Converted from an MRP planned order (see the *Oracle Process Manufacturing MRP/MPS and Forecasting User's Guide*)

- Converted from a firm planned order (FPO) (See: Firm Planned Orders)

- Entered directly from the Create Batch/Firm Planned Order box

This section discusses how to enter a batch directly, and how to edit a batch, regardless of how it was created.

You create a batch on the Create Batch/Firm Planned Order box. (See: Create Batch FPO.) Access this box from the Production menu. OPM also automatically displays it from the Batches window (and, optionally, from the Batch Input and Batch Output forms) if you are creating a new batch. Specify either the item and quantity of the item the batch will produce, or the formula and version upon which the batch will be based. You also enter the planned start and end dates of the batch. In addition, you can enter a routing and routing version, if you wish.

The Create Batch/Firm Planned Order box displays automatically from the Batch Input and Batch Output forms if the GME:Allow Batch Creation from Input and GME:Allow Batch Creation from Output Profiles are set to 1.

After you complete the box and select OK, the View Effectivities window is displayed, showing all of the effectivities which are valid for the data you entered on the box. Select the one on which the batch will be based. If only one effectivity is valid, the View Effectivities window is skipped and that sole effectivity is used. See: the View Effectivities for more information on the View Effectivities window.

If you accessed the Create Batch/Firm Planned Order box from the Production Management menu, the batch or FPO is saved and you remain on the box to enter additional batches. If you accessed the Create Batch/Firm Planned Order box through the Firmed Planned Order, Batches, Batch Input, or Batch Output window, you are returned to the window from which you accessed the box, with the newly created batch or FPO displayed. You can edit the batch or FPO before saving it.

Editing a Batch

You can change the products and product quantities on the Batches window. Note that when a batch produces more than one product, these are sometimes referred to as coproducts. In OPM, products and coproducts are synonymous. You may want to create an effectivity record in the Formula Management application for each coproduct. This enables you to enter any of the coproducts on the Create Batch/Firm Planned Order box. Coproducts should not be confused with byproducts, which are described below.

Editing Batch Ingredients

You can add or delete ingredients and change ingredient quantities on the Batch Ingredients window. Access this by clicking the Ingredients button on any of the other batch forms.

Editing Batch Byproducts

If your batch produces byproducts, you can add or delete these byproducts and change byproduct quantities on the Batch By-products window. Access this by clicking the Byproducts button. Byproducts, like products, are items produced by a batch. They differ from products in that you do not plan your production to make byproducts. Byproducts may or may not have value, but generally have less value than products.

For example, in the production of applesauce you produce apple peels. These peels are not something you plan to produce. You would never schedule a batch in order to produce apple peels. These apple peels may not have any value and may be disposed of, or you may find someone who will buy these peels (as animal feed, for example). In either case, you would enter apple peels as a byproduct of your applesauce batch.

You cannot calculate the cost of production of byproducts in OPM. Any items produced by your batches for which you want to calculate costs should be entered as products, not byproducts. Byproducts can have an effect on the cost of products, however. For example, the cost of disposing of byproducts may increase the cost of producing your products. Alternatively, the money you make from selling the byproducts may lower the cost of producing your products.

From each of the three forms described previously on which you enter items (ingredients, products, and byproducts) in a batch, you can access an Additional Edit box by selecting Additional Edit from the Action menu. On this box, you can enter additional information, such as scale types and release types, for any of the lines in the batch.

In addition to the forms mentioned above, you can access forms to enter quality control data for items in the batch (specifications, samples, results), to scale the batch, to calculate theoretical yield, to allocate ingredients, and to allocate products. For information on entering quality control data, see the *Oracle Process Manufacturing Quality Management User's Guide* and the online help.

Batch Text

Like many other documents in OPM, you can add text to a batch by selecting Edit Text from the Action menu. You can do this at the header or line level. In addition, text associated with the formula on which the batch is based is copied to the batch if the GME:Copy Formula Text Profile is set to 1.

Note that identical paragraph codes must be set up on the Paragraph window in the OPM System Administration application for the fm_form_mst and pm_btch_hdr tables for header text to be copied, and for the fm_matl_dtl and pm_matl_dtl tables for line item (product, ingredient, or byproduct) text to be copied.

See: *Oracle Process Manufacturing Implementation Guide* for more information on setting up paragraph codes.

Shared Data Area

The Batches, Batch Ingredients, and Batch By-products forms, as well as the Batch Input and Batch Output make use of a shared data area. From each of these forms, you can access any of the other forms. If you are working with a specific batch on any one of these forms and you access any of the other forms, the same batch will display on the other window.

For example, if you are editing ingredients for a specific batch on the Batch Ingredients window and you access the Batch Input window by selecting Input from the Action menu, the same batch will display on the Batch Input window. This reduces the number of keystrokes required, since you do not have to enter the batch number on each window. It also allows you to perform various functions at one time, such as adding or editing ingredients and then allocating those ingredients, without having to add or edit the ingredients, then save the batch, then reopen the batch, and then allocate.

Security Considerations

The Production Management batch forms are designed to enable you to make certain functions available to only certain people. For example, a production planner or supervisor may have authority to create batches, cancel batches, reschedule batches, scale batches, and change items and planned item quantities. You would give this person access to all of the forms and functions in Production Management.

A line user, on the other hand, may only have authorization to record what went into a batch and what came out. You would not want this person to be able to create new batches, or change the production plan.

Therefore, you can give this person access to the Batch Input and Batch Output forms, but not to the Batches, Batch Ingredients, Batch Byproducts, or Create Batch/FPO forms. You would also set the GME:Allow Batch Creation from Input and GME:Allow Batch Creation from Output Profiles to 0 to prevent access to the Create Batch/Firm Planned Order box from the Batch Input and Batch Output forms.

By removing access to the Scale Batch and Theoretical Yield functions on the Batch Input and Batch Output forms, you prevent this user from changing planned quantities, since the Planned Qty fields on these forms are not directly editable.

Creating a Batch or FPO Procedure

To create a batch or FPO proceed as follows:

1. Navigate to the Create Batch/Firm Planned Order box.

2. In the **Document Type** field select to create either to create either a Batch or Firmed Planned order.

   - If you are using manual document numbering, you must enter the new number in the **Document Number** field. This field is only accessible if your system uses manual document numbering for batches or FPOs. If the field is accessible, entry is required.

   - If you are using automatic document numbering proceed to the next field. The word New continues to be displayed. When you save the FPO or batch, a number will be assigned and displayed in this field.

3. Complete the remaining fields as described.

4. Click **OK**.

- If more than one effectivity record qualifies, the **View Effectivities** window displays all of the effectivities which are valid for the data you entered on the box. Select one.

- If only one effectivity record qualifies, the **View Effectivities** window is skipped and the batch is created directly based on that sole effectivity. One of the following occurs:

  - If you accessed **the Create Batch/Firm Planned Order** box from the Production menu, the batch or FPO is created and saved. This is useful if you are entering many batches or FPOs at a time and do not need to edit them before they are saved.

  - If you accessed the **Create Batch/Firm Planned Order** box from the Firm Planned Order, Batches, Batch Input, or Batch Output window, you are returned to the window from which you accessed the box. You can then edit the batch before saving it, including performing theoretical yield calculations and direct certification.

5. Continue to create batches or edit the batch as necessary.

Create Batch/Firm Planned Order Field Reference

Document Type
You may select to create a Batch or a Firm Planned Order from the list.

Plant
This field displays the code for the plant in which the batch will be produced. It defaults to the code for your default organization and cannot be edited. To change your default organization, you must use either the Session Parameters window or the change the profile for default organization.

Document Number
If you are using manual document numbering, enter the new number. This field is only accessible if your system uses manual document numbering for batches or FPOs. If the field is accessible, entry is required.

If you are using automatic document numbering proceed to the next field. The word New continues to be displayed. When you save, a number will be assigned and displayed in this field.

WIP Warehouse

Enter the code for the warehouse used to cost production activity. If you leave this field blank, the WIP warehouse will default to the replenishment warehouse for the product set up on the Plant Warehouses window.

Item

This is an optional field which provides a way of selecting an effective formula for the batch. Enter the item code of the product this batch will produce. If you do not enter an item code in this field, you must enter a formula and version in the Formula and Version fields.

When you finish completing the box and select OK, the View Effectivities window will display all formulas which are effective for producing the specified quantity of the item during the specified dates.

Effective Quantity

This field is only accessible if you entered an item code in the Item field. Enter the quantity of the product you are planning to make in the batch. This field defaults to the standard quantity set up on the Production Rules window but can be edited. Required if you entered an item in the Item field.

Unit of Measure

Enter the unit of measure in which the effective quantity is expressed. This defaults to the item's primary inventory unit of measure.

Formula

Enter the formula on which the batch will be based. Required if you did not enter an item in the Item field.

Version

Enter the number of the formula version on which the batch will be based. Required if you did not enter an item in the Item field.

Routing

Enter the code for the routing to be used for the batch.

Version

Enter the number of the routing version to be used for the batch.

Planned Start

Enter the planned production start date and time for the batch. The default is the current date and time.

OPM can calculate the planned start date and time if you enter the planned completion date in the next field. See the next field description for more detail.

Planned Completion

Enter the planned completion date and time for the batch. The default for this field is calculated from the fixed and variable leadtimes on the Production Rules window. This is calculated by adding the following to the planned start date:

Fixed Leadtime + (Variable Leadtime * (Batch Quantity / Standard Quantity))

Note that the leadtimes on the Production Rules window are expressed in hours.

If you left the Planned Start field blank and enter a date and time in this field, OPM will use the above formula to back-calculate the planned start date and time.

Required Completion

Enter the required completion date and time for the batch. This field is for informational purposes only and defaults to the planned completion date.

Editing Batch Header and Products Information

Use the Batches window to enter header and product information for a batch. The product information shown defaults from the formula on which the batch is based.

Editing Batch Header and Products Information Procedure

1. Navigate to the **Batches** window.

2. Complete the fields as described.

3. Save the window.

Batches Window Field Reference

[ ]

The double brackets identify a descriptive flexfield that you can use to add data fields to this window without programming.

Batch

To edit an existing batch, enter the batch number using Query Find or Query Find All.

To enter a new batch, proceed accordingly:

- If you are using automatic document numbering for batches, press the Tab key. The Create Batch /Firm Planned Order box is displayed.

- If you are using manual document numbering for batches, enter the new batch number. The Create Batch /Firm Planned Order box is displayed.

Note that the batch number is preceded by your default organization code. The combination of this code and the batch number uniquely identify a batch.

Next to this field, the current status of the batch is displayed. You cannot edit this field.

Formula

This field displays the name of the formula on which the batch is based. You cannot edit this field.

Next to the Formula field, the number of the formula version upon which the batch is based is displayed. You cannot edit this field.

Routing

The routing for the batch is displayed. You cannot edit this field directly. To change the routing, select Reroute from the Action menu.

Next to the Routing field, the number of the routing version for the batch is displayed. You cannot edit this field directly. To change the routing version, select Reroute from the Action menu.

WIP Warehouse

Enter the code for the warehouse used to cost production activity. This defaults to the WIP warehouse entered on the Create Batch/Firm Planned Order box. If you did not enter a WIP warehouse on the Create Batch/Firm Planned Order box, this field defaults to the replenishment warehouse for the product set up on the Plant Warehouses window. The description associated to the warehouse code is displayed.

Planned Dates

Start

The date and time you plan the batch to start defaults from the Create Batch/Firm Planned Order box. To change this, you must select Reschedule from the Action menu.

Completion

The date and time you plan the batch to be completed defaults from the Create Batch /Firm Planned Order box. To change this, you must select Reschedule from the Action menu.

Required Completion

Enter the date and time by which the batch must be completed. This field is for informational purposes only, and defaults from the Create Batch/Firm Planned Order box. Required.

Actual Dates

Start

Enter the date and time the batch was actually started. If you do not enter a date in this field, the current system date and time is entered when you release the batch.

Completion

Enter the date and time the batch was actually completed. If you do not enter a date in this field, the current system date and time is entered when you certify the batch.

Close

Enter the date and time the batch was closed. If you do not make an entry, the current system date and time is used when you close the batch.

Products

Seq

This field displays the line number for each product line. This field cannot be edited.

Item

The code of the product from the formula is displayed. You can add or delete products as necessary.

Description

The description of the product is displayed. You cannot edit this field.

Planned Qty

If you entered an item code and effective quantity on the Create Batch/Firm Planned Order box, the planned quantity for that item (but not the other products) will default from that quantity. If you entered a formula and version on the Create Batch/Firm Planned Order box, the planned quantity will be the standard quantity defined on the Production Rules for the first product, or the quantity from the formula if there is no Production Rule. You can change this quantity on a New or Pending batch. Required.

Actual Qty

Enter the quantity actually produced by the batch.

For automatic certification lines (those with the Release Type set to automatic on the Additional Edit box), if you have not entered a quantity in this field, the greater of allocated quantity versus the planning quantity defaults into this field when you certify the batch. You cannot directly edit this field until you certify the batch. You cannot edit this field on a WIP batch and save the batch. You can, however, edit this field on a WIP batch and then certify the batch.

For lines with the Release Type set to manual, the quantity you certify on the Batch Output window or Partial Certification box defaults into this field.

For lines with the Release Type set to incremental, the quantity calculated by partial certification backflushing displays in this field.

UOM

Enter the unit of measure in which the quantities are expressed.

If you enter a unit of measure that is of a different UOM type than the item's inventory unit of measure, you must first have set up a unit of measure conversion between these two units of measure. Conversions between unit of measure types must be defined for each item on the Item Lot/Sublot Std Conversion window.

Allocated

This checkbox indicates whether the line is allocated. Cannot be edited.

Batches - Buttons

Byproducts

Accesses the Batch By-products window. This window is described in detail later in this section.

Ingredients

Accesses the Batch Ingredients window. This window is described in detail later in this section.

