Oracle® Process Manufacturing

Quality Management API User's Guide

Release 11i

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Oracle Process Manufacturing Quality Management API User's Guide, Release 11i

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

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Preface

Audience for This Guide

Welcome to Release 11*i* of the *Oracle Process Manufacturing Quality Management API User's Guide*.

This guide assumes you have a working knowledge of the following:

- The principles and customary practices of your business area.
- *Oracle Process Manufacturing (OPM)*

  If you have never used *Oracle Process Manufacturing Quality Management APIs*, Oracle suggests you attend one or more of the *Oracle Process Manufacturing* training classes available through Oracle University.
- The Oracle Applications graphical user interface.

  To learn more about the Oracle Applications graphical user interface, read the *Oracle Applications User's Guide*.

See Other Information Sources for more information about Oracle Applications product information.

How To Use This Guide

This guide contains the information you need to understand and use *Oracle Process Manufacturing Quality Management APIs*.

- Chapter 1 describes the Application Program Interfaces (APIs) that support external interfaces to the OPM Quality Management tables including: packages supplied, Quality Management API bill of material, wrapper function, stored procedures, and validating the user name.
- Chapter 2 provides the relationships between Quality Management API table structure and its entities. Discusses Quality Management API business objects, the entity relationship diagram, business object interface design, creating a new formula and importing formula data structures.
- Appendix A provides message handling, the interpretation of error conditions, and an understanding of error messages.
- Appendix B provides a useful guide and examples for using the APIs.

Other Information Sources

You can choose from many sources of information, including online documentation, training, and support services, to increase your knowledge and understanding of *Oracle Process Manufacturing Quality Management APIs*.

If this guide refers you to other Oracle Applications documentation, use only the Release 11*i* versions of those guides.

Online Documentation

All Oracle Applications documentation is available online (HTML or PDF).

- **Online Help** - The new features section in the HTML help describes new features in 11i. This information is updated for each new release of *Oracle Process Manufacturing*. The new features section also includes information about any features that were not yet available when this guide was printed. For example, if your administrator has installed software from a mini-packs an upgrade, this document describes the new features. Online help patches are available on MetaLink.
- **11i Features Matrix** - This document lists new features available by patch and identifies any associated new documentation. The new features matrix document is available on MetaLink.
- **Readme File** - Refer to the readme file for patches that you have installed to learn about new documentation or documentation patches that you can download.

Related User's Guides

Oracle Process Manufacturing Quality Management APIs shares business and setup information with other Oracle Applications products. Therefore, you may want to refer to other user's guides when you set up and use *Oracle Process Manufacturing*.

You can read the guides online by choosing Library from the expandable menu on your HTML help window, by reading from the Oracle Applications Document Library CD included in your media pack, or by using a Web browser with a URL that your system administrator provides.

If you require printed guides, you can purchase them from the Oracle Store at http://oraclestore.oracle.com.

Guides Related to All Products

Oracle Applications User's Guide

This guide explains how to enter data, query, run reports, and navigate using the graphical user interface (GUI) available with this release of *Oracle Process Manufacturing Quality Management APIs* (and any other Oracle Applications products). This guide also includes information on setting user profiles, as well as running and reviewing reports and concurrent processes.

You can access this user's guide online by choosing"Getting Started with Oracle Applications" from any Oracle Applications help file.

User Guides Related to This Product

Accounting Setup User's Guide

The OPM Accounting Setup application is where users set up global accounting attributes about the way financial data will be collected by OPM. These attributes include such things as account keys, financial calendars, and account segments. Since OPM is closely integrated with Oracle General Ledger (GL), much of the attributes are defined in the Oracle GL instead of OPM, and therefore, the windows are display only within OPM. The *Oracle Process Manufacturing Accounting Setup User's Guide* describes how to setup and use this application.

Cost Management User's Guide

The OPM Cost Management application is used by cost accountants to capture and review the manufacturing costs incurred in their process manufacturing businesses. The *Oracle Process Manufacturing Cost Management User's Guide* describes how to setup and use this application.

Manufacturing Accounting Controller User's Guide

The Manufacturing Accounting Controller application is where users define the impact of manufacturing events on financials. For example, event RCPT (Inventory Receipts) results in a debit to inventory, a credit to accrued accounts payable, a debit or a credit to purchase price variance, etc. These impacts are predefined in the Manufacturing Accounting Controller application so users may begin using OPM to collect financial data out-of-the-box, however, they may also be adjusted per your business needs. The *Oracle Process Manufacturing Manufacturing Accounting Controller User's Guide* describes how to setup and use this application.

Oracle Financials Integration User's Guide

Since OPM is closely integrated with Oracle General Ledger, financial data that is collected about the manufacturing processes must be transferred to the Oracle Financials applications. The OPM Oracle Financials Integration application is where users define how that data is transferred. For example, users define whether data is transferred real time or batched and transferred at intervals. The *Oracle Process Manufacturing Oracle Financials Integration User's Guide* describes how to setup and use this application.

Inventory Management User's Guide

The OPM Inventory Management application is where data about the items purchased for, consumed during, and created as a result of the manufacturing process are tracked. The *Oracle Process Manufacturing Inventory Management User's Guide* includes information to help you effectively work with the Oracle Process Manufacturing Inventory application.

Physical Inventory User's Guide

Performing physical inventory count is the most accurate way to get an accounting of all material quantities purchased, manufactured, and sold, and update your onhand quantities accordingly. The OPM Physical Inventory application automates and enables the physical inventory process. The *Oracle Process Manufacturing Physical Inventory User's Guide* describes how to setup and use this application.

Order Fulfillment User's Guide

The OPM Order Fulfillment application automates sales order entry to reduce order cycle time. Order Fulfillment enables order entry personnel to inform customers of scheduled delivery dates and pricing. The *Oracle Process Manufacturing Order Fulfillment User's Guide* describes how to setup and use this application.

Purchase Management User's Guide

OPM Purchase Management and Oracle Purchasing combine to provide an integrated solution for Process Manufacturing. Purchase orders are entered in Oracle Purchasing and received in OPM. Then, the receipts entered in OPM are sent to Oracle Purchasing. The *Oracle Process Manufacturing Purchase Management User's Guide* describes how to setup and use this integrated solution.

Using Oracle Order Management with Process Inventory Guide

Oracle Process Manufacturing and Oracle Order Management combine to provide an integrated solution for process manufacturers. The manufacturing process is tracked and handled within Oracle Process Manufacturing, while sales orders are taken and tracked in Oracle Order Management. Process attributes, such as dual UOM and lot control, are enabled depending on the inventory organization for the item on the sales order. Order Management accepts orders entered through Oracle Customer Relationship Management (CRM). Within CRM, orders can originate from TeleSales, Sales Online, and iStore, and are booked in Order Management, making the CRM suite of products available to Process customers, through Order Management. The *Oracle Order Management User's Guide* and *Using Oracle Order Management with Process Inventory Guide* describes how to setup and use this integrated solution.

Process Execution User's Guide

The OPM Process Execution application lets you track firm planned orders and production batches from incoming materials through finished goods. Seamlessly integrated to the Product Development application, Process Execution lets you convert firm planned orders to single or multiple production batches, allocate ingredients, record actual ingredient usage, and then complete and close production batches. Production inquiries and preformatted reports help you optimize inventory costs while maintaining a high level of customer satisfaction with on-time delivery of high quality products. The *OPM Process Execution User's Guide* presents overviews of the tasks and responsibilities for the Production Supervisor and the Production Operator. It provides prerequisite setup in other applications, and details the windows, features, and functionality of the OPM Process Execution application.

Integration with Advanced Planning and Scheduling User's Guide

Oracle Process Manufacturing and Oracle Advanced Planning and Scheduling (APS) combine to provide an integrated solution for process manufacturers that can help increase planning efficiency. The integration provides for constraint-based planning, performance management, materials management by exception, mixed mode manufacturing that enables you to choose the best method to produce each of your products, and combine all of these methods within the same plant/company. The *Oracle Process Manufacturing Integration with Advanced Planning and Scheduling User's Guide* describes how to setup and use this application.

MPS/MRP and Forecasting User's Guide

The Oracle Process Manufacturing Material Requirements Planning (MRP) application provides long-term "views" of material demands and projected supply actions to satisfy those demands. The Master Production Scheduling (MPS) application lets you shorten that view to a much narrower and immediate time horizon, and see the immediate effects of demand and supply actions. The *Oracle Process Manufacturing MPS/MRP and Forecasting User's Guide* describes how to setup and use this application.

Capacity Planning User's Guide

The OPM Capacity Planning User's Guide describes the setup required to use OPM with the Oracle Applications Advanced Supply Chain Planning solutions. In addition, Resource setup, used by the OPM Production Execution and New Product Development applications, is also described.

Using Oracle Process Manufacturing with Oracle Manufacturing Scheduling

Oracle Process Manufacturing integrates with Oracle Manufacturing Scheduling to manage and utilize resources and materials. Through the Process Manufacturing application, you set up manufacturing, inventory, procurement and sales order data. Through the Manufacturing Scheduling application, you can optimize the schedule based on resource and component constraints and user predefined priorities. Using different optimization objectives, you can tailor Manufacturing Scheduling to meet your needs.

Using Oracle Manufacturing Scheduling helps you improve productivity and efficiency on your shop floor. By optimally scheduling shop floor jobs, and being able to quickly react to unplanned constraints, you can lower manufacturing costs, increase resource utilization and efficiency, and increase customer satisfaction through improved on-time delivery. The *Using Oracle Process Manufacturing with Oracle Manufacturing Scheduling User's Guide* describes how to setup and use this integrated solution.

Product Development User's Guide

The Oracle Process Manufacturing Product Development application provides features to manage formula and laboratory work within the process manufacturing operation. It lets you manage multiple laboratory organizations and support varying product lines throughout the organization. You can characterize and simulate the technical properties of ingredients and their effects on formulas. You can optimize formulations before beginning expensive laboratory test batches. Product Development coordinates each development function and enables a rapid,

enterprise-wide implementation of new products in your plants. The *Oracle Process Manufacturing Product Development User's Guide* describes how to setup and use this application.

Quality Management User's Guide

The Oracle Process Manufacturing Quality Management application provides features to test material sampled from inventory, production, or receipts from external suppliers. The application lets you enter specifications and control their use throughout the enterprise. Customized workflows and electronic record keeping automate plans for sampling, testing, and result processing. You can compare specifications to assist in regrading items, and match customer specifications. Aggregate test results and print statistical assessments on quality certificates. Several preformatted reports and inquiries help manage quality testing and reporting. The *Oracle Process Manufacturing Quality Management User's Guide* describes how to set up and use this application.

