

**SAP MM with Guru99
Mihailo Sundic
Krishna Rungta**

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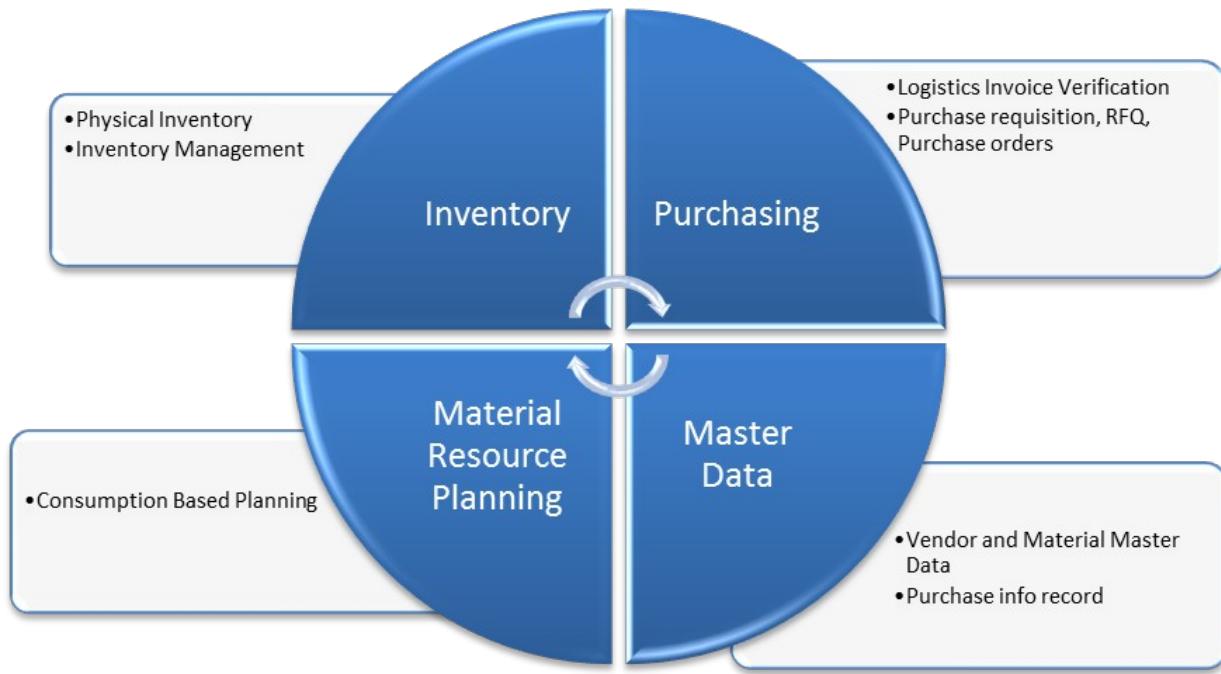
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Chapter 1 - SAP MM Module Training Material

This material will provide sufficient information for end users in SAP MM module, first time SAP users as well as users from other module transferring to MM module team. It covers transactions in MM module and integration points with other modules based on actions performed in MM module.

Overview of SAP MM module

Materials Management module in SAP consists of several components and subcomponents. The most prominent and widely used are Master Data, Purchasing and Inventory.



All of these components have their subcomponents that are essential in specific business processes, and all of the processes are executed by using transactions.

Transaction (in SAP) means processing of certain information in order to complete business process requirement. For example, if you have purchased 10 pieces of litter buckets, you can perform particular transaction code (t-code) that will reflect those changes in SAP. Most of the business processes involve multiple SAP transactions to be accomplished and are spread over one, two or more modules.

Master Data

Master data in SAP is used as a base for any transaction. If you are producing, transferring stock, selling, purchasing, doing physical inventory, whatever your activity is it requires certain

master data to be maintained. We have material master data, customer master data, vendor master data, pricing/conditions master data, warehouse management master data (storage bin master data) etc.

The ones we will focus in MM module are material master and purchase info record.

Material Master

INTRODUCTION: What you should know about material master?

Material in SAP is a logical representation of certain goods or service that is an object of production, sales, purchasing, inventory management etc. It can be a car, a car part, gasoline, transportation service or consulting service, for example.

All the information for all materials on their potential use and characteristics in SAP are called material master. This is considered to be the most important master data in SAP (there are also customer master data, vendor master data, conditions/pricing master data etc), and all the processing of the materials are influenced by material master. That is why it's crucial to have a precise and well maintained material master.

In order to be confident in your actions you need to understand material master views and its implications on processes in other modules, business transactions and a few more helpful information like tables that store material master data, transactions for mass material maintenance (for changing certain characteristics for a large number of materials at once).

1. Material types

In SAP ERP, every material has a characteristic called „material type“ which is used throughout the system for various purposes.

Why is it essential to differentiate between material types and what does that characteristic represent?

It can represent a type of origin and usage – like a finished product (produced goods ready for sale), semifinished product (used as a part of a finished product), trading goods (for resale), raw materials (used for production of semifinished and finished products) etc. These are some of the predefined SAP material types among others like food, beverages, service and many others.

We can define our custom material types if any of standard ones doesn't fulfill our need.

MTyp	Material type description
FERT	Finished Product
HALB	Semifinished Product
HAWA	Trading Goods
ROH	Raw materials

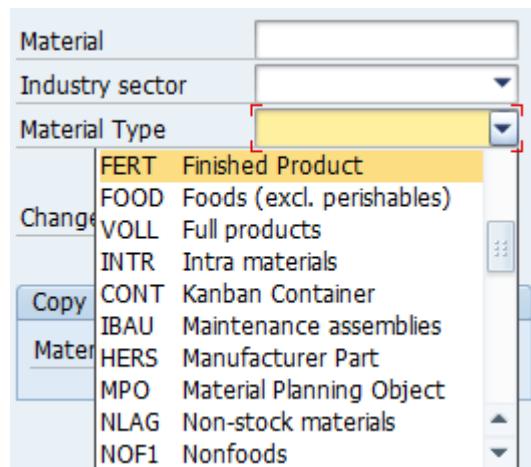
Mostly used material types in standard SAP installation

What can be configured on material type level (possible differences between types)?

Material master views: what type of data should be maintained for this type of material (covered later). For example, if we have a material type “FERT” assigned to our material Product 1000 – we don’t want to have Purchasing based views for that material because we don’t need to purchase our own product – it is configured on material type level.

Default price control: we can set this control to standard or moving average price (covered later in detail), but this can be changed on in material master to override the default settings.

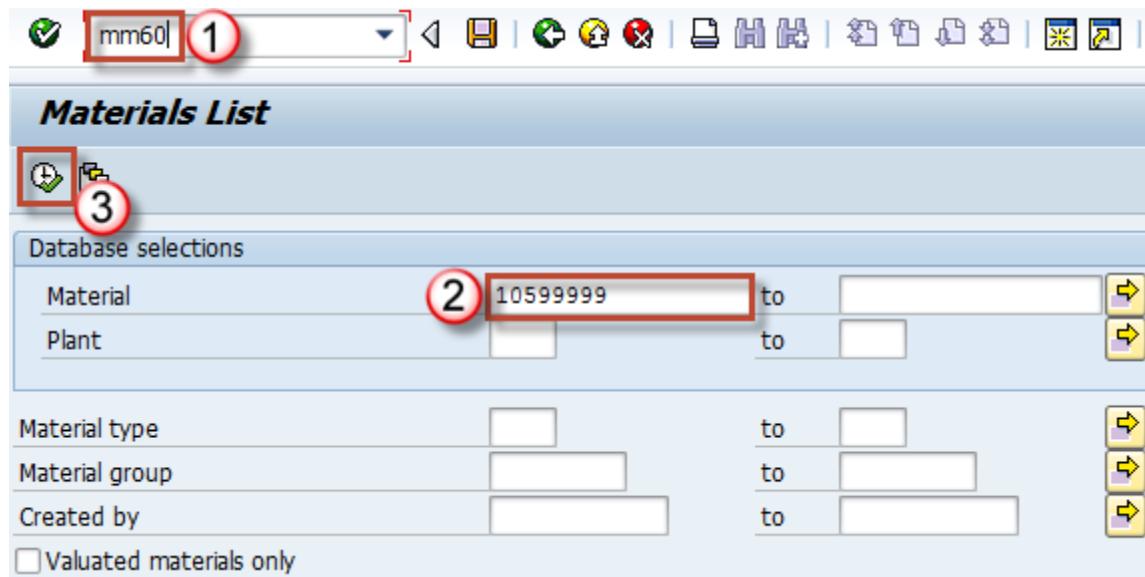
Default Item category group: used to determine item category in sales documents. It can be changed in material master to override the default settings. internal/external purchase orders, special material types indicators, and few more. So material type is assigned to materials that have the same basic settings for material master views, price control, item category group and few other. It can be assigned (material type) during the creation of the material in t-code **MM01** (screen below), which is covered later.



Offered material types in MM01 transaction

Where can we find a complete list of materials with their respective material type?

There are numerous transactions for this. The raw data itself is stored in MARA table (you can view table contents with t-code **SE16** or **SE16N** – newest version of the transaction), but in some systems these t-codes aren’t allowed for a standard user, so in that case we can easily acquire the list with t-code **MM60** (Material list). It is used particularly often as it displays a lot of basic material characteristics. Selection screen – you can enter only the material number:



Selection screen for MM60 transaction

We can see that material 10410446 in plant AR01 is of type FERT (finished product).

Material	Plant	Val. Type	Description	Last Change	MTyp	Matl Group	Unit
10599999	0001		LCD TV 40"	07.05.2013	FERT		PCS

MM60 report results with the export button highlighted

In this transaction, like in pretty much all of the report transactions in SAP we can export the list of materials we have selected with details we see on screen with the tollbar button highlighted on the above screen.

2. Material group

Another characteristic SAP material is assigned during its creation is „material group“, which can represent a group or subgroup of materials based on certain criteria.

Which criteria can be used to create material groups?

Any criteria that suit your needs for reporting purposes is right for your system. You may group materials by the type of raw material used to produce it (different kinds of plastics used in the production process), or you can divide all services into consulting services (with different materials for SAP consulting, IT consulting, financial consulting etc), transportation services (internal transport, international transport), you can also group by production technique

(materials created by welding, materials created by extrusion, materials created by injection etc). Grouping depends mainly on the approach your management chooses as appropriate, and it's mainly done during the implementation, rarely changes in a productive environment.

The screenshot shows the SAP Material Master (MM01) and Material Group selection interface. On the left, the material master details for material number 10599999 are displayed, including its description 'LCD TV 40"'. In the 'Material Group' field, the value '100' is selected. On the right, a list of material groups is shown with '100' highlighted. The list includes:

Matl Group	Material Group Desc.
100	Material group 100
101	Material group 101
102	Material group 102
103	Material group 103
104	Material group 104
105	Material group 105
106	Material group 106
107	Material group 107

Assigned material group in material master

In addition, there is a material hierarchy (used mostly in sales & distribution) that can also be used for grouping, but it's defined almost always according to sales needs as it is used for defining sales conditions (standard discounts for customers, additional discounts, special offers). On the other hand, material group is mainly used in PP and MM module. If you need to display material groups for multiple materials, you can use already mentioned t-code **MM60**. You just need to select more materials in selection criteria.

Material	Plant	Val. Type	Description	Last Change	MTyp	Matl Group	Unit
10599999	0001		LCD TV 40"	08.05.2013	FERT	100	PCS

Material group in report MM60

Material group is easily subject to mass maintenance via transaction **MM17**. More on that in the material master editing section.