Batches - Actions Menu

The following options appear on the Actions menu depending on whether you have the cursor in the header panel or the Products panel.

Batch Steps

Accesses the Batch Steps window. See the *Oracle Processing Manufacturing Process Operation Control User's Guide* for more information on the Batch Steps window. POC must be turned on for this option to be available.

Input

Accesses the Batch Input window, on which you can allocate ingredient lines.

Output

Accesses the Batch Output window, on which you can allocate product and byproduct lines.

Edit Parent

If you are editing a phantom batch, this retrieves the parent batch.

Scale Batch

Accesses the Scale Batch box, which allows you to scale the quantities of the ingredients, products, and byproducts in the batch. You must have the cursor in the Products panel for this option to display on the Actions menu.

Release

Releases the batch and changes the batch status to WIP. This writes completed transactions for all of the ingredient lines which are flagged for automatic release on the Additional Edit box. You must have the cursor in the header or the dates panels for this option to display on the Actions menu.

Certify

Certifies the batch and changes the batch status to Certified. This writes completed transactions for all of the product lines which are flagged for automatic release on the Additional Edit box. You must have the cursor in the header or the dates panels for this option to display on the Actions menu.

Close

Closes the batch. Once a batch has been closed, you can no longer edit any of the batch data. You must have the cursor in the header or the dates panels for this option to display on the Actions menu.

Cancel

Cancels the batch. A batch can only be canceled if it has a Pending status. Canceling a batch deletes the pending transactions associated with the batch. You must have the cursor in the header or the dates panels for this option to display on the Actions menu.

Unrelease

Reverses a release and changes the batch status to Pending. This reverses the completed ingredient transactions and writes pending ingredient transactions. Also reverses completed transactions for manual release products and creates pending transactions. Note that both automatic release lines and manual release lines are unreleased by this action. You must have the cursor in the header or the dates panels for this option to display on the Actions menu.

Reschedule

Accesses the Reschedule Batch box, on which you can change the planned start and completion dates of the batch. You must have the cursor in the header or the dates panels for this option to display on the Actions menu.

Reroute

Accesses the View Effectivities window, on which you can select a different routing. You must have the cursor in the header or the dates panels for this option to display on the Actions menu.

Effectivity

Accesses the View Effectivity window which allows you to view the effectivity upon which the batch was based. An effectivity record specifies under what conditions a formula/routing can be used. You must have the cursor in the header or the dates panels for this option to display on the Actions menu.

See: The View Effectivity topic for detailed information.

Inventory Summary

If the cursor is on a product line, this option accesses the Inventory Summary window. This window lists available and committed quantities for an item by warehouse and QC grade. You must have the cursor in the Products panel for this option to display on the Actions menu.

See: *Oracle Process Manufacturing Inventory Management User's Guide* for more information on this window.

Results

If the cursor is on a product line, this option accesses the Production Results window. You must have the cursor in the Products panel for this option to display on the Actions menu. See the *Oracle Process Manufacturing Quality Management User's Guide* for more information on results.

Samples

If the cursor is on a product line, this option accesses the Production Samples window. You must have the cursor in the Products panel for this option to display on the Actions menu. See the *Oracle Process Manufacturing Quality Management User's Guide* for more information on samples.

Specifications

If the cursor is on a product line, this option accesses the Production Specifications window. See the *Oracle Process Manufacturing Quality Management User's Guide* for more information on specifications.

Theoretical Yield

If the cursor is on a product line, this option accesses the Calculate Theoretical Yield box, which allows calculation of the product quantities based on the ingredient quantities and a yield factor. You must have the cursor in the Products panel for this option to display on the Actions menu.

Additional Edit

If the cursor is on a product line, this menu choice accesses the Additional Edit box, which allows you to enter additional information, such as scale type and release type, for each product line. You must have the cursor in the Products panel for this option to display on the Actions menu.

Entering and Editing Batch Ingredients

Use the Batch Ingredients window to enter or edit ingredients and ingredient quantities for a batch. The ingredients from the formula on which the batch is based default onto this window.

The number of products, byproducts, and ingredients in the formula are displayed at the bottom of the window. These fields cannot be edited.

Entering and Editing Batch Ingredients Procedure

1. Navigate to the **Batch Ingredients** window by clicking **Ingredients** on the **Batches**, **Batch Input** or **Batch Output** forms.

2. Complete the fields as described.

3. Save the window.

Batch Ingredients Field References

Batch
The batch number and its associated organization is displayed. This field cannot be edited.

(Unlabeled)
The status of the batch is displayed. This field cannot be edited.

Product1
The item code and description of the first product made by this batch is displayed. This field cannot be edited.

Seq
This field displays the line number for each ingredient line. This field cannot be edited.

Item
Displays the item codes of the ingredients in this batch. The ingredients from the formula on which the batch is based default.

Description

The item description of the ingredients displays from the item master table. This field cannot be edited.

Plan Quantity

The ingredient quantity defaults from the formula. If the batch is still pending, you can change this quantity if you plan to consume more or less in this batch. Required.

Actual Qty

Enter the quantity actually consumed by the batch. You cannot edit this field directly until the batch has been released (WIP status)

For automatic release lines (those with the Release Type on the Additional Edit box set to automatic), when you release the batch, the quantity of the pending transaction(s) that had been associated with this line defaults into this field. For manual release lines (those with the Release Type set to manual), the quantity you release using the Batch Input window defaults into this field. For lines with the release type set to Incremental, partial certification with backflushing updates this quantity.

UOM

Enter the unit of measure in which the quantities are expressed. This defaults from the formula. If you add a new ingredient, the item's primary inventory unit of measure defaults.

If you enter a unit of measure that is of a different UOM type than the item's inventory unit of measure, you must first have set up a unit of measure conversion between these two units of measure. Conversions between unit of measure types must be defined for each item on the Item Lot/Sublot Std Conversion window.

Allocated

This checkbox indicates whether the line is allocated. Cannot be edited.

Batch Ingredients - Buttons

Byproducts

Accesses the Batch By-products window. This window is described in detail later in this section.

Products

Accesses the Batches window.

Batch Ingredients - Actions Menu

Edit Phantom

If the cursor is on a phantom ingredient, this retrieves the phantom batch.

Input

Accesses the Batch Input window, on which you can allocate ingredient lines.

Output

Accesses the Batch Output window, on which you can allocate product and byproduct lines.

Edit Parent

Accesses the parent batch and allows you to edit it if you are editing a phantom batch.

Inventory Summary

Accesses the Inventory Summary window. This window lists available and committed quantities for an item by warehouse and QC grade.

See: *Oracle Process Manufacturing Inventory Management User's Guide* for more information on this window.

Results

Accesses the Production Results window.

See: *Oracle Process Manufacturing Quality Management User's Guide* for more information on results.

Samples

Accesses the Production Samples window.

See: *Oracle Process Manufacturing Quality Management User's Guide* for more information on samples.

Specifications

Accesses the Production Specifications window.

See: *Oracle Process Manufacturing Quality Management User's Guide* for more information on specifications.

Scale Batch

Accesses the Scale Batch box, which allows you to scale the quantities of the ingredients, products, and byproducts in the batch.

Allocate

Allocates all ingredient lines which belong to an allocation class flagged for auto-allocation (automatic or user-initiated).

Create Phantom

If the cursor is on an unexploded phantom, this option accesses the Create FPO/ box on which you can create the phantom batch.

Additional Edit

Accesses the Additional Edit box, which allows you to enter additional information, such as scale type and release type, for each ingredient line.

Inventory Shortage

Checks whether there are inventory shortages of any ingredients in the batch. If there are, the shortages are displayed on the Inventory Shortages window.

Allocate Line

Allocates the ingredient line on which the cursor is positioned, if that ingredient belongs to an allocation class flagged for auto-allocation (automatic or user-initiated).

Entering and Editing Batch Byproducts

Use the Batch By-products window to enter byproducts and byproduct quantities for a batch. The byproducts from the formula on which the batch is based defaults. Byproducts are items produced by a formula, but differ from products in that you do not plan your production to make byproducts, and you cannot cost byproducts.

The number of products, byproducts, and ingredients in the formula are displayed at the bottom of the window. These fields cannot be edited.

Entering and Editing Batch Byproducts Procedure

1. Navigate to the **Batch By-products** window.

2. Complete the fields as described.

3. Save the window.

Batch By-products Field References

The sections that follow describe the fields in the various panels on the Batch By-products window.

Batch

The batch number and its associated plant organization are displayed. This field cannot be edited.

(Unlabeled)

The status of the batch is displayed. This field cannot be edited.

Product1

The first product made by this batch is displayed. This field cannot be edited.

Byproducts

Seq

The line number for each byproduct line is displayed. This field cannot be edited.

Item

The code of the byproduct(s) from the formula is displayed. You can add or delete byproducts if necessary.

Description

The item description of the byproduct displays from the item master table.

Planned Qty

The byproduct quantity defaults from the formula. You can change this quantity if you plan to produce more or less in this batch. Required.

Actual Qty

Enter the quantity actually produced by the batch.

For automatic certification lines (those with the Release Type on the Additional Edit box set to automatic), if you have not entered a quantity in this field, the allocated quantity defaults into this field when you certify the batch.

For automatically certified lines, you cannot directly edit this field until you certify the batch. If you edit this field on a WIP batch and try to save it, an error message is displayed. You can, however, edit this field on a WIP batch and then certify the batch

For manual lines with the Release Type set to manual, the quantity you certify on the Batch Output window or Partial Certification box defaults into this field.

For lines with release type set to Incremental, the quantity calculated by partial certification backflushing displays in this field.

UOM

Enter the unit of measure in which the quantities are expressed. This defaults from the formula. If you add a new byproduct, the item's primary inventory unit of measure defaults.

If you enter a unit of measure that is of a different UOM type than the item's inventory unit of measure, you must first have set up a unit of measure conversion between these two units of measure. Conversions between unit of measure types must be defined for each item on the Item Lot/Sublot Std Conversion window.

Allocated

This checkbox indicates whether the line is allocated. Cannot be edited.

Batch By-products - Buttons

Ingredients
Accesses the Batch Ingredients window.

Products
Accesses to the Batches window.

Batch By-products - Actions Menu

Batch Steps
Accesses the Batch Steps window.

See: *Oracle Processing Manufacturing Process Operation Control User's Guide* for more information on the Batch Steps window. The batch must have POC turned on for this option to work.

Input
Accesses the Batch Input window, on which you can allocate ingredient lines.

Output
Accesses the Batch Output window, on which you can allocate product and byproduct lines.

Inventory Summary
Accesses the Inventory Summary window. This window lists available and committed quantities of an item by warehouse and QC grade.

See: *Oracle Process Manufacturing Inventory Management User's Guide* for more information on this window.

Results
Accesses the Production Results window.

See: *Oracle Process Manufacturing Quality Management User's Guide* for more information on results.

Samples

Accesses the Production Samples window.

See: *Oracle Process Manufacturing Quality Management User's Guide* for more information on samples.

Specifications

Accesses the Production Specifications window.

See; *Oracle Process Manufacturing Quality Management User's Guide* for more information on specifications.

Theoretical Yield

Accesses the Calculate Theoretical Yield box, which allows calculation of the product quantities based on the ingredient quantities and a yield factor.

Additional Edit

Accesses the Additional Edit box, which allows you to enter additional information, such as scale type and release type, for each byproduct line. This is described in detail later in this section.

Scale Batch

Accesses the Scale Batch box, which allows you to scale the quantities of the ingredients, products, and byproducts in the batch.

Adding Additional Attributes to a Batch Line

You this dialog box to add additional attributes to a batch.

You can add additional attributes for any line in a batch (product, ingredient, or byproduct) by placing the cursor on that line and selecting Additional Edit from the Actions menu. Any settings which were set on the corresponding line on the Additional Information box in the formula on which the batch is based will default onto this window. You can access Additional Edit from FPOs, but you cannot edit any of the fields. To select a product you must be on the Batches, Batch Output, or Firm Planned Order window, to select an ingredient you must be on the Batch Ingredients, Batch Input, or FPO Ingredients window, and to select a byproduct you must be on the Batch Byproducts, Batch Output, or FPO Byproducts window.

Depending on the window from which you access this box, some of fields described below may not display.

Additional Edit Field Dialog Box Field References

The values of all these fields default to the value set for the line in the formula on which the batch is based.

Seq

The batch line number is displayed. This field cannot be edited.

Item

The code of the item on the line you selected displays from the previous window. This field cannot be edited.

Description

The description of the item on the line you selected displays. This field cannot be edited.

Planned Quantity

The planned quantity of the item on the line you selected displays from the previous window. This field cannot be edited.

Scrap Factor

Scrap factor represents the anticipated amount of ingredient loss during manufacturing. Enter the scrap factor for this line item, expressed as a percentage (ex. 5% is entered as 5). Only displays for ingredient lines. You may enter scrap factor or required quantity, but not both.

Required Quantity

This field only appears on the Ingredient Additional Edit box. Enter the ingredient quantity required for manufacturing. The value entered should represent the amount of an ingredient needed to manufacture a given product. This includes the scrap, the amount of anticipated ingredient loss during manufacturing.

This field works in conjunction with the Scrap Factor field. When the required quantity is entered, the scrap factor value will be automatically calculated using the following algorithm:

scrap_factor%=(required_quantity/planned_quantity)-1

You may enter required quantity or scrap factor, but not both

Scale Batch

Click this box to allow scaling. Inserted lines default to scaleable.

Release Type

Select the release type of this line.

- Automatic

- Manual

- Incremental

Automatic, when set for an ingredient line, means that the ingredient line will be released for production when the batch is released. Manual, when set for an ingredient line, means that the ingredient line must be released individually. Incremental, when set for an ingredient, means that the line will be released incrementally based on entries made using the Partial Certification option.

See: Partial Certification and Backflushing section.

For example, if you have an ingredient that is used a little at a time, you can set it to manual release and release just the amount that has been used at a certain time, using the Batch Input window. If some ingredients go into a batch later than others, you can release those later.