Regulatory Management User's Guide

The Oracle Process Manufacturing Regulatory Management application generates the Material Safety Data Sheets (MSDSs) required by authorities to accompany hazardous materials during shipping. You can create MSDSs from OPM Formula Management with Regulatory or Production effectivities. The *Oracle Process Manufacturing Regulatory Management User's Guide* describes how to setup and use this application.

Implementation Guide

The *Oracle Process Manufacturing Implementation Guide* offers information on setup. That is, those tasks you must complete following the initial installation of the Oracle Process Manufacturing software. Any tasks that must be completed in order to use the system out-of-the-box are included in this manual.

System Administration User's Guide

Much of the System Administration duties are performed at the Oracle Applications level, and are therefore described in the *Oracle Applications System Administrator's Guide*. The *Oracle Process Manufacturing System Administration User's Guide* provides information on the few tasks that are specific to OPM. It offers information on performing OPM file purge and archive, and maintaining such things as responsibilities, units of measure, and organizations.

API User's Guides

Public Application Programming Interfaces (APIs) are available for use with different areas of the Oracle Process Manufacturing application. APIs make it possible to pass information into and out of the application, bypassing the user interface. Use of these APIs is documented in individual manuals such as the *Oracle Process Manufacturing Inventory API User's Guide, Oracle Process Manufacturing Process Execution API User's Guide, Oracle Process Manufacturing Product Development Formula API User's Guide, Oracle Process Manufacturing Product Development Recipe API User's Guide, Oracle Process Manufacturing Quality Management API User's Guide,* and the *Oracle Process Manufacturing Cost Management API User's Guide.* Additional API User's Guides are periodically added as additional public APIs are made available.

Installation and System Administration

Oracle Applications Concepts

This guide provides an introduction to the concepts, features, technology stack, architecture, and terminology for Oracle Applications Release 11*i*. It provides a useful first book to read before an installation of Oracle Applications. This guide also introduces the concepts behind Applications-wide features such as Business Intelligence (BIS), languages and character sets, and Self-Service Web Applications.

Installing Oracle Applications

This guide provides instructions for managing the installation of Oracle Applications products. In Release 11*i*, much of the installation process is handled using Oracle Rapid Install, which minimizes the time to install Oracle Applications, the Oracle8 technology stack, and the Oracle8*i* Server technology stack by automating many of the required steps. This guide contains instructions for using Oracle Rapid Install and lists the tasks you need to perform to finish your installation. You should use this guide in conjunction with individual product user's guides and implementation guides.

Upgrading Oracle Applications

Refer to this guide if you are upgrading your Oracle Applications Release 10.7 or Release 11.0 products to Release 11*i*. This guide describes the upgrade process and lists database and product-specific upgrade tasks. You must be either at Release 10.7 (NCA, SmartClient, or character mode) or Release 11.0, to upgrade to Release 11*i*. You cannot upgrade to Release 11*i* directly from releases prior to 10.7.

Maintaining Oracle Applications

Use this guide to help you run the various AD utilities, such as AutoUpgrade, AutoPatch, AD Administration, AD Controller, AD Relink, License Manager, and others. It contains how-to steps, screenshots, and other information that you need to run the AD utilities. This guide also provides information on maintaining the Oracle applications file system and database.

Oracle Applications System Administrator's Guide

This guide provides planning and reference information for the Oracle Applications System Administrator. It contains information on how to define security, customize menus and online help, and manage concurrent processing.

Oracle Alert User's Guide

This guide explains how to define periodic and event alerts to monitor the status of your Oracle Applications data.

Oracle Applications Developer's Guide

This guide contains the coding standards followed by the Oracle Applications development staff. It describes the Oracle Application Object Library components needed to implement the Oracle Applications user interface described in the *Oracle Applications User Interface Standards for Forms-Based Products*. It also provides information to help you build your custom Oracle Forms Developer 6*i* forms so that they integrate with Oracle Applications.

Oracle Applications User Interface Standards for Forms-Based Products

This guide contains the user interface (UI) standards followed by the Oracle Applications development staff. It describes the UI for the Oracle Applications products and how to apply this UI to the design of an application built by using Oracle Forms.

Other Implementation Documentation

Oracle Applications Product Update Notes

Use this guide as a reference for upgrading an installation of Oracle Applications. It provides a history of the changes to individual Oracle Applications products between Release 11.0 and Release 11*i*. It includes new features, enhancements, and changes made to database objects, profile options, and seed data for this interval.

Multiple Reporting Currencies in Oracle Applications

If you use the Multiple Reporting Currencies feature to record transactions in more than one currency, use this manual before implementing *Oracle Process Manufacturing Quality Management APIs*. This manual details additional steps and setup considerations for implementing *Oracle Process Manufacturing Quality Management APIs* with this feature.

Multiple Organizations in Oracle Applications

This guide describes how to set up and use *Oracle Process Manufacturing Quality Management APIs* with Oracle Applications' Multiple Organization support feature, so you can define and support different organization structures when running a single installation of *Oracle Process Manufacturing*.

Oracle Workflow Guide

This guide explains how to define new workflow business processes as well as customize existing Oracle Applications-embedded workflow processes.You also use this guide to complete the setup steps necessary for any Oracle Applications product that includes workflow-enabled processes.

Oracle Applications Flexfields Guide

This guide provides flexfields planning, setup and reference information for the *Oracle Process Manufacturing Quality Management APIs* implementation team, as well as for users responsible for the ongoing maintenance of Oracle Applications product data. This manual also provides information on creating custom reports on flexfields data.

Oracle eTechnical Reference Manuals

Each eTechnical Reference Manual (eTRM) contains database diagrams and a detailed description of database tables, forms, reports, and programs for a specific Oracle Applications product. This information helps you convert data from your existing applications, integrate Oracle Applications data with non-Oracle applications, and write custom reports for Oracle Applications products. Oracle eTRM is available on Metalink

Oracle Manufacturing APIs and Open Interfaces Manual

This manual contains up-to-date information about integrating with other Oracle Manufacturing applications and with your other systems. This documentation includes API’s and open interfaces found in Oracle Manufacturing.

Oracle Order Management Suite APIs and Open Interfaces Manual

This manual contains up-to-date information about integrating with other Oracle Manufacturing applications and with your other systems. This documentation includes API's and open interfaces found in Oracle Order Management Suite.

Oracle Applications Message Reference Manual

This manual describes all Oracle Applications messages. This manual is available in HTML format on the documentation CD-ROM for Release 11i.

Training and Support

Training

Oracle offers a complete set of training courses to help you and your staff master *Oracle Process Manufacturing Quality Management APIs* and reach full productivity quickly. These courses are organized into functional learning paths, so you take only those courses appropriate to your job or area of responsibility.

You have a choice of educational environments. You can attend courses offered by Oracle University at any one of our many Education Centers, you can arrange for our trainers to teach at your facility, or you can use Oracle Learning Network (OLN), Oracle University's online education utility. 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 structure, terminology, and data as examples in a customized training session delivered at your own facility.

Support

From on-site support to central support, our team of experienced professionals provides the help and information you need to keep *Oracle Process Manufacturing Quality Management APIs* working for you. This team includes your Technical Representative, Account Manager, and Oracle's large staff of consultants and support specialists with expertise in your business area, managing an Oracle8*i* server, and your hardware and software environment.

Do Not Use Database Tools to Modify Oracle Applications Data

Oracle STRONGLY RECOMMENDS that you never use SQL*Plus, Oracle Data Browser, database triggers, or any other tool to modify Oracle Applications data unless otherwise instructed.

Oracle provides powerful tools you can use to create, store, change, retrieve, and maintain information in an Oracle database. But if you use Oracle tools such as SQL*Plus to modify Oracle Applications data, you risk destroying the integrity of your data and you lose the ability to audit changes to your data.

Because Oracle Applications tables are interrelated, any change you make using Oracle Applications can update many tables at once. But when you modify Oracle Applications data using anything other than Oracle Applications, you may change a row in one table without making corresponding changes in related tables. If your tables get out of synchronization with each other, you risk retrieving erroneous information and you risk 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 keeps track of who changes information. If you enter information into database tables using database tools, you may 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.

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 160 software modules for financial management, supply chain management, manufacturing, project systems, human resources and customer relationship 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 145 countries around the world.

Your Feedback

Thank you for using *Oracle Process Manufacturing Quality Management APIs* and this user's guide.

Oracle values your comments and feedback. At the end of this guide is a Reader's Comment Form you can use to explain what you like or dislike about *Oracle Process Manufacturing Quality Management APIs* or this user's guide. Mail your comments to the following address or call us directly at (650) 506-7000.

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1

Quality Management API Introduction

This document describes the Application Program Interfaces that support external interfaces to the Oracle Process Manufacturing Quality Management tables. The topics discussed in this topic are:

- Introducing the Quality Management API
- Oracle Applications Packages Supplied
- Quality Management API Bill of Materials
- Wrapper Function and Stored Procedures

Introducing the Quality Management API

Quality Management APIs let you import quality information from an existing quality management system into the Oracle Process Manufacturing Quality Management tables. When you import this information, you can include all pertinent information using a friendly tool that does not have cryptic IDs and system specific information. Quality Management APIs can process virtually all information. The interface ensures that your imported information contains the same detail as those you enter manually on the OPM Quality Management window.

What Is In This Document

This document describes the basic business needs, major features, architecture, and components for the Insert, Update, and Delete features for the Quality Management APIs. The application is divided into application-specific objects that let you link OPM functionality into your own programs. The interfaces can make use of the standard functionality and logic implemented in the Quality Management application.

Quality Management APIs are written in PL/SQL that can be called by your own programs. To make use of these APIs, code the wrapper function that passes the appropriate parameters to the APIs. Your program is also responsible for connecting to a database before calling an API function, and disconnecting from the database upon return. You can also write to log files before calling and after returning from a function. If there is a problem during execution of a call, then the APIs return one of the following status codes:

- S for success
- E for error
- U for unknown or unexpected status

Quality Management API Features

These APIs offer the following features:

- Creating Updating and Deleting Information
- Proper Encapsulation
- Synchronous Processing Following the Business Hierarchy
- Detailed and Translatable Error Messages

Quality Management API Support Policy

Quality Management APIs are supported by Oracle. This means:

- Oracle provides objects and libraries needed to use to the APIs and the documentation for their use.
- Oracle ensures that the APIs function as designed.
- Oracle does not support customer generated programs that use the APIs.

Oracle Applications Packages Supplied

Quality Management APIs make use of the following standard Oracle Applications packages:

- FND_API - the standard Oracle Applications API version checking function. This is used by the stored procedure to check valid API version number and also contains constant variables such as TRUE and FALSE.
- FND_MESSAGE - the standard Oracle Applications messaging function. This is used by the stored procedure to report status and error handling.
- FND_PUB_MSG - the standard Oracle Applications message retrieval function, used to interrogate the procedure messages.