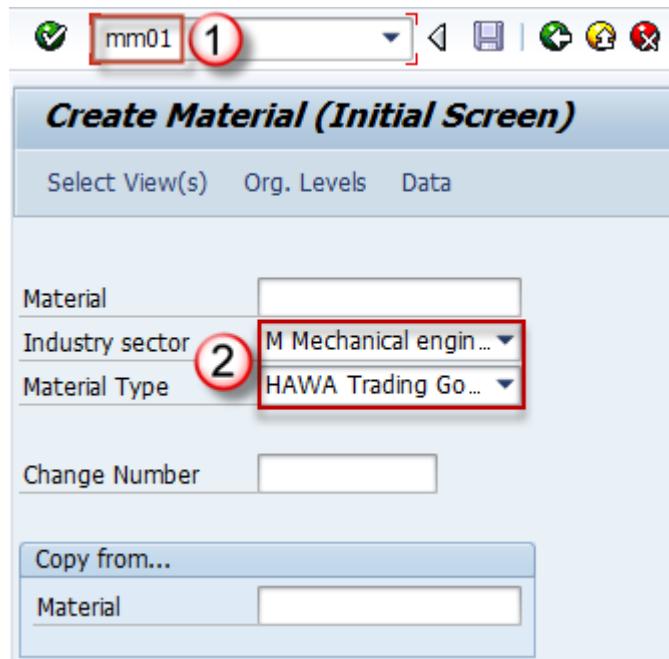
3. Creation of Material Master data

When we want to use a new material in SAP, we have to define its characteristics, in order to control its behaviour in all of the transactions. Every material is created in the either of these two ways:

By calling transaction MM01 (mostly used in a productive environment) Mass creation (mainly used only once on transition of materials from the previous system to SAP ERP) We will focus now on transaction MM01, and leave the mass creation for later since it is an advanced tool. We will discuss it after you have enough knowledge about material master views and organizational levels. Transaction that is used for the creation of material master record, as stated above is MM01. The execution of the transaction brings us to the initial screen, which consists of few

fields that contain the basic information on our material. Industry sector (mostly used: M-Mechanical engineering) and Material type, which we addressed in the first lessons, (it can be FERT, ROH, HALB, HAWA - the appropriate material type for current material).

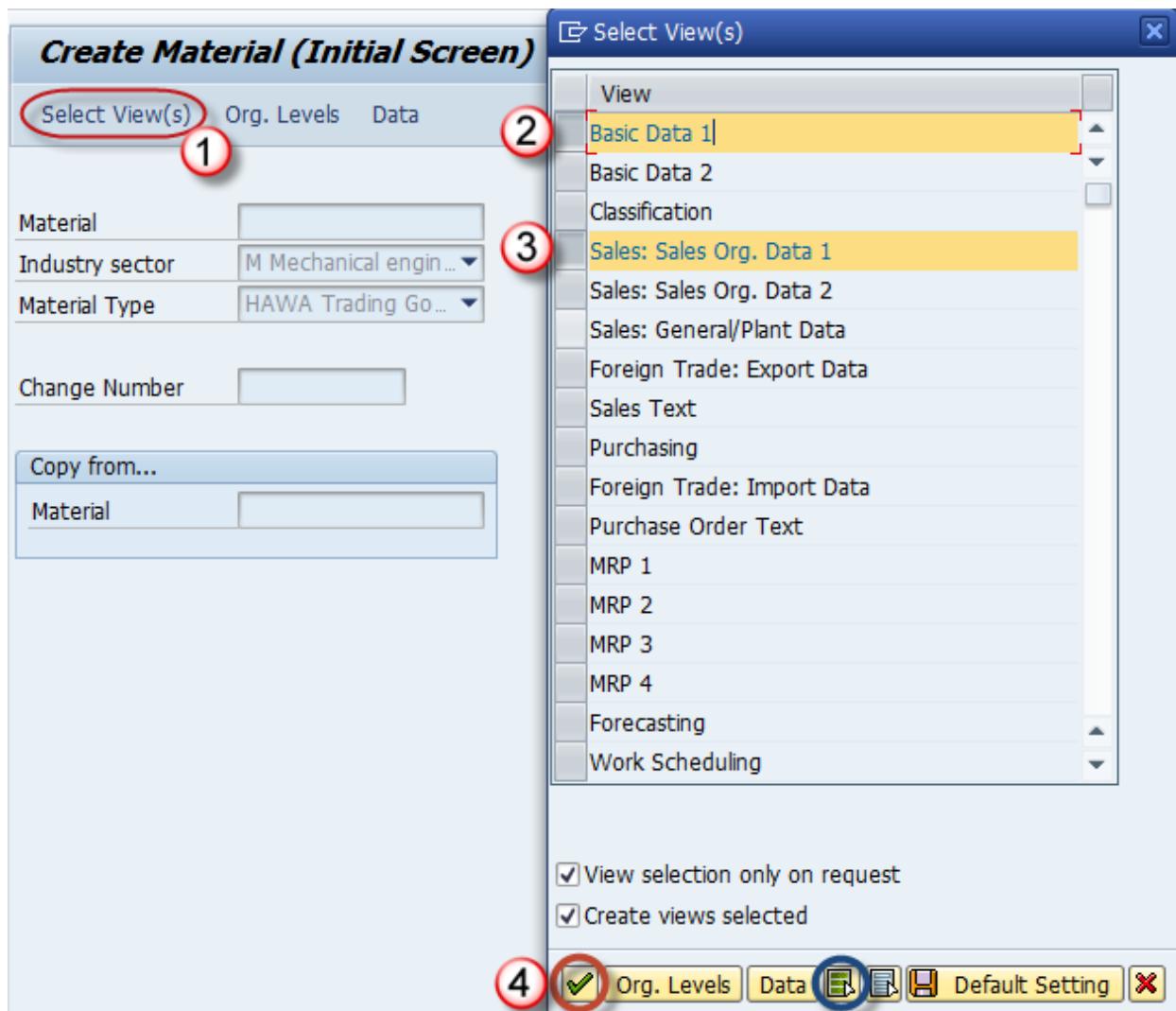
Note: Material number (alphanumeric key uniquely identifying material in SAP system) can be generated automatically or assigned manually – it depends on material type. For material type HAWA for example, you can have manual number assignment, while for FERT you can have automatic number assignment. These settings are supposed to be done by MM consultant in customizing during the implementation.



Creating material master data using transaction MM01

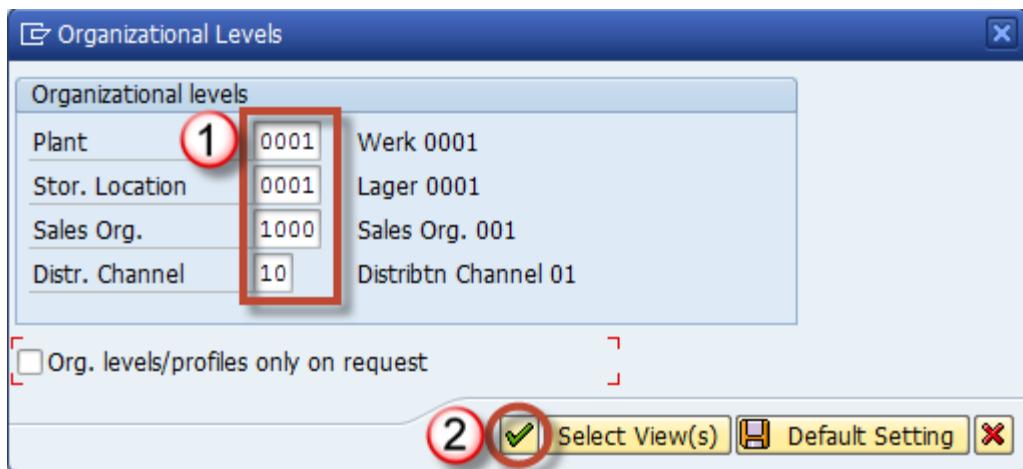
Then we can choose which master data to create. We can click on **Select View(s)** to choose which views we need to create for the material. You can always extend the material master data later if you forgot to choose all needed views. You can see an option button marked in blue on the screen below for selecting all views (rarely used in a productive environment).

Note: Selection of views that can be maintained for material are depending on material type. In most of the systems some views are disabled for certain material types (for example MRP views might be disabled for trading goods).



Selecting views in MM01

After completion of the previous step, we will be transferred to the next screen, where you are asked to enter Organizational levels for the views we selected in the previous step. For example, those could be Plant, Storage Location, Sales Organization and Distribution Channel etc.



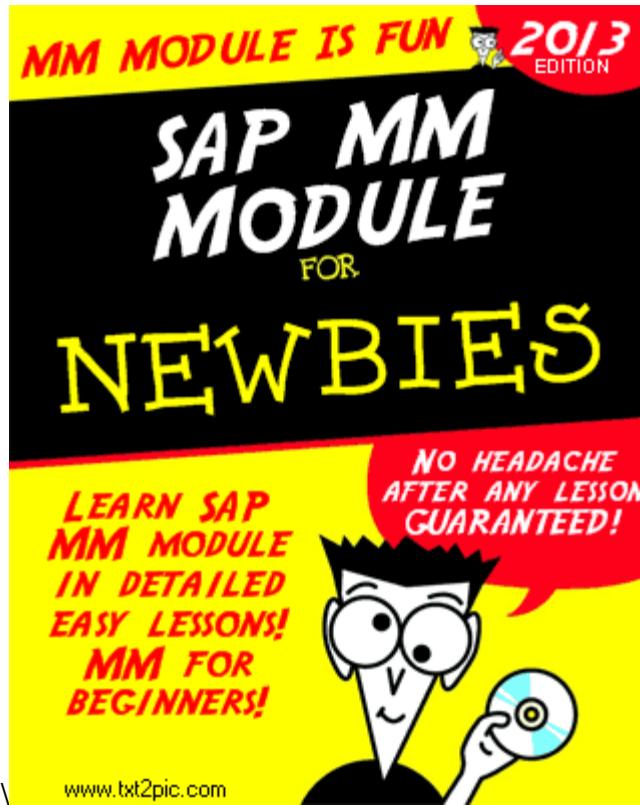
Choosing organizational levels

Below you can find a complete reference of organizational levels needed for creating material master views.

Material Master View	Organizational Levels
Basic data (1 & 2)	None
Classification	None
Sales organization data (1 & 2)	Plant, Sales Organization, Distribution Channel
Sales General	Plant
Foreign Trade – Export data	Plant
Purchasing	Plant
MRP Views	Plant, Storage Location, MRP Profile
Forecasting	Plant, Forecasting Profile
Work Scheduling	Plant
General Plant Data (Storage 1 & 2)	Plant, Storage Location
Warehouse Management 1	Plant, Warehouse Number
Warehouse Management 2	Plant, Warehouse Number, Storage Type
Quality Management	Plant
Accounting (1 & 2)	Plant
Costing (1 & 2)	Plant

Table of material master views connection to organizational levels

IMPORTANT: You need to maintain materials in all of your organizational levels in which they are going to be used. If you have more than one plant than you have to repeat MM01 transaction in order to extend your materials for both plants. If you have more than one combination of Sales organization/Distribution channel you also have to repeat the process in MM01 for all of the combinations.



Material Master Views

In this section, we will cover all the MM views with the implication on vital processes in standard SAP system. You will see how each of the views is created, its obligatory data, optional fields, and how its creation reflects the system.

Basic Views

Basic views are views with general information about our material. Obligatory fields you need to insert in order to save changes are material description, base unit of measure, division, item category group, weight unit, material weight. Other fields are optional.

In the upper part, (marked in green) you can see views that are possible to maintain for current material. You can navigate by clicking on the appropriate view name.

Create Material 10599999 (Finished Product)

Additional Data Org. Levels Check Screen Data Lock

Basic data 1 Basic data 2 Classification Sales: sales org. 1

Material 10599999 1 LCD TV 40"

General data

Base Unit of Measure	pc	2	Material Group	
Old material number			Ext. Matl Group	
Division	10	3	Lab/Office	
Product allocation			Prod.hierarchy	
X-plant matl status			Valid from	
<input type="checkbox"/> Assign effect. vals			GenItemCatGroup	NORM
				4 Standard item

Material authorization group

Authorization Group	
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Dimensions/EANs

Gross Weight	26,988	Weight unit	KG	5
Net Weight	24,651			6
Volume		Volume unit		
Size/dimensions				
EAN/UPC		EAN Category		

Packaging material data

Matl Grp Pack.Mats	
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Material master basic data 1 view

Basic data - mandatory fields

- 1) Material description: LCD TV 40“ – this can be maintained in various languages.
- 2) Base unit of measure (often referred to as Base UOM): PCS – this is the unit of measure in which material stock is managed. For a TV set, it's natural to be a piece. You can also use meter, kilogram, or any other unit you have defined and is suitable for material.
- 3) Division: 10 – Division for the material, you could create divisions 10, 20, 30, 40 for finished goods, trading goods, services, and other materials, so you can categorize them in this way. We have selected division 10 for our material since it is finished goods.
- 4) General Item category group: NORM – Standard item. Used throughout the system, this indicator has an effect on sales and stock transfer processing as it is used in item category determination.
- 5) Weight unit: Kg – unit in which product weight is entered.

