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This sample chapter discusses the basic structure of the material master and reviews the data entry screens for basic data, classification, purchasing, sales org. It also covers the material requirements planning, forecasting, accounting, and costing views.

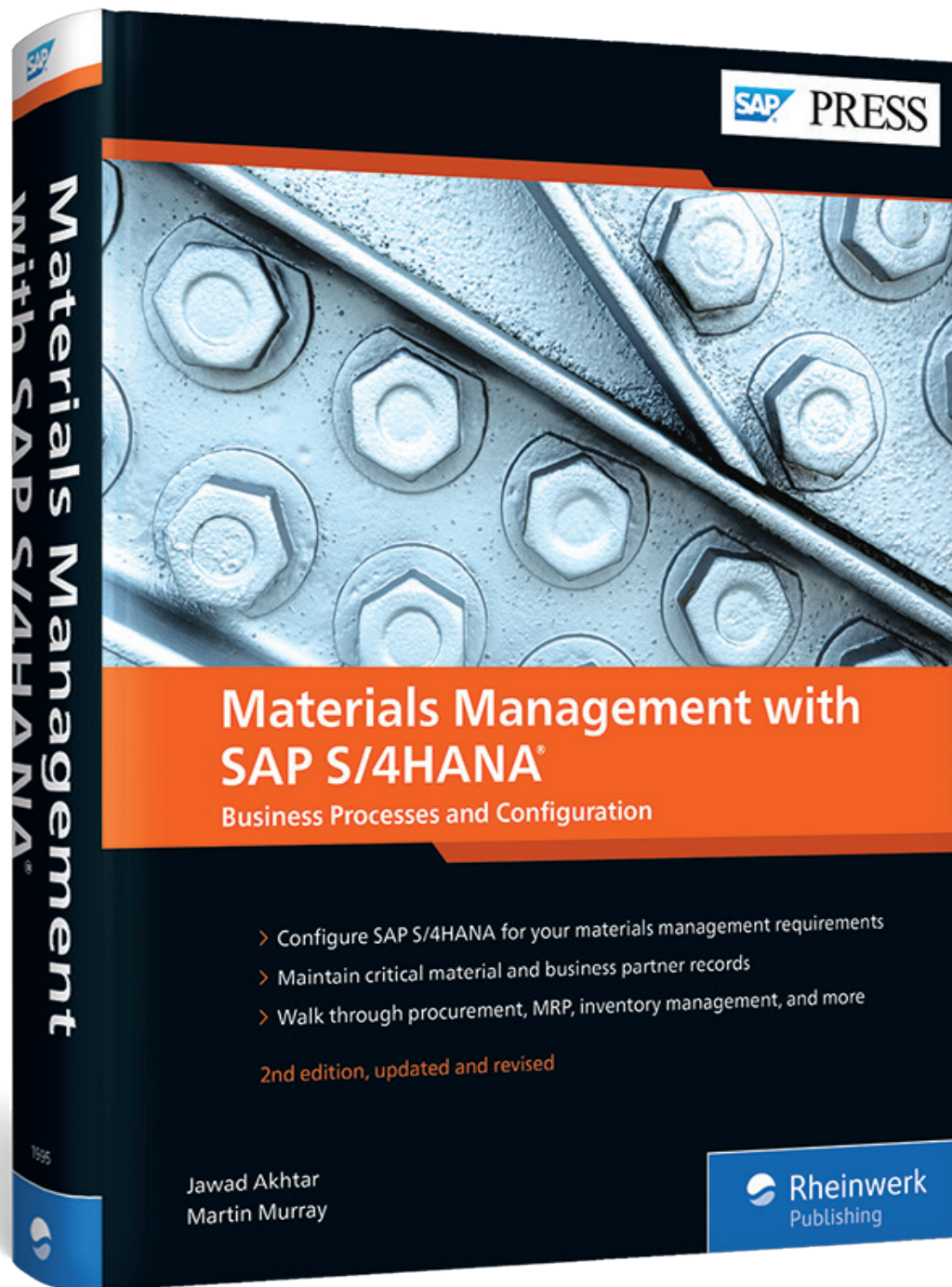**"Material Master Data"**

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Chapter 4
Material Master Data

Data entered into the material master is extremely important to an SAP implementation. Incorrect, incomplete, or missing data can bring operations to a screeching halt. Understanding how to enter correct data into the material master is vital for all SAP components.

In this chapter, we'll discuss the basic structure of the material master and review the data entry screens for basic data, classification, purchasing, sales org, and material requirements planning, forecasting, accounting, costing views among others. Understanding what a field in the material master is and how it relates to data in your legacy systems is crucially important.

Data conversions are rarely treated with the importance they deserve. The earlier in the implementation the team works on understanding the data in the SAP master files, the more time will be available for correctly converting legacy data and creating data that doesn't reside in the legacy files.

Prior to starting any implementation, we recommend starting parallel projects for cleansing legacy data and eradicating duplicate and redundant records. Often, companies have many duplicate records for one vendor or for materials that are obsolete, which should be identified and corrected before any data is loaded into SAP. Maintaining a correct, complete, and comprehensive set of master data is key to a successful SAP implementation project, and this data should be constantly cleansed, refined, and improved over time.

A company may have more than one legacy system and may be combining and loading master data from several systems into one SAP system. The more complicated the data rationalization task, the earlier the company needs to start ensuring the successful loading of data into SAP before the implementation goes live. As mentioned earlier, a complete, correct, and comprehensive set of master data is needed to ensure that business processes run smoothly in the SAP system.

Note

During an SAP implementation project, the configuration objects are first decided and agreed upon with relevant stakeholders. These objects are configured in the SAP system by consultants. These configured objects are then assigned to the master data. Transactions or business processes then use the master data. Finally, reporting functions, whether for standard SAP reports or custom reports, will use configured objects, master data, and transactions.

For example, the logical sequence of how these four elements work follows this order:

1. As described in Chapter 2, we *configured* a new purchasing organization 6000 and a new plant 6000.

2. These two objects are then assigned to the material master, which is master data, as will be discussed throughout this chapter. Supplier or vendor master data (now called *business partner master data*) is MM master data, which can be assigned to a purchasing organization. We'll cover this process in Chapter 5.

3. Business processes or transactional data, such as a purchase order of a material-vendor combination, will use the master data we created in the previous step. We'll cover this process in Chapter 10.

4. Finally, a few standard purchasing or inventory reports can be created to use plant, purchasing organization, material master, or vendor master data as selection criteria. We'll cover these reporting and evaluation topics in Chapter 27.

To summarize, configuration is a backend SAP system activity and must occur only once during an SAP implementation project. Master data is a frontend input activity that also often happens only once or only occasionally. Master data remains largely unchanged for a much longer period of time and is used in routine business transactions. Transactions or business processes, such as creating a purchase requisition, a purchase order, a goods issuance, or a goods receipt are again input activities and take place as frequently as needed. Finally, reporting and analysis, for example, to determine the number of open purchase orders or to identify vendors who delivered goods but haven't been paid, are *outputs* of all these previous input activities.

An SAP consultant must always stay focused on the *output* (reporting) during the SAP implementation project. This focus means you'll need to ensure the necessary data *inputs* are in place in the system so the necessary outputs can be produced. (Remember that, when data is incorrect or missing, data outputs will be incorrect or incomplete!)

Before covering the first master data in MM, the material master, let's quickly recap the configuration information we covered in detail in Chapter 2 and Chapter 3.

4.1   Industry Sector

A *configured* industry sector must be *assigned* for each material master record added. In general, most SAP customers use just one industry sector for all their material master records, but this limit isn't mandatory.

An SAP system has four predefined industry sectors:

- P: For the pharmaceutical sector
- C: For the chemical industry sector
- M: For the mechanical engineering sector
- A: For plant engineering and construction

Defining a new industry sector requires choosing a single character to identify the industry sector and providing a description. The new industry sector must be linked to a field reference, which we discussed in Chapter 3. A *field reference* consists of a list of material master fields and an indicator determining whether an individual field is hidden or displayed, optional or required. Exercise careful consideration when configuring new field references.

4.2   Material Type

A *material type* is a group of materials with similar attributes. Material types allow for the management of different materials in a uniform manner. For example, a material type can group together materials that are purchased or produced internally or that have no value. SAP delivers a set of standard, predefined material types, but you can also create new material types, which we covered in Chapter 3.

4.2.1   Standard Material Types

A number of SAP-delivered material types can be used without needing to configure any new material types. In this section, we'll discuss standard material types. Although new material types can be configured, the added complication of additional configuration steps and testing will be required.

The standard material types include the following:

- **CONT: Kanban container**
  This material type is delivered by SAP for creating kanban containers. A kanban container is used in a kanban container-based system, sometimes implemented at

a specific manufacturing plant for just-in-time (JIT) replenishment of parts on the production line. A kanban container is used to transport the material from the supply area to the manufacturing location. Materials used as kanban containers only have the basic data view.

- **DIEN: Services**
  Services are either internally or externally supplied by a vendor. Services can involve activities such as consulting, garbage collection, or legal services. Service material master records don't have storage information.

- **ERSA: Spare parts**
  Spare parts are materials used for equipment maintenance in the plant. The material is purchased and stored like any other purchased item, but a spare part isn't sold and therefore doesn't contain sales information. If a maintenance item is sold, then the material should use a different material type, such as material type HAWA, for trading goods.

- **FERT: Finished goods**
  A finished good is a material that has been manufactured by some form of production from items, such as raw materials. A finished good isn't purchased and thus doesn't contain any purchasing information. However, a finished good is sold and thus does contain sales information.

- **FHMI: Production resources/tools (PRTs)**
  Production resources/tools (PRTs) are purchased and used by the plant maintenance department. This material type is assigned to items used in the maintenance of plant equipment, such as test machines, drill bits, or calibrating tools. The material type for PRTs doesn't contain sales information because the PRTs aren't purchased to sell. In addition, PRTs are only managed on a quantity basis.

- **HALB: Semifinished goods**
  Semifinished products are often purchased or produced and then completed and sold as finished goods. Semifinished products could come from another part of a company or from a vendor. The semifinished material type allows for purchasing and work scheduling but not sales. If a company also sells its semifinished products, then sales views can be activated.

- **HAWA: Trading goods**
  Trading goods are generally materials that are purchased from vendors and sold. This kind of material type only allows purchasing and sales information because no internal operations are carried out on these materials. An example of a trading good can be found at many computer manufacturers, who sell their own manufactured goods (computers) but also may also sell printers and routers. These trading

goods aren't manufactured by the company but are instead bought from other manufacturers and sold alongside their own manufactured computers.

- **HERS: Manufacturer parts**
  Manufacturer parts are materials that can be supplied by different vendors who may use different part numbers to identify the material. This type of material can be found in many retail stores. For example, a DIY retail store may sell a three-step ladder for $20, but the ladder can be made by three different manufacturers, each of which use a different part number. The store will then have three part numbers for the ladder, but the consumer won't be aware of this fact.

- **HIBE: Operating supplies**
  These materials are vendor-purchased operating supplies used in the production process. This type of product includes lubricants, compressed air, or solder. The HIBE material type can contain purchasing data but not sales information.

- **IBAU: Maintenance assembly**
  A maintenance assembly isn't an individual object but a set of logical elements to separate technical objects into clearly defined units for plant maintenance For example, a car can be a technical object, and the engine, transmission, axles, and so on are maintenance assemblies. An IBAU material type contains basic data and classification data.

- **KMAT: Configurable material**
  Configurable materials form the basis for variant configuration, and the KMAT material type is used for all materials that are variant configuration materials. A material of this type can have variables that are determined by the user during the sales process. For example, automotive equipment produced by a manufacturer may have variable attributes that each car manufacturer requires be different for each car, such as the length of a chain or the height of a belt.

- **LEER: Empties**
  Empties are materials consisting of returnable transport packaging and can be subject to a nominal deposit. Examples of empties include crates, drums, bottles, or pallets. Empties can be made from several materials grouped together in a bill of material (BOM) that is assigned to a finished material.

Empties Management

The empties management functionality is available in MM. This functionality allows the use of sales BOMs in purchasing and sales, and empties can be added to full product items in purchase orders (POs). You can also process these empties during invoice verification.

This functionality allows separate valuations for full products versus related empties and is compatible with other solutions that use BOMs (e.g., free goods discounts).

- **LEIH: Returnable packaging**
  Reusable packaging material is used to pack finished goods to send to the customer. When the finished good is unpacked, the customer is obligated to return the returnable packaging material to the vendor.
- **NLAG: Nonstock material**
  The nonstock material type is used for materials that aren't held in stock and aren't inventoried. These materials can be called "consumables" and include items such as maintenance gloves, safety glasses, or grease. Items in this material type are usually purchased only when needed.
- **PIPE: Pipeline material**
  The pipeline material type is assigned to materials that are brought into the production facility via pipelines. These materials aren't usually planned because they are always on hand. This type of material type is used, for example, for oil, water, electricity, or natural gas.
- **ROH: Raw materials**
  Raw material is purchased material that is fed into the production process and may result in a finished good. No sales data exists for a raw material because this material type is not sold. To reclassify a raw material for sales, then the material type would be changed to HAWA, for trading goods.
- **UNBW: Nonvaluated material**
  This nonvaluated material type is similar to the NLAG (nonstock material) except that nonvaluated material is held by quantity and not by value. Examples of this material type are often seen in plant maintenance (PM), where materials are extremely important to the plant's equipment but of little or no other value. Therefore, the plant maintenance department will monitor inventory to allow for planned purchases.
- **VERP: Packaging material**
  Unlike material type LEER (empties), the packaging material type is for materials that are packaged but are free of charge to the customer in the delivery process. Although free, the packaging material may still have value, and a physical inventory is recorded.
- **WETT: Competitive products**
  The sales department uses material type WETT to monitor competitors' goods.

This material type is used to identify competing products. Only basic data is held for these materials.

> **Note**
>
> In addition to these material types, a number of additional material types are available for SAP Retail customers. These types include FRIP (perishables), NOF1 (nonfood items), FOOD (food except perishables), FGTR (beverages), MODE (apparel), VKHM (additional items like clothing labels), and WERB (advertising material).

4.2.2   Configuring Material Types

As covered in Chapter 3, the best method for creating a new material type is to select an existing material type and copy it to a new one. Copying from an existing material type reduces the amount of configuration required. For user-defined material types, the four-character identifier in the **Material Type** field should always start with "Z."

After a new material type is configured, the valuation areas defined for that material type can also be configured. A *valuation area* is the level at which material is valuated. The valuation area can be defined at the plant level or the company code level. A number of valuation areas can be defined for a material type.

Four fields can be configured for each valuation area (**Val. area**)/material type (**Matl type**) combination as follows:

- **Qty updating**
  This field specifies whether a material assigned this material type can be managed on a quantity basis for this valuation area.
- **Value Update**
  This field specifies whether a material assigned this material type can be managed on a value basis for this valuation area.
- **Pipe.mand**
  This field specifies whether a material assigned this material type is subject to mandatory pipeline handling for this valuation area.
- **PipeAllowd**
  This field specifies whether a material assigned this material type can be subject to pipeline handling for this valuation area.

4.2.3   Changing a Material Type

Sometimes, you may need to change the material type of a material. For example, if a raw material used for in-house production now needs to be sold, the material type may need to be changed from ROH (raw material) to HAWA (trading goods).

A number of caveats exist regarding unrestricted material type changes, as shown in Table 4.1. In addition, if a material has any stock, reservations, or purchasing documents against it, changing the material type may require some extra steps.

Material with Old Material Type	Material with New Material Type
No price control specification	Can only allow standard prices
PRTs view maintained	PRTs view must be maintained
Not a configurable material	Must not be a configurable material
Allows inspection plans	Must allow inspection plans
Material for process indicator	Must be the same setting
Manufacturer part indicator	Must be the same setting
Stock value updated in general ledger account	Must be the same general ledger account
Quantity and value updating	Must be the same as previously
Warehouse management (WM) transfer request open	WM view must be maintained
Batch managed	Must be batch managed

Table 4.1 Changing a Material Type

Let's now cover the steps for creating a new material master in the SAP system.

4.3   Basic Data

The basic data screen is the initial screen that is displayed when a material master record is created. The basic data screen contains data that is common across the client, such as the material's description and basic unit of measure (UoM).

In the following sections, we'll create a new material master, discuss the importance of organizational structures in MM, and cover in detail the individual material master screens, known as *views*, in the SAP system.

4.3.1   Creating a Material Master Record: Immediately

You can create a material master record in a number of different ways. The most common way to create a material master record is to use Transaction MM01 or to follow the navigation path **Logistics • Materials Management • Material Master • Material • Create (General) • Immediately**.

Figure 4.1 shows the fields that you'll need to maintain initially to create a material master record.

Figure 4.1 Initial Fields Required for Creating a Material Master Record

Let's look at each of these necessary fields:

- **Material**
  Leave this field blank for internal numbering or enter a material number if the number range is configured for external numbers.
- **Industry Sector**
  Enter the selected industry sector.
- **Material type**
  Enter a predefined material type or a user-defined material type.
- **Change Number (optional)**
  Enter a change number if you are using engineering change management.
- **Copy from Material (optional)**
  Enter a material number for the material that provides the information required for the new material.

4.3.2   Creating a Material Master Record: Scheduled

If material master creation is a scheduled activity, then use Transaction MM11 or follow the navigation path **Logistics • Materials Management • Material Master • Material • Create (General) • Schedule**.