These packages are installed as part of the current release. Refer to the *Oracle Applications Coding Standards* manual for additional details.

Quality Management API Bill of Materials

The following are the packages and files that are delivered with the OPM Quality Management APIs. These must be on your system for your interface to compile and link properly.

Package Name	File Names	Description
GMD_SPEC_PUB	GMDPSPCS.pls, GMDPSPCB.pls	Public Formula Header package that the user defined function calls. The business API can be used for creating, modifying, or deleting a formula header. While creating a formula header, the API also creates Detail and Effectivity associated with this header.
GMD_SPEC_GRP	GMDGSPCS.pls, GMDGSPCB.pls	Group level specifications package containing validation procedures and functions for verifying specification and spec test data.
GMD_SPEC_VRS_PUB	GMDPSVRS.pls, GMDPSVRB.pls	Public level specification validity rules package supplying APIs to create or delete specifications and associated specification tests.
GMD_SPEC_VRS_GRP	GMDGSVRS.pls, GMDGSVRB.pls	Group level specification validity rules package containing validation procedures and functions for verifying specification validity rules data

Package Name	File Names	Description
GMD_SAMPLES_PUB	GMDPSMPS.pls, GMDPSMPB.pls	Public level samples package supplying APIs to create or delete samples and associated entities.
GMD_SAMPLES_GRP	GMDGSMPS.pls, GMDGSMPB.pls	Group level samples package containing validation procedures and functions for verifying samples.
GMD_RESULTS_GRP	GMDGRESS.pls, GMDGRESB.pls	Group level results package containing validation procedures and functions for verifying results.
GMD_RESULTS_PUB	GMDPRESS.pls, GMDPRESB.pls	Public level results package supplying APIs to record results and add tests to a sample.
GMD_RESULTS_GRP	GMDGRESS.pls, GMDGRESB.pls	Group level QC Tests package containing validation procedures and functions for verifying test and results data.

2

Quality Management API Business Objects

To use Quality Management API business objects it is important to understand the relationships of the table structure with all its entities. You must also understand the fundamental API business object interface design before you import quality data structures and manage any errors that arise during these operations.

The following topics are discussed:

- Understanding the General Input Structure
- API Hints
- OPM Quality Specifications APIs
- OPM Quality Specification Validity Rules APIs
- OPM Quality Test APIs
- OPM Quality Samples APIs
- OPM Quality Results APIs

Understanding the General Input Structure

All stored procedure API are called with PL/SQL parameters. Examination of both the x_return_status and x_msg_count indicates the pass or fail status of the call. Standard parameters that are common to all API activities and their details are summarized in the following:

Parameter	Type	IN/OUT	Required	Validation
p_api_version	varchar2	IN	Y	Validates version compatibility. The version sent by the calling function is compared to the internal version of the API and an unexpected error (U) is generated if these do not match.
p_init_msg_list	varchar2	IN	N	Used to specify whether the message list must be initialized on entry to the API. It is an optional parameter, and if not supplied, then it defaults to FND_API.G_FALSE which means that the API does not initialize the message list.
p_commit	varchar2	IN	N	Used to specify whether the API must commit its work before returning to the calling function. If not supplied, then it defaults to FND_API.G_FALSE.
p_called_from_forms	varchar2	IN	N	The default value is Y.
x_return_status	varchar2	OUT	N	Specifies whether the API was successful or failed: S = Successful E = failed due to expected error U= failed due to unexpected error Q = Could not calculate the total input and output quantities
x_msg_count	number	OUT	N	Specifies number of messages added to message list.
x_msg_data	varchar2	OUT	N	Returns the messages in an encoded format. These messages can then be processed by the standard message functions as defined in business object API Coding Standards Document.

API Hints

For performance improvement, NOCOPY hints have been added to the OUT parameters of the APIs. When an API has the same type of parameter defined as IN and OUT, pass in different variables. In addition, check the return status of the API (generally returned through x_return_status parameter) before looking at other OUT variables returned by the API. If the return status is not Success, then you must not use any of the OUT parameters passed back from the API.

For example, the Create_sample API contains p_sample and x_sample:

```
Create_Sample(p_sample GMD_SAMPLES%ROWTYPE,
              x_sample GMD_SAMPLES%ROWTYPE)
```

Therefore, the call can be set up to read:

```
create_sample(p_sample => l_sample
              x_sample => l_sample)
```

In this example, p_sample and x_sample both have the variable l_sample. This gives an incorrect result because both the parameters cannot have the same variable.

You must set the call up so that p_sample and x_sample have different variables:

```
create_sample(p_sample => l_in_sample
              x_sample => l_out_sample)
```

OPM Quality Specifications APIs

A specification defines the tests to be carried out on an item for quality control purposes. Each specification is identified by its name and version; together these form a unique key. The specification references an item and, optionally, a grade. It also has an owner and an owning organization.

The specification owns one or more specification tests specifying the test procedures to be carried out against the item identified in the specification header.

The following topic demonstrates the mechanics of importing data structures for:

- Specification Header
- Specification Detail

A single general input structure is described in the following topic.

Parameter Specification for p_spec

The parameter specification for p_spec is described below. This specification is used for inserts. No validation is applied to the descriptive flexfield segments.

Field/Column	Type	Length	Default	Required	Validation
spec_id	number	variable	N/A	N	Spec_id must be null when a new gmd_specifications row is being created. A valid spec_id must be provided when there is no requirement to create a new gmd_ specifications row and the intention is to reference an existing one in order to add gmd_spec_tests.
spec_name	Varchar2	32	N/A	Y	Spec_name and spec_vers must form a unique key.
spec_vers	number	10	N/A	Y	Positive integer value. Spec_name and spec_vers must form a unique key.
item_id	number	variable	N/A	Y	Must reference a valid record in ic_ item_mst.
grade	varchar2	4	N/A	N	Must reference a valid record in gmd_ grades.
spec_status	number	5	100	N	Value 100 signifies NEW.
owner_orgn_ code	varchar2	4	N/A	N	Valid values from sy_orgn_mst.
owner_id	number	variable	N/A	N	Valid values from sy_orgn_usr.

Field/Column	Type	Length	Default	Required	Validation
sample_inv_ trans_ind	varchar2	1	Null	N	Must be null in a create scenario.
use_ind	varchar2	1	Null	N	Not used.
delete_mark	number	5	Null	Y	Zero.
text_code	number	10	Null	N	Zero.
attribute1	varchar2	240	Null	N	Descriptive Flexfield Segment.
attribute2	varchar2	240	Null	N	Descriptive Flexfield Segment.
attribute3	varchar2	240	Null	N	Descriptive Flexfield Segment.
attribute4	varchar2	240	Null	N	Descriptive Flexfield Segment.
attribute5	varchar2	240	Null	N	Descriptive Flexfield Segment.
attribute6	varchar2	240	Null	N	Descriptive Flexfield Segment.
attribute7	varchar2	240	Null	N	Descriptive Flexfield Segment.
attribute8	varchar2	240	Null	N	Descriptive Flexfield Segment.
attribute9	varchar2	240	Null	N	Descriptive Flexfield Segment.
attribute10	varchar2	240	Null	N	Descriptive Flexfield Segment.
attribute11	varchar2	240	Null	N	Descriptive Flexfield Segment.
attribute12	varchar2	240	Null	N	Descriptive Flexfield Segment.
attribute13	varchar2	240	Null	N	Descriptive Flexfield Segment.
attribute14	varchar2	240	Null	N	Descriptive Flexfield Segment.
attribute15	varchar2	240	Null	N	Descriptive Flexfield Segment.
attribute16	varchar2	240	Null	N	Descriptive Flexfield Segment.
attribute17	varchar2	240	Null	N	Descriptive Flexfield Segment.
attribute18	varchar2	240	Null	N	Descriptive Flexfield Segment.
attribute19	varchar2	240	Null	N	Descriptive Flexfield Segment.
attribute20	varchar2	240	Null	N	Descriptive Flexfield Segment.
attribute21	varchar2	240	Null	N	Descriptive Flexfield Segment.
attribute22	varchar2	240	Null	N	Descriptive Flexfield Segment.
attribute23	varchar2	240	Null	N	Descriptive Flexfield Segment.
attribute24	varchar2	240	Null	N	Descriptive Flexfield Segment.
attribute25	varchar2	240	Null	N	Descriptive Flexfield Segment.

Field/Column	Type	Length	Default	Required	Validation
attribute26	varchar2	240	Null	N	Descriptive Flexfield Segment.
attribute27	varchar2	240	Null	N	Descriptive Flexfield Segment.
attribute28	varchar2	240	Null	N	Descriptive Flexfield Segment.
attribute29	varchar2	240	Null	N	Descriptive Flexfield Segment.
attribute30	varchar2	240	Null	N	Descriptive Flexfield Segment.
attribute_ category	varchar2	30	Null	N	Descriptive Flexfield Segment Category.
creation_date	date	variable	Null	N	Always set to sysdate.
created_by	number	15	Null	N	Always derived from input parameter p_user_name.
last_updated_ by	number	15	Null	N	Always derived from input parameter p_user_name.
last_update_ date	date	variable	Null	N	Always set to sysdate.

Parameter Specification for p_spec_tests_tbl

The parameter specification for p_spec_tests_tbl is described below. This specification is used for inserts. No validation is applied to the descriptive flexfield segments.

Field/Column	Type	Length	Default	Required	Validation
spec_id	number	variable	null	N	Spec_id not required. It is populated with the spec_id from the owning gmd_specifications entity.
test_id	number	variable	N/A	Y	Must reference a valid entry in gmd_ tests.
test_method_ id	number	variable	N/A	Y	Must reference a valid entry in gmd_ test_methods.
seq	number	variable	N/A	Y	Sequence of this test within the specification. Positive integer value. Duplicates not allowed within a single specification.
test_qty	number	variable	N/A	Y	Must fall within the minimum and maximum specified by the test.
test_uom	varchar2	4	N/A	Y	Must reference a valid unit of measure from sy_uoms_mst.