When used on product lines, manual allows you to do partial certification of a batch using the Batch Output window or Partial Certification box. This is useful for long batches or continuous processing, in which you want to record the fact that a certain amount of the product was yielded without having to wait until the entire batch is complete.

For inserted lines, the value of this field defaults based on the FM$DEFAULT_ RELEASE_TYPE profile.

Phantom Type

This field only appears on the Ingredient Additional Information box. Designate the phantom type you want to use. Select one of three options:

- Not a phantom

- Auto Generate

- Manually Generated

When you select Auto Generate, the system will create a dependent phantom batch when you first save the parent batch.

When you select Manually Generated Phantom Batches, you will have to explode the phantom ingredient by selecting Actions > Create Phantom on the Batch Ingredients window.

See: Phantoms for more information.

Cost Allocation

This field only displays when you access the Additional Edit box from a product line on the Batches, Batch Output or Firm Planned Order window. Use this field to allocate costs among products if the batch produces more than one product.

Enter the fraction of the cost to be assigned to the product as a decimal. If the batch produces only one product, enter 1.00. If the batch produces more than one product, these must sum to 1.00.

Checking Inventory Shortages

The Inventory Shortage box can be displayed by selecting Inventory Shortage from the Actions menu on the Batch Ingredients window. It displays any ingredients for which the planned quantity for the batch is greater than the available quantity.

This window will also display automatically if there are shortages of any ingredients when you save or release the batch. There are two System Profiles, PM$CHECK_INV_SAVE and PM$CHECK_INV_RELEASE, which determine whether OPM automatically performs inventory shortage checking upon saving or releasing a batch. If you generally do not have your ingredients in stock at the time you enter a batch (for example, if you use just-in-time manufacturing), you should turn off inventory shortage checking at save.

This window serves only as a warning. To continue with the save or release, click the OK button.

Inventory Shortage Field References

The sections that follow describe the fields on the Inventory Shortage box.

Line

The ingredient line number for which there is insufficient inventory is displayed from the Ingredients window.

Item

The code for the ingredient for which there is insufficient inventory is displayed.

Description

The description of the ingredient is displayed.

Quantity

Planned

The planned quantity from the batch is displayed.

On Hand

The current onhand quantity of the ingredient is displayed.

Available

The current available quantity of the ingredient is displayed. This is equal to the onhand quantity minus all other commitments. Ingredients for which the planned quantity is greater than this available quantity are displayed on this window.

The unit of measure in which the quantities are expressed is displayed in the unlabeled field to the right.

Rescheduling Batches

Use the Reschedule box to reschedule a batch. You can change the planned start date and time on a batch that has a status of New or Pending, and the planned completion date and time of a batch that has a status of New, Pending, or WIP.

Changing the planned start date and time changes the date and time on the pending ingredient transactions. Changing the planned completion date and time changes the date and time on the pending product and byproduct transactions.

If you change one field, OPM will ask if you want to apply the change to the other field. If you answer Yes, OPM calculates the difference between the original date and time and the new date and time, and applies that to the other field. For example, if you push the planned start date three days ahead, OPM will also push the planned completion date three days ahead.

Rescheduling Batches Procedure

1. Navigate to the **Reschedule Batch** box.
2. Complete the fields as described.
3. Click **OK**.

Reschedule Batch Field References

Planned Start

Enter the new planned start date for the batch. You can only edit this field if the batch has a status of New or Pending.

Planned Complete

Enter the new planned completion date for the batch.

View Effectivity

The View Effectivity window allows you to view the effectivity upon which a batch or Firm Planned Order was based. An effectivity record specifies under what conditions a formula/routing can be used.

The View Effectivity form (which is read only) is accessible from the Batches and Firm Planned Order Action menus. You must have the cursor in the header or the dates panels for this option to display on the Actions menu.

This form displays the effectivity that currently resides in the batch header record. This is the effectivity upon which the batch was based when it was created, unless the batch was rerouted. If the batch was rerouted, then the screen will display the effectivity chosen when rerouting. The effectivity details are displayed as they exist currently. If someone edited the effectivity record in Formula Management since the batch was created, the data you see could be different from when the batch was created.

Phantom Batches

Phantoms are intermediate items in a formula that do not exist by themselves, and generally are not tracked in inventory, but their ingredients are. A phantom is made only during the production of another product and may also be known as a transient subassembly or a blowthrough.

Phantom batches are linked to parent batches of which they are an ingredient or intermediate. They are sometimes also referred to as child batches.

Phantom Batches - Example

For example, if you manufacture breads, you use a basic bread dough (BASIC_ DOUGH) for all of the breads you sell. You don't sell the dough or manufacture it separately and keep it in inventory; you track only the ingredients; flour, water, yeast, etc. Your formulas for bread contain the phantom, BASIC_DOUGH, plus whatever other ingredients are needed to produce the type of breads you sell -- apple blend for apple bread, carrot blend for carrot bread, etc.

Creating and Generating Phantoms

In OPM, phantom functionality is a fixed window of multi-batch management. Once several batches are linked by a production order number and the phantom type dependency, you can manage them as a single production event. There are three basic tasks associated with using phantoms:

1. Identify one or more ingredients in a formula as phantoms

2. Build a formula for each phantom and create effectivities

Note: These first two tasks are performed in the Formula Management application. After you create a formula for the phantom, you use the Formula Ingredients window's Additional Information box to select a Phantom Type. At the Phantom Type field, you select one of the following: Not a Phantom, Auto Generate Manually Generated. For more information, see the *Oracle Process Manufacturing Formula Management User's Guide.*

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3. Create an FPO or Production Batch from the formula with phantom ingredients

Auto-Generate Phantom Batches

When you use the Auto-Generate Phantom Batches function with automatic document numbering (see the *Oracle Process Manufacturing Implementation Guide* for information on document numbering), the system automatically creates a phantom batch when you first save the parent batch.

Manually Generated Phantom Batches

When you use the Manually Generated Phantom Batches function, you will have to select Actions > Create Phantom to explode (create) a phantom batch.

When using manual document numbering as set up in the System Administration guide, the system can not create auto-generated phantom Batches.

See: *Oracle Process Manufacturing Implementation Guide* for information on setting up documents and document numbering.

Phantom batches are dependent on the parent production batch and are sometimes referred to as the child or dependent batch. This dependency eliminates several steps in batch processing. OPM synchronizes the output quantity of the phantom batch to the input of the parent batch. If any of the following functions are applied to the parent batch, they will also automatically be applied to all associated phantom batches. The functions are:

- Create Batch (Generates the dependent phantom batch for Auto-generated phantoms)
- Cancel (Cancels phantom batch)
- Release
- Unrelease
- Certify
- Close
- Reschedule (Applies date change to phantom batches)
- Scale Batch (This may or may not scale ingredients in the phantom batch, depending on whether or not you answer yes to the message "Backflush qty to phantom batches (Y/N)?")

The following two menu items from the Actions menu can be used to modify phantom data.

- Edit Phantom (The phantom batch is displayed)
- Edit Parent (The parent batch is displayed)

Phantom Batches and Partial Certification with Backflushing

If a phantom ingredient has a release type of Incremental in the parent batch, it will be updated by partial certification, and the rest will be handled the same as if you had manually changed the qty. That is, you will be asked "Backflush quantity to phantom batches (Y/N)?" If you answer Yes, standard phantom backflushing (using the scaling algorithm, not the partial certification algorithm) will be done. If you answer No, the quantities of the ingredients in the phantom batches will not be changed.

5

Recording Batch Input and Output

This section discusses the following topics:

- Batch Input - Allocating Ingredients
- Viewing Unallocated Items
- Recording Batch Consumption
- Batch Input Window - Simultaneous Multi-User Batch Access Mode
- Allocating Lines in a Batch - Batch Input
- Picking Lots/Locations
- Recording Batch Output
- Allocating Products and Byproducts - Batch Output
- Certification
- Recording Batch Production
- Batch Output - Allocating Lines in a Batch
- Simultaneous Multi-User Batch Access

Batch Input - Allocating Ingredients

Allocating ingredients refers to specifying the lots and locations of ingredients used for a batch. Allocation can be performed automatically by OPM or manually.

If you use auto-allocation, OPM will select the lot(s) to be used (for lot-controlled ingredients), the sublot(s) to be used (for sublot-controlled ingredients), and the location(s) from which to take the ingredient (for location-controlled ingredients). If you use manual allocation, allocate ingredients on the Batch Input window.

You can manually allocate before or after releasing a batch. You can only auto-allocate *before* releasing a batch. An advantage to allocating (either automatically or manually) before releasing a batch is that the selected lots and locations will print on the Batch Picklist. This provides a guide to picking the correct material. If you record what went into a batch after it has started, instead of what will go into it before it starts, then you must manually allocate after releasing the batch.

Automatic Allocation

Using this method, OPM automatically allocates the ingredients in a batch when the batch is saved for the first time. OPM decides the lots, sublots, and/or locations from which to take the items. This is based on the allocation class you assign the items on the Items window, and the rules you set up on the Allocation Parameters window. This is the easiest type of allocation. You can use automatic auto-allocation when the following circumstances are true for the item:

- The ingredient is lot-controlled.

- The correct material can be chosen using FIFO/FEFO, single/multi-lot, and lot status rules.

- The ingredient is typically available at the time of batch entry in the consumption warehouse specified on the Plant Warehouses window.

To set an ingredient to be automatically auto-allocated, assign it an allocation class on the Items window. The allocation class must be linked to allocation parameters that specify automatic auto-allocation on the Allocation Parameters window. For more information on setting up allocation parameters, see the *Oracle Process Manufacturing Inventory Management User's Guide.*

User-initiated Auto-allocation

With user-initiated auto-allocation, OPM automatically allocates ingredients, but you must prompt OPM to perform the allocation; it is not performed automatically when the batch is first saved. You prompt OPM to perform the allocation of individual ingredient lines by selecting the line on either the Batch Ingredients or Batch Input window and selecting Allocate Line from the Actions menu. You can prompt allocation of all ingredients set to auto-allocate by selecting Allocate Batch from the Actions menu on the Batch Ingredients and Batch Input forms. You can use user-initiated auto-allocation when the following circumstances are true for the item:

- The ingredient is lot-controlled.

- The correct material can be chosen using FIFO/FEFO, single/multi-lot, and lot status rules.

- The ingredient is typically available at the time of allocation in the consumption warehouse specified on the Plant Warehouses window, although not necessarily at the time of batch entry.

To set an ingredient for user-initiated auto-allocation, assign it an allocation class on the Items window. The allocation class must be linked to allocation parameters that specify user-initiated auto-allocation on the Allocation Parameters window.

Manual Allocation of Ingredients using the Batch Input Window

You can allocate ingredients manually using the Batch Input window. You can also use this window to display or change allocations made by OPM using one of the automatic allocation methods.

This is the most flexible way of allocating inventory. You can use this method when the automatic methods are inappropriate, that is, when the correct material cannot be chosen using FIFO/FEFO, single/multi-lot, and lot status rules. You can also use the Batch Input window to take ingredients that are not lot or location controlled from a warehouse other than the consumption warehouse specified on the Plant Warehouses window.

Pick Lots/Location

You can also allocate material using the Pick Lots/Location option on the Batch Input Form's Actions menu.

Pick lots is similar to manual allocation but it shows you what is available for allocation in the consumption warehouse. Note that Pick Lots shows the availability of an item *only* in the consumption warehouse shown on the Batch Input window.

The generic LOV on the Lot field lists all the lots whether or not they have inventory in them, and regardless of whether the inventory has been committed elsewhere.

Batch Input - Releasing

Releasing a batch indicates that production has begun and ingredients have been consumed. You release a batch by selecting Release from the Actions menu on the Batches window.

Prior to releasing a batch, the transactions associated with the ingredient lines are called pending transactions. Pending transactions represent an expected or future change to inventory, as opposed to completed transactions which represent an actual change to inventory.

When you release a batch, the pending transactions associated with ingredient lines flagged for automatic release are deleted and replaced with completed transactions. (Ingredient lines are flagged for automatic release on the Additional Edit box, accessible by selecting Additional Edit from the Actions menu on the Batch Ingredients window.)

Manual or Partial Release

You may not want to release all of the ingredient lines simultaneously. For example, you may have some ingredients which are consumed after the others. You may want to manually release these separately. Alternatively, you may have a batch which runs for a long time and consumes the ingredient quantities a bit at a time. In this case, you would want to perform partial releases of the ingredients. When you want to release an ingredient separately from the others, or when you want to partially release an ingredient, the ingredient line must be flagged for manual or incremental release on the Additional Edit box.

Unlike automatically released ingredients, manual release and incremental release ingredients are not released when you release the batch (that is, the pending transactions are not replaced with completed transactions). The Batch Input window is used to release those ingredients flagged for manual release. You do this by checking the Completed field in the Line Allocations box. This replaces a pending transaction with a completed transaction. You can release the entire ingredient quantity, or you can release a bit at a time by adding a new transaction line and creating a completed transaction for the quantity you are releasing. This decreases the quantity on the pending transaction to indicate the quantity that has not yet been released.

You can only release ingredient lines manually on a batch with a status of WIP (that is, a batch which has been released but not certified).

The difference between manual release and incremental release is that when a partial certification is done, an incremental quantity is calculated for incremental release items, and this quantity is released (backflushed). For manual release ingredients, the release must be done manually; they are not affected by partial certification.

Viewing Unallocated Items

The Unallocated Items window displays under the following circumstances:

- When you initially save a batch that contains ingredients flagged for automatic auto-allocation, if OPM could not auto-allocate any of those items.

- When you select Allocate Batch from the Actions menu on any of the batches forms, and the batch contains items flagged for automatic or user-initiated auto-allocation which OPM could not auto-allocate.

- When you use partial certification with backflushing, and the quantities partial certified or backflushed are not fully allocated.

- When you certify a batch, if you have not allocated any of the ingredients, products, or byproducts in the batch.

The Unallocated Items window displays the items that could not be or have not been allocated.