This screen has the same entry fields as Transaction MM01, shown earlier in Figure 4.1, but an additional field requires entering the date on which the material is scheduled to be created.

4.3.3   Creating a Material Master Record: Special

This particular method of creating a material master record involves an already defined material type. For example, to create a material master record using the ROH material type (raw material), use Transaction MMR1 or follow the navigation path **Logistics • Materials Management • Material Master • Material • Create (Special) • Raw Material**.

Table 4.2 shows the transactions that you can use to create material masters for the various material types.

Material Type	Transaction
Raw materials (ROH)	MMR1
Semifinished materials (HALB)	MMB1
Finished products (FERT)	MMF1
Operating supplies (HIBE)	MMI1
Trading goods (HAWA)	MMH1
Nonvaluated material (UNBW)	MMU1
Nonstock material (NLAG)	MMN1
Packaging (VERP)	MMV1
Empties (LEER)	MML1
Services (DIEN)	MMS1
Configurable material (KMAT)	MMK1
Maintenance assembly (IBAU)	MMP1

Table 4.2 Transactions for Creating Materials by Material Type

Material Type	Transaction
Competitor product (WETT)	MMW1
Returnable packaging (LEIH)	MMG1

Table 4.2 Transactions for Creating Materials by Material Type (Cont.)

4.3.4   Selecting Views

After the material type, industry sector, and external material number (if applicable) are entered, a dialog box will show the views available for the particular material type, as shown in Figure 4.2. Users can choose the view in which they want to maintain information.
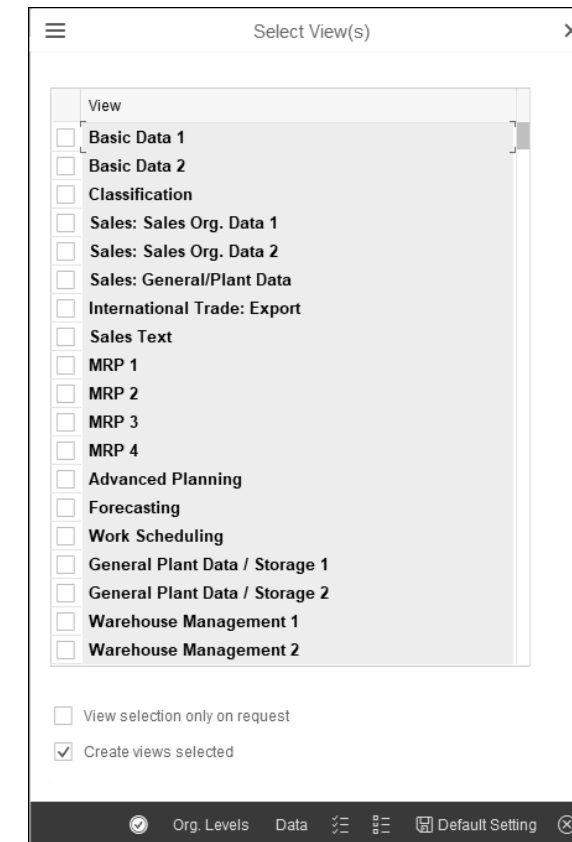
Figure 4.2 Selecting Views of the Material Master

Note

This chapter is completely focused on covering the details and options available in each of the different views of a material master. We'll also cover all the possible views a material master can have so that users maintaining and using data in different views of material master know all the options and choices available to them.

During an SAP implementation project, a single material master file in MS Excel format is shared with business users to fill in the relevant data belonging to their business functions. Maintaining this material master file is the collective, combined, and shared responsibility of relevant stakeholders and business users. For example, only your sales department knows the complete details of the sales processes, discounts, rebates, etc., and therefore, they'll need to maintain the data required in the sales views of the material master. Similarly, production personnel understands production complexities and scenarios best and therefore are best suited to fill in the work scheduling (production) view of the material master in the MS Excel template.

While each SAP component will have its own set of master data, we recommend identifying and assigning responsibilities to the persons who will fill in the relevant views/data in the various fields of the material master data file in MS Excel format. This consolidated data will then be uploaded into the SAP system during the SAP implementation project.

The best way to fill in the data is to consider each and every field in the MS Excel file as the same field available in the SAP system. For example, evaluate each raw material in the MS Excel file that needs to be *assigned* a previously configured purchasing group code. Better yet, set up a validation rule for each field so that only configured objects are available for selection in the MS Excel file of the material master.

When the purchasing data of a material master from the MS Excel is uploaded in the **Purchasing** tab in the SAP system, the relevant purchasing group code will be assigned to the material master.

While this example covers how to manage the material master in MS Excel and then in the SAP system, SAP implementation project teams can adopt the same approach for all master data files using MS Excel for various SAP components.

Due to the completely integrated nature of an SAP system and the way data and information flow from one SAP component to another, we highly recommend maintaining close and complete coordination among the various departments and business functions of your company so that the most relevant, complete, and correct information is entered into the master data templates.

Finally, medium- to large-sized projects can be greatly facilitated if your company can engage a dedicated master data management lead or form a small team to coordinate all efforts on the master data front.

4.3.5   Organizational Levels

Depending on the views that you selected earlier in Figure 4.2, click the **Org. Levels** button on the same screen. A dialog box, shown in Figure 4.3, will appear displaying the organizational levels required for this material master record. For example, if sales views are not selected in Figure 4.2, then organizational elements related to sales, such as sales organization and distribution channel, will not be available for entry in the screen shown in Figure 4.3.

Figure 4.3 Organizational Levels for Creating a Material Master Record

During data entry, a business user can maintain the **Plant, Stor. Location**, **Sales Org.**, **Distr. Channel, Warehouse No.**, and **Storage Type** fields. The organizational levels relate to the levels at which material master information is held. The **Distr. Channel** field is required for sales screens; the **Warehouse No.** field, for warehouse management (WM) screens and other items. In the **Profiles** section, the **MRP profile** field is for material requirements planning (MRP) and the **Forecast prof.** field for forecasting, both of which we'll discuss in this section.

Materials Requirements Planning Profile

The MRP profile is a key that provides a set of field values for MRP screens to save users from having to make data entry decisions.

An MRP profile isn't part of configuration and can be defined by authorized end users by using Transaction MMD1 or following the navigation path **SAP Menu • Logistics • Materials Management • Material Master • Profile • MRP Profile • Create**.

Figure 4.4 shows some of the fields that can be defaulted for the MRP profile. The MRP profile allows highlighting a field from the list of fields on the MRP screens. One of two options can be chosen. The data from the field is entered into the material master either as a fixed value (**Fixed val.**) that can't be overwritten or as a default value (**Default value**) that can be changed. After determining which fields will be part of the MRP key, the values must be entered. The MRP profile can be changed or deleted using Transaction MMD2.

Figure 4.4 Possible Default Fields for the MRP Profile

> **Note**
>
> Chapter 14 covers MRP in greater detail.

Forecast Profile

Similar to the MRP profile, a forecast profile is a key that provides a set of field values for the **Forecasting** screen.

The forecast profile can be defined by authorized end users by using Transaction MP80 or following the navigation path **Logistics • Materials Management • Material Master • Profile • Forecast Profile • Create**.

> **Note**
>
> Chapter 15 covers forecasting in greater detail.

4.3.6   Basic Data Tabs

After selecting the views and the organizational levels entered, the first tab that appears is the **Basic data 1** tab, as shown in Figure 4.5.

Figure 4.5 Material Master: Basic Data 1 Tab

The **Basic data 1** tab allows data entry for nonorganizational level fields. This screen doesn't require a plant or sales organization to be defined but allows a user to enter basic information about the material. The mandatory fields on this screen, as defined by configuration, are the minimum information required for creating a material master. If the complete material master is created by a number of different departments, each entering its own information, then this basic data can be used to enter materials at the client level. In the following sections, we'll describe many of the fields under the **Basic data 1** tab.

Material Description

The first field to be entered is the material description (**Descr.** field). Different descriptions of the material based on the language can be added, with EN as English, DA as Danish, or NL as Dutch, for example. Since a material description can only be up to 40 characters long, a good practice would be defining a material description policy. Standard abbreviations and wording should be used where possible.

Base Unit of Measure

The **Base Unit of Measure** field is the unit of measure (UoM) that represents the lowest level for the material. The base unit of measure is the smallest unit of measure in which your company maintains its inventory. For example, sheet metal may be sold in single sheets, stored in pallets of sheets, and purchased by the truckload, but the base UoM may be a square foot. A base unit can have alternate units of measure that are multiples of the base UoM (i.e., grams and kilograms).

Click on the **Additional Data** link shown in Figure 4.5 to access the screen shown in Figure 4.6, which shows the UoM conversions that relate back to the base UoM (that is, are multiples of the base UoM), which in this case is **EA** (each).

Figure 4.6 Base Unit of Measure and Conversions for Alternate Units of Measure

Material Group

The **Material Group** field reflects a method of grouping similar materials. A material group can be defined either by classification or by configuration. The material group is important not only for searching for materials but also in other areas, for example, in purchasing when defining release strategies (approvals). For example, a purchasing information record can be created without a material number but must have a material group and a vendor. This material group/vendor purchasing information record is used in production orders where in-process material is sent to vendors for outside processing.

A material group can be configured using Transaction WG21 or by following the navigation path **SAP IMG • Logistics – General • Material Group • Create Material Group**.

A hierarchy of material group hierarchy can also be created, which can be difficult and time-consuming. Thus, a best practice is to use an existing hierarchical material structure already defined in the implementing organization.

> **Warning**
>
> Changes to the material group hierarchy after the project has been implemented can be quite complicated and can have far-reaching implications. Therefore, defining material groups and hierarchies early in the project is important.

Old Material Number

The **Old Material Number** field is useful for entering the number for the material that exists in legacy systems or in systems that are still interfacing (but not integrated) with SAP. This field is up to 18 characters in length. For example, if your company uses a legacy warehouse system for shipping materials, the material number used in that system could be entered into the **Old Material Number** field in SAP.

Division

Each material can only be assigned to one division, primarily at a sales organizational level, which is entered in the **Division** field. This value can be used to distinguish different areas of a distribution channel. A division allows a company to organize its sales structure to work with groups of similar materials. Divisions can be configured by using Transaction VOR2 or by following the navigation path **SAP IMG • Sales and Distribution • Master Data • Define Common Divisions**.

Laboratory/Design Office

The **Lab/Office** field defines the laboratory or design office responsible for the material. This field is used more frequently in production planning (PP) to identify the persons responsible for a BOM. This field can be configured by following the navigation path **SAP IMG • Logistics – General • Material Master • Settings for Key Fields • Define Laboratories/Offices**.

Cross-Plant Material Status

The material status can be entered in a number of areas. The cross-plant material status field (**X-plant matl status**) under the **Basic Data 1** tab allows a user to enter a status that will be valid across the client. Material statuses are defined using Transaction OMS4 or by following the navigation path **SAP IMG • Logistics – General • Material Master • Settings for Key Fields • Define Material Statuses**.

A two-character field identifies the material status. A user can configure new material statuses as well. The material status shown in Figure 4.7 is user-defined and shows the process areas where either a warning message (**A**) or an error message (**B**) is given.

Figure 4.7 Process Area Attributes for a User-Defined Material Status

Product Hierarchy

A product hierarchy is used in the sales area for analysis and price determination. The **Prod.hierarchy** field is an alphanumeric string that groups together materials by combining different characteristics. In a standard SAP system, the product hierarchy can have up to three levels. Levels 1 and 2 have five characters each, and level 3 has eight. The product hierarchy is defined using Transaction V/76 and can be up to eight levels.

General Item Category Group

The **GenItemCatGroup** field allows the system to automatically generate an item type in the sales document being created. This item type depends on the type of sales document and the general item category group. The item category group can be configured by following the navigation path **SAP IMG • Sales and Distribution • Sales • Sales Documents • Sales Document Items • Define Item Category Groups**.

Dimensions/EANs

This section of the **Basic data 1** tab enables maintenance of **Gross Weight**, **Net Weight**, and **Volume** fields. The **Size/dimensions** text field allows a text description that may be required on a document. The dimensions of a material may be relevant to shipping companies when they are deciding how to pack and ship material. The dimensions may determine how the material is to be shipped.

Also included in this section of the screen are settings related to the International Article Number (EAN), which is assigned by the manufacturer of the particular material. The EAN identifies the manufacturer uniquely. In the United States, the equivalent to the EAN is the Universal Product Code (UPC). An SAP customer can configure EANs to be used internally.

Some configuration items can be found for EAN/UPC items by following the navigation path **SAP IMG • Logistics – General • Material Master • Settings for Key Fields • International Article Numbers (EANs)**. Configuration items include the following:

- Internal and external number ranges for EAN (Transaction W4EN)
- Number ranges for perishables for EAN (four-digit and five-digit ranges)
- Prefixes for EAN/UPCs
- Attributes for EAN/UPCs

Note

The fields discussed in the following sections aren't displayed on the screen shown in Figure 4.5 but can be displayed depending on how the screen layout is configured. Each client's material master screens may appear slightly differently.

Click on the **Basic Data 2** tab, as shown earlier in Figure 4.5, and the screen shown in Figure 4.8 will appear.

Figure 4.8 Material Master: Basic Data 2 Tab

Product/Inspection Memo and Industry Standard Description

These fields are for information only. The **Product/Inspection** field allows a user to enter a product or inspection memo for the material. The **Industry Standard** field allows the entry of the industry standard description of the material. If an International Organization for Standardization (ISO) or American National Standards Institute (ANSI) standard name exists for the material, then this value can be added.

Basic Material

Under the **Basic Data 2** tab, the **Basic material** field allows grouping the material being entered under another material. The **Basic material** field has no specific control function but is often used in custom reports so end users can see the activity of a material at a basic material level.

A basic material can be configured by following the navigation path **SAP IMG • Logistics – General • Material Master • Settings for Key Fields • Define Basic Materials**.

Dangerous Goods Indicator Profile

This field is defined in SAP Environment, Health, and Safety Management (SAP EHS Management). A **DG** indicator profile can be selected if the material being added is relevant for dangerous goods and for any documentation that accompanies that type of material.

The **DG** indicator profile can be configured in SAP EHS Management by following the navigation path **SAP IMG • Environmental Health and Safety • Dangerous Goods Management • Dangerous Goods Checks • Common Settings • Specify Indicator Profiles for Material Master**.

Environmentally Relevant

This field is relevant for safety data shipping. If this indicator is set, then during the delivery creation process, an output type of safety data sheet (SDS) is selected via the sales condition table. The output for this delivery will include a material safety data sheet (MSDS) and other documentation that may be defined in SAP EHS Management for product safety.

Highly Viscous and In Bulk/Liquid

These two indicators don't have any control features in a standard SAP system. These indicators can be used to influence the text or documentation of transportation documents if custom reports are developed.

Design Drawing Fields

The **Document Type**, **Document Version**, **Page Number**, **Document Chapter Page Format**, and **Number of Sheets** fields are all used for design documents that aren't controlled by the Document Management System (DMS). If users need to add a design

document to the material master, then these fields will need to be maintained. These fields serve as integration points between MM and the DMS.

> **Note**
> Chapter 24 covers the DMS in greater detail.

Cross-Plant Configurable Material

This field is used in variant configuration to identify a configurable material that is relevant for the client, not just relevant to one plant.

Material Group: Packaging Materials

A packaging material group can be entered for a material that groups similar packaging materials. Packaging material groups can be found in table TVEGR. These fields can be configured by following the navigation path **SAP IMG • Logistics — General • Handling Unit Management • Basics • Technical Basics • Define Material Groups for Packaging Materials**.

4.4   Classification Data

Classification data is used primarily when searching for materials. The characteristic values entered into the classes for each material can be used to search for a material with that set of characteristics. This functionality is quite powerful if significant effort into identifying and creating characteristics and classes, as well as entering the characteristic values for materials and other objects, such as vendors or batches, can be allocated. Classification also finds extensive usage in the batch management functionality that we'll cover in Chapter 25.

In the following sections, we'll cover how you can assign a previously created class to a material master that then brings up the characteristics associated with the class. We'll also show you how to maintain characteristic values of the class that is assigned to the material master.

4.4.1   Class Type

The **Classification** tab allows information to be entered into user-defined characteristics and classes that can be assigned to a material.