Field/Column	Type	Length	Default	Required	Validation
min_value_num	number	variable	N/A	N	Minimum numeric value for an item to qualify as In-Spec.
target_value_num	number	variable	N/A	N	Numeric target value for the test.
max_value_num	number	variable	N/A	N	Maximum numeric value for an item to qualify as In-Spec.
min_value_char	varchar2	16	N/A	N	Minimum character value for an item to qualify as In-Spec.
target_value_char	varchar2	16	N/A	N	Character target value for the test.
max_value_char	varchar2	16	N/A	N	Maximum character value for an item to qualify as In-Spec.
test_replicate	number	variable	N/A	Y	Number of test repetitions required per sample integer value greater than 0.
check_result_interval	number	variable	N/A	N	Interval between expiration date or failed QC test and follow up action.
out_of_spec_action	varchar2	32	N/A	N	Action required if test fails to meet spec test values. Valid values are 0 to 9, dictating the number of decimal places for target and results.
exp_error_type	varchar2	1	N/A	N	Valid values are N - Number, P - Percentage.
below_spec_min	number	variable	N/A	N	Below minimum value.
above_spec_min	number	variable	N/A	N	Above minimum value.
below_spec_max	number	variable	N/A	N	Below maximum value.
above_spec_max	number	variable	N/A	N	Above maximum value.
below_min_action_code	varchar2	32	N/A	N	Action required if tested sample is below minimum. Must be a valid entry from gmd_actions.
above_min_action_code	varchar2	32	N/A	N	Valid values are 0 to 9, dictating the number of decimal places for target and results.
below_max_action_code	varchar2	32	N/A	N	Action required if tested sample is below maximum. Must be a valid entry from gmd_actions.

Field/Column	Type	Length	Default	Required	Validation
above_max_ action_code	varchar2	32	Null	N	Action required if tested sample is above maximum. Must be a valid entry from gmd_actions.
optional_ind	varchar2	1	Null	N	A value of Y indicates that this is an optional test.
display_ precision	number	2	Null	N	Valid values are 0 to 9, dictating the number of decimal places for target and results.
report_ precision	number	2	Null	N	Valid values are 0 to 9, dictating the number of decimal places for reporting results on reports.
test_priority	varchar2	2	N / A	Y	Valid values are H - High, N - Normal, L - Low.
retest_lot_ expiry_ind	varchar2	1	Null	N	A value of Y indicates that this test is required for a lot that is about to expire.
print_on_coa_ ind	varchar2	1	Null	N	The value Y equals print on Certificate of Analysis.
use_to_ control_step	varchar2	1	Null	N	For future use.
print_spec_ ind	varchar2	1	Null	N	The value Y equals print target, minimum and maximum on quality certificates.
print_result_ ind	varchar2	1	Null	N	The value Y equals print results on quality certificates.
text_code	number	10	Null	N	Zero.
attribute1	varchar2	240	Null	N	Descriptive Flexfield Segment.
attribute2	varchar2	240	Null	N	Descriptive Flexfield Segment.
attribute3	varchar2	240	Null	N	Descriptive Flexfield Segment.
attribute4	varchar2	240	Null	N	Descriptive Flexfield Segment.
attribute5	varchar2	240	Null	N	Descriptive Flexfield Segment.
attribute6	varchar2	240	Null	N	Descriptive Flexfield Segment.
attribute7	varchar2	240	Null	N	Descriptive Flexfield Segment.
attribute8	varchar2	240	Null	N	Descriptive Flexfield Segment.
attribute9	varchar2	240	Null	N	Descriptive Flexfield Segment.
attribute10	varchar2	240	Null	N	Descriptive Flexfield Segment.

Field/Column	Type	Length	Default	Required	Validation
attribute11	varchar2	240	Null	N	Descriptive Flexfield Segment.
attribute12	varchar2	240	Null	N	Descriptive Flexfield Segment.
attribute13	varchar2	240	Null	N	Descriptive Flexfield Segment.
attribute14	varchar2	240	Null	N	Descriptive Flexfield Segment.
attribute15	varchar2	240	Null	N	Descriptive Flexfield Segment.
attribute16	varchar2	240	Null	N	Descriptive Flexfield Segment.
attribute17	varchar2	240	Null	N	Descriptive Flexfield Segment.
attribute18	varchar2	240	Null	N	Descriptive Flexfield Segment.
attribute19	varchar2	240	Null	N	Descriptive Flexfield Segment.
attribute20	varchar2	240	Null	N	Descriptive Flexfield Segment.
attribute21	varchar2	240	Null	N	Descriptive Flexfield Segment.
attribute22	varchar2	240	Null	N	Descriptive Flexfield Segment.
attribute23	varchar2	240	Null	N	Descriptive Flexfield Segment.
attribute24	varchar2	240	Null	N	Descriptive Flexfield Segment.
attribute25	varchar2	240	Null	N	Descriptive Flexfield Segment.
attribute26	varchar2	240	Null	N	Descriptive Flexfield Segment.
attribute27	varchar2	240	Null	N	Descriptive Flexfield Segment.
attribute28	varchar2	240	Null	N	Descriptive Flexfield Segment.
attribute29	varchar2	240	Null	N	Descriptive Flexfield Segment.
attribute30	varchar2	240	Null	N	Descriptive Flexfield Segment.
attribute_ category	varchar2	30	Null	N	Descriptive Flexfield Segment Category.
creation_date	date		Null	N	Always set to sysdate.
created_by	number	15	Null	N	Always derived from input parameter p_user_name.
last_updated_ by	number	15	Null	N	Always derived from input parameter p_user_name.
last_update_ date	date	N/A	Null	N	Always set to sysdate.

Procedure CREATE_SPEC

This procedure lets you:

- insert a specification into GMD_SPECIFICATIONS.
- insert one or more spec tests into GMD_SPEC_TESTS.

All data is validated prior to insert. If an error is encountered, then an error is returned. If the API is able to insert, then a status of success is returned.

Procedure DELETE_SPEC

This procedure lets you delete mark a row in GMD_SPECIFICATIONS indicating that it is logically deleted.

This is only permitted where:

- The row is not already delete marked.
- The spec_status permits updates.

Procedure DELETE_SPEC_TESTS

This procedure lets you physically delete a row in GMD_SPEC_TESTS.

This is only permitted where:

- The header GMD_SPECIFICATIONS row is not already delete marked.
- The header GMD_SPECIFICATIONS row has a spec_status which permits updates.

OPM Quality Specification Validity Rules APIs

The circumstances under which a specification is used are determined by its validity rules. Specification validity rules (SVRs) fall into the following categories that dictate the usage type:

- Inventory
- WIP
- Supplier
- Customer

A single specification can have multiple validity rules both across and within the four categories. The selection of a specification is controlled by the criteria particular to the validity rules. These can be of a general or specific nature.

Parameter p_inventory_spec_vrs_tbl

The parameter specification for p_inventory_spec_vrs_tbl is described below. This specification is used for inserts. No validation is applied to the descriptive flexfield segments.

Field/Column	Type	Length	Default	Required	Validation
spec_vr_id	number	variable	N/A	N	Must be null. A unique spec_vr_id is generated by the insert processing.
spec_id	number	variable	N/A	N	Must reference a valid, non-delete marked entry in gmd_specifications.
orgn_code	Varchar2	4	null	N	Must reference a valid entry in sy_orgn_mst.
lot_id	number	variable	null	N	Must reference a valid entry in ic_lots_mst associated with the item in the owning gmd_specifications.
lot_no	varchar2	32	null	N	Must reference a valid entry in ic_lots_mst associated with the item in the owning gmd_specifications.
sublot_no	varchar2	32	null	N	Must reference a valid entry in ic_lots_mst associated with the item in the owning gmd_specifications. Only permitted where the item is sublot controled.
whse_code	varchar2	4	null	N	Must reference a valid entry in ic_whse_mst.

Field/Column	Type	Length	Default	Required	Validation
location	varchar2	16	N/A	N	Valid values are derived from sy_orgn_mst.
use_ind	varchar2	1	N/A	N	Not used.
spec_vr_status	number	variable	N/A	Y	Must be 100 (New) in a create scenario.
start_date	date	N/A	N/A	Y	Valid date.
end_date	date	variable	null	N	Valid date. The end_date must be greater than the start_date.
sampling_plan_id	number	variable	null	N	Must reference a valid entry in gmd_sampling_plans.
sample_inv_trans_ind	varchar2	1	null	N	The value Y equals Transact Inventory for Sample.
control_lot_attrib_ind	varchar2	1	null	N	The value Y equals change lot status based on sample disposition.
lot_optional_on_sample	varchar2	1	null	N	The value Y equals lot optional for sample.
out_of_spec_lot_status	varchar2	1	null	N	Must reference a valid entry in ic_lots_sts.
in_spec_lot_status	varchar2	1	null	N	Must reference a valid entry in ic_lots_sts.
control_batch_step_ind	varchar2	1	null	N	The value Y equals control batch step status.
coa_type	varchar2	1	null	N	Valid values are A = Certificate of Analysis, C= Certificate of Conformance.
coa_at_ship_ind	varchar2	1	null	N	The value Y equals At shipment.
coa_at_invoice_ind	varchar2	1	null	N	The value Y equals At invoice.
coa_req_from_supl_ind	varchar2	1	null	N	The value Y equals From Supplier.
delete_mark	number	5	null	Y	Zero.
text_code	number	10	null	N/A	Zero.
attribute1	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute2	varchar2	240	null	N	Descriptive Flexfield Segment.

Field/Column	Type	Length	Default	Required	Validation
attribute3	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute4	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute5	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute6	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute7	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute8	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute9	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute10	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute11	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute12	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute13	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute14	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute15	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute16	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute17	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute18	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute19	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute20	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute21	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute22	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute23	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute24	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute25	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute26	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute27	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute28	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute29	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute30	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute_ category	varchar2	30	null	N	Descriptive Flexfield Segment Category.

Field/Column	Type	Length	Default	Required	Validation
creation_date	date		null	N	Always set to sysdate.
created_by	number	15	null	N	Always derived from input parameter p_user_name.
last_updated_by	number	15	null	N	Always derived from input parameter p_user_name.
last_update_date	date	N/A	null	N	Always set to sysdate.

PARAMETER p_wip_spec_vrs_tbl

The parameter specification for p_wip_spec_vrs_tbl is described below. This specification is used for inserts. No validation is applied to the descriptive flexfield segments.

Field/Column	Type	Length	Default	Required	Validation
spec_vr_id	number	variable	N/A	N	Must be null. A unique spec_vr_id is generated by the insert processing.
spec_id	number	variable	N/A	N	Must reference a valid, non delete marked entry in gmd_specifications.
orgn_code	Varchar2	4	null	N	Must reference a valid entry in sy_orgn_mst.
batch_id	number	variable	null	N	Must reference a valid entry in gme_batch_header. The batch must belong to orgn_code.
recipe_id	number	variable	null	N	Must reference a valid entry in gmd_recipes. Recipe must contain the item associated with the item in the owning gmd_specifications.
recipe_no	varchar2	16	null	N	Must reference one or more valid recipes in gmd_recipes.
recipe_version	number	5	null	N	The recipe_no must be present. Must reference a valid recipe_version in gmd_recipes compatible with the recipe_no.
formula_id	number	variable	null	N	Must reference a valid row in fm_form_mst.
formulaline_id	number	variable	null	N	The formula_id must be present. Must reference a valid row in fm_matl_dtl.