- 6) Gross weight: 26,988 – gross weight of 1 unit of product in weight unit
 7) Net weight: 24,651 – net weight of 1 unit of product in weight unit

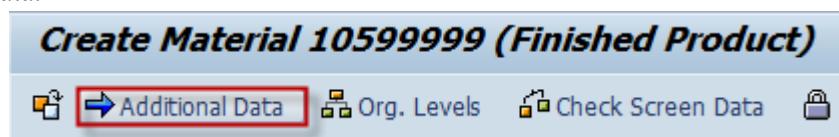
Basic data - optional fields

Material group – you can maintain this field as described in Chapter 2 – Material Group.

Product hierarchy – this field is used in sales and distribution and is maintained in Sales organization 1 view. EAN/UPC – Material EAN code, besides usage in bar coding, it is particularly utilized in Warehouse management as a unique identifier for material and package combination. One material can have several bar codes. One for the base unit of measure. Every alternative unit of measure can also have its EAN, but it's not a requirement, it's an option.

Additional data

Besides material master views, we have another level of maintenance in MM01 transaction. It is also with no reference to organizational levels. From any View in material master you can choose button Additional data:



Button for switching to additional data maintenance

When there, first you can see that we can return to MM Views by clicking on Main Data button.

Language	Material Description
EN	LCD TV 40"
FR	LCD TV 40"
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Product descriptions for various languages in additional data

First tab in additional data is about material description. You saw that we have already maintained material description on Basic View 1, but we have only defined a description for the default language (logon language for user in this session). In additional data, we can define descriptions for any other language needed. For example, I have created description for French language. In our case, material description is the same for both languages (in other cases you might need to translate the description). This is important because if you have a customer from France and they are accepting only french product name, you have to define it here, and set

communication language for that customer to French (this is done in SD module and is a point where integration between MM and SD is utilized). Maintenance of alternative units of measure is utilized in the second tab. You can see that there is a record for 1 PCS, which equals to 1 PCS, and this is a record for our base UOM. The other one is 1 PAL equals 12 PCS – it means that our company packages LDC TV sets 40“ in the amount of 12 pieces on a pallet. You can add as many alternative UOMs as you like, as well as delete them by using the Delete Line button. Here, you can also maintain all EAN codes for all units of measure.

In SD module, you can create sales orders by any unit of measure.

So practically it's the same creating sales order for 12 pieces, or 1 pallet.

Classification

Materials can be classified in order to be found later by their class, batch characteristics etc. Let's

say we have a lot of TV sets with different dimensions colors etc. You can create two classes: dimension and color. Later you can use it to find all the black TV sets, or TV sets of a certain dimension.

Class type description	Ty.
Material Class	001
Batch	023
Material (Configurable Objects)	200
Variants	300

Class types available in standard SAP

By choosing Material Class – 001 you are extending material for this class type and in the next screen you can maintain values. Now we have to add a class we want to use for our material. A class called **General** could consist of two **characteristics**: *Color* and *Dimension*, or anything that you might need while categorizing materials or searching them in mm module, or other modules. After class assignment to the material, you can maintain characteristics that this class contains. In our case, we have a class named **General** that contains characteristics *Color* and

Dimension. We can populate the appropriate fields.

Classification

Object

Material	10599999	LCD TV 40"
Class Type	001	Material Class

Assignments

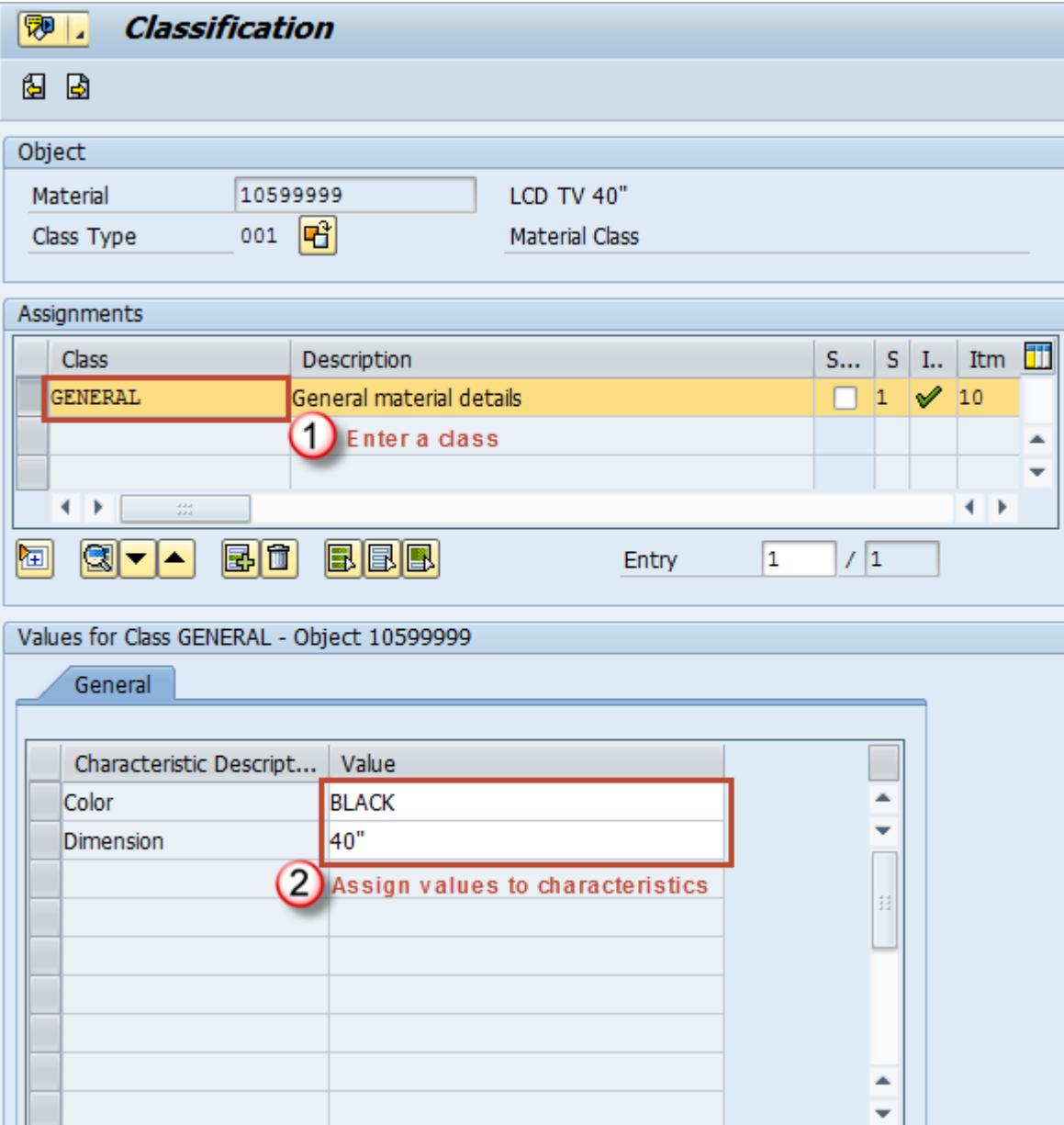
Class	Description	S...	S	I..	Itm
GENERAL	General material details	<input type="checkbox"/>	1	<input checked="" type="checkbox"/>	10
1 Enter a class					

Values for Class GENERAL - Object 10599999

General

Characteristic Descript...	Value
Color	BLACK
Dimension	40"

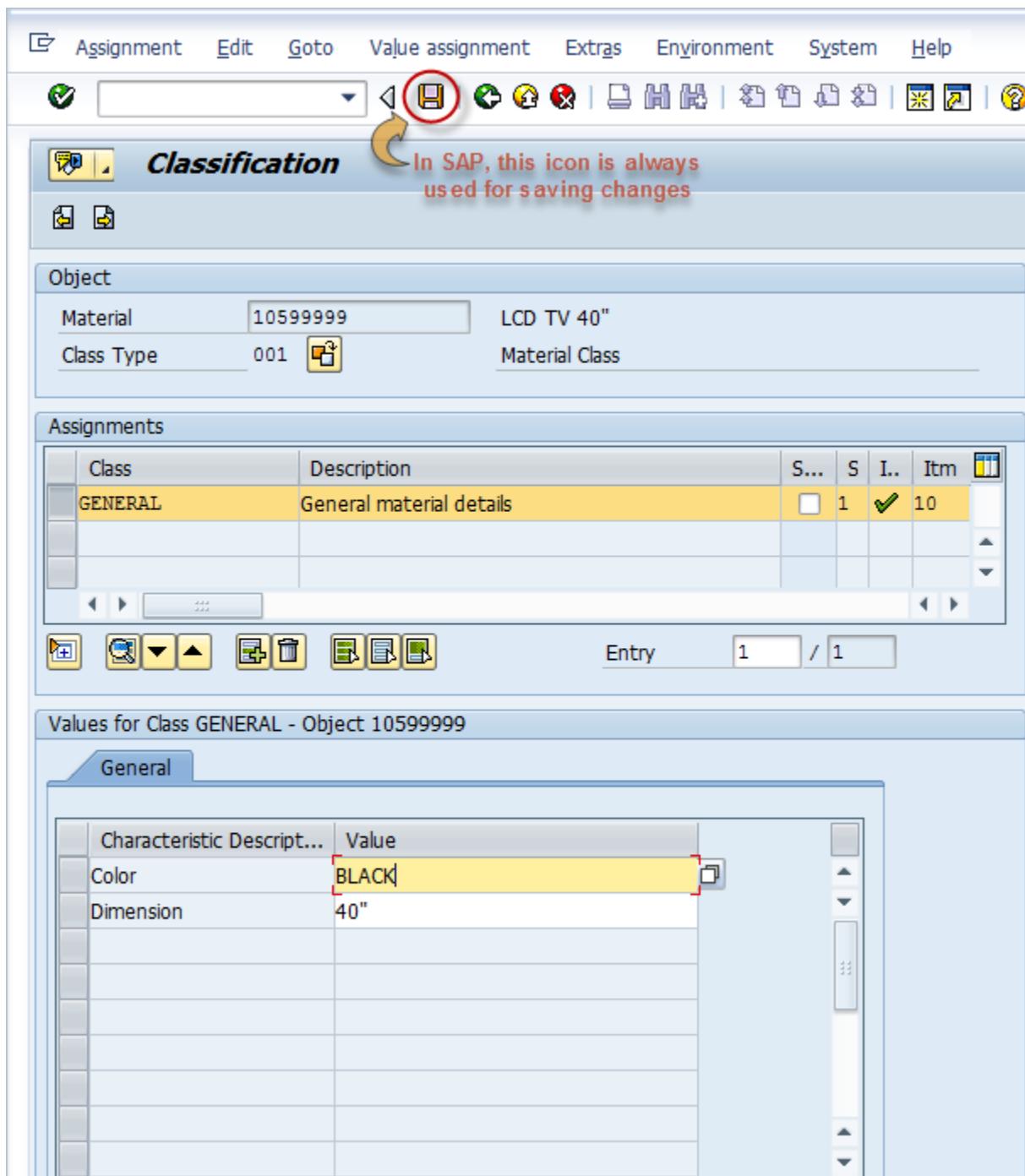
2 Assign values to characteristics



The screenshot shows the SAP Classification interface. At the top, there's a toolbar with icons for search, refresh, and classification. The main title is "Classification". Below the toolbar, the "Object" section displays "Material" as 10599999 and "LCD TV 40\"", and "Class Type" as 001 with a dropdown icon. The "Assignments" section contains a table with columns: Class, Description, S..., S, I.., and Itm. A row for "GENERAL" is selected, highlighted with a yellow background and a red border. A red circle with the number "1" and the text "Enter a class" points to the "GENERAL" entry. Below the table are several icons for navigation and operations. The "Values for Class GENERAL - Object 10599999" section shows a table for "General" characteristics. The first two rows are "Color" (Value: BLACK) and "Dimension" (Value: 40"). A red circle with the number "2" and the text "Assign values to characteristics" points to the "Color" row.

Assigning a class and maintaining values for characteristics

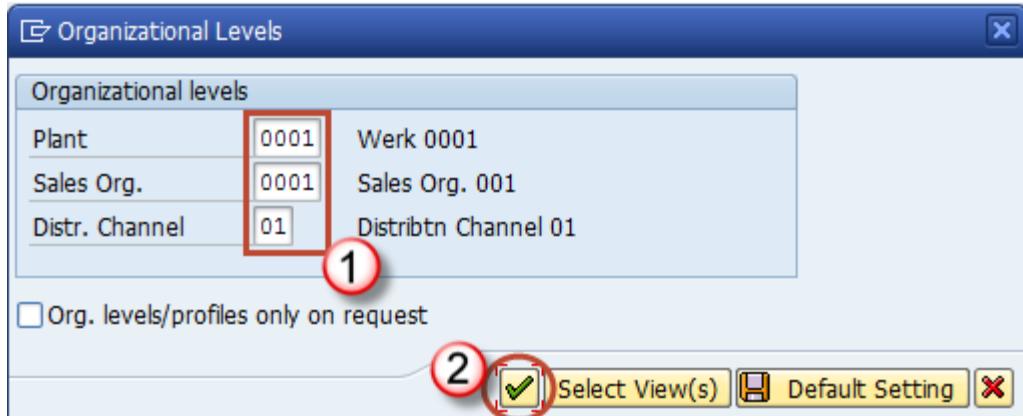
It is a good practice to include the color of your product in material description as well; it is extremely useful to other users. For example while creating sales orders in SD, for picking and putaway processes in warehouse management, purchasing department, production planning etc. You can now save your changes.