Figure 4.9 shows that, for this material, a user can choose a class that has been assigned to one of four class types. A *class type* is a predefined grouping in SAP. When a class is created, a class type is assigned depending on its function. Figure 4.9 shows class type **023**, which is for batch records, while class type **001** is for the material master. A *class* contains the characteristics for which values are entered. Users can view the classes of a particular class type by choosing that class type, as shown in Figure 4.9. We'll cover the classification system in more detail in Chapter 23.
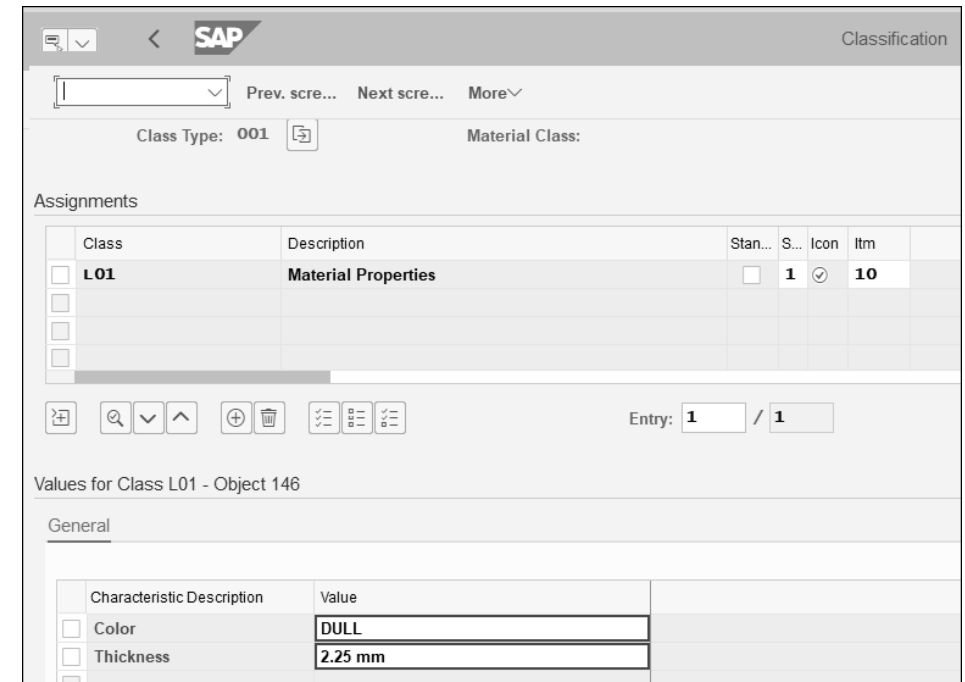
Figure 4.9 Two Classes Selected for a Material, with One Class Showing Its Characteristics

4.4.2   Classes

After a class type has been chosen for the material (in our example, class type 001), individual classes can be selected. These classes have been set up to group together characteristics that describe a material further than the usual fields in the material master.

4.4.3   Characteristics

Characteristics make up the lowest level of a classification structure. Information or a value is entered at the characteristic level. As shown in Figure 4.9, class **L01** of material class **001** has been selected for this material. The characteristics for the first class, **L01**, are shown and are available for entering values. The other two characteristics of this class are **Color** and **Thickness**.

Characteristics can be configured to accept certain values or a range of values, and entry can be mandatory or optional. We'll cover classification in more detail in Chapter 23.

4.5   Purchasing Data

The **Purchasing** tab, shown in Figure 4.10, is displayed when the material being entered is assigned to a material type that allows purchasing. For example, normally, the **Purchasing** tab is only available for trading goods (HAWA), raw materials (ROH), and PRTs (FHMI). Some of the fields shown in Figure 4.10 have already been described in other material master screens.

Figure 4.10 Material Master: Purchasing Tab

In the following sections, we'll cover the various areas that make up the purchasing data view of the material master. Starting with the general data and the options available, we'll cover the purchasing value key, which acts as a control function for purchasing business functions. We'll also cover foreign trade data (imports) as well as trade or legal requirements in some countries. Finally, we'll discuss the legal control options available when performing business processes involving purchasing.

4.5.1   General Data

The **General Data** area contains various units of measure and other basic data that can be entered on the **Purchasing** tab of the material master. In the following sections, we'll discuss the most important fields and indicators in this area.

Base Unit of Measure

The **Base Unit of Measure** field defaults from the **Basic data 1** tab and also populates other data screens. After a **Base Unit of Measure** is entered, this data will appear as the UoM for all instances. For example, if a material has a base UoM of kilograms (kg), then this UoM will be the default for purchasing, warehousing, production, and so on. This default will be used unless another UoM is entered in those screens, for example, entering pounds ("lb") into the **Purchasing Unit of Measure** field.

Order Unit

The purchasing **Order Unit** field is the UoM in which the material can be purchased. Therefore, a material that has a **Base Unit of Measure** of **Each (EA)** may be purchased from a vendor in the **Order Unit** of **Carton (CAR)**. If the conversion between the base UoM and the order unit isn't already defined (refer to Figure 4.5 again to maintain alternate UoMs), the system will open a popup window where you can maintain the conversion. If the **Order Unit** field is blank, then the **Base Unit of Measure** is used as the purchasing **Order Unit** of measure.

Variable Order Unit

Selecting the **Var. OUn** checkbox allows the purchasing UoM to be a variable. The purchasing UoM can be changed during PO creation.

Plant-Specific Material Status

The plant-specific material status (**Plant-sp.matl status**) field under the **Purchasing** tab uses the same status fields found in the **X-plant matl. status** field under the **Basic data 1** tab shown earlier in Figure 4.5. The **Plant-sp.matl status** field on this screen defines the material status at the plant level.

Tax Indicator for Material

The **Tax ind. f. material** field is used for the automatic determination of the tax code in purchasing. The tax code can be determined automatically by the price determination process using purchasing conditions.

Qualify for Free Goods Discount

This indicator (**Qual.f.FreeGoodsDis.**) specifies whether a material qualifies for a discount in kind. A value should appear if the material does qualify for a discount in kind from vendors.

Material Freight Group

The **Material freight grp** field is used to classify materials to provide transportation information to forwarding agents and rail transportation companies.

The configuration for freight groups and codes is completed in the transportation area of sales. To configure freight groups, follow the navigation path **SAP IMG • Logistics Execution • Transportation • Basic Transportation Functions • Maintain Freight Code Sets and Freight Codes**.

Automatic Purchase Order

The **Autom. PO** indicator allows POs to be generated automatically when purchase requisitions are converted into POs. To make the generation process automatic, a further indicator must be set in the vendor master record of the vendor associated with the PO. Chapter 10 covers this functionality.

Batch Management Requirement Indicator

The **Batch management** indicator configures the material to allow batches to be created for the material. This indicator is found on screens where batch information is required, such as the **MRP** tabs.

4.5.2   Purchasing Value Key

The **Purchasing Value Key** field is configured to allow the entry for purchasing-related values like tolerance limits; reminder days, which are the days elapsed before a vendor is contacted regarding outstanding POs; or similar information by using one entry. Figure 4.11 shows a purchasing value key (**Pur.Val.Key**) whose attributes can be configured.

To configure a purchase value key, follow the navigation path **SAP IMG • Materials Management • Purchasing • Material Master • Define Purchasing Value Keys**. In the following sections, we'll discuss the most important fields in this area.

Figure 4.11 Purchasing Value Key and Configurable Attributes

Deadline Monitoring: Reminders

In the reminder fields, enter the number of days after which a reminder or other message should be generated and sent to the vendor. If the value entered is a positive number, then reminders are sent that number of days after the due date specified by the purchasing document. If the value entered is a negative number, the reminder is sent that number of days before the due date.

The number of days in the **1st Reminder/Exped.**, **2nd Reminder/Exped.**, and **3rd Reminder/Exped.** fields are populated from the purchasing information record. If no record exists, then information from the material master record is used.

Deadline Monitoring: Acknowledgment Required

If the **Acknowledgment Reqd** checkbox is selected, then the vendor is expected to send an acknowledgment that the vendor has received the purchasing document. Deadline monitoring is covered in Chapter 25.

GR/IR Control: Underdelivery Tolerance

In the **Tol. Underdelivery** field, you can maintain a percentage figure representing the underdelivery tolerance for this material. For instance, if the tolerance is 13%, then on a PO to a vendor for 20 units, you will accept a delivery of or 18 units (10%) but not 17 units (15%).

GR/IR Control: Overdelivery Tolerance

In the **Tol. Overdelivery** field, you can maintain a percentage figure representing the overdelivery tolerance for this material. For example, if the tolerance is 7%, then on a PO to a vendor for 340 units, your company will accept a delivery for 363 units (6.8%) but not 364 units (7.1%).

GR/IR Control: Unlimited Overdelivery Allowed

The **Unlimited Overdel.** indicator allows you to accept any overdelivery from the vendor. This allowance may not be acceptable for some materials and some vendors, so the purchasing department should understand the ramifications of unlimited overdelivery.

GR/IR Control: Shipping Instructions

The **Shipping Instr.** field allows a shipping instruction indicator to be chosen. The instructions describing shipping and packaging requirements are sent to the vendor if configured. The **Shipping Instr.** indicator is found in table T027A and configured by following the navigation path **SAP IMG • Materials Management • Purchasing • Material Master • Define Shipping Instructions**.

Vendor Evaluation: Minimum Delivery Quantity Percentage

In this field (**Min.Del.Qty %**), maintain a minimum percentage of the PO quantity that must be delivered for the goods receipt to be included in the vendor evaluation. This

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field prevents a vendor from receiving a good score for an on-time delivery when the delivery quantity was insufficient.

Vendor Evaluation: Standardizing Value for Delivery Time Variance

The value is entered to determine how many days from the planned delivery date will constitute 100% variance for vendor evaluation. If the entry in this field (**StdDelDt-Var**) is 10, then the vendor evaluation system calculates that the vendor will receive a 100% variance if the PO is delivered 10 or more days after the expected delivery date. Vendor evaluation is covered in Chapter 10.

4.5.3   Other Data/Manufacturer Data

The **Other data/manufacturer data** section on the **Purchasing** screen, shown earlier in Figure 4.10, contains other data required for the purchasing view of the material master. These data types will be discussed in the following sections.

Goods Receipt Processing Time in Days

The **GR Processing Time** field refers to the number of working days required after receiving the material for quality inspection and movement into storage.

Post to Inspection Stock

The **Post to insp. stk** indicator controls whether the material is subject to a quality inspection and whether the material needs to be posted to inspection stock.

Critical Part

The **Critical Part** indicator is only used in inventory sampling and is for information purposes only. Discuss with the relevant stakeholders whether they need to use this indicator and how it should be used.

Source List

The **Source list** indicator is important to the purchasing department. If this indicator is set, a source list must be maintained for procurement for the plant. This source list must be created before a PO can be entered. Maintaining source lists is described more fully in Chapter 6.

Item Relevant to Just-in-Time Delivery Schedules

The **JIT Sched. Indicator** determines whether the system can generate a JIT delivery schedule, as well as the forecast schedules, for the material in a scheduling agreement.

4.5.4   Foreign Trade Data

In this section, we'll examine the fields found under the **Foreign trade import** tab, as shown in Figure 4.12.

Figure 4.12 Material Master: Foreign Trade Import Tab

Commodity Code/Import Code Number for Foreign Trade

The **Commodity Code** field relates to the harmonized system for the description and coding of merchandise. If selected, the commodity code is used for statistical purposes and must be declared to the regulatory authorities for foreign trade transactions. Examples of this are Intrastat and Extrastat in the European Union and the Automated Export System (AES) in the United States.

Commodity codes are defined in table T604 and can be configured by following the navigation path **SAP IMG • Sales and Distribution • Foreign Trade/Customs • Basic Data for Foreign Trade • Define Commodity Codes/Import Code Numbers by Country**.

Export/Import Group

This four-character code is a grouping for similar materials based on import and export attributes. Export/import group information can be found in table TVFM and can be configured by following the navigation path **SAP IMG • Sales and Distribution • Foreign Trade/Customs • Basic Data for Foreign Trade • Define Material Groups for Import/Export**.

CAS Number for Pharmaceutical Products

This field is only required if the material has a CAS number that is a key to the descriptions given by the World Health Organization (WHO) for customs-free materials.

A CAS number can be defined by using Transaction VI36 or by following the navigation path **SAP IMG • Sales and Distribution • Foreign Trade/Customs • Specific Data for Customs Processing • Define CAS Numbers**.

PRODCOM Number for Foreign Trade

This field is used to enter a PRODCOM number in EU countries and allows for harmonized production statistics in the European Union. PRODCOM numbers can be configured by using Transaction VE47.

Control Code for Consumption Taxes in Foreign Trade

This field is used for consumption taxes in foreign trade.

4.5.5   Origin/EU Market Organization/Preferences

In this section, we'll cover the **Country of origin** and **Region of origin** fields, which are particularly relevant when using a Certificate of Origin document.

Country of Origin

A country of origin must be specified for export documentation. The material will often require a Certificate of Origin to be printed and included in the shipping documents. The **Country of origin** field uses country abbreviations.

Region of Origin

The region of origin—a state in the United States, a county in the United Kingdom, a province in Australia, and so on—can provide more information about where the material originated, for documentation.

CAP Product List Number

The **CAP product list no.** field is the number of the material as defined in the EU market products group list. Product list numbers can be configured using Transaction VI67.

CAP Product Group

Similar materials can be grouped under a CAP product group, which is used in the European Union only. CAP product groups can be configured using Transaction VI69.

Preference Status

This field specifies whether a preference status is allowed at the plant level. A preference status identifies whether a material is eligible to receive any special or preferential treatment under the terms of a trade agreement between countries.

Vendor Declaration Status

This field specifies whether the vendor declaration status is allowed at the plant level. A vendor declaration states where the material was manufactured. The origin of the material is determined with this declaration.

4.5.6   Legal Control

The **Legal control** section relates to the details required for the exemption certificate, which we'll discuss next.

Exemption Certificate/Certificate Number/Issue Date

The **ExemptionCertificate** field is defined as an indicator for export certification information. The values for export certification include the following:

- **A – Applied for**
  The material doesn't require a license for import or export.

- **B – Accepted**
  The material doesn't require a license for import or export because a certificate has been obtained.

- **C – Rejected**
  The application for an exemption certificate has been rejected.

- **Blank – Not relevant**
  The material has no exemption and requires an import or export license.

If the field has been set to **B**, then the certificate number and the issue date must be entered using the two fields **Exemption cert. no.** and **Iss. date of ex.cert.**

Military Goods

This field is for use only in Germany, due to weapons regulations. Outside of Germany, you can use this field for information purposes.

In the next section, we'll examine the material master fields used for sales purposes.

4.6   Sales Organizational Data

The tabs shown in Figure 4.13 and Figure 4.14 allow users entering sales information to enter data relevant to a particular sales organization. A material may be sold by various sales organizations, and the data for each sales organization may differ. Many fields in these screens will default from other entry screens, such as **Base Unit of Measure**. Some fields shown in Figure 4.13 and Figure 4.14 have already been described in other material master screens. In the following sections, we'll detail the components of the major sections within these screens.

Figure 4.13 Material Master: Sales: Sales Org. 1 Tab

4.6.1   General Data

The **General data** section under the first sales organization tab in the material master includes some basic data used in sales processing for materials, such as the **Sales unit** field; the **Sales unit not var.** indicator (i.e., variable sales unit not allowed); the **X-distr.chain status** (cross-distribution chain material status) field; and the **Delivering Plant** field.

Sales Unit

The UoM in which the material is sold is known as the sales UoM. For each sales organization, a material can be specified in a sales UoM that is used for sales orders. This UoM can be the same as the base UoM or a multiple of the base UoM. An example is a material that has bottle as its base UoM, but this material can be sold in the sales organization for the United States as cartons and sold through the sales organization for France as pallets.

Variable Sales Unit Not Allowed Indicator

If the **Sales unit not var**. indicator is set, then the sales UoM in the material master can't be changed in the sales order. If this indicator isn't selected, then a sales representative can change the sales UoM in the order from carton to pallet. With the indicator set, a sales representative can't change the sales unit, and the sales unit will remain as cartons.

Cross-Distribution Chain Material Status

The **X-distr.chain** status field, along with the distribution chain-specific material status field (**DChain-spec. status**), is used in SAP Retail and checks whether a material can be used in different distribution channels.

Delivering Plant

This field designates the default plant where this material is delivered. This field is automatically copied into the sales order as the delivery plant.

4.6.2   Tax Data

In the **Tax data** section of the screen, tax data can be entered for a number of countries in which a material is sold. The country is entered, along with the tax category and the relevant tax classification. A number of tax categories may exist for each country.

The **Tax category** for materials is specific to the sales organization/division/plant level that defines the country-specific taxes during pricing. The configuration of the access sequences in the tax-condition tables for sales tax and use tax is made in the **Financial Accounting Global Settings** section of the IMG. This part of the configuration is cross-client and requires careful consideration before any access sequences are added. Consult with an FI specialist when considering any changes to tax-calculation procedures.

A tax category/classification is defined in the IMG using Transaction OVK4 or by following the navigation path **SAP IMG • Sales and Distribution • Basic Functions • Taxes • Define Tax Relevancy of Master Records**.

4.6.3   Quantity Stipulations

The fields in the **Quantity stipulations** section describe the minimum and maximum values of the material used for a particular sales organization.

Minimum Order Quantity

The **Min.order qty** value is the minimum quantity that can be ordered for this material/sales organization combination.

Minimum Delivery Quantity

The **Min. dely qty** value is the minimum quantity that can be delivered for an order for this material/sales organization combination.

Delivery Unit

The **Delivery unit** is the minimum unit of quantity for a delivery. The second field is for the UoM. For example, if the delivery unit is 50 cartons, then the delivery quantity to the customer can only be 50, 100, 150, and so on. The delivery quantity can't be 125 cartons, which is not a multiple of 50.

Rounding Profile

The **Rnding Profile** field defines how a quantity is rounded up to a given value, depending on whether a static or dynamic profile is defined. The configuration for a rounding profile allows the option of defining the rounding quantities for different thresholds. Table 4.3 shows an example of a static rounding profile.

Threshold Value	Rounding Value
1,000	70,000
211,000	300,000
301,000	450,000
451,000	1000,000

Table 4.3 Configuration for a Rounding Profile in Transaction OWD1

Table 4.4 shows the actual rounding of quantities 1 to 1,000 based on the rounding values listed in Table 4.3. You can configure rounding profiles by using Transaction OWD1 or by following navigation path **SAP IMG • Materials Management • Consumption-Based Planning • Planning • Lot-Size Calculation • Maintain Rounding Profile**.