Field/Column	Type	Length	Default	Required	Validation
formula_no	varchar2	16	null	N	Must reference one or more valid formula in fm_form_mst.
formula_vers	number	5	null	N	The formula_no must be present. Must reference a valid formula_vers in fm_form_mst compatible with the formula_no.
routing_id	number	variable	null	N	Must reference a valid row in gmd_ routings.
routing_no	varchar2	16	null	N	Must reference one or more valid routings in gmd_routings.
routing_vers	number	5	null	N	The routing_no must be present. Must reference a valid routing_vers in gmd_routings compatible with the routing_no.
step_id	number	variable	null	N	Must reference a valid row in fm_ rout_dtl.
step_no	number	variable	null	N	Must reference a valid routingstep_ no in fm_rout_dtl if step_id is provided. Must reference a valid batchstep_no in gme_batch_steps if the batch_id is provided.
oprn_id	number	variable	null	N	Must reference a valid routingstep_ no in fm_rout_dtl if step_id is provided. Must reference a valid batchstep_no in gme_batch_steps if the batch_id is provided.
oprn_no	varchar2	16	null	N	Must reference one or more valid operations in gmd_operations.
oprn_vers	number	5	null	N	The oprn_no must be present. Must reference a valid oprn_vers in gmd_ operations compatible with the oprn_no.
charge	number	N/A	null	N/A	Valid value is a positive integer greater than 0.
spec_vr_ status	number	variable	100	Y	Value 100 equals NEW.
start_date	date	N/A	N/A	Y	Valid date.
end_date	date	variable	null	N	Valid date. The end_date must be greater than the start_date.
sampling_ plan_id	number	variable	null	N	Must reference a valid entry in gmd_sampling_plans.

Field/Column	Type	Length	Default	Required	Validation
sample_inv_ trans_ind	varchar2	1	null	N	The value Y equals Transact Inventory for Sample.
control_lot_ attrib_ind	varchar2	1	null	N	The value Y equals change lot status based on sample disposition.
lot_optional_ on_sample	varchar2	1	null	N	The value Y equals lot optional for sample.
out_of_spec_ lot_status	varchar2	1	null	N	Must reference a valid entry in ic_ lots_sts.
in_spec_lot_ status	varchar2	1	null	N	Must reference a valid entry in ic_ lots_sts.
control_ batch_step_ ind	varchar2	1	null	N	The value Y equals control batch step status.
coa_type	varchar2	1	null	N	Valid values are A = Certificate of Analysis, C= Certificate of Conformance.
coa_at_ship_ ind	varchar2	1	null	N	The value Y equals At shipment.
coa_at_ invoice_ind	varchar2	1	null	N	The value Y equals At invoice.
coa_req_ from_supl_ ind	varchar2	1	null	N	The value Y equals From Supplier.
delete_mark	number	5	null	Y	Zero.
text_code	number	10	null	N	Zero.
attribute1	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute2	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute3	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute4	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute5	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute6	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute7	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute8	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute9	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute10	varchar2	240	null	N	Descriptive Flexfield Segment.

Field/Column	Type	Length	Default	Required	Validation
attribute11	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute12	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute13	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute14	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute15	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute16	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute17	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute18	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute19	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute20	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute21	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute22	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute23	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute24	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute25	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute26	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute27	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute28	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute29	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute30	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute_ category	varchar2	30	null	N	Descriptive Flexfield Segment Category.
creation_date	date	N / A	null	N	Always set to sysdate.
created_by	number	15	null	N	Always derived from input parameter p_user_name.
last_updated_ by	number	15	null	N	Always derived from input parameter p_user_name.
last_update_ date	date	N / A	null	N	Always set to sysdate.

PARAMETER p_customer_spec_vrs_tbl

The parameter specification for p_customer_spec_vrs_tbl is described below. This specification is used for inserts. No validation is applied to the descriptive flexfield segments.

Field/Column	Type	Length	Default	Required	Validation
spec_vr_id	number	variable	N/A	N	Must be null. A unique spec_vr_id is generated by the insert processing.
spec_id	number	variable	N/A	Y	Must reference a valid, non-delete marked entry in gmd_specifications.
orgn_code	Varchar2	4	null	N	Must reference a valid entry in sy_orgn_mst.
cust_id	number	variable	null	Y	Must reference a valid cust_account_id in hz_cust_accounts_all.
order_id	number	variable	null	N	Must reference a valid header_id in oe_order_headers_all.
order_line	number	variable	null	N	Must reference a valid line_number in or_order_lines_all.
org_id	number	variable	null	N	Must reference a valid organization_id from hr_operating_units. The operating unit must be mapped to OPM through a fiscal policy.
spec_vr_status	number	variable	100	Y	Value 100 equals NEW.
start_date	date	N/A	N/A	Y	Valid date.
end_date	date	variable	null	N	Valid date. The end_date must be greater than the start_date.
sampling_plan_id	number	variable	null	N	Must reference a valid entry in gmd_sampling_plans.
sample_inv_trans_ind	varchar2	1	null	N	The value Y equals Transact Inventory for Sample.
control_lot_attrib_ind	varchar2	1	null	N	The value Y equals change lot status based on sample disposition.
lot_optional_on_sample	varchar2	1	null	N	The value Y equals lot optional for sample.
out_of_spec_lot_status	varchar2	1	null	N	Must reference a valid entry in ic_lots_sts.
in_spec_lot_status	varchar2	1	null	N	Must reference a valid entry in ic_lots_sts.

Field/Column	Type	Length	Default	Required	Validation
control_ batch_step_ ind	varchar2	1	null	N	The value Y equals control batch step status.
coa_type	varchar2	1	null	N	Valid values are A = Certificate of Analysis, C= Certificate of Conformance.
coa_at_ship_ ind	varchar2	1	null	N	The value Y equals At shipment.
coa_at_ invoice_ind	varchar2	1	null	N	The value Y equals At invoice.
coa_req_ from_supl_ ind	varchar2	1	null	N	The value Y equals From Supplier.
delete_mark	number	5	null	Y	Zero.
text_code	number	10	null	N	Zero.
attribute1	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute2	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute3	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute4	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute5	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute6	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute7	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute8	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute9	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute10	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute11	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute12	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute13	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute14	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute15	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute16	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute17	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute18	varchar2	240	null	N	Descriptive Flexfield Segment.

Field/Column	Type	Length	Default	Required	Validation
attribute19	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute20	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute21	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute22	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute23	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute24	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute25	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute26	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute27	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute28	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute29	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute30	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute_ category	varchar2	30	null	N	Descriptive Flexfield Segment Category.
creation_date	date	N/A	sysdate	N	Always set to sysdate.
created_by	number	15	null	N	Always derived from input parameter p_user_name.
last_updated_ by	number	15	null	N	Always derived from input parameter p_user_name.
last_update_ date	date	N/A	sysdate	N	Always set to sysdate.

PARAMETER p_supplier_spec_vrs_tbl

The parameter specification for p_supplier_spec_vrs_tbl is described below. This specification is used for inserts. No validation is applied to the descriptive flexfield segments.

Field/Column	Type	Length	Default	Required	Validation
spec_vr_id	number	variable	N/A	N	Must be null. A unique spec_vr_id is generated by the insert processing.
spec_id	number	variable	N/A	Y	Must reference a valid, non delete marked entry in gmd_specifications.

Field/Column	Type	Length	Default	Required	Validation
orgn_code	Varchar2	4	null	N	Must reference a valid entry in sy_orgn_mst.
supplier_id	number	variable	null	N	Must reference a valid vendor_id in po_vendors.
supplier_site_id	number	variable	null	N	Must relate to supplier above. Must reference a valid vendor_site_id in po_vendor_sites_all.
po_header_id	number	variable	null	N	Must reference a valid po_header_id in po_headers_all.
po_line_id	number	variable	null	N	Must relate to po_header_id above. Must reference a valid po_line_id from po_lines_all.
spec_vr_status	number	variable	100	Y	Value 100 equals NEW.
start_date	date	variable	N/A	Y	Valid date.
end_date	date	variable	null	N	Valid date. The end_date must be greater than the start_date.
sampling_plan_id	number	variable	null	N	Must reference a valid entry in gmd_sampling_plans.
sample_inv_trans_ind	varchar2	1	null	N	The value Y equals Transact Inventory for Sample.
control_lot_attrib_ind	varchar2	1	null	N	The value Y equals change lot status based on sample disposition.
lot_optional_on_sample	varchar2	1	null	N	The value Y equals lot optional for sample.
out_of_spec_lot_status	varchar2	1	null	N	Must reference a valid entry in ic_lots_sts.
in_spec_lot_status	varchar2	1	null	N	Must reference a valid entry in ic_lots_sts.
control_batch_step_ind	varchar2	1	null	N	The value Y equals control batch step status.
coa_type	varchar2	1	null	N	Valid values are A = Certificate of Analysis, C= Certificate of Conformance.
coa_at_ship_ind	varchar2	1	null	N	The value Y equals At shipment.
coa_at_invoice_ind	varchar2	1	null	N	The value Y equals At invoice.

Field/Column	Type	Length	Default	Required	Validation
coa_req_ from_supl_ ind	varchar2	1	null	N	The value Y equals From Supplier.
delete_mark	number	5	null	Y	Zero.
text_code	number	10	null	N	Zero.
attribute1	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute2	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute3	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute4	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute5	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute6	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute7	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute8	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute9	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute10	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute11	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute12	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute13	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute14	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute15	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute16	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute17	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute18	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute19	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute20	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute21	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute22	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute23	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute24	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute25	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute26	varchar2	240	null	N	Descriptive Flexfield Segment.

Field/Column	Type	Length	Default	Required	Validation
attribute27	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute28	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute29	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute30	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute_ category	varchar2	30	null	N	Descriptive Flexfield Segment Category.
creation_date	date	N/A	sysdate	N	Always set to sysdate.
created_by	number	15	null	N	Always derived from input parameter p_user_name.
last_updated_ by	number	15	null	N	Always derived from input parameter p_user_name.
last_update_ date	date	N/A	sysdate	N	Always set to sysdate.

Procedure CREATE_INVENTORY_SPEC_VRS

This procedure lets you insert one or more rows into GMD_INVENTORY_SPEC_ VRS.

Procedure CREATE_WIP_SPEC_VRS

This procedure lets you insert one or more rows into GMD_WIP_SPEC_VRS.