In the first two cases above, in which OPM could not auto-allocate one or more ingredients, you do not have to take any immediate action. You can try to initiate auto-allocation at a later time, manually allocate now, or manually allocate at a later time.

In the third case above, you must allocate the items before you can save the batch.

In the fourth case above, in which, during certification, the window displays items in the batch which have not been allocated, you must allocate those items before you can certify the batch.

All of the fields on this window are display-only and cannot be edited.

Unallocated Items Field References

Line
The ingredient, product, or byproduct line number is displayed.

Type
This field indicates whether the line is an Ingredient, Product, or Byproduct.

Item
The code for the item which was not allocated is displayed.

Actual Quantity
This field indicates the total quantity that must be allocated. When this window displays during certification, this field indicates the actual quantity from the batch.

Allocated Quantity
The quantity which has been allocated is displayed.

Unallocated Quantity
The quantity which has not been allocated is displayed.

UOM
The unit of measure in which the quantities are expressed is displayed.

Recording Batch Consumption

Use the Batch Input window to identify the material which has been or will be consumed by a batch. This is the window on which you allocate ingredient lots and locations for a batch.

You cannot add, delete, or change ingredients or planned quantities on this window. To change ingredients or planned ingredient quantities, you must use the Batch Ingredients window, accessed by clicking the Ingredients button.

Entering Batch Input Ingredients Procedure

1. Navigate to the **Batch Input** window.

2. Complete the fields as described.

3. Save the window.

Batch Input Field References

[ ]

The double brackets identify a descriptive flexfield that you can use to add data fields to this window without programming.

Batch

Using a Query option, enter the number of the batch for which you want to record input. The batch number is preceded by your default organization code. The combination of organization code and batch number uniquely identify a batch.

Status

The current status of the batch is displayed. You cannot edit this field.

Step

Using Query Find, enter the batch step number you want to retrieve. This field only displays if you turn on POC for the current organization and is only accessible if the batch being edited has POC data associated with it.

Step Status

This field only displays if you entered a step in the Step field. It shows the status of the step (example: cert). Cannot be edited.

Formula

The code of the formula and the version number on which the batch was based is displayed. You cannot edit this field.

Routing

The routing and routing version used for the batch are displayed. You cannot edit this field.

Input Lines

Seq

The ingredient line number is displayed.

Item

The item code for each ingredient is displayed. You cannot edit this field.

Description

The description of the ingredient is displayed. You cannot edit this field.

Planned Qty

The quantity of the ingredient which the batch was planned to consume is displayed. You cannot edit this field.

Actual Qty

Enter the quantity actually consumed by the batch. You cannot edit this field directly until the batch has been released.

For automatic release lines, when you release the batch the quantity of the pending transaction(s) that had been associated with the line defaults into this field.

For manual release lines, the quantity you release using the Completed field on the Line Allocations box defaults into this field.

For incremental release lines, the actual quantity is updated through partial certification backflushing.

UOM

The unit of measure in which the quantities are expressed is displayed. This is the unit of measure used on the batch.

Allocated

If this field is checked, the item is allocated.

Batch Input Window - Simultaneous Multi-User Batch Access Mode

If you turn on POC for the plant and there is POC data associated with the batch, use a Query option to enter a batch step number in the Step field to retrieve the batch lines associated with that step. The Step Status field displays with the current status of the retrieved step. This locks that step and disables whole batch functions (certifying, etc.). If you leave the Step field blank, all input lines are retrieved.

If this screen is accessed from the Batches, Batch Ingredients, or Batch Byproducts screens, the Step field will be blank and all input lines will be displayed. If this screen is accessed from the Batch Output screen and the Step field was left blank on Batch Output, the Step field on Batch Input will be blank as well. If a step had been specified on Batch Output, that same step will be displayed on Batch Input, and only input lines associated with that step will be displayed. If a user attempts to retrieve a step that has no ingredients associated with it, a message, "This step has no ingredients" will be displayed and the user will not be able to retrieve the step on Batch Input.

If a step is retrieved, all whole-batch functions are disabled. This includes batch release, batch unrelease, batch certification, batch close, batch cancel, scaling and performing a theoretical yield calculation. In addition, access to the Batches, Batch Ingredients, and Batch Byproducts screens will be disabled, since they are whole-batch screens. Both menu access and hot-key access are also disabled.

Status

Select the current status of the batch (Canceled, Pending, WIP, Certified, Closed) from the list.

Batch

Enter the batch number.

Formula

Enter the formula code on which the batch is based.

Version

Enter the version number of the formula.

Routing

Enter the routing ID number.

Version

Enter the routing version number.

WIP Warehouse

Enter the WIP warehouse for the batch.

Planned Start

Enter the planned start date.

Planned Completion

Enter the planned completion date.

Required Completion

Enter the required completion date.

Actual Start

Enter the actual start date of the batch.

Actual Completion

Enter the actual completion date of the batch.

Batch Close

Enter the batch close date.

Allocating Lines in a Batch - Batch Input

When you click the drill-down indicator box next to the line you want to allocate, the Line Allocations box appears.

Batch Input - Allocating Lines in a Batch Procedure

1. Navigate to the **Line Allocation** box.

2. Complete the fields as described.

3. Click **OK.**

Line Allocations Field References

Lot

Enter the lot you are allocating to the batch. This field is only accessible if the ingredient is lot-controlled and is then required.

Sublot

Enter the sublot you are allocating to the batch. This field is only accessible if the ingredient is sublot-controlled, and is then required.

Warehouse

Enter the warehouse from which the ingredient was or will be taken for the batch. This defaults to the consumption warehouse specified for the ingredient on the Plant Warehouses window. Required.

Location

Enter the location from which the ingredient was or will be taken for the batch. This field is only accessible if the ingredient and warehouse are location-controlled and is then required.

Allocated Qty

Enter the quantity of the ingredient which is being taken from the specified lot/sublot and warehouse/location. Required.

Completed

This field is used to release ingredient lines set to manual release on the Additional Edit box accessible from the Actions menu on the Batch Ingredients window. This field is only accessible if the ingredient line is set to manual or incremental release, and then only when the batch is WIP. Check this box to release the quantity specified. This replaces the pending transactions with completed transactions.

Reason

Enter a reason code associated with this transaction. This code can provide information about the transaction.

Secondary Qty

If the item is set up for dual unit of measure, enter the secondary quantity.

Secondary UOM

If the item is set up for dual unit of measure, then the UOM in which the secondary quantity is expressed is displayed.

Transaction Date

Enter the date of the transaction. The defaults for this field are as follows:

- When the batch is created, ingredient transactions default to the planned start date.

- When the batch is released, ingredients with a release type of automatic default to the actual start date and time.

- Ingredients with a release type of manual or incremental default to the system date and time when the completion indicator on the Batch Input or Batch Output window is checked.

> **Note:** Changing the actual start date after releasing the batch and changing the actual completion date after certifying the batch do not update the transaction dates.

Total Completed

The total quantity of all completed transactions associated with the ingredient line is displayed. This is the quantity which has been released.

Total Pending

The total quantity of all pending transactions associated with the ingredient line is displayed. This is the quantity which has not been released.

Total Allocated

The total quantity of the ingredient line which has been allocated is displayed.

Line Allocations Box - Buttons

Previous Line

This accesses the transaction on the previous ingredient line.

Next Line

This accesses the transactions on the next ingredient line.

Batch Input Window - Actions Menu

Depending on whether you have the cursor in the header area or the Input Lines panel, the following options are available on the Actions menu.

Details

This displays the Line Allocations box. See *Batch Input - Allocating Lines in a Batch*.

Additional Edit

Accesses the Additional Edit box, which allows you to enter additional information, such as scale type and release type, for each ingredient line.

Edit Parent

If you are editing a phantom batch, this retrieves the parent batch.

Edit Phantom

If the cursor is on a phantom ingredient, this retrieves the phantom batch.

Inventory Summary

Accesses the Inventory Summary window. This window lists available and committed quantities for an item by warehouse and QC grade.

See: *Oracle Process Manufacturing Inventory Management User's Guide* for more information on this window.

Scale Batch

Accesses the Scale Batch box, which allows you to scale the quantities of the ingredients, products, and byproducts in the batch. For more information on scaling refer to the section on Scaling and Theoretical Yield.

Partial Certify

Accesses the Partial Certification box. This window enables you to enter incremental quantities, a new actual quantity or a new percent of plan for an item. Note that this box can only be used with a WIP or Certified Batch. For more information on this option, refer to the section on Partial Certification.

Create Phantom

If the cursor is on an unexploded phantom, this Accesses the Create Batch/Firm Planned Order box on which you can create the phantom batch.

Pick Lots/Loct

Accesses the Pick Lots/Locations window, which displays the lots and locations of an ingredient which are available to be allocated to the batch.

Allocate Batch

Allocates all ingredient lines which belong to an allocation class flagged for auto-allocation (automatic or user-initiated).

Allocate Line

Allocates the ingredient line on which the cursor is positioned, if that ingredient belongs to an allocation class flagged for auto-allocation (automatic or user-initiated).

Inventory Shortage

Checks whether there are inventory shortages of any ingredients in the batch. If there are, the shortages are displayed on the Inventory Shortages window.

Certify

Certifies the batch and changes the batch status to Certified. This writes completed transactions for all of the product lines which are flagged for automatic release on the Additional Edit box.

Byproducts

Accesses the Batch By-products window.

Batch Input Window - Buttons

Batch Steps

Displays the Batch Steps window. For more information on this window, refer to the *Oracle Process Manufacturing Process Operation Control User's Guide.* This button only works if there is POC data associated with the batch.

Ingredients

Accesses the Batch Ingredients window.

Output

Accesses the Batch Output window, on which you allocate product and byproduct lines.

Products

Accesses the Batches window.

Picking Lots/Locations

The Pick Lots/Locations window displays the lots and locations of the ingredient available to be allocated to the batch. Only lots available in the warehouse specified on the Batch Input transaction line are displayed. You can select the lots and locations to allocate, and the quantity of each.

Pick Lots/Locations Field References

Lot

The lot available for allocation is displayed.

Sublot

The sublot available for allocation is displayed.

Location

The location in which the ingredient is available for allocation is displayed.

Expiration Date

The expiration date of the lot is displayed.

Available Quantity

The quantity available to be allocated to the batch is displayed. This is the onhand quantity nettable for production minus any prior commitments.

Allocation

Enter the quantity of the lot/location which you are allocating to the batch.

Creation Date

The creation date of the lot is displayed.

Quality Control Grade

The QC grade of the lot is displayed, if the item is grade-controlled.

Unallocated Quantity

The quantity which has not yet been allocated is displayed.

(unlabeled)

The unit of measure used for the ingredient on the batch is displayed. All quantities on this window are expressed in this unit of measure.

Selected Quantity

The total of the allocations which you have just made is displayed.

Recording Batch Output

The following topics are discussed:

- Allocating Products and Byproducts
- Certification

Allocating Products and Byproducts - Batch Output

Allocation of products and byproducts is done on the Batch Output window. While allocating ingredients refers to taking material from existing lots or locations, allocating products refers to creating and naming new lots or specifying the location in which the product will be placed.

Certification

Certifying a batch signifies that the batch is finished and has yielded all of its product. You certify a batch by selecting Certify from the Actions menu on any of the batches forms.

Prior to certifying a batch, the transactions associated with the product and byproduct lines flagged for automatic release are pending transactions. When you certify a batch, the pending transactions associated with these product and byproduct lines are deleted and replaced with completed transactions. (Product and byproduct lines are flagged for automatic release on the Additional Edit box, accessible by selecting Additional Edit from the Actions menu on the Batches and Batch By-products forms respectively.)

Manual Certification

Manual and partial certification of products are similar to manual and partial release of ingredients. For example, you may have a product that is yielded before other products. You may want to manually certify this product before you certify the rest. Alternatively, you may have a batch which runs a long time and yields the product a bit at a time. In this case, you would have to use partial certification to record the quantities as they are yielded.

When you want to certify a product separately from the others, or when you want to partially certify one or more products, you can flag these product lines for manual certification on the Additional Edit box. (The flag on the Additional Edit box is called Release Type, since this box is also used for ingredient lines, but for product and byproduct lines it actually controls certification type.

The Batch Output window is used to certify these products flagged for manual certification. You do this by checking the Completed field on the Line Allocations box. This replaces a pending transaction with a completed transaction. You can certify the entire product quantity, or you can certify a bit at a time by adding a new transaction line and creating a completed transaction for the quantity you are certifying. This decreases the quantity on the pending transaction to indicate the quantity that has not yet been certified.

You can only certify product and byproduct lines manually on a batch which has a status of WIP (that is, a batch which has been released but not certified). When you certify the batch, any pending transactions for manual certification product and byproduct lines (that is, any quantities which you did not manually certify) are deleted.

If you want to perform partial certification with backflushing, you can use Partial Certification which is briefly described below. For more detailed information, refer to the Partial Certification with Backflushing section.

Partial Certification with Backflushing

Partial Certification with Backflushing enables you to incrementally record production yield as it occurs. With this feature you can incrementally record production yield prior to the batch being completed (partial certification) and OPM will calculate the ingredient usage (backflushing).

Partial Certification is initiated in WIP batches by selecting Partial Cert from either the Production menu or the Actions menu on the Batch Output or Batch Input forms. This retrieves the Partial Certification box. At this screen, you can enter either an incremental quantity, a new actual quantity, or a new percent of plan (Actual Qty/Planned Qty * 100).

If the Partial Certification box was accessed from the Production menu, the batch is saved. If the box was accessed from one of the Batches forms, OPM displays the original window. You can then edit the calculated actual quantities or enter additional allocations, if necessary, before saving.

For more information on this option, refer to the section on Partial Certification with Backflushing.

Recording Batch Production

Use the Batch Output window to identify the material which has been or will be produced by a batch. In other words, this is the window used to allocate products and byproduct lots and locations for a batch.