Value From	Value To	Rounded Value
1,000	70,000	70,000
71,000	140,000	140,000
141,000	210,000	210,000
211,000	300,000	300,000
301,000	450,000	450,000
451,000	1000,000	1000,000

Table 4.4 Actual Rounding of Quantities

4.6.4   Grouping Items

A material can be assigned to any number of material groups, which the sales department can use in the information systems, as shown in Figure 4.14.

Figure 4.14 Material Master: Sales: Sales Org. 2 Tab

Material Statistics Group

The material statistics group field (**Matl statistics grp**) is a grouping used in the logistics information system (LIS). This field is found in table TVSM. You can configure material statistics groups by using Transaction OVRF or by following the navigation path **SAP IMG • Logistics Information System (LIS) • Logistics Data Warehouse • Updating • Updating Control • Settings: Sales and Distribution • Statistics Groups • Maintain Statistics Groups for Material**.

Volume Rebate Group

The **Volume Rebate Group** field is just a way to group similar materials for rebate agreement processing. The field can be configured by following the navigation path **Logistics General • Sales and Distribution • Billing • Rebate Processing • Define Material Rebate Group**.

Commission Group

The **Commission Group** field can group together materials that offer similar commissions. A commission group can be used in pricing procedures. This field can be configured by following the navigation path **SAP IMG • Logistics – General • Material Master • Settings for Key Fields • Data Relevant to Sales and Distribution • Define Commission Groups**.

Material Pricing Group

The **Material Price Grp** is another available field that groups materials for pricing conditions. This field is found in table T178.

Account Assignment Group

Users can maintain the **Acct Assmt Grp Mat.** field to group together materials that have similar accounting requirements. For example, you can select a group for service revenues or a group for trading goods revenues. This field is used in sales billing documents and can be found in table TVKM. Account assignment groups can be defined in configuration steps by following the navigation path **SAP IMG • Sales and Distribution • Basic Functions • Account Assignment/Costing • Revenue Account Determination • Check Master Data Relevant for Account Assignment • Materials: Account Assignment Groups**.

4.6.5   Material Groups

The material groups that can be entered under this sales organization tab aren't used in standard SAP S/4HANA processing. The sales department can use the five **Material group** fields to further define a material based on the sales organization. These fields will be available for sales department analysis.

You can define and configure these five material groups by following the navigation path **SAP IMG • Logistics – General • Material Master • Settings for Key Fields • Data Relevant to Sales and Distribution • Define Material Groups**.

4.6.6   Product Attributes

The **Product attribute** indicators are available to the sales department for analysis. The ten **Product attribute** fields are found in table MVKE, which can be viewed using Transaction SE11.

In this section, we discussed the data used to define the **Sales: sales org.** data tabs on the material master record. In the next section, we'll focus on the material master screen for the sales general data.

4.7   Sales General Data

The **General data** section for the **Sales: General/Plant** tab is specific to a particular combination of material and plant, as shown in Figure 4.15. In the following sections, we'll discuss the main subsections of this area.

4.7.1   General Data

The **General data** section for a material, as it refers to sales functionality, includes the **Replacement part** and **Availability check** fields and the approved batch record required (**Appr.batch rec. req.**) indicator.

Replacement Part

The **Replacement Part** indicator allows the sales department to specify whether a material is a replacement part or not and whether this material is only a replacement part (as opposed to also being sold).

Figure 4.15 Material Master: Sales: General/Plant Tab

Availability Check

The **Availability check** field defines an availability check and is thus important to the sales department. You can configure availability checks by using Transaction OVZ2 or by following the navigation path **SAP IMG • Sales and Distribution • Basic Functions • Availability Check and Transfer of Requirements • Availability Check • Availability Check with ATP Logic or Against Planning • Define Checking Groups**.

New availability checks can be defined based on your sales department's requirements.

Approved Batch Record Required Indicator

The **Appr.batch rec. req.** indicator is only valid when the batches originate from a process order. This indicator specifies that certain activities can only be performed after a batch record has been entered.

4.7.2   Shipping Data

The many fields used in the shipping processes are described next.

Transportation Group

The **Trans. group** field is used to group together materials that have similar transportation requirements, such as trucks, tankers, trains, and so on. This field can be used in the automatic route scheduling function for sales orders and deliveries. The transportation group can be configured by following the navigation path **SAP IMG • Logistics Execution • Shipping • Basic Shipping Functions • Routes • Route Determination • Define Transportation Groups**.

Loading Group

The **LoadingGrp** field allows sales departments to group together materials that have similar loading requirements, such as cranes, forklifts, trolleys, and so on. This field is required if shipping point determination will be used. The field contents can be configured by following the navigation path **SAP IMG • Logistics Execution • Shipping • Basic Shipping Functions • Shipping Point and Goods Receiving Point Determination • Define Loading Groups**.

Setup Time

The **Setup time** for shipping is similar to the setup times in other material master tabs such as the **Work Scheduling** tab. This setup time is strictly the setup time for getting the equipment, such as a forklift or a trolley cart, ready to move the material.

Processing Time/Base Quantity

The processing time field (**Proc. time**) for shipping is the actual time required to load the material from its location onto the transportation vehicle. This processing time is valid for the amount of material that is entered into the base quantity (**Base qty**) field.

> **Packaging Material Data**
>
> Before the **General plant parameters** area, you'll find the **Packing Material Data** area. In this section, the **Ref. Mat. for Pckg** field references the packaging material of another material to be used for this material.

4.7.3   General Plant Parameters

A number of plant parameters used in sales processing are described next.

Negative Stock in Plant

The **Neg.stocks** indicator can be set if stocks of this material must allow a negative stock situation. Negative stock occurs when actual physical stock exists, but that stock has not been received into inventory. If a goods issue is made from inventory, then the stock will be negative until the missing goods receipt is made. This scenario allows stock to be shipped without waiting for paperwork to be completed. However, this situation depends on your company's policy.

Profit Center

A profit center is a function of the controlling area of SAP. A profit center is a way of internally managing your company, which may have to manage and analyze financials for profit center accounting. The **Profit Center** field on this screen can be maintained if profit centers will be used.

Serial Number Profile

The serial number profile field (**SerialNoProfile**) is used for materials that must be serialized. For example, a fuel indicator sold for use on an airplane may require a unique serial number. The serial number profile determines the conditions and business transactions for issuing serial numbers. Serial numbers are covered in Chapter 6.

Distribution Profile

Companies using SAP Retail can use the distribution profile field (**DistProf**) for materials in a plant as a control profile for merchandise distribution.

Level of Explicitness for Serial Number

The **SerializLevel** field describes the level on which serial numbers are unique. A number of different levels can be assigned. Serial numbers can be made unique across the SAP client by entering "1" for every material. This value will also create an equipment number with the same number as the serial number. If this field is left blank, then the serial number will be unique to the material only.

> **Note**
>
> The details under the **Foreign trade exports** tab are the same as the fields we covered in Section 4.5.4 when we described the **Foreign trade imports** tab.

In this section, we discussed the **Sales: General/Plant** tab on the material master. The next sections will discuss materials planning data in the material master.

4.8   Material Requirements Planning Data

Planners need material planning tools to accurately plan materials for timely availability across the entire logistics and supply chain. A planner's primary concern is to ensure that enough stock is always available for sales to customers without escalating inventory carrying costs or facing a shortage of raw or packing materials needed for production processes. Material requirements planning (MRP) is a planning tool to help production and procurement planners create feasible and realistic plans so they can quickly initiate procurement or production processes.

> **Note**
>
> Refer to Chapter 14 on MRP, where we cover this topic in detail.

MRP data is divided into a number of tabs in the material master. Figure 4.16 shows the first tab, which allows data to be entered for a material/plant combination.

Figure 4.16 Material Master: MRP 1 Tab

The information on the four MRP tabs is important in how material is planned, procured, and produced within the plant. Some fields from these tabs have been discussed in previous sections.

In the following sections, we'll start by covering the general MRP data to develop a basic comprehension of MRP. Then, we'll move on to discuss the MRP elements. We'll cover procurement, production, scheduling, and material availability fields as well as fields that control repetitive manufacturing (REM).

4.8.1   General Data

The **General Data** section contains some fields we've already discussed, such as the **Base Unit of Measure** field but also includes the **MRP Group** and **ABC Indicator** fields.

MRP Group

The **MRP Group** field is a combination of special control parameters specific to the total planning run. An MRP group is created at the plant level and assigned to materials with similar needs for these parameters.

The MRP group is created using Transaction OPPR or by following the navigation path **SAP IMG • Materials Management • Consumption-Based Planning • MRP Groups • Carry Out Overall Maintenance of Material Groups**.

Figure 4.17 shows the fields available for modifying an MRP group.

Figure 4.17 MRP Group Parameters

ABC Indicator

The **ABC Indicator** field allows a determination to be made based on consumption criteria. The higher the consumption, the more important the material is, and A represents the highest importance. The SAP system predefines the indicators **A**, **B**, and **C**, but you can also define other indicators.

The **ABC Indicator** field can be configured by following the navigation path **SAP IMG • Logistics – General • Material Master • Settings for Key Fields • Define ABC Indicator**.

> **Note**
> Chapter 19 covers how ABC works in physical inventory.

4.8.2   Material Requirements Planning Procedure

The **MRP procedure** fields allow you to maintain the **MRP Type** field, the **MRP Controller** field, and other fields necessary for the MRP functionality.

Material Requirements Planning Type

The **MRP Type** field is a key representing a procedure for planning a material and to control which MRP parameters can be maintained for the material.

SAP predefines a number of MRP types, but you can create new MRP types in configuration. Table 4.5 describes the standard MRP types.

MRP Type	Description
PD	Standard MRP
VB	Manual reorder point planning
VM	Automatic reorder point planning
V1	Automatic reorder point planning (including external requirements)
V2	Automatic reorder point planning (without external requirements)
VV	Forecast-based planning
ND	No planning

Table 4.5 SAP Standard MRP Types

The planning department can create new MRP types using configuration by following the navigation path **SAP IMG • Materials Management • Consumption-Based Planning • Master Data • Check MRP Types**.

Reorder Point

This field is used only for reorder point planning. Reorder point planning uses a reorder point to indicate to MRP that a material must be included in the next planning run when a requirement will be produced. The production staff determines the reorder level and enters this value into the material master in the **Reorder Point** field. The reorder level can be calculated in a number of ways. For example, a reorder point can be calculated as the safety stock level plus the forecasted demand for the material during its replenishment lead time.

Planning Time Fence

To create a period of time when no automatic changes are made to the master plan, the planning department can enter a value into the **Planning Time Fence** field.

Planning Cycle

The **Planning cycle** field reflects a planning calendar that determines when material is ordered and planned. For this data to be relevant, the material must be assigned an MRP type that allows time-phased planning. The planning cycle can be configured for the specific planning department. To configure the planning calendar, follow the navigation path **Production • Material Requirements Planning • Master Data • Maintain Planning Calendar**. (We covered planning calendars earlier in Chapter 2.)

Material Requirements Planning Controller

The **MRP Controller** field reflects the person or persons responsible for planning the material. Since the MRP controllers of MM and PP use the same SAP table, we recommend coordinating with the PP team to ensure no overlap exists among MRP controller codes configured in the SAP system.

You can configure MRP controllers by following the navigation path **SAP IMG • Materials Management • Consumption-Based Planning • Master Data • Define MRP Controllers**.

4.8.3   Lot Size Data

A number of lot size fields can be maintained under this tab, such as minimum and maximum lot sizes, if this information is relevant for the material.

Lot Size

The **Lot size** field defines the lot-sizing procedure. The procedure calculates the reorder quantity in the planning run. Lot sizes can be defined for short-term and long-term periods. The production department will determine what lot-size calculation is required for the material. The lot-size calculation can be configured by using Transaction OMI4 or following the navigation path **SAP IMG • Materials Management • Consumption-Based Planning • Planning • Lot-Size Calculation • Check Lot-Sizing Procedure**.

Minimum Lot Size

The planning department can enter this field to determine this material's minimum lot size for procurement.

Maximum Lot Size

This field is the material's maximum lot size for procurement. This value is used in the lot-size calculation for production orders.

Fixed Lot Size

The **Fixed lot size** field is the amount of the material ordered when there is a shortage of the material. If the fixed lot size is less than the shortage, then multiples of the fixed lot size will be ordered to cover the shortage.

Maximum Stock Level

This field is only used if the **Lot size** field value "HB" (replenish to maximum) has been entered for this material. This field determines the maximum level of stock for this material at the plant.

Ordering Costs

These costs are only used with the optimum lot-sizing procedure and represent the cost of producing or purchasing the material above the normal purchasing costs. The system assumes the currency is the same as the currency used for the plant.

Storage Costs Indicator

This field is used only with the optimum lot-sizing procedure and is defined as the cost of storing material based on the quantity and the unit price.

Assembly Scrap

The **Assembly scrap (%)** field represents the amount of scrap that normally occurs during the assembly of a material. The percentage scrap will allow the lot-size calculation to increase to allow for scrap. A value should only be entered if this material is an assembly.

Takt Time

"Takt" is the German word for the baton used by an orchestra conductor to regulate the speed at which musicians play. Production uses takt time as the rate at which a material is completed. If the **Takt time** field is defined as four hours, a complete material is produced every four hours.

> **Note**
>
> Chapter 14 covers how you can set up and use MRP areas in your SAP system.

The second MRP tab, as shown in Figure 4.18, allows you to configure material data for procurement, such as the **Procurement type** and the **Backflush** indicator.

Figure 4.18 Material Master: MRP 2 Tab

In the **Scheduling** section, you can maintain the **In-house production** and **Planning Calendar** fields, and in the **Net requirements calculation** sections, the **Safety stock** for the material.

4.8.4   Procurement

The first section of data fields under the second MRP tab in the material master refer to how a material can be procured for production.

Procurement Type

The **Procurement type** field describes how a material is procured. For example, a material can be purchased externally from a vendor, be produced in-house via a production or a process order, or be both produced and purchased.

Batch Entry

The **Batch entry** key identifies where the batches must be entered in the production process. Three options are available for the **Batch entry** field:

- Manual batch determination at release of order
- Batch not required in order; confirmation required
- Automatic batch determination upon release of order

Special Procurement

The **Special procurement** field is configured to describe a procurement scenario. This key can determine the procurement type, procurement from another plant, and bill of materials (BOM) characteristics. To configure the **Special procurement** field, follow the navigation path **SAP IMG • Materials Management • Consumption-Based Planning • Master Data • Define Special Procurement Type**. Chapter 12 covers special procurement types.

Production Storage Location

If the material is produced in-house, the storage location entered in the **Prod. stor. location** field is used in the planned or production order, as well as for backflushing purposes.

Default Supply Area

The **Default supply area** field is used for kanban operations. The default supply area is a defined interim storage area that supplies material to the production operation. Supply areas aren't part of configuration and can be defined using Transaction PK05 or by following the navigation path **Logistics • Production • Kanban • Supply Area • Maintain**.

Storage Location for External Procurement

The storage location for external procurement field (**Storage loc. for EP**) is used as the storage location defaulted into the planned order for a material procured externally.

Just-in-Time Delivery Schedule

This indicator can be set to allow a JIT delivery schedule to be generated as well as the forecast schedules for this material.

Co-Product Indicator

A *co-product* is a material generated by the production process that has the composition or characteristics of a manufactured product or a semifinished product. Selecting the **Co-product** checkbox indicates the material is a co-product. If a by-product is produced during the production process, then you wouldn't select the **Co-product** indicator. A co-product is of equal value to the original material or is itself a high-value product (while a by-product is a low-value product) and can either be sold off or used in another production process. Inventory management is possible for both co-products and by-products, which we'll cover in more detail in Chapter 18.

Bulk Material Indicator

This indicator, if selected, defines the material as a bulk material for BOM purposes.

4.8.5   Scheduling

In this section, we'll cover the scheduling aspects of materials planning.

In-House Production

The system uses this field to calculate the time (in days) required to produce a material in-house.

GR Processing Time

The system uses this field to calculate the time (in days) required to make a product available. For example, if two days are required for inspecting a procured material, this time is added to the scheduling during an MRP run.

Scheduling Margin Key

The system uses this field to create a buffer in scheduling to account for any unforeseen delays during production or procurement. This time can also provide the planner with additional time for securing approvals to procure or produce a material.

Planned Delivery Time

The system uses this field to calculate the time (in days) required to procure a material.

> **Tips & Tricks**
>
> Report WPDTC compares planned delivery times maintained in the material master, supplier master (business partner), and purchasing information record with the actual time required for the supplier to deliver a material. This comparison between planned and actual delivery times can then be used to update MM master data such as a material master, a supplier master, or a purchasing information record.

Planning Calendar

While the system uses the factory calendar for most of its planning, the planning calendar provides planners with an alternate option for planning materials to meet specific business needs. The planning calendar is discussed in Chapter 14.

4.8.6   Net Requirements Calculations

Net requirements calculations are for the safety stock amounts active for a material at a specific plant. For example, depending on the specific production facilities at each

plant and the location of key vendors, the values for safety stock, minimum safety stock, and service level may be different for each plant in your company.

Safety Stock

The purpose of safety stock is to ensure that no material shortage occurs during production. The safety stock level maintained in the **Safety Stock** field is designed to offset any unexpected increase in demand.