Procedure CREATE_CUSTOMER_SPEC_VRS

This procedure lets you insert one or more rows into GMD_CUSTOMER_SPEC_ VRS.

Procedure CREATE_SUPPLIER_SPEC_VRS

This procedure lets you insert one or more rows into GMD_SUPPLIER_SPEC_VRS.

Procedure DELETE_INVENTORY_SPEC_VRS

This procedure lets you logically delete one or more rows in GMD_INVENTORY_ SPEC_VRS.

This is permitted where:

- The header GMD_SPECIFICATIONS row is not already delete marked.

- The targeted row in GMD_INVENTORY_SPEC_VRS is not already delete marked.

Procedure DELETE_WIP_SPEC_VRS

This procedure lets you logically delete one or more rows in GMD_WIP_SPEC_VRS.

This is permitted where:

- The header GMD_SPECIFICATIONS row is not already delete marked.
- The targeted row in GMD_WIP_SPEC_VRS is not already delete marked.

Procedure DELETE_CUSTOMER_SPEC_VRS

This procedure lets you logically delete one or more rows in GMD_CUSTOMER_SPEC_VRS.

This is permitted where:

- The header GMD_SPECIFICATIONS row is not already delete marked.
- The targeted row in GMD_CUSTOMER_SPEC_VRS is not already delete marked.

Procedure DELETE_SUPPLIER_SPEC_VRS

This procedure lets you logically delete one or more rows in GMD_SUPPLIER_SPEC_VRS.

This is permitted where:

- The header GMD_SPECIFICATIONS row is not already delete marked.
- The targeted row in GMD_SUPPLIER_SPEC_VRS is not already delete marked.

OPM Quality Test APIs

A Quality Test is required when a sample is taken for a product. The test must have a description, type, and code. The type is used to determine what values can be recorded for this test. The values entered determine what values can be recorded for this test. Customer values can also be recorded.

The QC CREATE_ TEST API lets you create a new test, test_values, and customer specific tests. It also lets you create values or customer tests for a test that already exists.

The QC TEST API also supports the deletion of either a test header record, details values, or customer specific tests. The delete APIs are:

- DELETE_TEST_HEADERS - This deletes a test header record. Specify the test_ code or the unique test_id in the test_record being passed. This logically marks the record as deleted.
- DELETE_TEST_VALUES - This accepts one or more test values that must be deleted for a test. Specify the test_id in the record being passed, as well as the unique test value id. This physically deletes the records.
- DELETE_CUSTOMER_TESTS- This accepts one or more customer test values that must be deleted for a test. You must specify the test_id in the record being passed, as well as the unique customer id. This physically deletes the records.

You must first delete the test header record before you can delete the test values or customer tests.

PARAMETER p_qc_tests_rec

The parameter specification for p_qc_tests_rec is described below. This specification is used for inserts. No validation is applied to the descriptive flexfield segments.

Field/Column	Type	Length	Default	Required	Validation
test_id	number	variable	N / A	N	Must be null if the requirement is to create a new row in gmd_qc_tests. A unique test_id is generated by the insert processing. Or, if the child records are being added to an exisiting gmd_qc_tests row, then the test_id must reference a valid, non delete marked row.
test_code	varchar2	80	N / A	Y	A code to uniquely identify the test.
test_desc	varchar2	80	N / A	Y	Free format text description.

Field/Column	Type	Length	Default	Required	Validation
test_method_id	number	variable	N/A	Y	Test method ID.
test_oprn_line_id	number	variable	null	N	For future use.
test_provider_code	varchar2	8	null	N	For future use.
test_class	varchar2	8	null	N	Test class.
test_type	varchar2	1	N/A	Y	Test class.
test_unit	varchar2	4	null	N	Must reference a valid qcunit_code from gmd_units.
min_value_num	number	variable	null	N	Minimum value number.
max_value_num	number	variable	null	N	The maximum value number is required when test_type is equal to N or E.
exp_error_type	varchar2	1	null	N	Valid values are N - number, P - percent.
below_spec_min	number	variable	null	N	Only valid in conjunction with exp_error_type.
above_spec_min	number	variable	null	N	Only valid in conjunction with exp_error_type.
below_spec_max	number	variable	null	N	Only valid in conjunction with exp_error_type.
above_spec_max	number	variable	null	N	Only valid in conjunction with exp_error_type.
below_min_action_code	varchar2	32	null	N	Only valid if below_spec_min is populated. Must reference a valid action_code from gmd_actions.
above_min_action_code	varchar2	32	null	N	Only valid if above_spec_min is populated. Must reference a valid action_code from gmd_actions.
below_max_action_code	varchar2	32	null	N	Only valid if below_spec_max is populated. Must reference a valid action_code from gmd_actions.
above_max_action_code	varchar2	32	null	N	Only valid if above_spec_max is populated. Must reference a valid action_code from gmd_actions.
expression	varchar2	1000	null	N	Required where test_type is equal to E (expression).

Field/Column	Type	Length	Default	Required	Validation
display_ precision	number	2	null	N	Must be in range 0 to 9.
report_ precision	number	2	null	N	Must be in range 0 to 9.
priority	varchar2	1	null	N	Valid values are L - low, N - normal, H - high.
test_oprn_id	number	variable	null	N	For future use.
delete_mark	number	5	zero	Y	Zero.
text_code	number	10	null	N	Zero.
attribute1	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute2	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute3	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute4	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute5	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute6	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute7	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute8	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute9	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute10	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute11	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute12	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute13	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute14	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute15	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute16	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute17	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute18	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute19	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute20	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute21	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute22	varchar2	240	null	N	Descriptive Flexfield Segment.

Field/Column	Type	Length	Default	Required	Validation
attribute23	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute24	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute25	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute26	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute27	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute28	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute29	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute30	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute_ category	varchar2	30	null	N	Descriptive Flexfield Segment Category.
creation_date	date	N/A	null	N	Always set to sysdate.
created_by	number	15	null	N	Always derived from input parameter p_user_name.
last_updated_ by	number	15	null	N	Always derived from input parameter p_user_name.
last_update_ date	date	N/A	null	N	Always set to sysdate.

PARAMETER p_qc_test_values_tbl

The parameter specification for p_qc_test_values_tbl is described below. This specification is used for inserts. No validation is applied to the descriptive flexfield segments.

Field/Column	Type	Length	Default	Required	Validation
test_value_id	number	variable	N/A	N	Must be null when a new test value is being created. A unique test_ value_id is generated by the insert processing.
test_id	number	variable	N/A	N	Must identify the parent gmd_qc_ tests where this already exists. If the parent gmd_qc_tests is being created in the same API call, then this must be null.
min_num	number	variable	null	N	Only valid where header gmd_qc_ test.test_type ius equal to L (numeric range with label).

Field/Column	Type	Length	Default	Required	Validation
max_num	number	variable	null	N	Only valid in conjunction with min_num.
display_label_numeric_range	varchar2	240	null	N	Only valid in conjunction with min_num and max_num.
test_value_desc	varchar2	240	null	N	Free format text. Must be populated in conjunction with value_char.
value_char	varchar2	16	null	N	Only valid where header gmd_qc_test.test_type is equal to T (text range), V (list of values).
text_range_seq	number	variable	null	N	Only required where header gmd_qc_test.test_type is equal to T (text range). Duplicate sequence numbers are not permitted within a set of test values.
expression_ref_test_id	number	variable	null	N	Only valid where owning gmd_qc_tests. test_type is equal to E. Must identify a valid gmd_qc_tests.test_id used as a component in the expression column of the owning gm_qc_tests.
text_code	number	10	null	N	Zero.
attribute1	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute2	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute3	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute4	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute5	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute6	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute7	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute8	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute9	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute10	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute11	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute12	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute13	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute14	varchar2	240	null	N	Descriptive Flexfield Segment.

Field/Column	Type	Length	Default	Required	Validation
attribute15	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute16	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute17	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute18	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute19	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute20	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute21	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute22	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute23	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute24	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute25	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute26	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute27	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute28	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute29	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute30	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute_ category	varchar2	30	null	N	Descriptive Flexfield Segment Category.
creation_date	date	N/A	null	N	Always set to sysdate.
created_by	number	15	null	N	Always derived from input parameter p_user_name.
last_updated_ by	number	15	null	N	Always derived from input parameter p_user_name.
last_update_ date	date	N/A	null	N	Always set to sysdate.

PARAMETER p_qc_cust_tests_tbl

The parameter specification for p_qc_cust_tests_tbl is described below. This specification is used for inserts. No validation is applied to the descriptive flexfield segments.

Field/Column	Type	Length	Default	Required	Validation
test_id	number	variable	N/A	N	Must identify the parent gmd_qc_ tests where this already exists. If the parent gmd_qc_tests is being created in the same API call, then this must be null.
cust_id	number	variable	N/A	Y	Must identify a valid cust_account_ id in hz_cust_accounts_all.
report_ precision	number	2	null	N	Must be in the range 0 to 9. Must be less than or equal to owning gmd_ qc_tests.report_precision.
cust_test_ display	varchar2	240	null	N	Free format text for the customer display
text_code	number	10	null	N	Zero.
creation_date	date	N/A	null	N	Always set to sysdate.
created_by	number	15	null	N	Always derived from input parameter p_user_name.
last_updated_ by	number	15	null	N	Always derived from input parameter p_user_name.
last_update_ date	date	N/A	null	N	Always set to sysdate.

Procedure CREATE_TESTS

This procedure is used to create:

- a test header
- test values
- customer test records

It can also be used to create test values or customer tests for a test that already exists. This routine determines what entities are required for creation based on the input parameters passed.

Procedure DELETE_TEST_HEADERS

This procedure is used to logically delete (set delete_mark=1) the entity test header - GMD_QC_TESTS.

Procedure DELETE_TEST_VALUES

This procedure lets you physically delete one or more rows in GMD_QC_TEST_VALUES.

This is permitted where:

- The header GMD_QC_TESTS row is not delete marked.
- All targeted rows in GMD_QC_TEST_VALUES belong to the same header (GMD_QC_TESTS).

Procedure DELETE_CUSTOMER_TESTS

This procedure lets you physically delete one or more rows in GMD_CUSTOMER_TESTS.

This is permitted where:

- The header GMD_QC_TESTS row is not delete marked.
- All targeted rows in GMD_CUSTOMER_TESTS belong to the same header (GMD_QC_TESTS).

OPM Quality Samples APIs

A sample can be drawn in response to the creation of a sampling event or simply on a standalone basis. A sampling event can arise in one of the following categories:

- Inventory
- WIP
- Supplier
- Customer

The sampling event documents the need for a sample to be taken. The sample is a representative quantity of material which undergoes analysis to record quality characteristics.