You cannot add, delete, or change products, byproducts, or planned quantities on this window. To change these, you must use the Batches window for products and product planned quantities, and the Batch By-Products window for byproducts and byproduct quantities.

Batch Output Field References

[ ]

The double brackets identify a descriptive flexfield that you can use to add data fields to this window without programming.

Batch

Using a Query function, enter the number of the batch for which you want to record output. The batch number is preceded by your default organization code. The combination of organization code and batch number uniquely identify a batch.

Status

The current status of the batch is displayed. You cannot edit this field.

Step

Using a Query function, enter the batch step number you want to retrieve. This field only displays if you turn on POC for the current organization and is only accessible if the batch being edited has POC data associated with it.

Step Status

This field only displays if you entered a step in the Step field. It shows the status of the step (example: cert). Cannot be edited.

Formula

The formula and formula version on which the batch was based is displayed.

Routing

The routing and routing version used for the batch are displayed. You cannot edit this field.

Seq

The product or byproduct line number is displayed.

Item

The item number of each product or byproduct is displayed. You cannot edit this field.

Description

The description of the item is displayed. You cannot edit this field.

Planned Qty

The quantity of the product or byproduct which the batch was planned to yield is displayed. You cannot edit this field.

Actual Qty

Enter the quantity actually yielded by the batch.

For automatic release lines, when you certify the batch the allocated quantity defaults into this field.

For manual release lines, the quantity you release using the Complete field defaults into this field.

For incremental release lines, the actual quantity is updated when a partial certification is performed.

UOM

The unit of measure in which the quantities are expressed is displayed. This is the unit of measure used on the batch.

Allocated

If this field is checked, the item is allocated.

Batch Output - Allocating Lines in a Batch

When you click the indicator box next to the line you want to allocate the Line Allocations box appears.

Allocating Lines for Batch Output Procedure

1. Navigate to the **Line Allocation** box.

2. Complete the fields as described.

3. Click **OK.**

Line Allocations Box Field References

Lot

Enter the lot you are allocating to the batch. This field is only accessible if the ingredient is lot-controlled, and is then required.

Sublot

Enter the sublot you are allocating to the batch. This field is only accessible if the ingredient is sublot-controlled, and is then required.

Warehouse

Enter the warehouse from which the product was or will be taken for the batch. This defaults to the consumption warehouse specified for the ingredient on the Plant Warehouses window. Required.

Location

Enter the location from which the product was or will be taken for the batch. This field is only accessible if the ingredient and warehouse are location-controlled, and is then required.

Allocated Qty

Enter the quantity of the product which is being taken from the specified lot/sublot and warehouse/location. Required.

Completed

This field is used to release product lines set to manual release on the Additional Information box accessible from the Actions menu on the Batch Ingredients window. This field is only accessible if the product line is set to manual or incremental release, and then only when the batch is WIP. Check this box to release the quantity specified. This replaces the pending transactions with completed transactions

Reason

Enter a reason code associated with this transaction. This code can provide information about the transaction.

Secondary Qty

If the item is set up for dual unit of measure, enter the secondary quantity.

Secondary UOM

If the item is set up for dual unit of measure, then the UOM in which the secondary quantity is expressed is displayed.

Transaction Date

Enter the date of the transaction. The defaults for this field are as follows:

- When the batch is created, ingredient transactions default to the planned start date.

- When the batch is released, ingredients with a release type of automatic default to the actual start date and time.

- Ingredients, with a release type of manual or incremental default to the system date and time when the completion indicator on the Batch Input or Batch Output window is checked.

Changing the actual start date after releasing the batch and changing the actual completion date after certifying the batch do not update the transaction dates.

Total Completed

The total quantity of all completed transactions associated with the ingredient line is displayed. This is the quantity which has been released.

Total Pending

The total quantity of all pending transactions associated with the ingredient line is displayed. This is the quantity which has not been released.

Total Allocated

The total quantity of the ingredient line which has been allocated is displayed.

Line Allocations Box - Buttons

Previous Line

This accesses the transaction on the previous ingredient line.

Next Line

This accesses the transactions on the next ingredient line.

Batch Output - Actions Menu

Details

This displays the Line Allocations box. *See Batch Output - Allocating Lines in a Batch.*

Additional Edit

Accesses the Additional Edit box, which allows you to enter additional information, such as scale type and release type, for each ingredient line.

Edit Parent

If you are editing a phantom batch, this retrieves the parent batch.

Inventory Summary

Accesses the Inventory Summary window. This window lists available and committed quantities for an item by warehouse and QC grade.

See: *Oracle Process Manufacturing Inventory Management User's Guide* for more information on this window.

Scale Batch

Accesses the Scale Batch box, which allows you to scale the quantities of the ingredients, products, and byproducts in the batch. For more information on scaling refer to the section on Scaling and Theoretical Yield later on in this guide.

Theoretical Yield

If the cursor is on a product line, this option accesses the Calculate Theoretical Yield box, which allows calculation of the product quantities based on the ingredient quantities and a yield factor. You can only use this option when entering a new batch.

Partial Certify

Accesses the Partial Certification box. This window enables you to enter incremental quantities, a new actual quantity or a new percent of plan for an item. Note that this box can only be used with a WIP or Certified Batch.

Certify

Certifies the batch and changes the batch status to Certified. This writes completed transactions for all of the product lines which are flagged for automatic release on the Additional Edit box.

Simultaneous Multi-User Batch Access

In batch manufacturing, there are distinct independent production events (batches). These are often processed through a series of steps, which may take place on different machinery or at different work centers. Specific ingredients may be consumed at specific steps, and specific products or byproducts may be yielded at specific steps.

If you enabled simultaneous multi-user batch, multiple users may retrieve and edit the items associated with a single step on the Batch Input or the Batch Output forms.

Simultaneous Multi-User Batch Access - Business Scenario

The following is a hypothetical scenario of a user who is not interested in recording POC data but who needs the multi-user batch access functionality. In this example, the user has a production line which consists of three workcenters, which are modeled as three steps in a routing, each of which has its own terminal for accessing OPM. The line processes one batch per shift. At the end of the shift, each user records all lots consumed and yielded for their workcenter.

Below is an list of the Actions steps that might occur during a production cycle when using simultaneous multi-user batch access.

1. Production manager schedules a batch by creating a Pending batch, using the Create Batch/Firmed Planned Order box or the Batches, Batch Input, or Batch Output screens.

2. Production manager releases the batch at the beginning of the shift by selecting Release from the Actions menu on the Batches forms.

3. At the end of the shift, the production floor users from each workcenter retrieve their batch step on either the Batch Input or Batch Output screens by entering the batch number and the step number. Each user sees only the items associated with the step they are editing. All three users are simultaneously editing the same batch, but different pieces of the batch.

4. Production floor users enter lots and quantities consumed for each ingredient associated with their step, and lots and quantities produced for each product and byproduct associated with their step.

5. After the production floor users have finished, the production manager retrieves the whole batch on either the Batches screen, or on the Batch Input or Batch Output screens by leaving the step field blank. After verifying that all the data is correct, the production manager certifies the batch by selecting Certify from the Actions menu.

6

Partial Certification with Backflushing

The follow topics are discussed:

- Partial Certification with Backflushing Overview
- Partial Certification with Backflushing - Sample Scenarios
- Partial Certification - Allocating Ingredients
- Partial Certification After Full Certification - Adjusting Actuals
- Partial Certification and Phantoms
- Partial Certification - Scrap Factor
- Partial Certification - Inserting Items into a WIP Batch
- Changing Release Type After Partial Certification
- Partial Certification Sample Procedures
- Release Type Setup for Partial Certification
- Performing Partial Certification

Partial Certification with Backflushing Overview

Process manufacturing can be broken down into three categories: batch-oriented processing, continuous processing, and campaign processing. In continuous processing, ingredient quantities are consumed incrementally, and product quantities are yielded incrementally. In order for inventory levels to be updated in a timely manner, you need to record batch consumption and batch yield incrementally, as it happens. In addition, you may decide to calculate usage from the product yield.

Partial Certification enables you to incrementally record production output or yield as it occurs, prior to the batch being completed. Then, when you save the batch, OPM calculates the ingredient usage (backflushes) the ingredients. Partial certification with backflushing can only be done on WIP or Certified batches.

Partial Certification with Backflushing - Example

In Partial Certification with Backflushing, OPM calculates actual quantities for the "incremental" items (release type incremental) in a WIP batch proportional to the quantity of the item you selected for 'partial certification.' The following example illustrates how this works as new incremental quantities of a product are entered:

The formula on which the batch is based consists of the following:

Item	Release Type	Scale Type	Qty
Prod1	Manual	Linear Scaling	100
Ing1	Incremental	Linear Scaling	90
Ing2	Incremental	Fixed Quantity	2
Ing3	Manual	Linear Scaling	8

You set incremental release types on the Additional Information box in the Formula applicaiton or the Additional Edit box in the Production appplication. For new detail lines, you can set up a default release type of Incremental in the Systems application System Profile Values window using the FM$DEFAULT_RELEASE_TYPE System Profile.

When the batch is released, the quantities will be as follows:

Item	Plan Qty	Actual Qty
Prod1	100	0
Ing1	90	0
Ing2	20	0
Ing3	80	0

In this example, a partial certification is performed by entering an incremental quantity of 10 of Prod1 on the Partial Certification box. When you accept the partial certification, batch quantities will be as follows:

Item	Plan Qty	Actual Qty
Prod1	100	10
Ing1	90	9
Ing2	2	2
Ing3	8	0

When 10 of Prod1 is partially certified, the actual quantity of Ing1 is calculated to be 9. To calculate this, OPM divides the quantity being partially certified (the incremental quantity) by the planned quantity of that item to calculate a scale factor. In this case, the incremental quantity entered of Prod1 was 10 and the scale factor is $10/100$ or 0.1. The planned quantity of each scaleable item with a release type of Incremental is multiplied by this factor to calculate the incremental increase in the actual quantity of these items. (For information on scaling see the next section). In this case, the planned quantity of Ing1, 90, was multiplied by 0.1 to give an incremental quantity of 9. This was added to the old actual quantity, which was 0, to give a new actual quantity of 9.

Note that the quantity of Ing1 was calculated without regard to whether other items in the batch were non-scaleable or had a release type other than Incremental. This is different from the calculations used in standard scaling in Formula Management, Production Management, and MRP, which compensate for non-scaleable items when calculating new quantities for scaleable items. (See the section on Theoretical Yield and Scaling.

Note also that the actual quantity of Ing2, which has a release type of Incremental, but a scale type of non-scaleable, was calculated to be 2, not 0.2. Since this item is non-scaleable, a batch will consume 2 units. For non-scaleable, Incremental items, OPM consumes the full planned quantity the first time a partial certification is performed.

Since Ing3 has a release type of Manual, its quantity is not affected by the Partial Certification. You must manually enter actual quantities for items with a release type of Manual.

Now let's say that one unit of Ing1 was spilled, and the quantity consumed was actually 10 instead of 9. You can adjust this quantity on the Batch Input window. The new batch quantities would be as follows:

Item	Plan Qty	Actual Qty
Prod1	100	10
Ing1	90	10
Ing2	2	2
Ing3	8	0

When you edit items with a release type of Incremental on the Batch Input or Batch Output forms, they act exactly the same as items with a release type of Manual. Since in this example the adjustment was made on the Batch Input window, there was no effect on the quantities of the other items in the batch.

Now you do another Partial Certification of 10 units of Prod1. The batch quantities will be as follows:

Item	Plan Qty	Actual Qty
Prod1	100	20
Ing1	90	19
Ing2	2	2
Ing3	8	0

Another 10 units is added to the actual quantity of Prod1, and the scale factor is again calculated to be 0.1. An incremental quantity of 9 units of Ing1 is again calculated and added to the previous actual quantity of 10, resulting in a new actual quantity of 19. The actual quantities of Ing2 and Ing3 remain unchanged.

Each time a Partial Certification is performed, OPM will create completed transactions for the incremental quantity. Thus, if you looked at the transactions for Ing1, assuming for the moment that it is not lot- or location-controlled, you would see the following:

Complete	9	from the first partial certification)
Complete	1	(from the manual adjustment)
Complete	9	(from the second partial certification)
Pending	71	(the remaining difference between the planned and the actual quantity)

Note that it is not required that the item that drives the Partial Certification (in this case, Prod1) have a release type of Incremental. In fact, since the quantity of the item *driving* Partial Certification is measured and entered, not calculated by OPM, it should generally have a release type of Manual. It is also not required that the item driving Partial Certification be a product. The Partial Certification could be driven by a byproduct or ingredient also.

Note also that the backflushing that is done in conjunction with partial certification is different than the backflushing done to phantom batches. When a change is made to a pblush quantity to phantom batches?", that backflush updates the quantities of the ingredients in the phantom batch based on the scaling algorithm, not the algorithm described above.

Partial Certification with Backflushing - Sample Scenarios

Two scenario of how users might use Partial Certification with Backflushing during a production run are presented:

Partial Certification with Backflushing - Scenario One

1. A portion of the planned quantity of a product in a batch is produced and measured.

- The user selects Partial Cert from the Production menu.

- At the box, the user enters either the incremental quantity produced, the new actual quantity to far or the new percent of plan so far.

- OPM calculates the actual quantities of ingredients that were consumed.

2. During the production run an ingredient is spilled. An extra, unplanned quantity of one of the ingredients is used.

- User enters the actual quantity of that ingredient on the Batch Output window. This does not affect the actual quantities of the other items.

Partial Certification with Backflushing - Scenario Two

3. A portion of the planned quantity of an ingredient in another batch is consumed and measured.

- At the Partial Certification box, the user enters either the incremental quantity consumed, the new actual quantity so far, or the new percent of plan so far.

- OPM calculates the actual quantities of the other ingredients that were consumed and the actual quantity of the product that was yielded.

4. A lower quantity of the product of the above batch was yielded than was expected based on ingredient usage.

- The adjusts the quantity of that product on the Batch Output window. The actual quantity of the other items is not affected.