Figure 4.19 shows how safety stock relates to reorder point planning in the consumption-based planning method. Refer to Figure 4.16 again to maintain the reorder point in the material master.
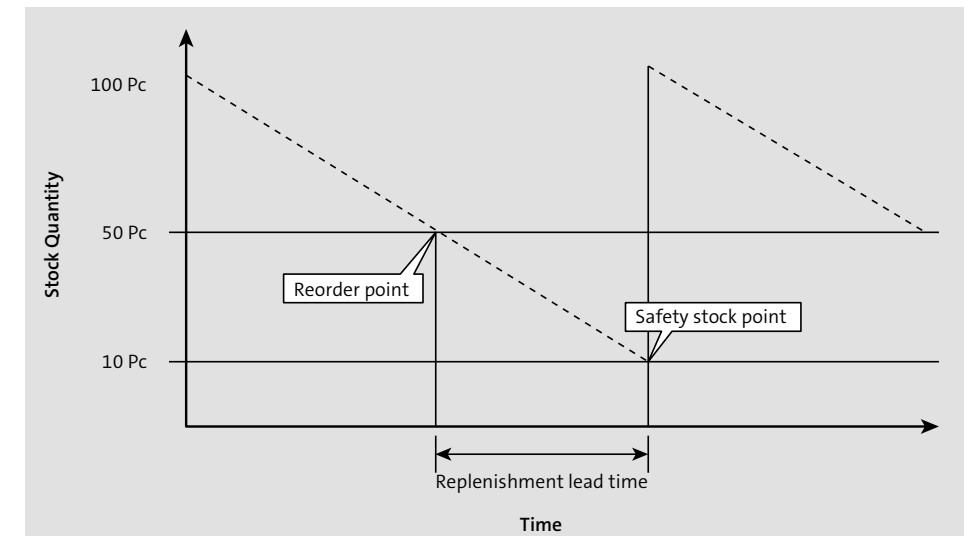
Figure 4.19 Safety Stock and Reorder Point

Service Level

This percentage is used in the calculation of safety stock. A low **Service level** percentage will be reflected in a low safety stock level. A 95% service level will mean that a material's stock must be available 95% of the time it's required. Falling below this threshold will mean increasing the safety stock to meet the desired and expected service level.

Minimum Safety Stock

The minimum safety stock level (**Min. safety stock**) is the lower limit of the safety stock range. This field should only be used by the planning department for forecasting and calculating safety stock.

Coverage Profile

The **Coverage profile** field defines parameters used for calculating safety stock dynamically. The dynamic safety stock is calculated using daily average requirements and the range of coverage. The coverage profile can be configured by following the navigation path **SAP IMG • Materials Management • Consumption-Based Planning • Planning • MRP Calculation • Define Range of Coverage Profile**.

Safety Time Indicator

The safety time indicator (**Safety time ind.**) allows a user to define the mechanism for safety time. Two indicators can be used. The first indicator allows the safety time to be active for all requirements; the second indicator is for independent requirements only. The safety time indicates when MRP requirements can be brought forward. This time buffer allows more time for the delivery of materials, among other things.

Safety Time/Actual Coverage

The **Safety time/act.cov.** field contains a value representing the actual time that the MRP requirements are brought forward. This value is the duration of actual coverage in workdays.

Period Profile for Safety Time

To define safety time, employing a period profile may be more useful since requirements fluctuate at different times of the year. In configuration, you can create a safety time based on the dates entered for each period. To configure safety time, use Transaction OMOD or follow the navigation path **SAP IMG • Materials Management • Consumption-Based Planning • Planning • MRP Calculation • Define Period Profile for Safety Time**.

The third MRP tab on the material master, shown in Figure 4.20, allows the entry of forecast, planning, and availability check information.

Figure 4.20 Material Master: MRP 3 Tab

4.8.7   Forecast Requirements

The **Forecast Requirements** section contains three fields: **Period Indicator**, **Fiscal Year Variant**, and **Splitting indicator**.

Period Indicator

The **Period Indicator** field specifies the time period for which consumption values are held for forecasting. The normal time period is 1 month, which is the system default if this field is left blank. This field is also displayed under the **Forecasting Data** tab.

Fiscal Year Variant

The **Fiscal Year Variant** is an accounting-defined field that describes the variant for the fiscal year, that is, the number of posting periods. The fiscal year variant can be configured using Transaction OB37 or by following the navigation path **SAP IMG • Financial Accounting • Financial Accounting Global Settings • Fiscal Year • Maintain Fiscal Year Variant**. This field is also displayed under the **Forecasting Data** tab.

Splitting Indicator

The **Splitting indicator** plays an important function within forecast-based planning. The forecast for a material may determine that production needs to manufacture 1,000 units per month for the next 6 months. However, the planning function needs to split production into smaller time intervals. In this example, a planning run may be required to determine the number of units required to be produced each day for the first month, then weekly for the second month, and then monthly after that. Thus, a splitting indicator can be defined in the configuration to determine the number of days, the number of weeks, and the number of forecast periods required.

This configuration can be found by following the navigation path **SAP IMG • Materials Management • Consumption-Based Planning • Forecast • Define Splitting of Forecast Requirements for MRP**.

4.8.8   Planning

This part of the screen allows you to maintain a number of fields related to the planning of the material at the specific plant.

Strategy Group

The **Strategy group** field groups planning strategies. The strategies used in planning are usually already predefined in the SAP system. Some examples of strategies include **10: Make to Stock Production**, **20: Make to Order Production**, **30: Production by Lot Size**, and **70: Planning at Assembly Level**.

A strategy group is defined with a main strategy and can have up to seven other strategies as part of that group. For instance, strategy group 33 may have its main planning strategy defined as **30: Production by Lot Size** and then have **40: Planning with Final Assembly** defined as part of the group. The configuration for the strategy group can be found by following the navigation path **SAP IMG • Materials Management • Consumption-Based Planning • Master Data • Independent Requirements Parameters • Planning Strategy • Define Strategy Group**.

Consumption Mode

The **Consumption mode** is simply the direction in which the system consumes requirements. In backward consumption, the consumption of the planned requirements occurs before the requirement date. In a forward consumption system, consumption occurs after the requirement date.

Backward Consumption Period

The **Bwd consumption per.** field relates to the consumption mode. If the consumption mode is defined as backward consumption, then this field defines the number of workdays that consumption should be carried out. A backward consumption period can last up to 999 workdays from the current date.

Forward Consumption Period

The **Fwd consumption per.** field also relates to the consumption mode. If the consumption mode is defined as forward consumption, then this field defines the number of workdays that consumption should be carried out. The forward consumption period can last up to 999 workdays from the current date.

Mixed Material Requirements Planning

The **Mixed MRP** field identifies the material as being available to one of three options: subassembly planning with final assembly, gross requirements planning, or subassembly planning without final assembly.

Planning Material

The **Planning material** field can be used when a material has a BOM that contains variant and nonvariant parts. Using another material (the planning material), the planning department can plan the nonvariant parts. When planning runs, the planning material isn't produced but is only used to plan the nonvariant parts. This planning strategy is called *planning with a planning material*.

Planning Plant

The **Planning plant** field reflects the plant associated with the planning of the material. The material is planned to be goods received into this plant.

Conversion Factor for Planning Material

If the regular material and the planning material don't have the same UoM, conversion will be needed. The **Plng conv. factor** field holds a 10-character string and can be defined as appropriate. If the field is blank, the system assumes that the conversation factor is a factor of 1.

4.8.9   Availability Check

This section reviews the availability check that has been identified on other entry screens and the addition of total replenishment lead time and cross-project materials.

Total Replenishment Lead Time

The **Tot. repl. lead time** field reflects the time, in workdays, that is required before a material is available to be used or sold. This field isn't a system calculation but should be the sum of the total in-house production times and the planned delivery times. This field should be maintained if the planning department wants total replenishment lead time to be included in the availability check.

Cross-Project Material Indicator

This indicator allows the user to take into account all project stock or just stock from one project segment.

The fourth **MRP** tab, shown in Figure 4.21, shows BOM explosion data, such as **Component Scrap (%)**; information for discontinued parts, such as **Follow-up matl**; and repetitive manufacturing, assemblies, and deployment strategy, such as **REM profile**.

Figure 4.21 Material Master: MRP 4 Tab

4.8.10   Bill of Materials Explosion/Dependent Requirements

The information in the **BOM explosion/dependent requirements** section includes the selection method, component scrap, and requirements group.

Component Scrap

The **Component scrap (%)** value calculates the correct figure for the component stock in MRP. This field is needed if a material is a component in a BOM. If a BOM for a finished material needs 400 units of material X, and material X has a component scrap figure of 10%, then the actual figure needed is 110%, that is, 440 units of material X. This value isn't used if already defined in the BOM.

Individual or Collective Requirements

The **Individual/coll.** indicator allows the planning department to determine whether a material is relevant for individual requirements, for collective requirements, or for both. Individual requirements are quantities of the material shown separately. Collective requirements are quantities of the material grouped together.

Requirements Group

The **Requirements group** field can be set to allow the system to group together the material requirements for a material on a daily basis.

Material Requirements Planning Dependent Requirements

This indicator is used for make-to-stock materials and assemblies. Set this indicator to indicate that the materials-dependent requirements are relevant for MRP.

4.8.11   Discontinued Parts

If a material is to be discontinued, data regarding its discontinuation can be added in this section. In some industries, many materials could be discontinued. For example, companies that manufacture and sell computer network cards are continually updating and improving the technology. Frequently, their products are discontinued, and replacement products are introduced.

Discontinuation Indicator

The **Disontin. ind.** indicator is used when a material is being discontinued. For MRP purposes, the system needs to know whether this material has dependent requirements.

This indicator can be set to "1" for a single-level material and set to "3" for dependent requirements.

Effective-Out Date

The **Eff.-out** field reflects the date by which the inventory of the discontinued material will be at zero. After this time, the follow-up material will be used in its place.

Follow-Up Material

This field is the material number of the material that will replace the discontinued material on the effective-out date.

4.8.12   Repetitive Manufacturing/Assembly/Deployment Strategy

Information in this section relates to repetitive manufacturing, assemblies, and deployment strategies.

Repetitive Manufacturing Indicator

This indicator allows a material to be considered in repetitive manufacturing. If this indicator is selected, a repetitive manufacturing profile must also be entered for the material.

Repetitive Manufacturing Profile

You can configure a repetitive manufacturing profile (**REM profile**), which allows the production user to determine some issues, such as the following:

- Error correction for use during backflushing
- Goods issue backflushing at goods receipt
- Planned order reduction
- Which movement types are used

A repetitive manufacturing profile can be configured by following the navigation path **Production • Repetitive Manufacturing • Control Data • Define Repetitive Manufacturing Profiles**.

The following section will describe production planning and detailed scheduling (PP-DS).

4.9   Advanced Planning Data

Production planning and detailed scheduling (PP-DS) with SAP S/4HANA has been available since SAP S/4HANA 1610. This functionality introduces advanced capacity planning and heuristics for materials planning that were previously only available in SAP Advanced Planning and Optimization (SAP APO).

PP-DS transactions are executed directly in SAP S/4HANA, thereby eliminating the need for a separate installation to run PP-DS transactions. PP-DS is also synchronized with material master and the work center creation, which means that a material or a work center that has just been created can be immediately available for planning in PP-DS. Some PP-DS functionalities are also integrated with SAP S/4HANA. For example, MRP Live (discussed in detail in Chapter 14) can now also plan PP-DS materials, and a single report is available to convert planned orders.

Let's now cover some of the important fields for PP-DS under the **Advanced Planning** tab of the material master, as shown in Figure 4.22.

Figure 4.22 PP-DS Advanced Planning Tab

> **Note**
>
> To use PP-DS in SAP S/4HANA, select the **Indicator for Advanced Planning** checkbox, which supports advanced liveCache-based planning and scheduling.

4.9.1   Procurement/PP-DS

In the following sections, we'll describe some of the important fields in the **Proc./ PPDS** section under the **Advanced Planning** tab.

PP Planning Procedure

The **PP Plng Procedure** field defines that, for each planning-relevant material, in other words, for an event occurring for a location product (which is a material), an action is triggered by PP-DS. The PP planning procedure also determines, according to your requirements, whether the desired quantity or the confirmed quantity of a schedule line is relevant for pegging. For example, let's say a planning-relevant event such as a goods movement for a product or a change in the product master takes place. Possible actions by the PP-DS can be immediately calling up a product heuristic for the product or creating a planning file entry. A *heuristic* is a planning function in PP-DS that executes planning for selected objects such as products, resources, operations, or line networks.

Plan Explosion

This field specifies the task list type, such as a bill of materials (BOM) and routing, that the system will use to create receipts in PP-DS.

Product Heuristic

Just as MRP types in SAP S/4HANA control the type of planning a material can have, a product heuristic is the planning method for PP-DS. Notice some of the available product heuristics shown in the dropdown menu on the far right of Figure 4.22.

4.9.2   Demand

In the following sections, we'll describe some of the important fields in the **Demand** section under the **Advanced Planning** tab.

Avoid Alerts in Pegging

If this indicator is selected, the system will attempt to create the pegging relationships between requirements and receipts, if possible, without the quantity or date alerts. First, the system links receipts and requirements that are compatible on a time and quantity basis, then the remaining receipts and requirements in a second step.

> **Warning**
> This method can reduce system performance.

Alert Threshold for Early Receipts

The system creates a date/time alert for a fixed or a dynamic pegging relationship if the earliness exceeds the alert threshold, that is, if the availability date/time is earlier than the specified timeframe before the requirements date. To specify the timeframe, use the format HHHHHH:MM (hours:minutes). For example, "1000:10" means 1,000 hours and 10 minutes, while "20:20" means 20 hours and 20 minutes. If no value is specified, the system uses the value "100000:00." Therefore, the system only creates an alert if an availability date/time is more than 100,000 hours before the requirements date.

Alert Threshold for Delayed Receipts

Similar to the alert threshold for early receipts, the system creates a date/time alert for a fixed or a dynamic pegging relationship if the delay exceeds the alert threshold, that is, if the availability date/time is later than the specified timeframe after the requirements date.

Pegging Strategy for Dynamic Pegging

Using the pegging strategy, you can specify in which time sequence the system should cover requirements for the product with dynamic pegging and in which time sequence the system should use the product receipts in the pegging interval to cover a requirement. Thus, the pegging strategy controls the following:

- Which requirement the system should cover first
- Which receipts the system should use first

Generally, for dynamic pegging, the system begins by covering the earliest requirement, then processes the next requirement, and so on. Since several receipts may exist for the availability dates/times within the pegging interval, a planner must specify which receipt the system should use first. The following options exist:

- **Use current receipts**
  With this option, the system uses the current receipt where possible to cover a requirement. Starting from the requirement date, the system first searches to the

beginning of the pegging interval. If no receipts exist in this direction, the system will search to the end of the pegging interval.

- **Use the earliest receipt (first in, first out)**
  With this option, the system uses the earliest receipts in the pegging interval to cover a requirement, that is, the first receipt in the pegging interval, then the second, and so on. With this strategy, excess receipts only become available later.

Resource Network

This field indicates the name of the resource network. A *resource network* describes the physical links between resources in a plant, such as processing units, reactors, vessels, and so on. A resource network explains the flow of materials through a plant.

Product Alerts

In this field, a planner specifies whether:

- The system determines direct alerts for a requirement or a receipt of a product.
- The product is relevant to network alerts.

If a product is relevant to network alerts, the system evaluates the direct alerts for this product for receipts or requirements at the higher levels of the pegging structure as well.

Alerts for less critical components can be hidden and thus:

- Increase the clarity and transparency of network alerts
- Improve performance

If the **Do Not Determine Any Alerts** option is chosen, the system will not determine any direct alerts for the product. The product is thus also not relevant with regard to the network.

> **Note**
>
> A planner will need to specify whether and which alerts are actually displayed by the system in the planning interface or in the **Alert Monitor** in the PP-DS alert profile that is being used for planning.

4.9.3 Lot Size

In the following sections, we'll describe some of the important fields in **Lot Size** area.

Lot Size Unit

This field indicates the valid unit of measure (UoM). The following options exist:

- No lot size units maintained: The base unit of measure maintained for the product applies.
- A unit of measure (alternate or base unit of measure) can be maintained, which can be converted to the base UoM. If an alternate unit of measure is maintained, then the conversion to the base UoM must be maintained under the **Units of Measure** tab. The alternate units of measure must be able to be converted to the base UoM for the product, as otherwise the unit will not be accepted. For example, the alternate unit of measure is kilogram (kg). The base unit of measure is piece (pc). 5 kg correspond to 3 pieces.

Target Days' Supply in Workdays

The PP-DS standard heuristic SAP_PP_002 (planning of standard lots) and the SNP (supply network planning) heuristic takes into account the target days' supply if one of the following target stock level methods is selected:

- **No entry**
  Target days' supply from product master.
- **4**
  Target stock level equals maximum stock level + safety stock.
- **5**
  Maximum from maximum stock level/target days' supply (product master).
- **6**
  Total from maximum stock level/target days' supply (product master).
- **7**
  No target stock level.

To plan location products using target stock level methods, use the standard heuristic SAP_PP_002 (planning of standard lot sizes). Refer again to the far-right side of Figure 4.22.