Specification validity rules dictate when a sampling event is generated. They can exist in the following areas:

- Inventory
- WIP
- Supplier
- Customer

The validity rules automate the decision making as to when a sample must be taken. When a business event meets the criteria laid down in a rule, a sampling event is created. This owns the samples which are taken.

When a sample must be taken on a nonstandard basis without heed to validity rules, a free-standing sampling event is the owner of one or more samples.

The Samples API offers to:

- optionally create a sampling event relating to a specification.
- optionally create a free-standing sampling event which is not associated with a specification validity rule.
- create a sample belonging to a newly created or existing sampling event.

The following public APIs are provided in package GMD_SAMPLES_PUB to support the creation and deletion of the entities shown above.

- CREATE_SAMPLES - provides a mechanism to create the entities
- DELETE_SAMPLES - supports the logical deletion of GMD_SAMPLES

PARAMETER p_qc_samples_rec

The parameter specification for p_qc_samples_rec is described below. This specification is used for inserts. No validation is applied to the descriptive flexfield segments.

Field/Column	Type	Length	Default	Required	Validation
sample_id	number	variable	N/A	N	Must be null. A unique sample_id is generated by the insert processing.
sampling_ event_id	number	variable	N/A	N	Where supplied, this must reference a valid, non delete marked entry in gmd_sampling_ events. Where a null value is supplied, it assumes that the gmd_ sampling_events row must be created.
sample_no	varchar2	(80)	N/A	N	Unique identifier for the sample. Automatically generated where document numbering is in place for document type SMPL. Otherwise, the unique identifier must be supplied.
sample_desc	varchar2	(80)	null	N	Free format description.
type	varchar2	1	null	N	For future use.
qc_lab_orgn_ code	varchar2	4	null	N	Lab organization where the sample is tested. Must reference a valid orgn_code in sy_orgn_mst.
item_id	number	variable	null	N	Must reference a valid entry in ic_ item_mst.
whse_code	varchar2	4	null	N	Must reference a valid entry in ic_ whse_mst.
location	varchar2	16	null	N	Must reference a valid location in ic_loct_mst.
expiration_ date	date	variable	null	N	Valid date.
lot_id	number	variable	null	N	Item must be lot controlled. Must reference a valid lot_id in ic_lots_ mst.
lot_no	varchar2	32	null	N	Must reference a valid lot_no in ic_ lots_mst.
sublot_no	varchar2	32	null	N	Must reference a valid sublot_no in ic_lots_mst.

Field/Column	Type	Length	Default	Required	Validation
batch_id	number	variable	null	N	Must reference a valid batch_id in gme_batch_header.
recipe_id	number	variable	null	N	Must reference a valid recipe_id in gmd_recipes. The recipe must relate to a formula containing the item_id.
formula_id	number	variable	null	N	Must reference a valid fomula_id in fm_form_mst.
formulaline_ id	number	variable	null	N	Must reference a valid entry in fm_matl_dtl which relates to the item_id.
routing_id	number	variable	null	N	Must reference a valid routing_id in fm_rout_mst.
step_id	number	variable	null	N	Must reference a valid routingstep_id in fm_rout_dtl.
step_no	number	variable	null	N	Must reference a valid routingstep_no in fm_rout_dtl.
oprn_id	number	variable	null	N	Must reference a valid oprn_id on gmd_operations.
charge	number	variable	null	N	Integer value.
cust_id	number	variable	null	N	Must reference a valid cust_ account_id in hz_cust_accounts_ all.
order_id	number	variable	null	N	Must reference a valid header_id in oe_order_headers_all.
order_line_id	number	variable	null	N	Must reference a valid line_id in oe_order_lines_all containing the item.
ship_to_site_ id	number	variable	null	N	Must reference a valid site_use_id in hz_cust_site_uses_all.
org_id	number	variable	null	N	Must reference a valid org_id in gl_plcy_mst.
supplier_id	number	variable	null	N	Must reference a valid, enabled vendor_id in po_vendors.
sample_qty	number	variable	N / A	Y	Sample quantity.
sample_uom	varchar2	1	N / A	Y	Must reference a valid um_code in sy_uoms_mst. Conversion must exist between this UOM and the item UOM when they are different.

Field/Column	Type	Length	Default	Required	Validation
source	number	variable	N/A	Y	Identifies the source of the sample. Valid values are I - Inventory, W - Wip, C - Customer, S - Supplier.
sampler_id	number	variable	null	Y	Valid user_id from fnd_user.
date_drawn	date	variable	sysdate	N	Valid date.
source_ comment	varchar2	80	N/A	N	Free format text.
storage_whse	varchar2	4	N/A	N	Where the sample is held. Must reference a valid entry in ic_whse_ mst.
storage_ location	varchar2	16	N/A	N	Where the sample is held. Must reference a valid entry in ic_loct_ mst where the item implements validated location control.
external_id	varchar2	32	N/A	N	For informational purposes only. You can enter an alternate or cross-reference code for the sample. For example, if the sample is recorded on another system, this can act as a cross reference.
sample_ approver_id	varchar2	30	N/A	N	Valid user_id from fnd_user.
inv_approver_ id	varchar2	30	N/A	N	Valid user_id from fnd_user.
priority	varchar2	2	N/A	N	Valid values are 8H - High, 5N - Normal, 1L - Low.
sample_inv_ trans_ind	varchar2	1	null	N	Valid values are Y - Yes, N - No.
po_header_id	number	variable	null	N	Must reference a valid po_header_ id in po_headers_all.
po_line_id	number	variable	null	N	Must reference a valid po_line_id in po_lines_all. PO line must reference the item.
receipt_id	number	variable	null	N	For future use.
receipt_line_ id	number	variable	null	N	For future use.
supplier_lot_ no	number	variable	null	N	For future use.

Field/Column	Type	Length	Default	Required	Validation
supplier_site_id	varchar2	N/A	null	N/A	Must relate to the supplier_id. Must reference a valid vendor_site_id in po_vendor_sites_all
lot_retest_ind	varchar2	1	null	N	Valid values are Y - Yes, N - No.
orgn_code	varchar2	4	N/A	Y	Must reference a valid orgn_code in sy_orgn_mst. Used in conjunction with sample_no for document numbering.
sample_disposition	varchar2	3	null	Y	Valid values are 0RT - Retain, 1P - Pending, 2I - In Progress, 4A - Accept, 5AV - Accept with variance, 6RJ - Reject.
delete_mark	number	5	null	Y	Zero.
text_code	number	10	null	N	Zero.
attribute1	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute2	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute3	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute4	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute5	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute6	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute7	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute8	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute9	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute10	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute11	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute12	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute13	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute14	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute15	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute16	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute17	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute18	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute19	varchar2	240	null	N	Descriptive Flexfield Segment.

Field/Column	Type	Length	Default	Required	Validation
attribute20	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute21	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute22	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute23	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute24	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute25	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute26	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute27	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute28	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute29	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute30	varchar2	240	null	N	Descriptive Flexfield Segment.
attribute_ category	varchar2	30	null	N	Descriptive Flexfield Segment Category.
creation_date	date	N/A	null	N	Always set to sysdate.
created_by	number	15	null	N	Always derived from input parameter p_user_name.
last_updated_ by	number	15	null	N	Always derived from input parameter p_user_name.
last_update_ date	date	N/A	null	N	Always set to sysdate.

Procedure CREATE_SAMPLES

This procedures lets you:

- insert a row into GMD_SAMPLES.
- Associate the sample_row GMD_SAMPLES with an existing sampling event GMD_SAMPLING_EVENT, or insert a new GMD_SAMPLING_EVENT. Every sample belongs to a sampling event. Where a sampling_event_id is supplied, it is assumed that the sample is being associated with this. Where no sampling_ event_id is supplied, a new row is created. Therefore, parameter p_find_ matching_spec is examined. This determines whether the sampling event should be free-standing or associated with a specification. If the parameter is set to Y, then the specification validity rules are examined to find the specification with the closest match to the supplied input data. They can be input as follows:

- insert a row into GMD_SAMPLE_SPEC_DISP. This is necessary to record the disposition of the current instance of the sampling plan. It indicates whether all the requirements for the sampling plan have been met. For example, if the sampling plan requires three lot samples, then the disposition is changed to COMPLETE when all three samples are created.
- insert a row into GMD_EVENT_SPEC_DISP. This is necessary to record the disposition of the current sample in terms of the results for all tests prescribed by the specification. Test results may be considered in specification or out of specification.
- insert a result set, which is one or more rows in GMD_RESULTS. One result row is inserted for each replicate of each test in the associated specification. For example, if a test has a replicate number of two, then two result rows are inserted into the table. Each row ID acts as a skeleton entry put in place for recording actual test results.
- insert a row into GMD_SPEC_RESULTS. This is a skeleton entry put in place for recording the results of testing the sample. When a sample is new, the relationship between gmd_results and gmd_spec_results is one-to-one.

All data is validated prior to insert.

Procedure DELETE_SAMPLE

This procedure lets you logically delete one or more rows in GMD_SAMPLES. This is permitted where the targeted row in GMD_SAMPLES is not already delete marked.

OPM Quality Results APIs

Prior to documenting results, create a specification, a validity rule, and a sample. The sample has a set of tests against which results must be recorded. Therefore, when the sample is created, a result set is also established.

The RECORD_RESULTS API lets actual results be recorded for a particular test. The result row already exists since it is created with the sample, but the detail of the test result is now put in place.

The ADD_TESTS_TO_SAMPLE lets the result set for a sample be extended. New tests or replications of tests can be referenced.

PARAMETER p_results_rec

The parameter specification for p_results_rec is described below. This specification is used for inserts. No validation is applied to the descriptive flexfield segments.

Field/Column	Type	Length	Default	Required	Validation
test_replicate_cnt	number	variable	N/A	Y	Used in conjunction with sample and test identifiers to determine the required row in gmd_results.
result_value_num	number	variable	N/A	Y	Mandatory where test_type is equal to N- numeric range, E- expression, L- numeric range with label.
result_value_char	varchar2	80	N/A	Y	Mandatory where test_type is equal to T - text range, V - list of values, U- unvalidated.
result_date	date	N/A	sysdate	N	Result date.
sample_no	varchar2	80	N/A	Y	In conjunction with orgn_code, must reference a valid sample in gmd_samples.
orgn_code	varchar2	4	N/A	Y	In conjunction with sample_no, must reference a valid sample in gmd_samples.
test_code	varchar2	80	N/A	Y	Test code.
spec_name	varchar2	80	N/A	Y	In conjunction with spec_vers, must reference a valid row in gmd_specifications.
spec_vers	number	10	N/A	Y	In conjunction with spec_name, must reference a valid row in gmd_specifications.