Partial Certification - Allocating Ingredients

For pending transactions, if any of the *ingredients* with a release type of Incremental are lot- or location-controlled, and you entered allocations before the Partial Certification, the system will attempt to automatically consume the additional actual quantity from those allocations. For example, if Ing1 in the example given was lot-controlled and 30 units had been allocated from each of three lots before the first Partial Certification, then when you perform the Partial Certification with Backflushing, the system will consume the 9 units from the first lot that had been allocated.

Similarly, if the *product* was lot- or location-controlled and had been allocated before the Partial Certification, the system would automatically yield into the allocated lot or lots in the order in which they were allocated.

OPM does not create new lot allocations when partial certifying, but consumes ingredients from or yields products into already existing lot allocations.

As with Manual release items, the full actual quantity of Incremental release items must be allocated in order to save the batch. This is necessary to avoid having a pending default lot transaction and a completed default lot transaction for the same batch line. If there is insufficient quantity in pending allocations to consume from (or yield into) when a Partial Certification is performed, the Unallocated Items box will be displayed when you try to save the batch.

Since you can drive Partial Certification by entering an actual quantity less than the current actual quantity (or enter a negative incremental quantity), the system "de-consumes" from allocations. If actual quantities are reduced through Partial Certification, OPM resets the allocations which had been completed back to pending status, until the completed allocations equal the new actual quantity.

Partial Certification After Full Certification - Adjusting Actuals

The Partial Certification box also allows you to adjust actual quantities after certification. You can change a product quantity on a certified batch, and have the actual quantities for the other incremental release items in the batch backflushed or recalculated.

OPM provides two other ways to change product quantities after certification. 1) Edit the product actual quantity directly, which does not change the quantities of any other items in the batch, and creates a yield variance; and 2) Scale the certified batch, which changes the actual quantities of all scaleable items in the batch.

Partial Certification and Phantoms

If a phantom ingredient has a release type of Incremental in the parent batch, the ingredient will be updated by partial certification. The ingredients in the phantom batch will be handled as if you had manually changed the phantom quantity. That is, you will be asked "Backflush quantity to phantom batches (Y/N)?" If you answer yes, standard phantom backflushing (using the scaling algorithm, not the partial certification backflush algorithm) will be done. If you answer No, the quantities of the ingredients in the phantom batches will not be changed.

Standard Backflushing and Phantoms

If you manually edit the actual quantity of an Incremental release phantom ingredient in the parent batch, OPM will perform standard backflushing when you save the batch. The system will display the question, "Backflush quantity to phantom batches (Y/N) ?", and if you answer Y, OPM will perform standard phantom backflushing.

Since the phantom backflushing uses standard scaling, which is based on planned quantities and which compensates for non-scaleable items, the actual quantities calculated for the ingredients in the phantom batch through phantom backflushing may be different from the actual quantities that would have been calculated by the incremental update from Partial Certification. In fact, you may want to answer No to the "Backflush quantity to phantom batches (Y/N) ?" question, and manually edit the actual quantities of the ingredients in the phantom batch if necessary.

Partial Certification - Scrap Factor

If Partial Certification is driven by an ingredient with a scrap factor, the scale factor is calculated by comparing the incremental quantity with the ingredient's required quantity rather than its planned quantity. When Partial Certification is driven by an ingredient with a scrap factor, the formula will be:

■ Scale Factor = (incremental quantity)/(required quantity)

Since (required quantity) = (planned quantity) * (1 + scrap_factor), the formula works out to be

■ Scale Factor = [incremental quantity)/[planned quantity) * (1 + scrap_factor)]

Likewise, if there are ingredients with scrap factors that have a release type of Incremental, the backflush quantity (that is, the quantity that will be added to the ingredients current actual quantity to determine the new actual quantity) is calculated by multiplying the scale factor by the ingredient's required quantity instead of its planned quantity. Therefore,

■ Backflush Quantity = (scale factor) * (required quantity)

Substituting the formula for required quantity, this works out to:

■ Backflush Quantity = (scale factor) * [(planned quantity) * (1 + scrap_factor)]

Partial Certification - Inserting Items into a WIP Batch

When you insert an item in a WIP batch, you cannot enter a planned quantity. Incremental updates calculated for the actual quantity of Incremental release items are calculated by multiplying the scale factor by the item's planned quantity. Therefore, items added to a WIP batch will not be incrementally updated, even if their release type is Incremental.

Changing Release Type After Partial Certification

If you change the release type of a product or byproduct to Incremental after you have done some Partial Certifications, the product for which the release type has just been changed will be updated by future partial certifications. Its percent of plan, however, will not be the same as the percent of plan of the other Incremental items. This occurs because the scale factor calculated by Partial Certification is an incremental scale factor.

For example, suppose you have done Partial Certification for 50% of the planned quantity of an item. The Incremental release items will have been updated so that their actual quantity is 50% of their planned quantity. Now, you change the release type of a product to Incremental release that previously was Automatic release. Then, you do another Partial Certification for an additional 10% of the item driving Partial Certification. Ten percent of the planned quantity will be added to the actual quantity of the Incremental items in the batch. Therefore, the items that had been Incremental release all along will have an actual quantity equal to 60% of their planned quantity, while the product that just had its release type changed will have an actual quantity equal to only 10% of its planned quantity.

Trying to change the release type of a product from Incremental release to Automatic release in a WIP batch will be handled like changing from Manual release to Automatic release. If there are any completed transaction lines for the Incremental release product, they will have to be deleted before you can change the release type to Automatic and save, since there cannot be completed transactions for Automatic release products in a WIP batch.

Partial Certification Sample Procedures

The next two topics present procedures you might follow when using Partial Certification with Backflushing.

Partial Certification - Sample Procedure 1

In this example, the planned quantity of the ingredients and products is allocated before the batch is run.

1. Create a batch from the formula.

2. Allocate the planned quantity of the ingredients and products.

3. Release the batch on **Batches** forms.

4. Each time you record a new quantity of the product yielded by the batch, enter this on the **Partial Certification** box. You can enter either the incremental quantity, the new actual quantity, or the percent of plan that was produced so far. Select **OK** on the **Partial Certification** box. The batch will be saved, with the actual quantity updated for the product and ingredients, and the quantities will be consumed from the existing allocations.

5. When the batch is complete, certify the batch.

Partial Certification - Sample Procedure 2

In this example, the planned quantity of the ingredients is allocated before the batch is run, but the product is not allocated. Each time a new lot of the product is yielded, the lot number and quantity produced is reported.

1. Create a batch from the formula.

2. Allocate the planned quantity of the ingredients.

3. Release the batch on the **Batches** window.

4. Each time a lot of the product is yielded, enter the new lot and quantity on the Batch Output.

5. Check the **Completed** box on the **Line Allocation** window's lot transaction lines to indicate that the transaction is a completed transaction.

6. Display the Batch Output window. The new lot quantity that you entered is automatically added to the actual quantity.

7. Without first saving, select **Partial Certify** from the **Action** menu. **The Partial Certification** box is displayed, showing the new actual quantity and the incremental quantity that you had entered for the new lot.

8. Click **OK**. You are returned to the **Batch Output** window. The actual quantity of the ingredients will have been backflushed.

9. Save the batch.

10. When the batch is complete, certify the batch.

Release Type Setup for Partial Certification

Items must have a release type of Incremental in order to be backflushed by partial certification. You can set up incremental release types in one of two ways:

- Set the GMD:Default Release Type Profile to 2 so that newly inserted lines in the formulas and batches will default to incremental.

- Alternatively, you can individually set the release types of items to incremental at the Additional Information box at either the Formula Ingredients window or the Additional Edit box at the Batches, Batch Ingredients Batch Byproducts, Batch Input or Batch Output forms.

Performing Partial Certification

The Partial Certification box drives Partial Certification with Backflushing. At this box, you enter an incremental quantity, a new actual quantity, or a new percent of plan for an item. This box can only be used with a WIP or Certified batch.

Backflushing with Partial Certification Procedure

You initiate Partial Certification with Backflushing in WIP or Certified batches as follows:

1. Navigate to the **Partial Certification** box.

- If you accessed the box from the Production menu, you enter a batch number at the **Batch** field. This displays the header information.

- If you accessed the box from the **Batch Input** or **Batch Output** forms, the box displays with the header information already entered

- If you enter the number of a phantom batch, an error message will display and the batch cannot be retrieved. Phantom batches cannot drive Partial Certification with Backflushing because changes made to phantoms do not directly affect the parent batch.

2. If you selected **Partial Cert** from the **Production** menu, enter the item which you are using to drive the partial certification, then proceed to step 4. Otherwise, proceed directly to step 4.

3. Enter either an incremental quantity in the **Incremental** field, a new actual quantity in the **New Actual** field, or a new percent of plan in the **Percent Of Plan** field (for a full description of these fields, see the *Partial Certification Field Reference* topic). Based on which field you filled in, OPM will calculate the values for the other fields.

4. When you click **OK**, OPM performs Backflushing by calculating a new actual quantity for all the items in the batch which have a release type of Incremental If you accessed the Partial Certification box from the Production menu, the batch is saved.

- If you accessed it from the **Batch Input** or **Batch Output** window, OPM returns you to the window from which you selected Partial Certify from the Action menu. You can then edit the calculated actual quantities or enter additional allocations, if necessary, before saving.

Partial Certification Box Field References

The sections that follow describe the fields on the Partial Certification Box.

Batch

The production batch number assigned when you create the batch. If the box was accessed from the Production menu, enter the number of the batch to partial certify. If the box was accessed from one of the Batches forms, the batch number will be passed in from that window.

Status

This field displays the batch status must be WIP or Certified. This is pulled from the batch header information. Cannot be edited.

Product

This field displays the first product that the batch will produce. Cannot be edited.

Formula

This field displays the formula and version from which the batch was created. Cannot be edited.

Routing

This field displays the routing code and version associated with the batch. Routings define the processes or steps that produce the product. Routings are set up in Formula Management application. Cannot be edited.

Batch Line

Item

The item driving the Partial Certification. You enter the item number here if this box was accessed from the Production menu. If the box was accessed from one of the Batches forms, this information is passed in from the line on which the cursor was positioned on that window. If this item appears on more than one line in the batch, the Partial

Description

The description of the item that drives the Partial Certification.

Type

Indicates whether the item is a product, byproduct or ingredient. Cannot be edited.

Seq

The line number of the product, byproduct or ingredient. This only displays after you fill in the Item field. Cannot be edited.

Quantities

Incremental

The quantity from which the backflushing scale factor will be calculated. You can enter an incremental quantity or you can have OPM calculate it from the new actual quantity or new percent of plan entered in the fields described below. If this box was accessed from one of the Batches forms and the actual quantity was edited there, this will default to the result of subtracting the new actual from the old actual. If the user makes an entry in the New Actual or Percent Of Plan fields on this box, this will be calculated accordingly. The unlabeled field is the unit of measure in which batch quantities are expressed for the item.

Planned

The planned quantity of the item in the batch. Cannot be edited.

Old Actual

The last actual quantity saved. Cannot be edited.

New Actual

The new actual quantity of the ingredient. You can enter the actual quantity of the item here. If you entered an incremental quantity in the Incremental field described above, OPM calculates this quantity from old actual quantity plus the incremental quantity you entered. If you enter a percent of plan in the Percent of Plan field, OPM calculates this to be the new percent of plan times the planned quantity. If you accessed this box from one of the Batches forms and the actual quantity was edited there, this should default to that quantity.

Percent of Plan

The percentage of the planned quantity produced or consumed so far. You can enter this quantity or it can be calculated based on the actual quantity you entered.

7

Scaling and Theoretical Yield

The following topics are discussed:

- Scaling Production Batches
- Scaling Batches Dialog Box1
- Calculating Theoretical Yield
- Calculating Theoretical Yield

Scaling Production Batches

Scaling is the proportional increase or decrease of ingredients, products, and by-products in an FPO or batch. You scale FPOs and batches using the Scale Batch dialog box, which is accessed from the Firm Planned Order, Batches, and FPO and Batch Ingredients and By-products forms. An FPO or batch can only be scaled if the Scaling Allowed checkbox was selected was set to 1 (scalable) on the formula on which the FPO or batch is based. Only those items for which scaling is allowed will be scaled..

There are two ways to scale. When you enter the Scale Batch dialog box (by selecting Scale from the Action menu on any of the forms mentioned above), you are in percentage scaling mode. You can enter a percentage by which any scalable products will be scaled. For example, if you enter 100 percent, the product quantity will be scaled up by 100 percent (in other words, doubled), and the ingredient quantities will be increased accordingly. If you enter -50 (negative fifty) percent, the product quantity will be decreased by half. Percentage scaling is illustrated in Example 1.

Scaling Batches - Example 1

All products and ingredients set to linear scaling
Scale by 50 percent

Before Scaling

Product 1	30 kilograms
Ingredient 1	10 kilograms
Ingredient 2	20 kilograms

After Scaling

Product 1	45 kilograms
Ingredient 1	15 kilograms
Ingredient 2	30 kilograms

You can also scale by item quantity. To do this, place the cursor on the item you want to use as the basis for scaling before selecting Scale Batch. This must be a line item for which linear scaling is allowed as specified on the Additional Information dialog box. The item quantity fields will be displayed. Enter the new quantity which will be used (for an ingredient) or produced (for a product or by-product). The rest of the FPO or batch will be scaled accordingly You might want to do this if the formula calls for 10 kilograms of an ingredient, but you only have five. Item quantity scaling is illustrated in Example 2.

Scaling Batches - Example 2

All products and ingredients set to linear scaling
Scale Ingredient 1 (by item quantity) from 10 to 5 kilograms

Before Scaling

Product 1	30 kilograms
Ingredient 1	10 kilograms
Ingredient 2	20 kilograms

After Scaling

Product 1	15 kilograms
Ingredient 1	5 kilograms
Ingredient 2	10 kilograms

When you scale by percent, the product quantity will be scaled by the percent entered. If the FPO or batch contains fixed quantity ingredients, the scalable ingredients will be scaled by an amount necessary to produce the new product quantity, not by the percent entered as the scale factor. This is illustrated in Example 3 below.