Saving Classification view

Sales Organization Data 1

When you choose this view, a screen with organizational levels will appear. Here, you can choose for which Plant, Sales organization and Distribution channel you want to extend your material.



Organizational Levels for Sales Organization – Data 1 material master view

After confirming Organizational Levels, you are presented a screen which contains the data regarding sales activities. The only mandatory field is the delivery unit. Others are optional, but they might be needed in order to use some advanced features.

For example, if you want to use dynamic rounding profile (must be customized by SD consultant), you have to maintain field *Rounding profile*. Let's find out what are the most important fields in sales views. The most crucial thing about sales views is that they are open. When we do that people from SD module can sell our material through that Sales Organization / Channel. So essentially you would only have to populate the Delivery unit field and save the data, and immediately material becomes available to be used.

To get a better understanding of Sales organization, think of it as an office that sells your products. In this office, you have people that sell products in your home country – they are using distribution channel 01, and you can have people selling abroad, export department that would be channel 02. On the screen below, you can see all of the fields from Sales organization 1 View.

Tax category/indicator: For internal sales, we will have to define a full tax indicator since the tax is applied for sales inside the country. For export, (using division 02 for example) we would set this to 0 – No Tax. It actually depends on the tax policy of your country, but most of the countries have this practice I mentioned.

Delivery unit: in most cases it's first alternative unit of measure (box, pallet, something else). You can see that here we will define 1 PAL – pallet as a delivery unit, but that doesn't mean that we can sell only entire pallet. We will also be able to sell a single piece of this material, and the system will indicate to sales person that this material is meant to be delivered as 12 pieces on a pallet.

Base unit of measure: this is grayed out field as it is already defined in Basic Data view 1 and cannot be changed afterwards.

Division: this is the division we have just selected in our organizational levels screen before current screen.

Sales unit: If the field does not contain an entry, the system will assume that the unit of measure is the base unit of measure. If you don't want to use pieces as a default sales unit of measure, you can enter the appropriate unit of measure in this field. It will reflect sales documents in this way:

- Sales unit is not defined. Sales person enters quantity of 4 without specifying unit of measure. System will assume that the required quantity is 4 pieces
- Sales unit is defined as pallet. System will assume that the required quantity is 4 pallets

Sales unit not variable: this check box is used in cases when we require the material to be sold **only** in sales unit. If you set the sales unit to PAL, and check this box, sales person will only be able to sell this material using the PAL alternative unit of measure. This is being used rarely.

Unit of measure group: Used mainly in conjunction with dynamic rounding profile, this is an indicator which represents a group of units of measure that can be used for this material.

Material group: material group we discussed during the Basic Data view.

Min.order qty: This is a minimal order quantity accepted for this material.

Min.dely. Qty: This is a minimal delivery quantity accepted for this material.

Rounding profile: Here you can choose a specific rounding profile for material. SD consultant has to create the profiles to be shown as possible entries in this field.

Sales: sales org. 1

Base Unit of Measure	PCS	Piece	Division	10	Product Div...
Sales unit			<input type="checkbox"/> Sales unit not var.		
Unit of Measure Grp					
X-distr.chain status			Valid from		
DChain-spec. status			Valid from		
Delivering Plant					
Material Group					
<input checked="" type="checkbox"/> Cash discount			Conditions		

Tax data

C..	Country	T...	Tax category	Tax classification	
DE	Germany	MWST	Output Tax	1 Full tax	

Entry 1 of 1

Quantity stipulations

Min.order qty	PCS	Min. delay qty	PCS
		Delivery unit	1 PAL
Rndng Profile			

Sales organization Data 1 View

Sales Organization Data 2

With same Organizational Levels, we can create the sales organization data 2 View and maintain its data. Mostly statistical and grouping data are subject of this view.

Important Sales Organization Data 2 View fields

1. Material statistics group: This is an indicator used to specify if this material is to be included in statistical transaction in SD module MCSI. It is most used to set this indicator to 1 in most systems.
2. General item category group: default item category group for this material based on material type settings. You cannot change it.
3. Product hierarchy: This hierarchy is used for reporting purposes so that sales management can analyze sales data based on this hierarchy. It consists of two levels. For example, first level of hierarchy could be LCD TVs. Inside the first hierarchy level, we can find more than one second level, and in our case, we can have LCD TV 40“, LCD TV 32“, LCD TV 26“

inside our first level which is LCD TV. Another level would be Plasma TV. In this first level, we can maintain Plasma TV 22“, Plasma TC 32“, Plasma TV 40“. Every first level of hierarchy contains unique second level hierarchies.

4. Account assignment group: this field represents the accounting requirements for the material. Often different types of materials require different accounting requirements (finished goods, trading goods, services aren't accounted in the same way). This is a point of integration with FI/CO modules.
5. Item category group: it's copied from 2- General item cat.grp field, but this is the category group that is assigned to specific distribution channel. It can be changed as opposed to the field no.2, and with this field you can manage how will the same material will be used in sales in different channels.

For example, you might want a material to have different item category in foreign sales activities than the default. It is changed mainly under directives from SD team.

The screenshot shows the SAP Sales organization Data 2 View interface. At the top, there are tabs for Sales: sales org. 1, Sales: sales org. 2, Sales: General/Plant, and Foreign tra... (partially visible). Below the tabs, the material number 10599999 is displayed with the description "LCD TV 40" and a help icon. The sales organization is set to 0001 (Sales Org. 001) and the distribution channel is 01 (Distr. Chl). The main area is titled "Grouping terms" and lists several grouping categories with their respective values and numbers 1 through 5 circled in red:

Grouping term	Value	Number
Matl statistics grp	1	1
Volume rebate group	01	2
Gen. item cat. grp	NORM	3
Pricing Ref. Matl		4
Product hierarchy	0010000001	5
Commission group	01 Commission Group 1	

Below the grouping terms, there is a section titled "Product attributes" containing ten checkboxes, each labeled with a number 1 through 10:

Product attribute	Value
Product attribute 1	
Product attribute 4	
Product attribute 7	
Product attribute 10	
Product attribute 2	
Product attribute 5	
Product attribute 8	
Product attribute 3	
Product attribute 6	
Product attribute 9	

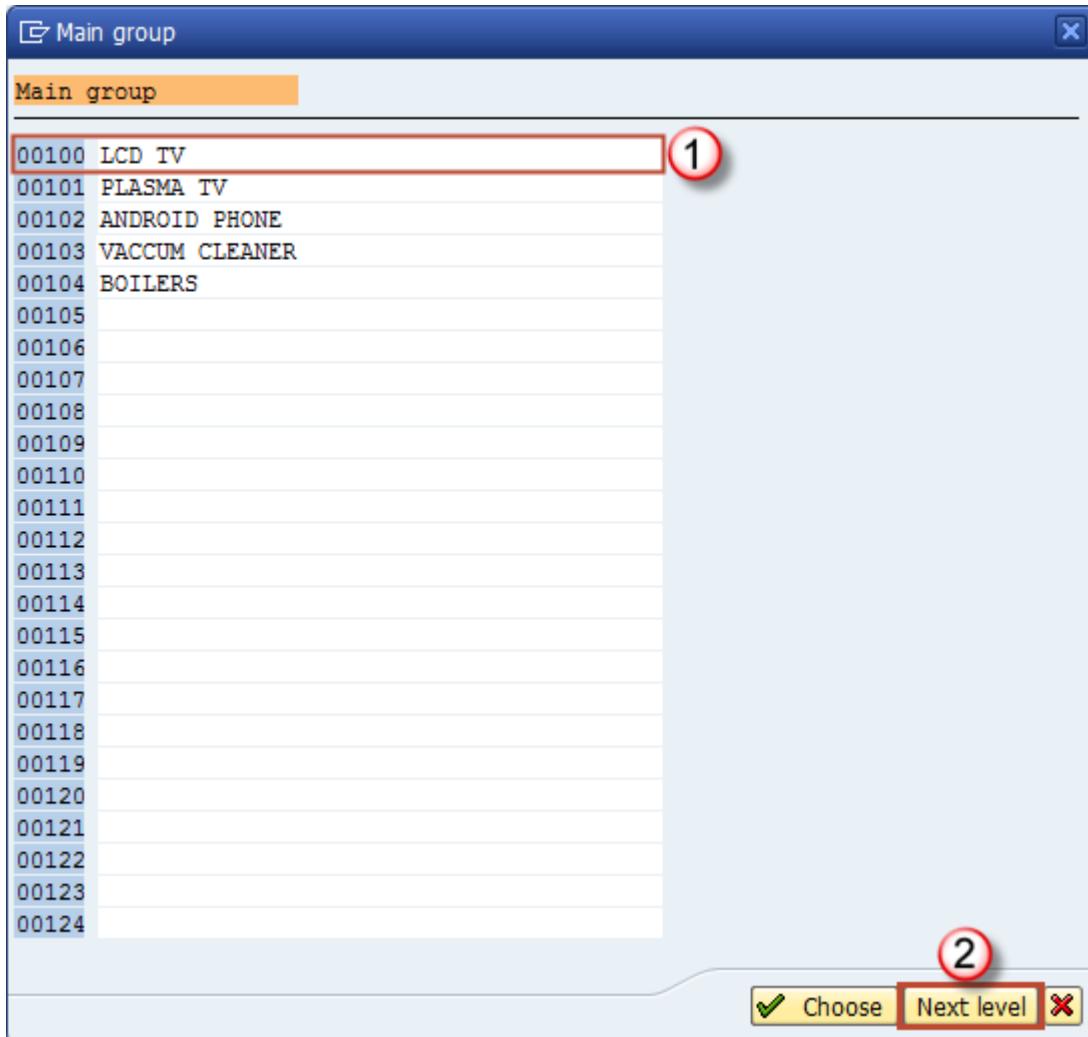
Sales organization Data 2 View

Product hierarchy – choosing the appropriate hierarchy from a predefined list:

You have probably already thought how product hierarchy is hard to maintain. You only see a bunch of numbers. It's hard to know which numbers are appropriate for particular material.