Procedure RECORD_RESULTS

This procedure can be used to record actual test results. It modifies the appropriate row in GMD_RESULTS which is put in place when the result set is created for a particular sample. The input result is analyzed to determine if it is considered in specification or out of specification and this information is used to update GMD_SPEC_RESULTS.in_spec_ind.

Procedure ADD_TESTS_TO_SAMPLES

This procedure lets tests be added to an existing sample. For each test referenced, rows are created in GMD_RESULTS and GMD_SPEC_RESULTS which is done in preparation for recording the outcome of the testing.

Each results row references a test. There can be multiple replications of a test. After the results rows have been added, dispositions are set to In Progress on the following entities:

- GMD_SAMPLES
- GMD_SAMPLING_EVENTS
- GMD_SAMPLE_SPEC_DISP
- GMD_EVENT_SPEC_DISP

A

Messages and Errors

This appendix covers the following topics:

- Handling Messages
- Interpreting Error Conditions
- Understanding Error Messages

Handling Messages

APIs put result messages into a message list. Programs calling APIs can then get the messages from this list, and process them. This can be by issuing them to the user if calling the API from an interactive process, or writing them to database tables or log files if calling the API from a batch process.

Messages are stored in an encoded format to let API callers find out message names using the standard functions provided by the message dictionary.

The structure of the message list is not public. Neither API developers nor API callers can access this list except by calling the API message utility routines.

The following utility functions are defined in the FND_MSG_PUB package:

- Initialize - Initializes the API message list
- Add - Adds a message to the API message list
- Get - Gets a message from the API message list
- Count_Msg - Returns the number of messages in the API message list
- Delete - Deletes one or more messages from the API message list
- Reset - Resets the index used in getting messages
- Count_And_Get - Returns the number of messages in the API message list. If this number is one, then it also returns the message data

Refer to the *Oracle Applications Coding Standards* guide for complete documentation of these functions and procedures for usage information.

To add a message to the API message list, use the regular message dictionary procedures FND_MESSAGE.SET_NAME and FND_MESSAGE.SET_TOKEN to set the message name and tokens on the message dictionary stack. Then call FND_MSG_PUB.Add to fetch the messages off the message dictionary stack and add it to the API message list.

To get a message from the API message list, API callers use the procedure FND_MSG_PUB.Get. This procedure operates in the following modes:

- First - Gets the first message in the API message list
- Next - Gets the next message in the API message list
- Last - Gets the last message in the API message list
- Previous - Gets the previous message in the API message list

- Specific - Gets a specific message from the API message list

Interpreting Error Conditions

The parameter x_return_status indicates whether the API was successful or failed. The values are as follows:

- S for success
- E for error
- U for unknown or unexpected status
- Q for could not calculate the total input and output quantities

Understanding Error Messages

Error messages are output to the stored procedure message file, and can be monitored through the return x_msg_count. With the x_return_status, this can be used to monitor the success or failure of the procedure call.

Displaying Errors in Languages Other than English

Language translation of error messages is determined by the environment variable NLS_LANGUAGE. If the message is not found in the required language, then the message is retrieved in US English.

The following is a complete list of the Quality Management API error messages:

Error Messages	Message Code
Supplier validity rule exists	GMD_SUPP_VR_EXIST
Error &ERROR occurred in Package &PACKAGE at &POSITION	GMD_API_ERROR
API failure while processing record for table &l_ table_name identified by column & column_ name of value &l_key_value	GMD_API_RECORD_IDENTIFIER
Batch not found	GMD_BATCH_NOT_FOUND
Batch step not found	GMD_BATCH_STEP_NOT_FOUND
Customer validity rule exists	GMD_CUST_VR_EXIST'
Customer not found	GMD_CUSTOMER_NOT_FOUND

Error Messages	Message Code
Customer Required	GMD_CUSTOMER_REQD
Event Spec disp id is Required.	GMD_EVENT_SPEC_DISP_NULL
Event Spec Record not found for event_spec_ disp_id &event_disp	GMD_EVENT_SPEC_NOTFOUND
Failure to delete record in table %l_table_name identified by column %l_column_name of value %l_key_value	GMD_FAILED_TO_DELETE_ROW
Failure to fetch record in table %l_table_name identified by column %l_column_name of value %l_key_value	GMD_FAILED_TO_FETCH_ROW
Failure to insert record in table %l_table_name identified by column %l_column_name of value %l_key_value	GMD_FAILED_TO_INSERT_ROW
Formula line not found	GMD_FORMULA_LINE_NOT_ FOUND
Formula not found	GMD_FORMULA_NOT_FOUND
GMD_INVALID_OPERATION	GMD_INVALID_OPERATION
Absolute experimental Error Value cannot be greater than &MAX_VAL	GMD_INVALID_SPEC_VAL_NUM
INVALID test type &test_type for test values record	GMD_INVALID_TEST_TYPE
Invalid user	GMD_INVALID_USER_NAME
Item lot not found	GMD_ITEM_LOT_NOT_FOUND
Item sublot not found	GMD_ITEM_SUBLOT_NOT_FOUND
Failure to lock record in table %l_table_name identified by column %l_column_name of value %l_key_value	GMD_LOCKING_FAILURE
Location not found	GMD_LOCT_NOT_FOUND
No data has been found while retrieving the row from the table &TABLE_NAME.	GMD_NO_DATA_FOUND
No keys have been specified to identify the row in the table &TABLE_NAME.	GMD_NO_KEYS

Error Messages	Message Code
Event specification record does not exist for spec_id &spec_id and sampling_event &samp_ event	GMD_NO_SPEC_EVENT_FOUND
For WIP sample, at least Batch No or Recipe ID is required	GMD_NO_WIP_PARAM
Order line not found	GMD_ORDER_LINE_NOT_FOUND
Order not found	GMD_ORDER_NOT_FOUND
Organization not found	GMD_ORG_NOT_FOUND'
Orgn Code not found	GMD_ORGN_CODE_NOT_FOUND
Purchase Order Line not found	GMD_PO_LINE_NOT_FOUND
PO not found	GMD_PO_NOT_FOUND'
QC Lab orgn code not found	GMD_QC_LAB_ORGN_CODE_NOT_ FOUND
QC Lab orgn code required	GMD_QC_LAB_ORGN_CODE_REQD
Recipe not found	GMD_RECIPE_NOT_FOUND
Record is already delete marked - see table %l_ table_name identified by column %l_column_ name of value %l_key_value	GMD_RECORD_DELETE_MARKED
Record locked	GMD_RECORD_LOCKED
Report precision cannot be greater then Display Precision	GMD_REP_GRTR_DIS_PRCSN
Could not find matching result char value.	GMD_RESULT_CHAR_NOTFOUND
Result record not found for sample_id &sample_ id, test_id &test_id and test_replicate_cnt value &test_rep_cnt	GMD_RESULT_NOT_FOUND
Result value char required for Results	GMD_RESULT_VAL_CHAR_REQD
Result value num required for Results	GMD_RESULT_VAL_NUM_REQD
Routing not found	GMD_ROUTING_NOT_FOUND
Routing Step not found	GMD_ROUTING_STEP_NOT_FOUND
Invalid sample disposition	GMD_SAMPLE_DISPOSITION_ INVALID
Sample already exists	GMD_SAMPLE_EXIST

Error Messages	Message Code
Sample record does not exists for sample_no &sample_no and orgn_code &orgn_code	GMD_SAMPLE_NOT_FOUND
Sample number required	GMD_SAMPLE_NUMBER_REQD
Sample requires a Orgn Code to be defined	GMD_SAMPLE_ORGN_CODE_REQD
Sample quantity required	GMD_SAMPLE_QTY_REQD
Invalid source &source defined for sample	GMD_SAMPLE_SOURCE_INVALID
Sample UOM required	GMD_SAMPLE_UOM_REQD
Sampling event missing	GMD_SAMPLING_EVENT_MISSING
Sampling event not found	GMD_SAMPLING_EVENT_NOT_ FOUND
Ship to not found	GMD_SHIP_TO_NOT_FOUND
Reference test(s) used in the expression test is missing in the specification	GMD_SOME_REF_TESTS_MISSING
Cannot define Specification error region.	GMD_SPEC_ERROR_REG_NOT_APPL
SPEC_ID must be supplied	GMD_SPEC_ID_REQUIRED
Specification Item not found.	GMD_SPEC_ITEM_NOT_FOUND
Specification Item required.	GMD_SPEC_ITEM_REQD
Specification Name required.	GMD_SPEC_NAME_REQD
Could not find matching Specification Record	GMD_SPEC_NOT_FOUND
Specification Owner Organization &ORGN not found.	GMD_SPEC_ORGN_NOT_FOUND
Specification Owner Organization Code required.	GMD_SPEC_ORGN_REQD
Specification Owner not found.	GMD_SPEC_OWNER_NOT_FOUND
Specification Owner required.	GMD_SPEC_OWNER_REQD
Spec status prevents updates	GMD_SPEC_STATUS_BLOCKS_ UPDATE
Specification status &STATUS not found.	GMD_SPEC_STATUS_NOT_FOUND
Specification Status required.	GMD_SPEC_STATUS_REQD
Spec Test ID required	GMD_SPEC_TEST_ID_REQUIRED

Error Messages	Message Code
Test Sequence &SEQ already exists on the current specification.	GMD_SPEC_TEST_SEQ_EXIST
Specification &SPEC Version &VERS exists.	GMD_SPEC_VERS_EXIST
Specification Version must be a whole positive number.	GMD_SPEC_VERS_INVALID
Specification Version required	GMD_SPEC_VERS_REQD
There is an error in effectivity date of spec validity rule	GMD_SPEC_VR_EFF_DATE_ERROR
SPEC_VR_ID must be supplied	GMD_SPEC_VR_ID_REQUIRED
Effectivity start date is required for Validity rule.	GMD_SPEC_VR_START_DATE_REQD
Specification Validity is higher.	GMD_SPEC_VR_STATUS_HIGHER
Specification warehouse not found.	GMD_SPEC_WHSE_NOT_FOUND
Supplier not found	GMD_SUPPLIER_NOT_FOUND
Supplier required	GMD_SUPPLIER_REQD
Parameter : Test_id Table is empty.	GMD_TEST_ID_TABLE_EMPTY
Test not found	GMD_TEST_NOT_FOUND
User &OWNER does not have access to Organization &ORGN.	GMD_USER_ORGN_NO_ACCESS
Warehouse not found.	GMD_WHSE_NOT_FOUND
Insufficient data for WIP Validity Rule	GMD_WIP_VR_ALL_NULL
WIP validity rule exists	GMD_WIP_VR_EXIST

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