The heuristic-based planning uses the SNP heuristic. The SNP heuristic plans demand over the entire supply chain network (cross-location planning) and creates a medium-term production and distribution plan. This heuristic does not take into account any constraints or costs, which means that the plan created may not necessarily be feasible. In a second step after the heuristic run, the planner can then adjust

the plan using capacity leveling in interactive SNP planning to create a plan that is feasible.

Reorder Days' Supply (in Workdays)

Specify the reorder days' supply if the **Reorder Point Method 2** for the location product is defined.

4.9.4   Goods Receipt/Goods Issue

In the following sections, we'll describe some important fields in **GR/GI** (goods receipt/goods issue) area, as shown in Figure 4.23, which is accessed by scrolling down from the screen shown in Figure 4.22.

Figure 4.23 More PP-DS Master Data Maintenance Options in the Advanced Planning Tab

Goods Receipt Processing Time

This field represents the time between the delivery or the production of a product and its availability as stock. This time is used, for example, to account for handling time or to allow time for quality checks and is added to the transportation duration or the production time of a product.

Handling Capacity Consumption in Unit of Measure (Goods Receipt)

This field is used to calculate how much handling resource capacity is consumed by the product for a particular plan. For example, if the handling resource can handle 1,000 liters per day and defining the handling capacity consumption as 10 liters per piece, the maximum rate is 100 pieces per day.

4.9.5   Location-Dependent Shelf Life

In this area, you can control whether the system should consider the resource location-dependent shelf life of a product and, if so, the standard, minimum, and maximum shelf lives a product must have. A location in PP-DS can be a plant, a distribution center, a storage location MRP area, a customer, a transportation lane, or a business partner (vendor).

The **Advanced Planning** tab examined in this section contains specific information that is important when a material is subject to detailed planning using the PP-DS functionality. The next section examines the information entered under the **External Service Parts Planning** tab of the material master.

4.10   Extended Service Parts Planning

SAP S/4HANA Supply Chain for extended service parts planning became available in SAP S/4HANA 1909. Like PP-DS, extended service parts planning was previously only available in SAP Advanced Planning and Optimization (SAP APO) before being embedded in SAP S/4HANA 1909.

Extended service parts planning provides planning functions specific to service parts and transparency throughout the supply chain, right from the moment demand occurs through to the delivery of the product. Extended service parts planning manages the forecasting, inventory planning, procurement, and distribution of the service parts to the customer facing locations in order to keep the target service levels.

Planning for the service parts takes place in distribution structures (bills of distribution [BOD]), which contain all locations of a company. These locations can be, for example, distribution centers, contract packagers, or customers and dealers.

Extended service parts planning considers the characteristics of each product during planning. This process takes into account, for example, the locations at which a certain product is most needed, whether a product is fast-moving or slow-moving, and the sales behavior of a product. Depending on these properties, for each product, your company can decide whether to perform *period-based service parts planning based on the forecast* or *plan the service parts based on a reorder point*. If period-based planning is used, then extended service parts planning generates a forecast for a product either on the basis of past sales values or on the basis of leading indicators.

We recommend using leading indicators as the basis for generating the forecast only if reliable, timely, and accurate information is available. If your company chooses to

use past sales values as the basis for the forecast of a service part, SAP distinguishes between products with constant demand, trends, seasonal demand, and products with sporadic demand. Extended service parts planning links the stocks within the BOD optimally with the actual demands. In addition to carrying out the actual planning, your company can also carry out a simulation of the planning, which means simulating a particular planning process so that you can optimize parameters and settings for efficient supply chain management.

In the following section, we'll discuss the fields available in the two tabs of extended services parts planning of material master.

4.10.1   Basic Data

Let's now cover some of the important fields for setting up extended service parts planning. Figure 4.24 shows the **Ext. SPP Basic Data** tab of the material master.

Figure 4.24 Basic Data: Extended Service Parts Planning

Some of the important fields in the **Planning Scenario** section include the following:

- **Product for Kit-to-Order**
  Setting this indicator denotes that this product is exclusively a part of a kit, and hence should be not taken into account in inventory planning.

- **Procure to Order**
  Setting this indicator denotes that the procurement of this product takes place only after receiving a firm order.
- **Push Deployment from Supplier**
  Indicates whether the product can be considered for push deployment from the supplier. This indicator at set at either a product level or a location-product level. The system only checks whether the indicator is set at product level if it is not set the indicator at location-product level.
- **DRP: Global Stock on Entry Location**
  Setting this indicator ensures that when there is no source determination within a BOD, the distribution requirements planning aggregates the net demands of each child location to the next parent location so that all demands along the BOD arrive at the entry location.
- **Excl. from express shipm.**
  Setting this indicator will eliminate the product from an expedited shipment process to account for the extra cost in choosing a different but expensive mean of transport.

4.10.2   Extended SPP

Figure 4.25 shows the **Extended SPP** tab of the material master. Let's discuss some of the important fields on this screen:

- **Product Alerts**
  This field enables a planner to choose whether the system creates direct alerts for a requirement or a receipt of a product or whether the product is relevant for a network alert. If the product is relevant to network alerts, the system evaluates the direct alerts determined for this product for receipts or requirements at the superordinate levels of the pegging structure.

  If the **Do Not Determine Any Alerts** option is selected, the system will not determine any direct alerts for the product, thus indicating that this product is also not relevant for network alerts.
- **GR Processing Time**
  This field is the time between the delivery or the production of a product and its availability as stock. This time is used, for example, to account for handling time or

to allow time for quality checks, and is added to the transportation duration or the production time of a product.

- **GI Processing Time**
  It is the time between issuing the product from storage and transporting it. This time is used to account for handling time or to allow time for quality control and is added to the transport duration of a product.

Figure 4.25 Extended Service Parts Planning

- **Throughput Time**
  A component's lead time starts at the end of the duration of transportation and ends when the next transportation begins.
- **Third-Party Order Processing**
  This field specifies whether the location product is supplied via third-party order processing (**TPOP**).
- **Safety stock**
  This field is the stock quantity (**SFT**) maintained to satisfy unexpectedly high demand in the coverage period. Not only is the option available to maintain safety stock of the parent location, but also that of a virtual child location (**VCL**).

> **Note**
>
> Other stock-related fields such as the reorder point and maximum stock, are discussed in detail in Chapter 14.

- **Cost Factor for Stockholding Costs**
  This field a cost factor that determines stockholding costs, which are calculated from the procurement costs multiplied by this factor.
- **Procurement Costs for Product**
  This field specifies the costs for procuring a location product needs to be taken into account in optimization-based planning in supply network planning. In addition, the supply network planning optimizer account for procurement costs when calculating the penalty costs for reusing or disposing of a product whose shelf life date is past.

The other two costs (goods receipt and goods issue) reflect the cost incurred in receiving or issuing a product, respectively.

4.11 Forecasting Data

The **Forecasting** tab, shown in Figure 4.26, is displayed when the material being entered is assigned to a material type applicable to forecasting. A forecast profile can be entered at the organizational level, if available. The forecasting data entered into the material master becomes the initial calculated forecast and consumption values.

Figure 4.26 Material Master: Forecasting Tab

4.11.1   General Data

The **General data** section under the **Forecasting** tab includes a number of fields, discussed in detail in the following sections, such as the **Forecast model** to be used for the material, the **Period Indicator** used for forecasting the material, and the **Fiscal Year Variant**.

Forecast Model

The forecast model calculates the requirements forecast for the material. We'll discuss forecast models and the analysis of forecasting data in general in Chapter 15.

Period Indicator

The **Period Indicator** field specifies the time period for which the consumption values are held for forecasting. The normal time period is 1 month, which is the SAP default if this field is left blank.

Fiscal Year Variant

The **Fiscal Year Variant** is an accounting-defined field that describes the variant for the fiscal year, that is, the number of posting periods. The fiscal year variant can be configured using Transaction OB37 or by following the navigation path **SAP IMG • Financial Accounting • Financial Accounting Global Settings • Fiscal Year • Maintain Fiscal Year Variant**.

Reference Material for Consumption

If the material has no historical data from which to create a forecast, the planner can define a material that may similar for use as a reference material in the **RefMatl:consumption** field. The system then uses the consumption figures for the reference material to create a forecast for the new material.

Reference Plant

The reference plant field (**RefPlant:consumption**) represents the plant from which to drive consumption figures. This field is used for new materials and used in combination with the **RefMatl:consumption** field. This field points to the plant from which a planner requires the material to copy the consumption figures.

Date To

This field is the furthest date to which the figures for the reference material should be taken. This field is used with the **RefMatl:consumption** and the **RefPlant:consumption** fields.

Multiplier

The **Multiplier** field is a number between 0 and 1 where the value relates to the percentage of the consumption of the reference material that should be used for the new material. For example, 1 means 100% of the reference material consumption is used, whereas 0.6 indicates that 60% of the reference material consumption is used.

4.11.2   Number of Periods Required

The fields in this section include the historical periods, forecast periods, and the number of periods per seasonal cycle.

Historical Periods

The number of historical periods entered into the **Hist. periods** field is used to calculate the forecast. If left blank, no periods are used.

Forecast Periods

The number entered in the **Forecast periods** field is the number of periods over which the forecast is calculated.

Number of Periods for Initialization

This number is for the historical values that you want to be used for the forecast initialization. If the **Initialization pds** field is blank, no historical values are used to initialize the forecast.

Fixed Periods

The **Fixed periods** field is used to avoid fluctuations in the forecast calculation or because production can no longer react to changed planning figures. The forecast will be fixed for the number of periods entered.

Number of Periods per Seasonal Cycle

If using a seasonal forecast model, then you can use the **Periods per season** field to define the number of periods that make up a season for this material.

4.11.3 Control Data

The **Control data** section under the **Forecasting** tab includes the **Initialization** indicator and the **Tracking limit**, **Model selection**, and **Weighting group** fields, among others.

Initialization Indicator

If a forecast needs to be initialized, then set this indicator to allow the system to initialize the forecast or allow forecasts to be manually initialized.

Tracking Limit

The **Tracking limit** field holds a value that specifies the amount by which the forecast value may deviate from the actual value. This figure can be entered to three decimal places.

Reset Forecast Model Automatically

If the **Reset automatically** indicator is selected, the forecast is reset if the tracking limit is exceeded.

Model Selection

This field is only active if the user did not enter a value in the **Forecast model** field, which means that the system will select a model automatically. To assist the system in choosing a forecast model, the **Model selection** field can be set to one of the following three indicators:

- **T**: Examine for a trend.
- **S**: Examine for seasonal fluctuations.
- **A**: Examine for a trend and seasonal fluctuations.

Selection Procedure

The **Selection procedure** field is used when the system is selecting a forecasting model. Two selection procedures are available:

- **1**: This procedure performs a significance test to find the best seasonal or trend pattern.
- **2**: This procedure carries out the forecast for all models and then selects the model with the smallest mean absolute deviation (MAD).

Indicator for Parameter Optimization

If the **Param.optimization** indicator is set, then the system will use the smoothing factors for the given forecast model.

Optimization Level

This indicator can be set to **Fine**, **Middle**, or **Rough**. The finer the optimization level, the more accurate the forecast becomes but at the expense of processing time and system resource consumption.

Weighting Group

This key is used with the weighted moving average forecast model. The weighting group can be configured by following the navigation path **SAP IMG • Materials Management • Consumption-Based Planning • Forecast • Weighting Groups for Weighting Moving Average**.

Correction Factor Indicator

The **Correction factors** indicator allows a planner to decide whether the forecast should include the following corrector factors:

- **Alpha factor**
  This correction is the smoothing factor for the basic value. If left blank, the default for the **Alpha factor** is 0.2.
- **Beta factor**
  This correction is the smoothing factor for the trend value. If left blank, the default for the **Beta factor** is 0.1.
- **Gamma factor**
  This correction is the smoothing factor for the seasonal index. If left blank, the default for the **Gamma factor** is 0.3.
- **Delta factor**
  This correction is the smoothing factor for the mean absolute deviation. If left blank, the default for the **Delta factor** is 0.3.

In this section, we've discussed the forecast data required for the material master record. Refer to Chapter 15, which discusses forecasting in detail. In the next section, we'll examine the data required under the **Work Scheduling** tab.

4.12   Work Scheduling Data

The **Work scheduling** tab, shown in Figure 4.27, allows a planner to enter information relevant to a particular plant. The material may be used in many plants. Some fields on this screen will be defaulted from other entry screens, such as the **Base Unit of Measure** fields. In the following sections, we'll discuss the major areas of this screen. If your company produces products, be sure to activate and maintain the work scheduling view.

Figure 4.27 Material Master: Work Scheduling Tab

4.12.1   General Data

The **General Data** section refers to the production unit, production storage location, and the production scheduling profile.

Production Unit

The **Production unit** field reflects the UoM used for the material in the production process. If no production unit is entered, then the base UoM is assumed to be the production UoM.

Production Supervisor

The production supervisor has an important position in production and plays many roles, including the following:

- Generating a collaborative production schedule
- Maximizing plant efficiency through the effective use of equipment and personnel

- Determining short-term labor requirements necessary to support the plan
- Creating a production plan that meets stated goals for on-time delivery
- Monitoring schedule adherence and schedule attainment to identify corrective actions for addressing shortfalls
- Working with management to report current order status and maintain order accuracy
- Coordinating project schedules and incorporating them into the commercial production schedule
- Identifying and resolving potential capacity constraints

In the material master, a production scheduler is entered at each plant level. The **Prodn Supervisor** can be configured using Transaction OPJ9 or by following the navigation path **SAP IMG • Production • Shop Floor Control • Master Data • Define Production Scheduler**.

Production Storage Location

The **Prod.stor.loc** field is the key to the production of a material in a plant. This storage location is used as the issuing storage location for the backflushing process for a material that is a component for a finished good. If the material is a finished good, then this storage location is where the finished goods will be received after production.

Production Scheduling Profile

The production scheduling profile can be configured using Transaction OPKP or by following the navigation path **SAP IMG • Production • Shop Floor Control • Master Data • Define Production Scheduling Profile**.

The **Prod.Sched.Profile** field can be configured to perform automatic actions on either the release or the creation of a production or process order. This profile also provides configuration for capacity planning, availability check goods receipt, batch management, and transport and order type.

4.12.2   Tolerance Data

The **Tolerance data** section includes the fields that describe the underdelivery and overdelivery tolerances.

Underdelivery Tolerance

The **Underdely tol.** field allows you to define an underdelivery tolerance percentage for the material. Thus, if a goods receipt for a production order differs from the expected amount by more than the underdelivery tolerance, then the goods receipt won't be allowed.

Overdelivery Tolerance

The **Overdely tol.** field allows a planner to define an overdelivery tolerance percentage for the material. Thus, if a goods receipt for a production order differs from the expected amount by more than the overdelivery tolerance, then the goods receipt won't be allowed.

Unlimited Overdelivery

If the **Unlimited** indicator is set, then the goods receipt from a production order for this material will accept any amount over the expected goods receipt total.

4.12.3   In-House Production Time in Days

The fields in the **In-house production time in days** section include the **Setup time, Processing time, Interoperation**, and **Base quantity** fields. Let's look at each of these fields next.

Setup Time

The **Setup time** field is used to determine the dates for planned orders. The setup time is the number of days required to configure the work centers used in the production of the material. For example, if production for material ABC in a machine shop has finished, the equipment must have the parts used for material ABC removed. After the machines have been torn down, and the setup for the next production has been run, material XYZ will start. After the run for XYZ has finished, the machines will be torn down before the next production run. The setup time for material XYZ is the setup time plus the teardown time.

This setup time doesn't take into account the quantity of the material being produced. The setup time may be a standard figure that has been calculated or negotiated. The field can be defined up to two decimal places for partial days.

Interoperation Time

The **Interoperation** field reflects the time that a material is in the state between operations in the production order. Many situations can make up the total interoperation time:

- **Move time**
  Time accumulated as the material is moved from one work center to the next.

- **Wait time**
  Time the material has to be left alone after an operation but before the move can take place on the material, for example, curing and temperature reduction.

- **Queue time**
  Time that materials are queued for work centers that are bottlenecked or because of production delays in operations. This queue time can be calculated by production staff.

- **Float before production**
  The number of days between the start date or the production order and the scheduled start date (entered by the production scheduler).

- **Float after production**
  The number of days from the end of the production order to the scheduled end date (entered by the production scheduler).

In-House Production Time

The **InhseProdTime** field is the number of days related to all of the individual elements of in-house production, including floats and interoperation. This value is used in material planning and is lot size independent.

Processing Time

The **Processing time** field reflects the amount of time the material consumes at the work centers used in the production order. The processing time will take into account the **Base quantity** that is entered.

Base Quantity

This processing time is entered for the base quantity and can be defined up to three decimal places.

In this section, we discussed the data used to define the **Work scheduling** tab. In the next section, we'll go into detail about maintaining production resources/tools (PRT) data in the material master.

4.13   Production Resources/Tools Data

The **Prod.resources/tools** tab, shown in Figure 4.28, allows the plant maintenance department to enter the data for a PRT material. Some of the fields shown have already been described in other material master screens. In the following sections, we'll discuss the most important elements of this tab.

Figure 4.28 Material Master: Prod.Resources/Tools Tab

4.13.1   General Data

The **General data** section under the **Prod.resources/tools** tab allows you to enter basic plant-specific data such as **Task list usage** and **Grouping key**.

Task List Usage

This field determines on what task lists the PRT is valid for the particular plant. This field can be found in table TC23. The configuration for the **Task list usage** field is found in Transaction OP47 or via the navigation path **SAP IMG • Plant Maintenance and**

Customer Service • Maintenance Plans, Work Centers, Task Lists and PRTs • Production Resources/Tools • General Data • Define Task List Usage Keys.