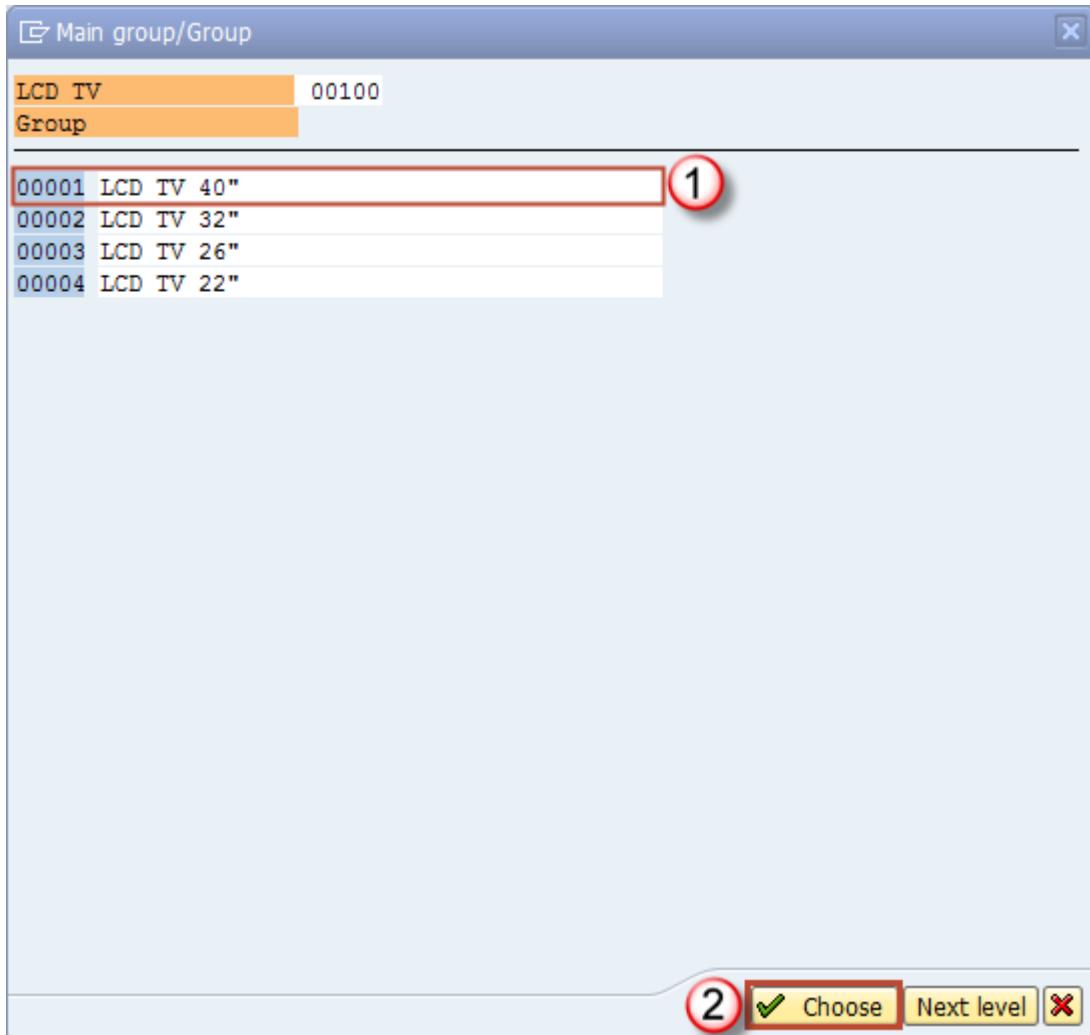
Besides the fact that this is the information that sales & distribution team should supply to you,

there is an easy way of browsing through all of the hierarchies. When you push the button that shows you possible entries for a field you get to this screen:



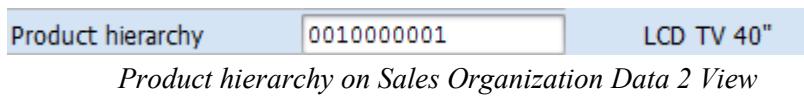
First level of hierarchy

After selecting the appropriate first level, you should click on Next level button just as on the above screen. You will be taken to the screen with possible entries for second level of hierarchy. As you can see in the header of this screen, there is an indication that this second level of hierarchy is for a first level 00100 – LCD TV:



Second level of hierarchy

Final result is as on the screen below:



Other fields in Sales organization Data 2 View

1. Volume rebate group: group used for rebate settlement, can be set to maximum rebate, low rebate, depends on settings in SD module, this information is supposed to be provided by SD team.
2. Pricing Reference Material: material master record that should be used as a reference for pricing purposes.
3. Commission group: you can assign the same commission group to more material as long as the commission is the same for both (for example 5%).
3. Material pricing group: used to group the material with the same pricing procedures. Later in SD condition record can be created based on this field, apart from standard ones (product hierarchy). You can combine material pricing group with the customer number to create a condition.
4. Product attributes: you can assign various product attributes to a material and check if the customer accepts this product attribute.

Sales General / Plant View

This view contains information about general sales characteristics of material. It is maintained on Plant level.

Mandatory fields

- Availability check:** very essential attribute, used to define the stock availability check method. These methods are defined by customizing team, and can include stock on storage locations, can be also set up to include quantities on process and production orders, planned orders, quantities in the transfer towards the plant from which sales is being processed, etc.
- Loading group:** extremely significant field as it is used in shipping point determination.

The screenshot shows the SAP Sales: General/Plant View interface. At the top, there are three tabs: Sales: sales org. 2, Sales: General/Plant (which is selected), and Foreign trade export. Below the tabs, the material number is 10599999 and the description is LCD TV 40". The plant is 0001 and the location is Werk 0001. The interface is divided into several sections:

- General data:** Contains fields for Base Unit of Measure (PCS), Piece, Replacement part, Gross Weight (26,988 KG), Net Weight (24,651), Availability check (02, circled in red with a number 1), Individ.requirements, Material freight grp, Appr.batch rec. req., and Batch management.
- Shipping data (times in days):** Contains fields for Trans. Grp, LoadingGrp (0001, circled in red with a number 2), Crane, Setup time, Proc. time, Base qty (PCS), and PCS.
- Packaging material data:** Contains Matl Grp Pack.Matls.
- General plant parameters:** Contains Neg.stocks, Profit Center, SerialNoProfile, DistProf, and SerializLevel.

At the bottom right, there is a yellow button labeled "Ext. customer repl. parameters".

Sales: General / Plant View

Optional fields in Sales - General / Plant View

1. **Replacement part:** defines if this material is a replacement part or not.
2. **Material freight group:** used for grouping materials in order to be classified according to freight code and class.
3. **Batch management:** Indicates if material is managed in batches or not.
Approved batch record required: determines if batch approval must be submitted before the batch can be transferred from restricted to unrestricted stock.
4. **Transportation group:** a way of grouping materials with same transportation needs. It is used in SD module for route scheduling in sales orders and deliveries. Example: when you have materials that require to be transported carefully as they are fragile, and others are not.
5. **Setup time, Process time, Base quantity:** these three fields are used to calculate time consumed for shipping the material, the first is time in which you will set up devices for shipping, second is processing time per base quantity (third).
6. **Material Group - Packaging Materials:** this field is used for grouping the materials with similar packaging materials requirements.
7. **Negative stocks:** If you check this box you will allow negative stocks for this material in this plant. This requires also a setting by your MM consultant on storage location level (in customizing).
8. **Profit center:** assign an adequate profit center for the material for controlling module purposes. This means that profit made from this material will be assigned to the profit center set in this field. For example if this is a finished product that makes a profit by sales you might want to choose a profit center for sales revenues. It also depends on management decision. Management might prefer to use some other key for profit center accounting.
9. **Serial number profile and Serialization level:** these control serialization of product (if you have it active), a profile used for the serial number, and serialization level that could be by material number etc.
10. **Distribution profile:** signals where the incoming (procured) merchandise will be distributed in our plant.

Foreign Trade / Export View

This view contains information about freight, foreign trade, exporting of materials.

Mandatory fields in this view are:

1. Commodity Code/Import Code Number for Foreign Trade: This field contains either a commodity code or a tariff number. It is a unique standardised coding value for a certain type of goods.
2. Export import group: system can use export/import groups to propose an export procedure for export/import processes in SAP.
3. Country of origin: it represents the country where this material has been produced. If it's finished goods produced in-house you will enter your country code here (in our example it is DE - Germany).

The screenshot shows the SAP Foreign trade export screen. At the top, there are tabs: Sales: General/Plant, Foreign trade export (which is selected), Sales text, and Plant stock. Below the tabs, the material number is listed as 10599999 with the description LCD TV 40". The plant is listed as 0001 with the description Werk 0001. The main area is divided into sections:

- Foreign trade data:**
 - Comm./imp. code no. (Field 1) contains 85411000.
 - Export/import group (Field 2) contains 0001 G0001.
 - Country of origin (Field 3) contains DE.
- Origin / EU market organization / preferences:**
 - Country of origin contains DE.
 - Region of origin is empty.
 - Preference status: Not maintained.
 - Vendor decl. status: Not maintained.
- Legal control:**
 - Exemption Certificate is empty.
 - Exemption cert. no. is empty.
 - Iss.date of ex.cert. is empty.
 - Military goods checkbox is empty.

Foreign trade / Export material master view

Other fields

All the characteristics for sales views are supposed to be provided by the sales department (sales,

freight), the role of a material master specialist/user is only to maintain them accurately. Some other information you can be given by your sales department to maintain in material master:

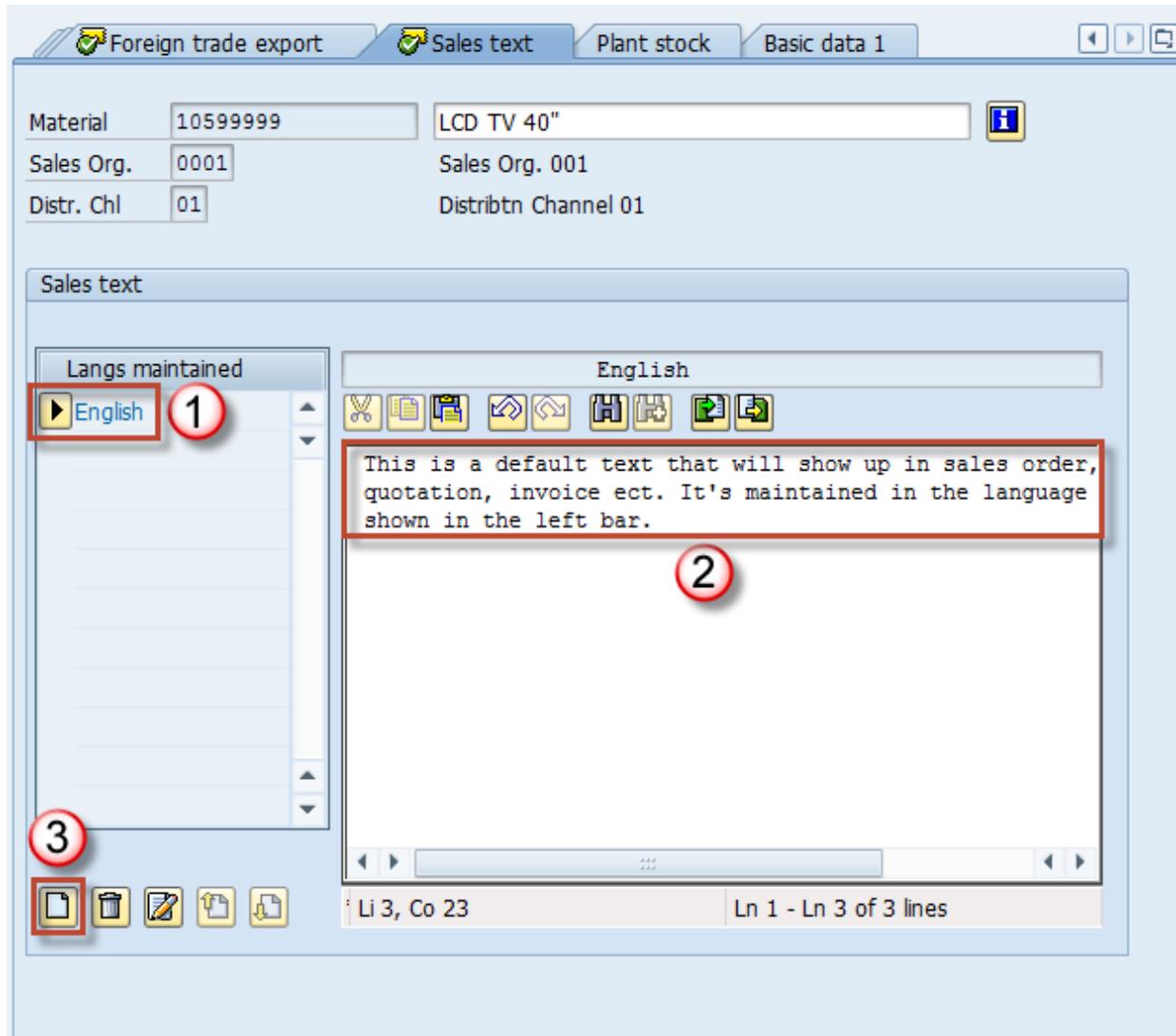
1. CAS number: this field is only used for pharmaceutical products.
2. PRODCOM no. – used only in EU countries for statistical purposes in production.
3. Control code: Consumption tax control code in foreign trade.
4. Region of origin: Besides country you can define a region in the country (for ex. Bavaria, Hessen etc.)
5. CAP product list no. – this is the number of the material in the EU market products group list – if applicable.

CAP product group: indicates a product group from CAP product list.

1. Exemption certificate: indicating if the material has been issued a certificate that states that this material doesn't need a license for export.
2. Exemption cert. Number: Number of the exemption certificate.
3. Issuing date of exempt.cert. – Issuing date for an exemption certificate.
4. Military goods: a check box indicating if the material is mainly used in military purposes.

Sales Text View

You can define a sales item text for this material for various languages to be used in the sales documents. This could be some general explanation about the material, or explanation maintained on distribution channel level. If you maintain this text it will show up on the item level in all sales documents, and also in the printing version of sales documents.