Scaling - Example 3

Ingredient 1 set to scaleable, product 1, ingredient 2, and ingredient 3 set to linear scaling.
Scale by 100 percent.

Before Scaling

Product 1	50 kilograms
Ingredient 1	10 kilograms
Ingredient 2	20 kilograms
Ingredient 3	20 kilograms

After Scaling

Product 1	100 kilograms
Ingredient 1	10 kilograms
Ingredient 2	45 kilograms
Ingredient 3	45 kilograms

Note that ingredients 2 and 3 are scaled to the quantities necessary to increase the product quantity by 100 percent. Since ingredient 1 was fixed, the quantities of ingredients 2 and 3 were increased by more than the scale factor. If they had merely been increased by 100%, the ingredient quantities would sum to 90 kilograms, which is less than the product quantity of 100 kilograms.

This example would apply to a situation in which one of your ingredients (ingredient 1) is a non-recovered catalyst. The quantity of the catalyst does not need to be increased to produce more of the product, but the quantity of the other ingredients does.

To scale, the system must convert the quantities of the ingredients, products, and by-products to a common unit of measure if there is a non-scaleable item in the batch. The unit of measure used for the calculation is the base unit of measure for the unit of measure type specified by the FM_YIELD_TYPE System Profile. This profile usually specifies MASS as the UOM type. The base unit of measure for a unit of measure type is the first unit of measure of that type entered into OPM. Therefore, in order to scale an FPO or batch, unit of measure conversions to this unit of measure must be set up for all of the items in the FPO or batch. Item unit of measure conversions are set up on the Item Lot/Conversion window.

Scaling Batches Dialog Box

This dialog is used to scale production batches. Use the Scale Batch dialog box to scale ingredient and product quantities in a batch. When you enter the dialog box, you are in percent-scaling . You can switch to item quantity mode by clicking the Item Quantity radio button.

Scaling Batches Procedure

To scale batches, proceed as follows:

1. Navigate to the **Scale Batch** dialog box.

2. Complete the fields as described.

3. Click **OK**.

Scale Batch Dialog Box Field References

Percent

Click this radio button if you want to scale by percent.

Factor

Enter the percent by which you want the FPO or batch scaled.

For example, to scale by 100% (that is, to double the product quantity), enter 100. To scale down by 20%, enter -20.

This field is only displayed if you selected scaling by percent.

Item Quantity

Click this radio button to indicate that you want to scale by Item Quantity.

This field is only accessible if the cursor was on an item that was set to allow scaling.

The following fields are only displayed if you selected scaling by item quantity.

Line

The number of the line the cursor was on when you selected scaling from the previous window is displayed. This field cannot be edited.

Item

The item you are using as the basis for scaling is displayed from the previous window. This field cannot be edited.

Description

The description of the item you are using as the basis for scaling is displayed. This field cannot be edited.

Old Quantity

The quantity before scaling (that is, the quantity indicated on the previous window) is displayed. This field cannot be edited.

New Quantity

Enter the new quantity for this item. The system calculates the percent difference between the old quantity and the new quantity and scales the rest of the FPO or batch accordingly.

Calculating Theoretical Yield

In process manufacturing, the product quantities in a formula, FPO, or batch do not necessarily equal the sum of the ingredient quantities. For example, in a certain process you may know that five percent of the mass is lost to evaporation. OPM can use this information to calculate the theoretical yield (that is, the adjusted product quantities) of a formula, batch , or FPO. You can have OPM calculate theoretical yield using the Calculate Theoretical Yield dialog box. The example below illustrates the yield OPM will calculate if you specify a yield percent of 95.

Theoretical Yield - Example

Ingredient 1	75 pounds
Ingredient 2	25 pounds
Product	95 pounds

OPM adds the ingredient quantities and multiplies by the yield percent.

To calculate theoretical yield, the system must convert the quantities of the ingredients, products, and by-products to a common unit of measure. The unit of measure used for the calculation is the base unit of measure for the unit of measure type (usually mass) specified by the FM_YIELD_TYPE System Profile. The base unit of measure for a unit of measure type is the first unit of measure of that type entered into OPM. Therefore, in order to calculate theoretical yield, unit of measure conversions to this unit of measure must be set up for all of the items in the formula, FPO, or batch. Generally, this means that the quantities of all of the items must be convertible to a "mass" unit of measure.

Calculating Theoretical Yield

Access this window by selecting Theoretical Yield from the Action pulldown menu on the Firm Planned Order, Batches, or FPO or Batch Ingredients or By-products window.

Use the Calculate Theoretical Yield dialog box to enter the percent yield for the FPO or batch. OPM will add the ingredient quantities, taking unit of measure conversions into account, and multiply the sum of the ingredient quantities by this percentage.

If the FPO or batch yields 100 percent, you can still use this dialog box to have OPM calculate the product quantities for you, or to check that you have added correctly. Simply use 100 percent as the yield percent.

Calculating Theoretical Yield Procedure

To calculate theortetical yeild:

1. For the selected batch, navigate to the **Scale Batch** dialog box.

2. Complete the field as described.

3. Click **OK**.

Calculate Theoretical Yield Dialog Box Field Reference

Yield Percent

Enter the percentage of ingredient quantities yielded in the product quantities. OPM will add the ingredient quantities, taking unit of measure conversions into account, and multiply the sum of the ingredient quantities by this percentage.

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Online Inquiries and Reports

You can use the online inquires and reports to view your production activity and related data. The following topics are discussed:

- Viewing Production Schedules 1

- Printing the Batch Picklist

- Running the Batch Ticket Report

- Running the Production Activity Report

- Running the Batch Yield Variance Report

- Running the Material Usage and Substitution Variance Report

Viewing Production Schedules

This option allows you to view, but not edit a list of scheduled batches and/or FPOs.

Production Schedule Selection Criteria

When you select Production Schedule from the Production menu, the Production Schedule dialog box appears. This dialog box enables you to limit the list of schedules that will be displayed. After you accept the selected criteria, the Production Schedule window appears with a list of schedules that fit the criteria you entered.

Viewing Production Schedules - Procedure

1. 1.Navigate to the **Production Schedule** dialog box.

2. 2.Complete the fields as described.

3. 3.Select **OK**. The **Production Schedule** dialog box displays with a list of scheduled batches and/or FPOs that fit the criteria you selected.

Production Schedule Dialog Box Parameters

Organization

Enter the code that identifies the organization for which you want to view a list of scheduled batches and/or FPOs. The organization must be effective for the user code. This field defaults to your default organization. Required.

Type

Click a check box to select to view FPOs and/or batches. Required.

Status

Click a checkbox to view the schedules of batches that have a status of pending and/or WIP. Required.

Start Date

Specify whether to include all, one, or a range of start dates for production batches or FPOs.

End Date

Specify whether to include all, one, or a range of end dates for production batches or FPOs.

Batch/FPO

Specify whether to include all, one, or a range of Batch/FPO numbers in the selection criteria. Required.

WIP Warehouse

Specify whether to include all, one or a range of WIP warehouses in the selection criteria.

Product

Specify whether to include all, one or a range of products in the selection criteria. Required.

Formula

Specify whether to include all, one or a range of formulas in the selection criteria.

Version

Specify whether to include all, one or a range of formula versions.

Routing

Specify whether to include all, one or a range of routing in the selection criteria.

Version

Specify whether to include all, one or a range of routing versions in the selection criteria.

Planning Class

Specify whether to include all, one or a range of planning classes in the selection criteria.

Routing Class

Specify whether to include all, one or a range of routing classes in the selection criteria.

Production Schedule Window

The Production Schedule window displays the FPOs and batches which meet the entered criteria. Use the up and down cursor keys to highlight a batch/FPO line. As each line is highlighted, the information at the bottom of the window changes.

Production Schedule Field References

Type

The unlabeled field on the left side of the dialog box identifies the document as either a firm planned order (F) or a batch (B). You cannot edit this field.

Plant

This field displays the user organization entered in the previous dialog box. You cannot edit this field.

Batch/Firm Planned Order

The number of the batch or FPO is displayed. You cannot edit this field.

Product

The code for the product on which the batch or FPO is based is displayed. You cannot edit this field.

Start Date

The starting date for the FPO or batch. You cannot edit this field.

End Date

The ending date for the FPO or batch. You cannot edit this field.

The following fields display information linked to the highlighted batch or FPO line at the top part of the window.

Description

A detailed description of the product produced by the batch or FPO of the line you have highlighted. You can not edit this field.

Status

Displays the status of the highlighted batch or FPO. It may be pending or WIP.

Formula

The first field on this line is the code for the formula on which the highlighted batch or FPO is based. The second field is the version of the formula on which the batch or FPO is based. You cannot edit these fields.

Routing

Displays the routing and routing version codes for the formula on which the highlighted batch or FPO is based. You cannot edit these fields.

WIP Warehouse

Displays the items WIP Warehouse along with its associated description.

Printing the Batch Picklist

The Batch Picklist identifies the material that must be picked for production batches. If you allocate your ingredients before releasing (starting) your batches, the Batch Picklist identifies the lots which must be picked and the warehouse locations from which the ingredients must be picked. The ability to use the Batch Picklist as a guide to picking is one of the primary advantages to allocating ingredients before batch release.

Batch Picklist Dialog Box

Use the Batch Picklist Dialog box to specify the batches to include on the picklist, the order in which the data will be sorted, and the printer on which the picklist will be printed.

Running the Batch Picklist Procedure

See: *Oracle Applications User's Guide* for detailed information on submitting a report.

To print the Batch Picklist proceed as follows:

1. Navigate to the **Submit Requests** window.

2. Enter the report name. This displays the dialog box for entering parameters.

3. Complete the parameters as describedand click **OK**. The **Submit Requests** window is displayed.

4. Complete the fields in the **Submit Requests** window and click **Submit Request**.

Batch Picklist Parameters

From Batch No
Enter the number of the first batch to be included on the report.

To Batch No
Enter the number of the last batch to be included on the report.

From Start Date

Enter the first start date in the range for which you want to the report. Only batches which start on or after this date will be included.

To Start Date

Enter the last start date in the range for which you want to print the report. Only batches which start on or before this date will be included.

Sort By

Select from the list to sort by Batch No or by Start Date and Batch No.

Batch Picklist Report Output

Warehouse

The warehouse in which the ingredient is located.

Location

The location in which the ingredient is located.

Item

The code and description of the ingredient to be picked.

Batch

The number of the batch in which the item is an ingredient.

Seq

The ingredient line number from the batch.

Planned Qty

The planned quantity from the batch in the unit of measure used on the batch.

Planned Qty2

The planned quantity in the item's secondary unit of measure.

Formula Num

The code identifying the formula on which the batch is based.

Version
The code identifying the formula version on which the batch is based.

Planned Start Date
The date on which the batch is planned to begin.

Actual Start Date
The date on which the batch was actually begun.

Lot
The lot which has been allocated to the batch. This is the lot which should be picked.

Sublot
The sublot which has been allocated to the batch. This is the sublot which should be picked. This field is only displayed for sublot controlled items.

Allocated Qty
The quantity of the lot allocated to the batch.

UOM
The item's primary unit of measure.

Allocated Qty2
The quantity of the lot allocated to the batch.

UOM
The item's secondary unit of measure.

Total Alloc
The total quantity of the item allocated to the batch from the warehouse and location, summed across each of the lots.

Running the Batch Ticket Report

The Batch Ticket report prints one or more batch tickets. It includes information about the formula used, the starting and completion dates, and the items and item quantities.

Batch Ticket Dialog Box

Use the Batch Ticket Parameters box to specify a range of batches or batch dates to include on the Batch Ticket report, the order in which the batches will be sorted, and the printer on which the report will be printed.

Running the Batch Ticket Report Procedure

To print the Batch Ticket proceed as follows:

1. Navigate to the **Submit Requests** window.

2. Enter the report name. This displays the dialog box for entering parameters.

3. Complete the fields as described in the *Batch Ticket - Parameters* topic, and click **OK**. The **Submit Requests** window is displayed.

4. Complete the fields in the **Submit Requests** window and click **Submit Request**.

Batch Ticket Parameters

From Batch No

Enter the number of the first batch to be included on the report.

To Batch No

Enter the number of the last batch to be included on the report.

From Start Date

Enter the first start date in the range for which you want to print the report. Only batches which start on or after this date will be included.

To Start Date

Enter the last start date in the range for which you want to the report. Only batches which start on or before this date will be included.

Sort By

Select from the list to sort by Batch No or by Start Date and Batch No.

Batch Ticket Report Output

Batch

The number of the batch, preceded by the code for the organization producing the batch.

Formula

The code for the formula on which the batch is based.

Version

The formula version on which the batch is based.

Planned Start Date

The planned start date of the batch.

Planned Completion Date

The planned completion date of the batch.

Required Completion Date

The required completion date of the batch.

WIP Whse

The warehouse used to cost production activity.

Seq

The product, ingredient, or byproduct line number.

Item

The code for each product, ingredient, or byproduct in the batch.

Description

The description of the product, ingredient, or byproduct.

Planned Qty

The planned quantity of each product, ingredient, or byproduct.

Running the Production Activity Report

The Production Activity report shows production activity (batches and firm planned orders) scheduled during a specified period of time. Only batches which have a status of Pending (that is, batches which have not yet been released) are displayed.

Production Activity Report Dialog Box

Use the Production Activity Report Parameters box to specify the range of batches or FPOs and the date range for which you want to print production activity. You can also specify the sort order used on the report, and the printer on which the report will print.

Running the Production Activity Report Procedure

To print the Production Activity report, proceed as follows:

1. Navigate to the **Submit Requests** window.

2. Enter the report name. This displays the dialog box for entering parameters.

3. Complete the fields as described in the *Production Activity Report - Parameters* topic, and click **OK**. The **Submit Requests** window is displayed.