Grouping Keys 1 and 2

These fields allow the plant maintenance department to define groupings for their PRTs. The configuration for the grouping keys is found by following the navigation path **SAP IMG • Plant Maintenance and Customer Service • Maintenance Plans, Work Centers, Task Lists and PRTs • Production Resources/Tools • General Data • Define PRT Group Keys**.

4.13.2   Default Values for Task List Assignment

The default values for the task list assignments include the control keys for the management of the PRTs, the standard text key, and the quantity formula.

Control Key for the Management of PRTs

The **Control key** field specifies how the PRT is used in the maintenance order or the task list. The control key defines in what parts of the task list the PRT can be used. This field allows a maintenance planner to select a control key that has been configured. During the configuration of a control key, five indicators can be selected for the control key: **Schedule, Calculate, Confirm, Expand**, and **Print**. The control key can be configured by following the navigation path **SAP IMG • Plant Maintenance and Customer Service • Maintenance Plans, Work Centers, Task Lists and PRTs • Production Resources/Tools • Production Resource/Tool Assignments • Define PRT Control Keys**.

Standard Text Key

The **Standard text key** allows the plant maintenance department to enter a key on the material master that defines a standard text for the PRT, which is then used as a default in the task list or maintenance order. The standard texts are maintained using Transaction CA10 or by following the navigation path **SAP IMG • Quality Management • Quality Planning • Inspection Planning • Operation • Work Center • Maintain Standard Text Keys**.

The standard text has to be maintained in the correct language. For example, the standard text key P000010 for PRTs can be defined in a number of different languages.

Quantity Formula

This field is the formula for calculating the total of the PRTs required. This field is copied into the maintenance order or task list. The formula can be defined in configuration using Transaction OIZM or by following the navigation path **SAP IMG • Plant Maintenance and Customer Service • Maintenance Plans, Work Centers, Task Lists and PRTs • Production Resources/Tools • Production Resource/Tool Assignments • Formulas • Configure Formula Definition**.

All formulas are defined in Transaction OIZM. For a formula to be selected in the **Quantity formula** field under the **Prod.resources/tools** tab, the formula must have the **PRT Allowed for Requirement** indicator, found on the configuration screen of Transaction OIZM, selected.

Usage Value Formula

This field calculates the total usage value of the PRT. This field is selected from the same formulas as the **Quantity formula** field.

Reference Date to Start of Production Resource/Tool Usage

The **Ref. date for start** field is used in calculating the start date/time for the PRT usage. This value is used with the **Offset to start** field, which is the next field in the material master and used in the task list or maintenance order.

Offset to Start

This field is used in conjunction with the **Ref. date for start** field for PRT scheduling. This numeric value can be positive or negative. A negative value indicates a start time before the reference date. A positive value indicates a time after the reference date. The numeric value can have a unit of measure (UoM) that indicates hours, minutes, days, and so on.

Reference Date for Finish/Offset to Finish

These fields are similar to the **Offset to start** field, except they determine the finish date rather than the start date.

In this section, we've discussed the data used to define the **PRT** tab. In the next section, we'll go into detail about maintaining plant and storage location data in the material master screen.

4.14   Plant Data/Storage Location

The **Plant data/stor.** tabs, shown in Figure 4.29 and later in Figure 4.30, allow the inventory staff to enter information relevant to storage locations and to shelf-life characteristics, including storage bins, container requirements, maximum storage periods, and total shelf life of a material, as we'll explain in the following sections.

Figure 4.29 Material Master: Plant Data/Stor. 1 Tab

4.14.1   General Data

The fields in the **General data** section under the **Plant data/stor. 1** tab allow the entry of material data specifically for the storage location, such as **Storage Bin** and cycle counting indicator (**CC phys. inv. ind**). These values are referred to as *general data items*.

Storage Bin

The **Storage Bin** field can be entered by the warehouse staff to identify a location within the storage location where the material is always stored. This value is used when WM isn't implemented. The **Storage Bin** is a 10-character field that isn't configurable

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because it doesn't have any functionality within inventory management and is only used as a reference field.

> **Note**
> Only one storage bin can be defined for each material per storage location.

Picking Area

The **Picking area** field represents a group of WM storage bins that are used for picking in lean WM. The **Picking area** field is similar to the definition of storage section under the **Warehouse Management** tab. The picking area can be configured by following the navigation path **SAP IMG • Logistics Execution • Shipping • Picking • Lean WM • Define Picking Areas.**

Temperature Conditions

The **Temp. conditions** field is simply the temperature at which the material should be stored. Certain chemicals and metals must be stored at low temperatures to avoid chemical reactions. The **Temp. conditions** field is stored at the client level, so this value valid for all plants. The **Temp. conditions** field can be configured by following the navigation path **SAP IMG • Logistics – General • Material Master • Settings for Key Fields • Define Temperature Conditions**.

Storage Conditions

The **Storage conditions** field is similar to the **Temp. conditions** field in that this value a client-wide field valid for all plants. The storage conditions can be defined to be relevant for specific requirements. Examples of a storage condition may be refrigeration, outside only, or in a hotbox. The **Storage conditions** field can be configured by following the navigation path **SAP IMG • Logistics – General • Material Master • Settings for Key Fields • Define Storage Conditions.**

Container Requirements

The **Container reqmts** field is another field that works at the client level and is the same for all plants. This field defines what container a material should be stored and shipped in. The **Container reqmts** field can be configured by following the navigation

path **SAP IMG • Logistics – General • Material Master • Settings for Key Fields • Define Container Requirements**.

Hazardous Material Number

A hazardous material number can be assigned to the material at the client level. This number links the material with the hazardous material information defined for that hazardous material number, such as water pollutant, hazardous storage class, or warnings. Hazardous material isn't defined in configuration but in logistics. A hazardous material can be created using Transaction VM01 or by following the navigation path **Logistics • Logistics Execution • Master Data • Material • Hazardous Material • Create**.

Cycle Counting Physical Inventory Indicator

Select the cycle counting indicator (**CC phys. inv. ind.**) if the material must be cycle counted. The indicator can also determine how the count is taken and how often. The cycle count indicator usually is an A, B, C, or D to coincide with the ABC indicators. The cycle counting indicator is defined by four characteristics:

- Number of physical inventories per fiscal year to be performed
- Maximum interval of days between counts
- Float time allowed for the planned count date after the required date
- Percentage of consumption allocated to each of the indicators (A, B, C, etc.)

The cycle counting indicator can be configured using Transaction OMCO or by following the navigation path **SAP IMG • Materials Management • Inventory Management and Physical Inventory • Physical Inventory • Cycle Counting**.

Cycle Counting Indicator Is Fixed

If the **CC fixed** indicator is set, then **CC phys. inv. ind.**, defined previously, can't be changed by the ABC functionality that can be run periodically. If the indicator isn't set, **CC phys. inv. ind.** will be changed if the ABC functionality determines that the material has changed status. If the indicator is set, and no changes can be made via the ABC functionality, then **CC phys. inv. ind.** can still be selected by changing it in the material master.

Number of Goods Receipt Slips

The **Number of GR slips** field allows the receiving department to enter a figure to determine the number of goods receipt documents that will be printed. If the field is left blank, the system assumes that one material document will be printed.

Label Type

Some materials require labels to be printed and affixed to the product or packaging. The **Label type** field defines which labels are printed for which goods movement, how many labels are printed, and which printer they are printed on. The label type can be configured using Transaction OMCF or by following the navigation path **SAP IMG • Materials Management • Inventory Management and Physical Inventory • Print Control • Set Label Printout • Label Type**.

Label Form

The **Lab.form** field can be used when a **Label type** has been entered for a material. The **Lab.form** field defines the dimensions and characteristics of the label. The label form can be defined using Transaction OMCF, as with the label type, or by following the navigation path **SAP IMG • Materials Management • Inventory Management and Physical Inventory • Print Control • Set Label Printout • Label Form**.

4.14.2   Shelf Life Data

The **Shelf life data** section allows the entry of data used in the shelf-life date functionality. For example, some companies use, store, and sell materials that can only be used before its shelf life expires, such as food items, chemicals, and pharmaceuticals. Materials with shelf life dates need to be batch managed.

Maximum Storage Period

The **Max. Storage Period** field is for information and reporting only and doesn't have any functionality. Users can define the maximum storage period for a material before it expires.

Time Unit

The **Time unit** field is the UoM of the maximum storage period, that is, days, months, and years. For example, many foodstuffs will have a shelf life of days, whereas pharmaceuticals may have a shelf life of a year or more.

Minimum Remaining Shelf Life

The **Min. Rem. Shelf Life** field determines whether a material can be received via goods receipts based on the remaining shelf life of the material to be received. If this field has a value of 100 days, but the material to be received has only 80 days of shelf life left, then the goods receipt won't be accepted. The **Min. Rem. Shelf Life** field works at the client level and is the same for the material across all plants.

Total Shelf Life

The **Total shelf life** field is at the client level, and this value doesn't vary by plant. The total shelf life is the time for which the materials will be kept, from the production date to the shelf-life expiry date (SLED). Shelf life is only checked if the expiration date check has been activated, at the plant level or at the movement type level, using Transaction OMJ5 or by following the navigation path **SAP IMG • Logistics – General • Batch Management • Shelf Life Expiration Date (SLED) • Set Expiration Date Check**.

Period Indicator for Shelf-Life Expiry Date

The **Period Ind. for SLED** field is defined for the SLED fields used in this material master tab. The period can be defined as months, days, and so on. The period indicator can be configured using Transaction OO2K or by following the navigation path **SAP IMG • Logistics – General • Batch Management • Shelf Life Expiration Date (SLED) • Maintain Period Indicator**.

Rounding Rule for Shelf-Life Expiry Dates

The **Rounding rule SLED** field allows SLED dates to be rounded up to the nearest unit of the time defined in the period indicator. For example, if the period indicator is months, then the rounding rule either is the first day of the month, the last day of the month, or no change if no rounding rule exists. The rounding rule is for calculated dates rather than dates entered into the record.

Figure 4.30 shows the second **Plant data/stor.** tab. The fields displayed in the **Weight/volume** section, such as the **Gross Weight** and **Net Weight** fields, and in the **General Plant Parameters** section, such as **Serial no. Profile** and **Profit Center**, can found on other material master screens.
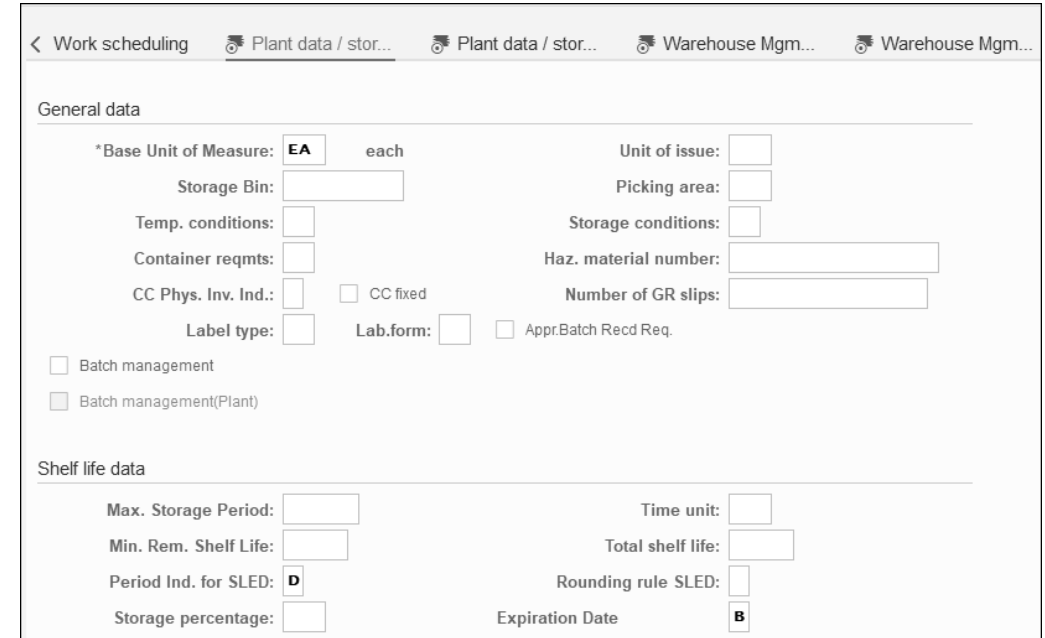
Figure 4.30 Material Master: Plant Data/Stor. 2 Tab

In the next section, we'll examine the material master screens for WM and the data that can be entered if your company uses WM or embedded EWM in SAP S/4HANA.

4.15   Warehouse Management Data

The **Warehouse Mgmt** tabs of the material master allow a planner to enter information at the warehouse/storage type level, as shown in Figure 4.31 and in Figure 4.32. In the following sections, we'll discuss the main sections found under the **Warehouse Mgmt** tabs.

4.15.1   General Data

The **General data** section, shown in Figure 4.31, allows the entry of specific WM data, including **Base Unit of Measure** and **Picking storage type**.

Figure 4.31 Material Master: Warehouse Mgmt 1 Tab

Warehouse Management Unit of Measure

Like other units of measure, this **WM unit** field is the UoM defined for the material as related to its movements through the warehouse.

Unit of Issue

This **Unit of issue** field allows the warehouse department to define a different UoM for items issued from the warehouse, as an alternative to the base UoM.

Picking Storage Type

This **Picking storage type** field is used by planning as the storage type that will contain material that can be used in rough-cut planning.

4.15.2   Storage Strategies

The data in this section relates to the stock placement and stock removal strategies in WM that can be attributed to a material when creating a material master.

Stock Removal

The **Stock removal** field allows warehouse staff to enter the storage type indicator that defines the sequence in which storage types are searched for the material to be picked in the warehouse. The storage type indicator can be defined using Transaction OMLY or by following the navigation path **SAP IMG • Logistics Execution • Warehouse Management • Strategies • Activate Storage Type Search**.

Stock Placement

The **Stock placement** field acts in a similar manner to the **Stock removal** field, except that the strategy defined in the storage type search is for a placement strategy rather than a removal strategy.

Storage Section

The storage section search is a more specific strategy for stock placement because it defines one level below the storage type search for stock placement. The **Storage Section Ind.** must be defined for each warehouse and storage type. The strategy allows up to ten storage sections to be defined in sequence for the placement strategy. The configuration can be found using Transaction OMLZ or by following the navigation path **SAP IMG • Logistics Execution • Warehouse Management • Strategies • Activate Storage Section Search**.

Bulk Storage

Within the placement strategies, you can define how bulk materials should be placed in stock. The **Bulk storage** indicator can be used if the bulk storage placement strategy has been activated in WM. The **Bulk storage** indicator can indicate height or width of a particular storage type. The configuration can be found using Transaction OMM4 or by following the navigation path **SAP IMG • Logistics Execution • Warehouse Management • Strategies • Putaway Strategies • Define Strategy for Bulk Storage**.

Special Movement

The **Special movement** indicator allows a material to be identified as requiring a special goods movement. The **Special movement** indicator is configured in WM to allow special processing for a group of materials. The configuration is found by following the navigation path **SAP IMG • Logistics Execution • Warehouse Management • Master Data • Material • Define Special Movement Indicators**.

If the **Special movement** indicator has been defined, it can be used when WM processes intersect with inventory management processes, where the configuration determines the WM movement type. The **Special movement** indicator can allow certain materials assigned with the indicator to behave differently during goods movements. The configuration for the warehouse goods movements can be found by following the navigation path **SAP IMG • Logistics Execution • Warehouse Management • Interfaces • Inventory Management • Define Movement Types**.

Message to Inventory Management

This field is used if the WM system is decentralized. If this indicator is set, WM information for this material will be sent to inventory management immediately.

Two-Step Picking

In WM, a warehouse supervisor can choose between one-step and two-step picking for materials. If the material is large and bulky, then one-step picking is optimal. However, if the materials to be picked are small and numerous, then one-step picking may not be an efficient use of warehouse resources. Therefore, two-step picking can minimize the workload. The two-step process defines an interim storage type, which is normally 200, where items are picked and transferred to; from that interim storage, the final pick takes place. The configuration for two-step picking is found by following the navigation path **SAP IMG • Logistics Execution • Warehouse Management • Interfaces • Shipping • Define 2-Step Picking**.

Allow Addition to Stock Indicator

Setting this indicator allows material to be added to the existing stock of the same material in the same storage bin, only if the characteristics of the two quantities of material are the same. If the storage type table doesn't allow additions to existing stock for this storage type, the indicator is redundant.

Figure 4.32 shows the data relating to palletization and storage bin stock, which we'll describe in further detail next.

Figure 4.32 Material Master: Warehouse Mgmt 2 Tab

4.15.3   Palletization Data

Palletization is used in storage unit handling within WM. The process uses pallets to store and move material in the warehouse. The **Palletization data** section determines how the material should be entered into stock. The material can be placed into storage in different ways depending on the storage unit type being used.

Loading Equipment Quantity/Unit of Measure

The **LE quantity** represents the amount of material to be placed in the storage unit type. The storage unit type (**SUT**) described in this section is the entity used to store some material in the warehouse. This field determines the quantity of material that can be stored in the storage unit.