Default text on sales document item level

MRP View 1

MRP views are maintained mostly for production purposes. This information is supplied by the appropriate MRP controller or someone else from production planning team. The only mandatory field in MRP 1 View is Planning type. We will cover the most important fields used in a productive environment in more detail.

- Purchasing group:** this field is used to indicate which purchasing group is the default for purchasing this material. We haven't maintained it yet as this is a finished product of our company, we don't need it to be purchased at any time. We will set up this field for another material that needs to be purchased.

2. **ABC indicator:** This is an indicator showing the importance of the material in terms of stock availability. Most of the companies use several ABC values, but most common are: **A** – the most important materials, they need to be available for sales in every moment customer requests it, **B** – less important materials that are often supposed to be available but the lack of this material can happen and is allowed, **C** – Least important materials. There can also be few more categories, **N** – new, material not yet tested on the market, so we don't actually know if it's going to be A, B or C yet. **S** – material that is produced only on customer request, and **D** – same as S with the difference that it has a certain quantity on stock just in case someone needs it ASAP, in production planning it is called a material safety stock.
3. **MRP type:** there are various types of MRP that can be utilized. In this case, our MRP controller signalled that it should be PD – default MRP for most of the SAP installations.
4. **MRP controller:** MRP controller responsible for production of this material, he manages all the data in these MRP views, along with the MRP results itself, production planning for this material etc. It is usual that the MRP controller provides the data for MRP views, or even in some organizational structures MRP controllers are maintaining these views on their own.
5. **Lot size:** defines the procedure used by the system in order to calculate the procurement or production quantity of the material.

MRP 1 View in material master and its most important fields

1. Other fields in this view

1. **Other fields in this view**
 - MRP group: this setting is used to group materials with same MRP control parameters which are, for example, the strategy group, the consumption mode, etc. If this field is not maintained, the system will use material group from Basic Data 1 when performing the MRP.
 - 2. Plant-Specific Material Status: If set, this indicates the usability of material in special functions, for example, material can be used for testing or is going to be discontinued, so the MRP doesn't take it into account when it runs. This setting could restrict the use of material in a particular function.
 - 3. Reorder Point: indicates at which stock level MRP should create a new order (either procurement or production order).
 - 4. Planning cycle: cycle of planning, it is defined in customizing and assigned to a material, it can represent a day on which the planning is performed.

5. Minimum and Maximum lot size, Fixed lot size: used to indicate the boundaries for lot size, or a fixed quantity to be used.
6. Ordering costs: fixed cost per order in company code currency, used to calculate the optimal lot size.
7. Rounding Profile and Unit of Measure Group: like the fields in sales views, these are the same fields you can populate with rounding type to purchasing or production (if applicable)
8. Rounding value: it is used in procurement for rounding the procurement quantity to a value of multiple of the number entered here

MRP View 2

MRP view 2 contains data about Procurement, Scheduling, and Net requirements calculation.

1. **Procurement type:** here you can choose if your material has internal production (our case), external procurement, or both types of procurements are possible. It also mightn't have procurement at all.
2. **Production storage location:** here you will maintain the storage location that is copied throughout the production documents. If this is a production component this marks the location from which the goods issue is posted, or if it's produced material it annotates a location to which the material receipt is posted.
3. **Goods Receipt Processing Time in Days:** you can set up this value that represents needed time in days for goods to be inspected and placed into appropriate storage location.
4. **Schedule margin key:** this represents a key used for determination of the floats required for scheduling an order. It is defined in customizing and is supplied by your MRP controller or PP administrator.

Procurement	
Procurement type	1 <input type="text" value="E"/>
Special procurement	<input type="checkbox"/>
Quota arr. usage	<input type="checkbox"/>
Backflush	<input type="checkbox"/>
JIT delivery sched.	<input type="checkbox"/>
<input type="checkbox"/> Co-product	
<input type="checkbox"/> Bulk Material	
Batch entry	
Prod. stor. location	2 <input type="text" value="0001"/>
Default supply area	<input type="checkbox"/>
Storage loc. for EP	<input type="checkbox"/>
Stock det. grp	<input type="checkbox"/>
Joint production	
Scheduling	
In-house production	<input type="text" value="1"/> days
GR Processing Time	3 <input type="text" value="2"/> days
SchedMargin key	4 <input type="text" value="000"/>
Planned Deliv. Time	<input type="checkbox"/> days
Planning calendar	<input type="checkbox"/>
Net requirements calculation	
Safety Stock	<input type="checkbox"/>
Min safety stock	<input type="checkbox"/>
Safety time ind.	<input type="checkbox"/>
STime period profile	<input type="checkbox"/>
Service level (%)	<input type="checkbox"/>
Coverage profile	<input type="checkbox"/>
Safety time/act.cov.	<input type="checkbox"/> days

MRP 2 View in material master

Other fields in this view

1. Special procurement: used to override the procurement type.
2. Batch entry: indicates when the batch determination should be executed.
Default supply area: if you define it this will be a proposed supply area for the material, it's mostly used for KANBAN type of materials.
3. Backflush: determines if backflush indicator is to be set in the production order.
4. Storage location for external procurement: storage location to be proposed in the purchase requisition.
5. Stock determination group: this indicator along with the stock determination rule create a key for the stock determination strategy
6. Co-product: if checked, indicates that this material can also be used as a co-product.
7. Bulk material: this identifies a bill of materials item as a bulk material. This is important as requirements of bulk materials are not relevant for the MRP.
8. Safety stock: quantity in base UOM to use as a safety stock.
9. Minimum safety stock: Safety stock is never allowed to drop below this value.

MRP View 3

MRP view 3 contains several valuable fields mostly used by planning functions.

1. Period indicator: indicates if material is to be planned/forecast monthly, weekly, yearly, daily etc. This is in most cases set to monthly.
2. Strategy group: used for grouping the planning strategies, for example, this can be set to Make to Order, Make to Stock etc. There are a number of options, and this must be defined by the production planning management. In most cases, material types and/or material ABC classification influences the decision which strategy group material should be assigned.
3. Consumption mode: this controls how system will consume requirements. In backward mode sales, orders, dependent requirements or material reservations consume planned independent requirements that lie before the requirements date while in forward mode they consume planned independent requirements that lie after the requirements date.
4. Forward consumption period: number of day used as a consumption threshold in forward consumption mode. Can be set from 1 to 999 days but usually not longer than several days. We are using 0 since we are utilizing backward consumption mode for this material.
5. Backward consumption period: Same as previous except it is used for backward consumption mode.
6. Mixed MRP: defines if material is available for subassembly planning and gross requirements planning.

The screenshot shows the SAP MRP 3 View in material master. At the top, there are tabs for MRP 2, MRP 3, MRP 4, Forecasting, and Work scheduling. Below the tabs, the material number is 10599999 and the description is LCD TV 40". The plant is 0001 and the location is Werk 0001.

Forecast Requirements

- Period Indicator: 1 (highlighted with a red circle)
- Fiscal Year Variant:
- Splitting indicator:

Planning

Strategy group: 2 (highlighted with a red circle)	11	Bwd consumption per.: 30 (highlighted with a red circle)	5
Consumption mode: 3 (highlighted with a red circle)	1	Mixed MRP: 2 (highlighted with a red circle)	6
Fwd consumption per.: 4 (highlighted with a red circle)	0	Planning plant: <input type="checkbox"/>	Planning matl BUnit: <input type="checkbox"/>
Planning material: <input type="checkbox"/>			
Plng conv. factor: <input type="checkbox"/>			

Availability check

- Availability check: 02
- Tot. repl. lead time: days
- Cross-project:

Plant-specific configuration

- ConfigurableMaterial:
- Variant: **Configure variant**
- Planning variant: **Configure planning variant**

MRP 3 View in material master

Other fields in MRP 3 View

Planning material: Only for use with planning strategy "planning with planning material".

MRP 4 View

This is the only MRP view that is maintained on Plant / Storage location organizational level. It doesn't contain as much valuable fields as previous, but there are three handy indicators that can be used to optimize processes in some modules.

1. Selection method: if you are using BOMs (Bill Of Materials) for your production, you could govern with the selection of alternative BOMs with this field. You can set selection type by order quantity, production version, explosion date.

2. Discontinued indicator: you can select the indicator for discontinued part as per requirements.
3. SLoc MRP indicator: this is the most powerful indicator on this view. It tells us if our storage location (that we used in organizational levels screen – in this example 0001 – Lager 0001) is relevant for MRP. That is highly significant as it can reflect not only MRP but also ATP (available to promise) quantities.

The screenshot shows the SAP MRP 4 View in material master. The top navigation bar includes tabs for MRP 3, MRP 4, Forecasting, Work scheduling, Plant data / stor. 1, and several icons. Below the navigation, there are input fields for Material (10599999, LCD TV 40"), Plant (0001, Werk 0001), and Stor. Loc. (0001, Lager 0001). A blue header bar contains the text "BOM explosion/dependent requirements". Under this, the "Selection method" field is highlighted with a red circle and number 1. The "Discontinu. ind." field is highlighted with a red circle and number 2. The "Storage location MRP" section at the bottom has a red box around the "SLoc MRP indicator" field, which is highlighted with a red circle and number 3. Other visible sections include "Discontinued parts", "Repetitive manufacturing / assembly / deployment strategy", and "Average plant stock".

MRP 4 View in material master with the most important fields
 For example, if we use the default value (empty field), it means that our storage location is taken into account in our MRP runs. It is also taken into account in ATP so sales department can see the stock on this location available for sales activities. On the other hand, if you choose indicator 1 – Storage location

stock excluded from MRP, this stock will not be taken into account for the MRP run, as well as it won't be available to promise (ATP) to the customer, so it couldn't be sold. If you choose indicator 2 - Manage storage location separately, it means that you want to manage this locations stock separately from plant stock (useful in some rare cases). The most obvious example for usage of this function is rejects storage location. When our LCD TV 40“ comes out of the production line it can be fully functional, or it might have a flaw. If it is ready for sales we will transfer it to our 0001 location and sales department will see that quantity available to be sold. Let's say we produced 3000 TV sets. Out of that quantity there is 10 TV sets with some problems and our quality control department chooses that those cannot be sold, so these are sent to our location 0003 for rejects. In MRP 4 view, we have to maintain the indicator 1 for our rejects location 0003 as we don't want sales department to see the stock as available. We only want the other 2990 pieces available that are on the 0001 location, for which we maintain empty field for this indicator (include in MRP/ATP).

Work Scheduling View

This view is used by the production to control the scheduling of production and process orders. A production schedule determines how capacity requirements are calculated for all the materials during a scheduling run. Here, you can also activate batch management if material is to be handled in batches (certain quantities of material with slightly different characteristics). Batch management can be activated in several other views.

1. Production schedule profile: define how the process will flow in PP or PP-PI, some additional controls about automatic goods receipt etc. Customized by your PP consultant.
2. Underdelivery tolerance: define allowed percentage of quantity to be underdelivered.
3. Overdelivery tolerance: allowed percentage for quantity exceeding for production or process order. For overdelivering, you can check the unlimited box – in that case we are allowing unlimited over delivery.
Setup time: time needed to setup and teardown work center resources (lot size independent).
4. Processing time: processing time for the base quantity.
5. Base quantity: used for processing and inhouse production time. In our case, processing time is the time needed to process 48 pieces of our material.

Forecasting Work scheduling Plant data / stor. 1 Plant data / stor. 2

Material	10599999	LCD TV 40"	
Plant	0001	Werk 0001	
General Data			
Base Unit of Measure	PCS	Piece	Unit of issue
Production unit	<input type="checkbox"/>		P-S matl status
Prod'n Supervisor	<input type="checkbox"/>		Valid from
Prod.Sched.Profile	① PI01		Prod.stor.loc.
Serial no. profile	<input type="checkbox"/>	SerLevel	Mat. Grouping
<input checked="" type="checkbox"/> Insp.stock	<input type="checkbox"/>	Critical Part	Overall profile
	<input type="checkbox"/>	Batch rec. req.	<input type="checkbox"/> Version Indicator
			ProdVersions
			<input type="checkbox"/> BatchManagement
Tolerance data			
Underdely tol.	② 5	percent	Overdely tol.
	③ 3	percent	<input type="checkbox"/> Unlimited
In-house production time in days			
Lot size dependent		Lot size independent	
Setup time	④ 1	Interoperation	<input type="checkbox"/> InhseProdTime
Processing time	⑤ 1	Base quantity	⑥ 48

Work Scheduling view in material master

Plant data – Storage 1 View

Warehouse administration team should supply the data for maintenance of this view. These are mostly storage data valid on the plant level. Let's go through all the essential fields for this view.