4. Complete the fields in the **Submit Requests** window and click **Submit Request**.

Production Activity Report Parameters

From Batch No
Enter the number of the first batch to be included on the report.

To Batch No
Enter the number of the last batch to be included on the report.

From Start Date
Enter the first start date in the range for which you want to print the report. Only batches which start on or after this date will be included.

To Start Date

Enter the last start date in the range for which you want to the report. Only batches which start on or before this date will be included.

Sort By

Select from the list to sort by Batch No or by Start Date and Batch No.

Production Activity Report Output

Organization

The ID code for the organization against which you ran the report.

Batch/FPO From

The number of the first batch or FPO that you specified on the dialog box.

To

The number of the last batch or FPO that you specified on the dialog box.

Start Date From

The first date you specified on the dialog box.

To

The last date you specified on the dialog box.

Type

The type of document:

- PROD (Batch)
- FPO (Firm planned order)

Plant

The code for the plant in which the batch or FPO is scheduled.

Batch/Firm

The number of the batch or FPO.

Formula
The formula on which the batch or FPO is based.

Version
The version of the formula used.

Start Date
The planned start date of the batch or FPO.

End Date
The planned end date of the batch or FPO.

Running the Batch Yield Variance Report

Use the Batch Yield Variance report to view the actual and calculated yield of a batch. This report shows the differences between the formula specified yields and the batch actual yields, and the variance costs based on the accounting cost of the item. Cost variances are shown for the products and coproducts as well as the batch. The report can be printed for all, one or a range of dates, items and batches.

Batch Yield Variance Parameters Box

Use the Batch Yield Variance Parameters box to specify the range of batches or FPOs and the date range for which you want to print the report. You can also specify the sort order used on the report, and the printer on which the report will print.

Running the Batch Yield Variance Report Procedure

To print the Batch Yield Variance report, proceed as follows:

1. Navigate to the **Submit Requests** window.

2. Enter the report name. This displays the dialog box for entering parameters.

3. Complete the fields as described and click **OK**. The **Submit Requests** window is displayed.

4. Complete the fields in the **Submit Requests** window and click **Submit Request**.

Batch Yield Variance Report Parameters

From Batch No
Enter the number of the first batch to be included on the report.

To Batch No
Enter the number of the last batch to be included on the report.

From Start Date
Enter the first start date in the range for which you want to print the report. Only batches which start on or after this date will be included.

To Start Date

Enter the last start date in the range for which you want to the report. Only batches which start on or before this date will be included.

Sort By

Select from the list to sort by Batch No or by Start Date and Batch No.

Batch Yield Variance Report Output

Currency

Code for the currency used in the calculation. For example, USD for U.S. dollars.

Item

The ID code of the item produced by the batch.

Description

The description associated to the item ID code.

Accounting

Value

- The planned or formula cost of the product. This is the unit cost multiplied by the Accounting Yield quantity.

Yield

- The quantity expected to be yielded based on the formula.

Actual

Value

- The actual cost of the product. This is the unit cost multiplied by the Actual Yield.

Yield

- The quantity actually yielded by the batch.

Quantity Variance

The difference between the Actual Yield and the Accounting Yield.

Value Variance

The difference between the Accounting Value and the Actual Value.

Variance (%)

The Quantity Variance divided by the Accounting Yield, expressed in a percent.

Batch

The batch number.

Formula

The ID code of the formula on which the batch is based.

Version

The formula version number.

Batch Size

The planned quantity of the primary product.

Batch Value Variance

The sum of the Value Variances for all products in the batch.

Total Value Variance

The total of all value variance on the report.

Running the Material Usage and Substitution Variance Report

The Material Usage and Substitution Variance report can be used to identify batches with unusual usage costs. The report provides a cost comparison and variance of actual costs against the standard usage which should have been incurred as set up for each formula.

The report can be printed for all, one, or a range of dates, items and batches.

Material Usage and Substitution Variance Parameters Box

Use the Material Usage and Substitution Variance Parameters box to specify the range of batches or FPOs and the date range for which you want to print the report. You can also specify the sort order used on the report, and the printer on which the report will print.

Running the Material Usage and Substitution Variance Report Procedure

To print the Material Usage and Substitution Variance report, proceed as follows:

1. Navigate to the **Submit Requests** window.

2. Enter the report name. This displays the dialog box for entering parameters.

3. Complete the fields as described and click **OK**. The **Submit Requests** window is displayed.

4. Complete the fields in the **Submit Requests** window and click **Submit Request**.

Material Usage and Substitution Variance Report Parameters

From Batch No
Enter the number of the first batch to be included on the report.

To Batch No
Enter the number of the last batch to be included on the report.

From Start Date
Enter the first start date in the range for which you want to print the report. Only batches which start on or after this date will be included.

To Start Date

Enter the last start date in the range for which you want to the report. Only batches which start on or before this date will be included.

Sort By

Select from the list to sort by Batch No or by Start Date and Batch No.

Material Usage and Substitution Variance Report Output

Currency

Code for the currency used in the calculation. For example, USD for U.S. dollars.

Batch

The ID code of the batch.

Formula

The ID code of the formula on which the batch is based.

Version

The version number of the formula on which the batch is based.

Batch Size

Planned quantity of the primary product.

Accounting

Unit Cost

- The unit cost of the ingredient.

Quantity UOM

- The standard quantity of the ingredient expected to be used. This is the quantity from the formula, scaled based on the batch size.

Actual Usage

The actual quantity used in the batch.

Quantity Variance

The difference between the Actual Usage and the Accounting Quantity.

Variance%

The Quantity Variance divided by the Accounting Quantity, expressed as a product.

Value Variance

The difference between the value of the ingredient actually used and the value expected to be used.

Total Variance

The total of all the value variances.

Total Usage Variance

The total of the value variances from usage variance.

Total Sub Variance

The total of value variances from ingredient substitution.

A

Appendix

The following topics are discussed:

- Production Management Navigation Paths
- Production Management Profile Options

Production Management Navigation Paths

Although your system administrator may have customized your navigator, typical navigation paths are described in the following tables. In some cases, there is more than one way to navigate to a form. These tables provide the most typical default path.

Form	Path
Additional Edit (Batches)	OPM Process Execution:Production Management:Batches:place cursor in Products panel:Actions:Additional Edit (You can also access this form from the By-products, Ingredients, Batch Input and Batch Output forms)
Batch By-Products	OPM Process Execution:Production Management:Batches:Byproducts
Batch Ingredients	OPM Process Execution:Production Management::Batches:Ingredients
Batch Input	OPM Process Execution:Production Management:Batch Input
Batch Output	OPM Process Execution:Production Management:Batch Output
Batches	OPM Process Execution:Production Management:Batches
Calculate Theoretcial Yield	OPM Process Executtion:Production Management:place cursor in Products panel:Actions:Theoretical Yield
Create Batch/Firm Planned Order	OPM Process Execution:Production Management:Create Batch/FPO
Firm Planned Order	OPM Process Execution:Production Management:Firm Planned Order
Firm planned Order to Batch Conversion	OPM Process Execution:Production Management:Firm Planned Order:Actions:FPO to Batch
FPO Byproducts	OPM Process Execution:Production Management::Firm Planned Order:Byproducts
FPO Ingredients	OPM Process Execution:Production Management:Firm Planned Order::Ingredients

Inventory Shortages	OPM Process Execution:Production Management:Batches:Ingredients:Actions :Inventory Shortage
Line Allocations	OPM Process Execution:Production Management:Batch Input/Batch Output:Actions:Details
Partial Certification	OPM Process Execution:Production Management:Partial Cert
Pick Lots/Locations	OPM Process Execution:Production Management:Batch Input:place cursor on ingredient:Actions:Pick Lots/Location
Production Schedule	OPM Process Execution:Production Management:Production Schedule
Reroute	OPM Process Execution:Production Management:Batches or Firm Planned Order:Actions:Reroute
Reschedule	OPM Process Execution:Production Management:Batches or Firm Planned Order:Actions:Reschedule
Scale Batch	OPM Process Execution:Production Management:Batches:place cursor on item:Actions:Scale Batch (also available from Batch Ingredients, Batch Output and Batch Input screens)
Submit Requests	OPM Process Execution:Production Management:Reports:Run:OK
View Effectivities	OPM Process Execution:Production Management:Batches/FPO

Production Management Profile Options

During your implementation, you or your system administrator set values for selected profile options to specify how your Production Management application controls access to and processes data. The profile options related to Production Management are listed below.

- GME:Allow Batch Creation from Input
- GME:Allow Batch Creation from Output
- GME:Auto-Release Allocated Quantity Only
- GME:Check Inventory Shortage Upon Release
- GME:Check Inventory Shortage Upon Save
- GME:Check Lot Status
- GME:Copy Formula Text
- GME:Use Auto-Allocation

You might set up these profile options when you set up other applications prior to your Produciton Management implementation. Refer to the other product user's guides for more details on how other products use these profile options.

Your system administrator sets user profile options at one or more of the following levels: Site Application, Responsibility, and User. Use the Personal Profile Options window or view or set your profile options at the user level. You can consult *the Oracle Process Manufacturing Implementation Guide* for a complete description of the profile options listed below. Consult your *Oracle Applications System Administrator's Guide* for a list of profile options common to all Oracle Applications.

Glossary

Allocate

For ingredients, to specify the lots that went (or will go) into a batch, and/or the locations from which the ingredients were drawn. For products, to specify the lots that were yielded by a batch, and/or the locations into which the products were put. Only lot or location-controlled items must be allocated.

Automatic Auto-allocation

A type of allocation in which ingredients are allocated by GEMMS when a batch is saved for the first time, based on certain rules which have been specified. Also known as fully automatic auto-allocation.

Backflushing

The calculation of ingredient consumption from the entry of product yield. In GEMMS, backflushing also includes the ability to calculate product yield from the entry of ingredient consumption.

Batch

In GEMMS, a document that is used to plan and record a manufacturing event. It captures the consumption of ingredients and the yield of products and by-products.

By-product

An item produced by a formula or batch in addition to the desired product. A by-product differs from a product or coproduct in that you do not plan production to make by-products. In GEMMS, you can only calculate the cost of producing products, not by-products. However, the costs associated with by-products are taken into account in calculating the costs of products in the same formula. Compare with coproduct.

Certifying a Batch

Indicating that a batch has been completed. Certifying a batch indicates that all product quantities have been yielded. When you certify a batch, the pending transactions associated with automatic certification product lines are deleted and replaced with completed transactions.

Completed Transaction

A record which represents an actual change to inventory.

Coproduct

One of several products produced by a formula or batch. The term coproduct is sometimes used when a formula or batch produces more than one product. GEMMS does not distinguish between products and coproducts. Compare with by-product.

Effectivity

A set of parameters that specify under what circumstances a formula can be used. These parameters include date of production, product quantity, and formula use (Production, Planning, or Costing). Effectivity records also link formulas with routings.

Firm Planned Order

A document which represents a plan to manufacture a product. Unlike an MRP-planned order, MRP cannot change or delete firm planned orders.

Formula

The "recipe" upon which production batches are based. A formula consists of products, ingredients, and, optionally, by-products. The formula also specifies the quantities of each item.

Formula Use

The module for which a formula will be used, either Production Management, Costing, or Material Requirements Planning.

Ingredient

An item which is consumed by a batch to yield a product.

Manual Certification

Certifying a product separately from certifying the batch. To perform manual certification, the Release Type field on the Additional Edit dialog box must be set to "1" for that product line. You perform the manual certification on the Batch Ouput form.

Manual Release

Releasing an ingredient separately from releasing the batch. To perform manual release, the Release Type field on the Additional Edit dialog box must be set to "1" for that ingredient line. You perform the manual release on the Batch Input form.

Partial Certification

Certifying less than the full quantity of a product. This is often done with batches which run a long time and yield product a bit at a time. To perform partial certification, the Release Type field on the Additional Edit dialog box must be set to "1" or "2" for that product line. You perform the partial certification on the Partial Certification dialog box.

Partial Release

Releasing less than the full quantity of an ingredient. This is often done with batches which run for a long time and consume ingredients a bit at a time. To manually perform partial release, the Release Type field on the Additional Edit dialog box must be set to "1" for that ingredient line. You perform the partial release on the Batch Input form. To hav ingredient consumption backflushed by partial certification, the Release Type must be set to 2 (Incremental).

Pending Transaction

A record which represents an anticipated or future change to inventory.

Phantoms

Intermediate items in a formula that do not exist by themselves, and generally are not tracked in inventory, but their ingredients are. A phantom is made only during the production of another product and may also be known as a transient subassembly or a blowthrough.

Product

An item which is produced by a batch. Compare with by-product.

Releasing a Batch

Indicating that a batch has been started. Releasing a batch indicates that ingredient quantities have been consumed. When you release a batch, the pending transactions associated with automatic release ingredient lines are deleted and replaced with completed transactions.

Scaling

The proportional increase or decrease of product, by-product, and ingredient quantities in a formula or batch.

Single-step Function

A function that only impacts a single step in a batch, and the batch lines associated with that step. Examples of single-step functions are releasing, certifying, and rescheduling steps.

Theoretical Yield Calculation

A calculation that calculates product quantities yielded by a formula or batch based on ingredient quantities and a specified yield percentage.

Turn on POC

For the user's current organization, the POC Ind on the Organization Code form is set to 1. This makes the Process Operations Control module functional, and means that resource usage data will be automatically collected for batches to which routings are associated and that simultaneous multi-user batch access is functional.

Whole Batch Functions

A function that has the potential to impact the batch as a whole. Examples of whole-batch functions are releasing, certifying, rescheduling, and partial certifying a batch.

User-initiated Auto-allocation

A type of allocation in which ingredients are allocated by GEMMS when the user requests allocation, based on certain rules which have been specified. This differs from automatic auto-allocation in that user-initiated auto-allocation is performed only when the user requests it, not automatically upon saving a batch.

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