Storage Unit Type

The storage unit type (**SUT**) is a description of how the material is stored in the storage bin. For example, some bins may not allow a full pallet due to height restrictions, but a half-pallet may fit. Therefore, the warehouse can define a storage unit type that defines a half-pallet and the quantity of the material that can fit on that half-pallet.

> **Example**
>
> Suppose that, for material XYZ, 30 boxes are equivalent to one half-pallet. The storage unit type is configured and must be activated in each warehouse before it can be used. A definition of the storage unit type exists for each plant. The configuration can be made by following the navigation path **SAP IMG • Logistics Execution • Warehouse Management • Master Data • Material • Define Storage Unit Types**.

4.15.4   Storage Bin Stock

The **Storage bin stock** information entered under the **Warehouse Mgmt 2** tab is used for calculation in WM bin replenishment.

Storage Bin

The storage bin is the lowest level of storage defined in the warehouse. The **Storage Bin** field allows a warehouse user to enter a storage bin that this material will be added to for the plant/storage type combination. Pressing the ⌨F4 key shows the options for the empty storage bins.

Maximum Bin Quantity

This value can be entered to define the maximum quantity of a material that can be entered into any storage bin defined in the storage type. The quantity is defined in the base UoM, not the WM UoM.

Control Quantity

The **Control quantity** field can be maintained to define, for this storage type, the amount of material that reaches the level when stock removal can take place. Similar to the **Maximum bin quantity**, this **Control quantity** uses the material's base UoM.

Minimum Bin Quantity

This field allows warehouse users to define a minimum quantity that can be stored in the bin locations for this storage type. This requirement makes efficient use of storage bins. For example, if a material is small, the maximum bin quantity is high, and no minimum quantity is set, then you might have many bins each containing small amounts of stock. Entering a minimum bin quantity allows a bin to be used efficiently and minimizes picking. Like the other quantities, the **Minimum bin quantity** is recorded in the base quantity unit.

Replenishment Quantity

The **Replenishment qty** field is defined to suggest the quantity that should be placed in the storage bin. Like the other quantities, the **Replenishment qty** is recorded in the base quantity unit.

Rounding Quantity

This quantity is used if a material is subject to the quantity-dependent picking strategy. The **Rounding qty** field represents the figure that picking quantities are rounded down to for this material/storage type combination. This quantity is also defined in the base UoM.

In the next section, we'll examine the material master screens that contain fields related to QM. Data on these screens should only be maintained if your company is using the QM functionality.

4.16   Quality Management Data

The **Quality management** tab allows the quality department to define the basic quality requirements for the material at each plant level. The following sections cover the most important fields and sections of this tab.

4.16.1   General Data

The **General data** section under the **Quality management** tab, shown in Figure 4.33, allows the entry of specific QM data, including UoM, inspection interval, and documentation.

Figure 4.33 Material Master: Quality Management Tab

Inspection Setup

Inspection setup information is already determined if a QM inspection setup already exists for this material/plant combination. If a quality inspection user wants to enter the inspection setup information for this material at this plant, the **Insp. Setup** button to the right will bring up the inspection entry screen. This screen allows a number of inspection types to be entered, such as goods receipt inspection for purchase orders or production orders, recurring (repeat) inspection, and stock transfer inspection.

Post to Inspection Stock Indicator

This indicator can be set to force material to be posted to inspection stock. This indicator is copied into the purchase order (PO). However, this indicator is ignored if an inspection type that is stock-relevant—in other words, an inspection due to stock movement—has been entered in the inspection setup.

Tips & Tricks

If your company hasn't implemented or isn't using QM, this checkbox available in various views of material master can still be selected so that the incoming stock is posted

to quality inspection instead of unrestricted-use stock. In other words, using this checkbox offers limited quality management functionality even when not using QM.

Material Authorization Group for Activities in Quality Management

The **QM material auth**. field allows the quality department to add a layer of security to the quality information of each material. An authorization group can be entered into the field to check whether a quality inspection user has the correct authorization to view the information. The authorization group is defined in configuration by following the navigation path **SAP IMG • Quality Management • Environment • Central Functions • Authorization Management • Define Authorization Group and Digital Signature**.

Note

This field not only controls who is authorized to perform quality functions but also controls the digital signature functionality in QM. A digital signature is an electronic signature and is cross-component functionality in SAP that allows the acceptance and approval of various SAP objects by requiring business users to enter their SAP passwords to reflect their acceptance or approvals of SAP objects. These SAP objects can be, for example, results recordings and usage decisions (the decision to use a material or not) of an inspection lot.

Document Required Indicator

After the **Documentation Reqd** indicator is set, the system will record any changes to inspection lots or usage decisions. These status changes are recorded in change documents that can be viewed in the status history for the material.

Inspection Interval

This field allows the quality department to enter the number of days required between inspections of the material at this plant. This value is copied to the batch master record when a batch is created. Refer to Chapter 25 to see how this functionality works.

Catalog Profile

This field reflects a value that is relevant in quality notifications. The catalog profile is defined in configuration by following the navigation path **SAP IMG • Quality**

Management • Quality Notifications • Notification Creation • Notification Content • **Define Catalog Profile**.

4.16.2   Procurement Data

The procurement data under the **Quality management** tab of the material master allows the material to be flagged for quality checks in procurement.

Quality Management in Procurement Indicator

The **QM proc. active** indicator switches on the QM aspect of procurement and can be activated at a plant level or a client level. If activated at the client level, then the **QM Control Key** field should also be defined. Selecting the **QM proc. active** checkbox also means that the system must have a QM info record already created before a procurement process, such as a purchase order, can be created. Just like the purchasing information record, a QM info record has a one-to-one relationship between a vendor and a material on the quality aspects of the procurement.

Quality Management Control Key

The **QM Control Key** can be defined during configuration and determines how a material is affected by quality during the procurement cycle. The control key can determine the following:

- If technical delivery terms must exist as a document
- If a quality assurance document must exist between the company and the vendor
- If a valid purchasing information record must exist
- If a quality certificate is required from the vendor on each shipment
- If a block can be put in place against the invoice

Certificate Type

The incoming quality certificate can be required by the quality department for each goods receipt item or PO item concerning certain materials from the vendor. Many different certificate types can be defined in configuration by following the navigation path **SAP IMG • Quality Management • QM in Logistics • QM in Procurement • Define Keys for Certificate Processing • Define Certificate Types**.

Target Quality Management System

The **Target QM system** field allows the quality department to define the type of QM system required from vendors. For example, the quality department may require

that the vendors for the material have an ISO 9001 certification for their sites. Configuration in QM can define these requirements and, in addition, determine the rating vendors must achieve in the quality department's evaluation processes.

The configuration for the target QM system can be found using Transaction OQB7 or by following the navigation path **SAP IMG • Quality Management • QM in Logistics • QM in Procurement • Define QM Systems**.

The **Quality management** tab we've examined in this section contains specific information important when the material undergoes quality checks. Coordinate with the quality control and quality assurance staff to ensure that the correct information is entered.

In the next section, we'll examine the information entered into the accounting screens of the material master.

4.17   Accounting Data

The first **Accounting** tab in the material master, shown in Figure 4.34, allows the accounting department to enter the valuation and price data needed for inventory transactions.

Figure 4.34 Material Master: Accounting 1 Tab

In the following sections, we'll discuss the screens and fields necessary for maintaining the accounting data of a material.

4.17.1   General Data

The **General Data** section under the first accounting tab displays some information that has already been maintained on other material master tabs, such as the **Base Unit of Measure** field.

Valuation Category

This field determines whether the material is subject to split valuation. *Split valuation* means that a material can be valuated in different ways. An example of split valuation is the valuation of separate batches, such as in the chemical industry where batches of the same material may have a different number of days left before batches expire. A batch with only 10 days before expiration may be valuated differently from a batch that has 100 days left before expiration because the batch with only 10 days left of shelf life could only be sold at a discounted price. Refer to Chapter 21 where we'll cover this topic in detail.

Material Ledger Active

The **ML act.** indicator shows whether the Material Ledger has been activated for this material. The Material Ledger is the basis of actual costing and enables material inventories to be valuated in multiple currencies and also using different valuation approaches. By default, the Material Ledger is now active in SAP S/4HANA. Chapter 22 covers the Material Ledger in detail.

4.17.2   General Valuation Data

The **General Valuation Data** section is where the valuation class is determined for the material at the specific plant and the price of the material, either a standard price or a moving average.

Valuation Class

The **Valuation Class** field is a mechanism for assigning a material to your general ledger accounts. These general ledger accounts are updated when material movements relevant to accounting occur. The valuation class is assigned to a material type via configuration.

You can configure valuation classes by using Transaction OMSK or by following the navigation path **SAP IMG • Materials Management • Valuation and Account Assignment • Account Determination • Account Determination without Wizard • Define Valuation Class**.

Valuation Class for Sales Order Stocks

The accounting department has the option of entering a different valuation class for sales order stock in the **VC: Sales Ord. Stk** field.

Valuation Class for Project Stock

As with a valuation class for sales order stock, the accounting department can enter a different valuation class for project stock in the **Project Stock VC** field.

Price Control

The **Prc. Ctrl** field is used in the valuation of the stock of the material. The two options are average moving price (**V**) and standard price (**S**).

Price Unit

The number entered in the **Price Unit** field is the number of units that the moving price or standard price relates to. Therefore, if the standard price for material XYZ is 3.24 USD, and the price unit is 1000, then the actual cost per unit is 0.00324 USD. The price unit is important when entering materials with small prices to avoid rounding errors if the number of decimal places in a report isn't sufficient.

Moving Price

The moving price, more often called the *moving average price*, is calculated by dividing the material value by the total stock. This price changes with each goods movement relevant for valuation. The accounting department can make an initial price entry if the **Price control** field is set to **V** for moving price. This field is also referred to as the *periodic unit price (PUP)* if the Material Ledger is active.

Standard Price

The **Standard Price** field is a constant; once entered, this price doesn't fluctuate and doesn't take into account invoice prices or any other price-altering movements. The standard price can be entered when the **Price control** field is set to **S** for standard price.

Future Price

The **Standard price** can be changed through an entry in the **Future price** field. A future price entered in the field will become valid starting on the date entered in the **Valid from** field. The second accounting tab, as shown in Figure 4.35, includes the **Determination of lowest value** and **LIFO data** sections. For detailed coverage on these fields, refer to Chapter 21.

Figure 4.35 Material Master: Accounting 2 Tab

4.17.3   Determination of Lowest Value

This section contains the fields for three **Tax price** and three **Commercial price** fields, as well as the **Devaluation ind.** and **Price unit** fields.

Tax Price

This field is available for entering the price of the material for tax purposes. This field isn't used in the United States but is used in some countries. Check with the accounting department if this field is used in your particular country.

Commercial Price

This field is available for entering the price of the material for commercial valuation purposes. This field is also not used in the United States but is used in some countries. Check with the accounting department if this field is used in your particular country.

Devaluation Indicator

A value can be entered into the **Devaluation ind.** field in the material master if your company feels that the material is a slow or non-moving item. The accounting department can configure a number of indicators for each material type that has a devaluation percentage attached, for each company code .

The indicator can be changed to increase or decrease the devaluation percentage depending on the movement of the material stock. The indicators can be configured using Transaction OMW6 or by following the navigation path **SAP IMG • Materials Management • Valuation and Account Assignment • Balance Sheet Valuation Procedures • Configure Lowest-Value Method • Price Deductions Based on Non-Movement • Maintain Devaluation by Slow/Non-Movement by Company Code**.

4.17.4   Last In, First Out Data

The two fields in this section are the **LIFO/FIFO-relevant** indicator and the **LIFO pool** field. For detailed coverage on this topic, refer to Chapter 21.

Last In, First Out/First In, Last Out Relevant

If this indicator is set, the material is subject to LIFO (last in, first out) valuation and FIFO (first in, first out) valuation.

LIFO valuation for stock implies that, as new stock comes in and then moves out first, the old stock doesn't change in value, and no overvaluation of the older stock occurs.

FIFO valuation calculates the valuation of the stock based on the price of the last receipt. Although this method is the most realistic valuation, older stock can be overvalued.

Last In, First Out Pool

The **LIFO pool** field is ignored if a material isn't LIFO relevant. The **LIFO pool** field can be configured to define a group of materials that can be valued together. LIFO pools can be configured using Transaction OMW2 or by following the navigation path **SAP IMG • Materials Management • Valuation and Account Assignment • Balance Sheet Valuation Procedures • Configure LIFO/FIFO Methods • LIFO • Configure LIFO Pools**.

The accounting tabs we've examined in this section contain specific information important when the material is valuated. Check with the accounting team to ensure that the correct information is entered.

In the next section, we'll examine the information entered into the costing tabs of the material master.

4.18 Costing Data

The costing tabs of the material master, shown in Figure 4.36 and Figure 4.37, allow the costing department to enter costing information for a material. Some of the fields on these screens have been discussed in previous sections.

Figure 4.36 Material Master: Costing 1 Tab

4.18.1 General Data

The **General Data** section contains a number of fields, which we'll discuss in the following sections.

Do Not Cost

This checkbox should be selected if the material won't have a material cost estimate, a sales order cost estimate, or a procurement alternative. The material also won't be part of a BOM explosion.

With Quantity Structure

The costing of materials can be performed with or without a quantity structure. If you cost materials with a quantity structure, select on the **With Qty Structure** indicator. If materials without a quantity structure are to be costed, then don't select this indicator. If this indicator isn't selected, the planned costs for the material are calculated using the cost estimate without a quantity structure. Check with the team working on the costing of materials to ensure this checkbox is set correctly.

Origin Group

The **Origin group** field is used to subdivide overhead and material costs. The material can be assigned to an origin group, and overhead costs are assigned to different origin groups at different percentage rates or at a flat cost.

Material Origin

The **Material origin** indicator should be selected when the costs incurred need to be updated under a primary cost element and with reference to the material number.

Overhead Group

The costing **Overhead Group** field applies overhead costs from the costing sheet of a production order to materials in that group.

4.18.2 Quantity Structure Data

Some of the fields in the **Quantity structure data** section have been explained in the descriptions of previous screens, such as the **BOM Usage** and **Alternative BOM** fields.

Group

A **Group,** sometimes called a *task list group,* can combine production processes that are similar and that are for similar materials. Groups can be used to group task lists for varying lot sizes.

Group Counter

Combined with the group, the **Group Counter** identifies a unique task list for a material. A *task list* describes the steps needed to produce a material or perform an activity without reference to an order. The task list is comprised of a header, operations, material component allocations, PRTs, and inspection characteristics.

Task List Type

This field identifies the *task list type*, that is, whether the task list is for routings, rate routings, standard networks, and so on. You can maintain task list types using Transaction OP8B or by following the navigation path **SAP IMG • Production • Basic Data • Routing • Control Data • Maintain Task List Types**.

Costing Lot Size

This field allows the product costing department to enter a lot size for the material, which will be used in the product cost estimate.

The first section of the **Costing 2** tab, as shown in Figure 4.37, is the **Standard Cost Estimate** section, which shows **Future**, **Current**, and **Previous** prices.

Figure 4.37 Material Master: Costing 2 Tab

4.18.3   Standard Cost Estimate

A standard cost estimate is the most important type of cost estimate in material costing. This type of cost estimate forms the basis for profit planning or product costing. A standard cost estimate is generally created for each material at the beginning of the company's fiscal year.

Planned Price

The **Planned price** field allows the entry of a marked standard cost estimate for a future price for the material. When a standard cost estimate for a material is marked, the cost calculated in the standard cost estimate is written to the material master record as the future planned price. A standard cost estimate must be marked before it can be released to the material. This field isn't the same as the three **Planned price** fields in the **Planned prices** section.

Standard Price

The value in the **Standard price** field means that all goods movements are valuated at that price.

4.18.4   Planned Prices

This part of the screen allows a costing user to add three planned prices to the material master and the dates on which those prices will become valid.

Planned Price 1

In addition to the planned price calculated from the standard cost estimate, three other planned prices can be added to the material master for product costing. The price becomes valid on a specified date, and then the price is used in product costing.

Planned Price Date 1

On this date, planned price 1 becomes valid and will be used by product costing.

The costing tabs contain a number of fields that may not be familiar to an MM consultant, so we recommend contacting a costing analyst to ensure that the data entered in the material master is correct.

The **Valuation Data** section holds information on how the system valuates a material. For example, the **Valuation Class** field controls whether a material produced in-house

should be valuated differently than a material procured from external sources. Similarly, the **Price Control** field controls whether a material should be valuated at a standard price or according to a moving average. If selecting the standard price option (**S**), the system will keep the material's price the same or standard, and any deviation in valuation is recorded as a gain or a loss. With the moving average price option, the system updates the material valuation each time its value changes.

4.19   Summary

In this chapter, we discussed the elements that make up the material master. At first, the SAP material master might seem daunting. Other inventory or integrated systems have item master data and files that are a fraction of the size of the material master, which is important when bringing on legacy systems. When converting legacy master files into the SAP material master, commonly, your legacy master files will only hold a small number of the fields necessary for the material master. Most companies spend a great deal of time constructing data for the material master. Therefore, a master data management team should learn about the material master structure and the implications of entering or not entering information into material master fields.

Another master file is examined in Chapter 5: the business partner master file. A business partner, as it is now known in SAP S/4HANA, was previously (and may still be) referred to as a vendor master or supplier master to represent entities that supply materials and services, respectively, to your company. Now, the information contained in the business partner master file allows the purchasing department to purchase from and pay business partners, regardless of whether they trade in goods or in services.

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