Work scheduling Plant data / stor. 1 Plant data / stor. 2 Warehouse Mg...

Material	10599999	LCD TV 40"	
Plant	0001	Werk 0001	
General data			
Base Unit of Measure	PCS	Piece	Unit of issue
Temp. conditions			Storage conditions
Container reqmts			Haz. material number
CC phys. inv. ind.	<input type="checkbox"/>	<input type="checkbox"/> CC fixed	Number of GR slips
Label type	<input type="checkbox"/>	Lab.form <input type="checkbox"/>	<input type="checkbox"/> Appr.batch rec. req.
<input type="checkbox"/> Batch management			
Shelf life data			
Max. storage period		Time unit	
Min. Rem. Shelf Life		Total shelf life	
Period Ind. for SLED		Rounding rule SLED	
Storage percentage	<input type="checkbox"/>		

Plant Data - Storage 1 view

1. Unit of issue: this is the unit in which material is issued from any storage location within the plant (except for the warehouse managed locations which have a setting that overrides this field value).
2. Temperature conditions: temperature (and atmospheric) conditions in which the material must be stored.
3. Storage conditions: storage conditions required by material.
4. Container requirements: type, and conditions in the container in which the material is shipped.
5. Max.storage period: maximum period of time for which a material can be stored.
6. Minimum remaining shelf life: minimum remaining time for the material to be allowed to be stored (in case the remaining time is shorter than minimum – system will deny goods receipt).
7. Period indicator for SLED: used as a unit of time for Minimum remaining shell life. If this field contains D, than minimum remaining shelf life is maintained in days. Indicator M is for months etc.

Plant data – Storage 2 View

These fields are repeating from Basic view 1 (Weight/Volume section), and Sales – General (General Plant parameters section), we had described them when we covered those views.

The screenshot shows the SAP interface for 'Plant data / stor. 2'. At the top, there are tabs for 'Plant data / stor. 1', 'Plant data / stor. 2' (which is active), and 'Warehouse Mgmt 1'. Below the tabs, there are three rows of input fields:

Material	10599999	LCD TV 40"	
Plant	0001	Werk 0001	
Stor. Loc.	0001	Lager 0001	

Below these are two sections:

Weight/volume Available on Basic Data 1 View

Gross Weight	26,988	Weight unit	KG
Net Weight	24,651		
Volume		Volume unit	
Size/dimensions			

General plant parameters Available on Sales - General View

<input type="checkbox"/> Neg. stocks in plant	<input type="checkbox"/> Log. handling group	
Serial no. profile	SerLevel	<input type="checkbox"/> Distr. profile
Profit Center		<input type="checkbox"/> Stock determ. group

Plant data – Storage 2 View

Warehouse Management 1 View

This view is maintainable on Plant / Warehouse number organizational level. Warehouse number is the top hierarchy level in warehouse management in SAP. You can see positions 1 & 2 in the picture below representing Plant and Warehouse Number for which we are extending the

material. Information for maintaining this view should be supplied by warehouse management administration team.

1. **Plant:** organizational level
2. **Warehouse number:** organizational level
3. **WM unit:** unit that is used throughout the warehouse management. Every document in WM uses this unit of measure, no matter what is the original document UOM. For example, if you create delivery for 12 pieces of LCD TV 40“ and we have defined in warehouse management view that WM unit is PAL, in transfer orders (WM document for stock management) 1 PAL will be shown instead of 12 PCS as the original document (delivery)item was created.
4. **Unit of issue:** it is already covered in Plant Data – Storage 1 View.
5. **Proposed UoM for material:** this indicator determines which unit of measure should be used in warehouse management in conjunction with WM unit. This indicator can be set to use Unit of Issue (defined here in material master), Order unit (unit in which the original document was created – sales order, delivery, reservation etc.), WM unit of measure, base unit of measure, and some additional conditional possibilities (for example, if no other unit is specified use base unit of measure).
6. **Stock removal strategy:** to be used, a stock removal strategy suitable for this material has to be defined in customizing. For example, strategy for our material could be: first try to remove stock from high rack storage, and if there is no stock there try picking from the bulk storage area. Used when we have to pick some quantity for customer (delivery) or reservation.
7. **Stock placement strategy:** same as above with opposite direction, when we want to place our stock from production to our warehouse, we want the system to search different storage types (areas) for placement in the warehouse. We want the system to search in the right order for this material so we can set up the appropriate strategy.

General data

Base Unit of Measure	PCS	Haz. material number	
WM unit	3	Gross Weight	26,988 KG
Unit of issue	4	Volume	
Proposed UoM frm mat	5	Capacity usage	/
Picking storage type		<input type="checkbox"/> Appr.batch rec. req.	
<input type="checkbox"/> Batch management			

Storage strategies

Stock removal	6	Stock placement	7
Storage Section Ind.	8	Bulk storage	9
Special movement		<input type="checkbox"/> Message to IM	
2-step picking		<input type="checkbox"/> Allow addn to stock	

Warehouse Management 1 View in material master

8. **Storage section indicator:** when using indicators for stock removal and placement, we might encounter a problem that in the same storage type, we could have storage bins that are smaller than usual and our material cannot be placed there. That is where we can use storage section indicator, to instruct the system not to place our material in storage bins of certain section (smaller bins).
9. **Bulk storage indicator:** this is used to indicate a special case for using up a bulk storage type capacity.

* Other fields include some special indicators, like special movement indicator, two step picking, allowing adding to existing stock in the storage bin already containing this material.

These settings are very complex and require more in-depth knowledge of Warehouse Management.

Warehouse Management 2 View

This view is maintainable on one more level than the previous view. Here are located palletization data (quantities of material and types of pallets used) in the first section which isn't

maintained on storage type level but like previous view on warehouse number level. Lower section of the screen shows several fields that are storage type related settings.

1. **Storage type:** the storage type for which we are extending/maintaining our material. In this case, we want our LCD TV to be stored at shelf storage (we have already selected this strategy in WM 1 View).
2. **Palletization data:** this is information about how our material is packed onto different storage unit types. For example, our material is packed 12 pieces on Euro pallet 1m high (defined as E1 in our system).
3. **Storage bin:** if we wanted to store our material in a predefined storage bin we would maintain this field. In this case, we want a system to propose a bin for our material every time we are executing putaway.
4. **Maximum bin quantity:** this is usually a number that is maintained in palletization data, in our case 12 PCS. Used in check while placing the stock, system will not allow more than 12 PCS to be stored in one bin.

LE quantity	Un	SUT
1.	12	PCS
2.		E1
3.		

Storage Bin	Picking Area
3	6
4	12
5	7
Rounding qty	12
	8
	1

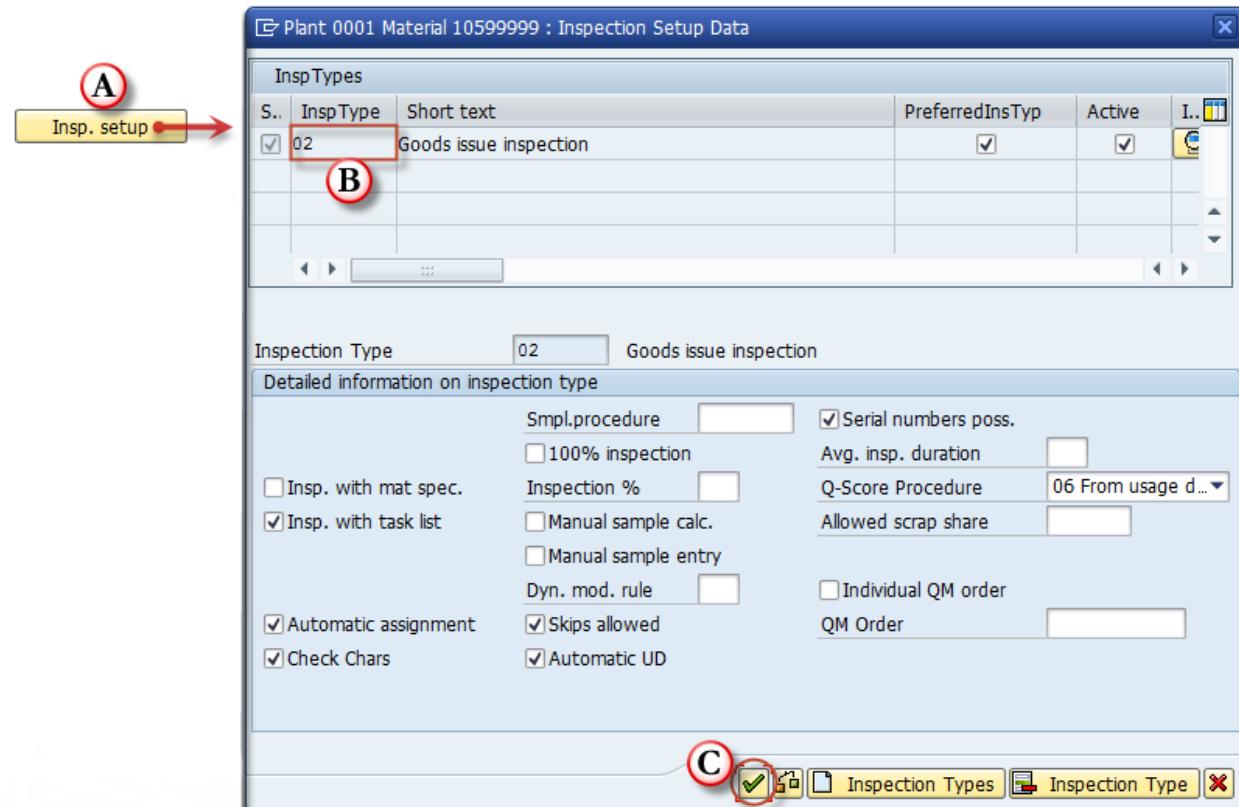
Warehouse Management 2 View in material master

5. **Minimum bin quantity:** this should be maintained only if replenishment is active for the storage type (mostly used in fixed bin storage types). In our case, if storage bin stock falls below 1 (no more TVs in the storage bin) system would request replenishment to be made, to fill the storage bin with another pallet. This is a very complex topic and requires more in-depth knowledge of warehouse management system in SAP.
6. **6) Picking area:** like storage sections are grouping bins together in putaway process, picking areas group storage bins for picking process.
7. **Control quantity:** for certain strategies (min/max quantity) utilized on storage type level, this is the quantity that signals the system that if the requested quantity for picking is higher than defined in this field, system should skip this storage type and move on to the next in our stock removal strategy. This is used in cases where we want to pick small quantities of material from one type of storage, and large quantities from another storage type.
8. **Replenishment quantity:** when system determines that replenishment of our bin is needed it will replenish with quantity in this field. We have defined that we want replenishment when stock falls to zero, and we want it to be replenished by entire pallet – 12 pieces.

Quality management View

This view is used for material settings for quality inspection processes in Quality Management module. Administrators of that module are responsible for providing the information for maintenance of this view.

1. Inspection setup: this indicates if at least one inspection type has been set up. In the setup itself, you can choose the inspection type you want to use for this material. Setup types have to be predefined by you QM consultant. Step A: Click the Inspection setup button; Step B: choose the appropriate inspection type predefined by QM team; Step C: confirm changes.



Choosing the inspection type on a subscreen of Quality Management view

2. Post to inspection stock: specify if the material is subject to quality inspection. If this is checked, an inspection lot will be created for the inspection type assigned.
3. Material authorization group: you can define authorizations for QM users based on the authorization group, for example if you want some materials inspected by some users, and other materials by other users.
4. Inspection interval (in days): interval between recurring inspections for the same batch.
5. QM in Procurement active: activating Quality management for material in the procurement process.
6. QM control key: used to define conditions in quality inspection in procurement. You can set a delivery block, invoice block and other types of blocks until material inspection is done. Possible entries are predefined in customizing by the consultant.
7. Certificate type: quality certificate type (possible entries are predefined in customizing by QM consultant).
8. Target QM system: Required QM system by vendor. We specify if vendor needs to have ISO 9001 or other types of QM systems implemented and certified.

Warehouse Mgmt 2 Quality management Accounting 1 Accounting 2

Material 10599999 LCD TV 40"

Plant 0001 Werk 0001

General data

Base Unit of Measure	PCS	Piece	1 <input type="checkbox"/> Inspection setup	Insp. setup
Unit of issue			2 <input type="checkbox"/> Post to insp. stock	
QM material auth.	3		<input type="checkbox"/> Documentation reqd	
GR Processing Time	2	days	Inspection interval	4
Catalog profile			Valid from	
Plant-sp.matl status				

Procurement data

<input type="checkbox"/> QM proc. active	5
QM Control Key	6
Certificate type	7
Target QM system	8
<input type="checkbox"/> Tech. delivery terms	

QM view in material master

Accounting 1 View

Data entered in this view determines the way that accounting will be processed for this material. Data is supplied by your FI/CO team, and background customizing by your FI/CO consultant.

1. **Valuation class:** depending on your system settings, but valuation class is in most times influenced by material type, so you will have a valuation class for finished goods, and another for trading goods. In our case valuation class, 7920 is SAP default class for finished goods. For HALB, this class is 7900 by default, and for ROH we can use 3000.
2. **Valuation Class for sales order stock:** you can assign a valuation class for sales order stock to override the default valuation class defined in field 1 - Valuation Class. Not recommended.
3. **Price control:** this indicated which type of internal price will be used for the material. It can be set to S – standard cost, or V – moving average price (variable price). In most

cases, S is used for finished goods while V is used for trading goods, but the settings depend on your SD/FI/CO teams preference.

4. **Moving price:** you can populate this field if price control is set to V.
5. **Standard price:** you can populate this field if price control is set to S. Your controlling team can use transactions for generating these prices based on the information contained in production orders, purchase orders, so that these prices don't have to be entered manually for each material. We can also maintain **Valuation Category** field, which determines whether stocks of the material are valued together or separately.

General data	
Base Unit of Measure	PCS
Currency	EUR
Division	10
Valuation Category	<input type="checkbox"/>
Current period	03 1998
Price determ.	<input type="checkbox"/>
<input type="checkbox"/> ML act.	

Current valuation	
Valuation Class	1
VC: Sales order stk	2
Price Control	3
Moving price	4
Total Stock	0
Proj. stk val. class	<input type="checkbox"/>
Price Unit	1
Standard price	5
Total Value	0,00
<input type="checkbox"/> Valuated Un	
Future price	<input type="checkbox"/>
Valid from	<input type="checkbox"/>

Accounting 1 View in material master

Accounting 2 View

This view isn't used very often in productive environment, the most common setting for this view is leaving all the fields empty. Basically, it consists of special tax information in accounting which is hardly ever relevant. Determination of the lowest value of the material, material devaluation through its status (moving, slow moving) etc. If this view is being used by your

financial accounting department, the department should provide you the information for maintaining this view.

Accounting 2 View in material master

Costing 1 View

Costing view is used to determine the product cost. It can take various inputs, but for production the most important is the costing lot size. That means that an optimal lot size used for product cost estimate can be set here. Product can be produced in a 100 pieces lot or in a 3700 pieces lot; therefore the costing for those two situations are different. That is because there are some fixed expenses (time for setting up appropriate tool, mechanics work). In the first case, our product cost might be as high as 126 USD/pcs while in the other case, it could be 111 USD, which is remarkably different, so production has to try to plan their activities and stock levels of all materials in a plant in a way that our production lot size doesn't vary too much and be as close to our optimal lot as possible.

1. Do Not Cost: no costing is estimated. Neither material cost nor sales order cost is created, just as procurement alternatives can't be created as well. If you want costing at all, leave the field blank.
2. With quantity structure: indicates if we want to use quantity structure data for cost estimating (lot size and other quantity information).
3. Material origin: this indicates if material number should be assigned to cost element item in CO module.
4. Variance key: determines how cost variance is calculated.
5. Costing lot size: it is only useful if check box „With Qty structure“ is checked. It determines the lot quantity used for a cost estimate calculation.

Accounting 2 Costing 1 Costing 2 Basic data 1

Material 10599999 LCD TV 40"

Plant 0001 Werk 0001

General data

Base Unit of Measure	PCS	Piece
<input type="checkbox"/> Do Not Cost	1	<input checked="" type="checkbox"/> With Qty Structure
Origin group		<input checked="" type="checkbox"/> Material origin
Overhead Group		Variance Key 4 000001
Plant-sp.matl status		
Valid from		Profit Center SAP-DUMMY

Quantity structure data

Alternative BOM		BOM Usage	
Group		Group Counter	
Task List Type			
SpecProcurement Costing		Costing Lot Size 5 600	
<input checked="" type="checkbox"/> Co-product	<input type="checkbox"/> Fxd Price	Joint production	
<input type="checkbox"/> Version Indicator		Versions	
Production Version			

Costing 1 View in material master

Costing 2 View

In figure 1 – Valuation data, we can see fields already covered in previous views (Accounting 1 view). Other than that there are fields to maintain planned prices (Standard cost estimate will be copied to Planned price if standard cost estimate is checked and created).

Costing 1 **Costing 2** **Basic data 1**

Material 10599999 LCD TV 40" **i**

Plant 0001 Werk 0001

Standard Cost Estimate

Cost Estimate	Future	Current	Previous
Period / Fiscal Year	0	0	0
Planned price		0,00	0,00
Standard price		0,00	

Planned prices

Planned price 1		Planned price date 1	
Planned price 2		Planned price date 2	
Planned price 3		Planned price date 3	

Valuation Data **1**

Valuation Class	7920	Valuation Category	
VC: Sales order stk		Proj. stk val. class	
Price Control	S	Current period	3 1998
Price Unit	1	Currency	EUR
Moving price		Standard price	0,00

Costing 2 View in material master

Purchasing View

In purchasing view, we can find several fields already present at previously covered views like Freight group, plant special material status etc. We also have few new fields available only from Purchasing view.

1. Purchasing group: you can define various purchasing groups like raw material purchasing, trading goods purchasing, service purchasing etc. This value will be the default value for all the items entered in purchasing documents.
2. Order unit: default unit used for ordering this material. We have used pallet as default so if we enter a quantity of 10 it means we are requesting 10 pallets of the material (120 pieces in this case).

You can see the Purchasing values section in this view. The only field you have to populate is the Purchasing value key which is maintained in customizing consisting of all the values you can see in this section (underdelivery tolerance, overdelivery tolerance). When you define the key in customizing, the values from the key are transferred to all the fields in this section.

Sales text Purchasing Foreign trade import Purchase order text MRP 1

Material	10599999	LCD TV 40"	<input type="button" value="H"/>
Plant	0001	Werk 0001	
General Data			
Base Unit of Measure	PCS	Piece	Order Unit
Purchasing Group	1 001		2 PAL
Plant-sp.matl status		Material Group	100
Tax ind. f. material		Valid from	
Material freight grp		Qual.f.FreeGoodsDis.	
<input type="checkbox"/> Autom. PO			
<input type="checkbox"/> Batch management			
Purchasing values			
Purchasing value key		Shipping Instr.	
1st Rem./Exped.	0 days	Underdel. Tolerance	0,0 percent
2nd Reminder/Exped.	0 days	Overdeliv. Tolerance	0,0 percent
3rd Reminder/Exped.	0 days	Min. Del. Qty in %	0,0 percent
StdValueDelivDateVar	0 days	<input type="checkbox"/> Unltd Overdelivery	<input type="checkbox"/> Acknowledgment Rqrd
Other data / manufacturer data			
GR Processing Time	2 days	<input checked="" type="checkbox"/> Post to insp. stock	<input type="checkbox"/> Critical Part
Quota arr. usage		<input type="checkbox"/> Source list	<input type="checkbox"/> JIT Sched. Indicator

Purchasing related data in material master

Foreign Trade Import View

Exactly the same view as a foreign trade export view.

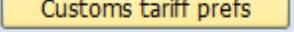
Purchasing Foreign trade import Purchase order text MRP 1 MR... 

Material	10599999	LCD TV 40"	
Plant	0001	Werk 0001	

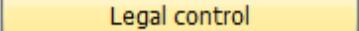
Foreign trade data

Comm./imp. code no.	85411000	Diodes, other than photodiodes and	Un <input type="checkbox"/>
Export/import group	0001 G0001		
CAS number (pharm.)			
PRODCOM no.			
Control code			

Origin / EU market organization / preferences

Country of origin	DE	Region of origin <input type="checkbox"/>
CAP product list no.		
CAP prod. group		
Preference status	Not maintained	
Vendor decl. status	Not maintained	

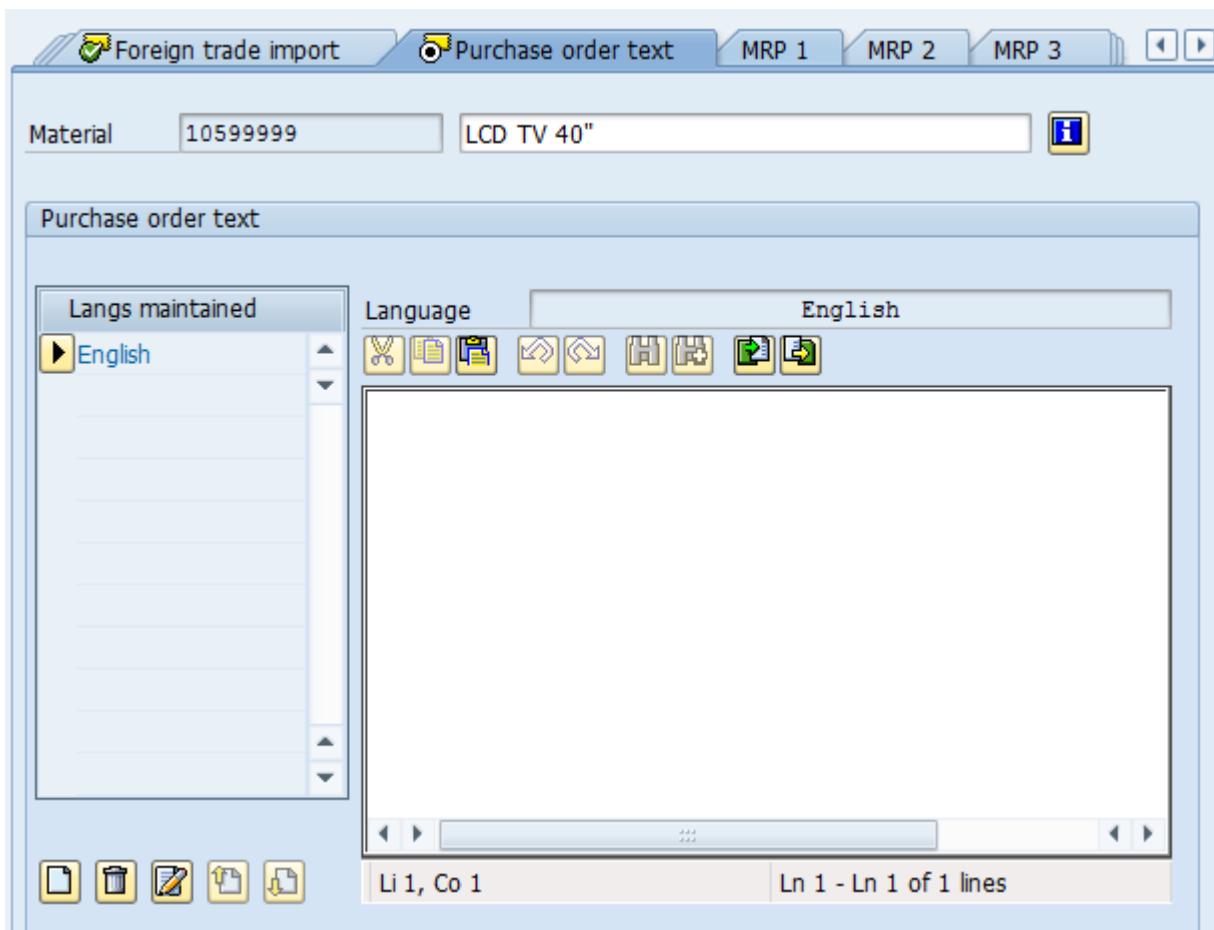
Legal control

Exemption Certificate <input type="checkbox"/>	Exemption cert. no. <input type="text"/>
Iss.date of ex.cert. <input type="text"/>	
<input type="checkbox"/> Military goods	

Foreign Trade - Import View in material master

Purchase order text View

Exactly the same view as a sales order text view.



Purchase Order Text View in material master

CHANGE AND DISPLAY OF MATERIAL MASTER

When our material master is maintained, and we need to change certain option (due to the organizational changes, or changes in processes) we cannot use MM01 as that is the transaction code used only for creating views that are not maintained for certain material. In this case, we need to use **MM02** and **MM03** transaction codes. In SAP transactions ending with **01** are for creating, ending with **02** for editing/changing, and the ones ending in **03** are used for viewing data without possibility to change it.

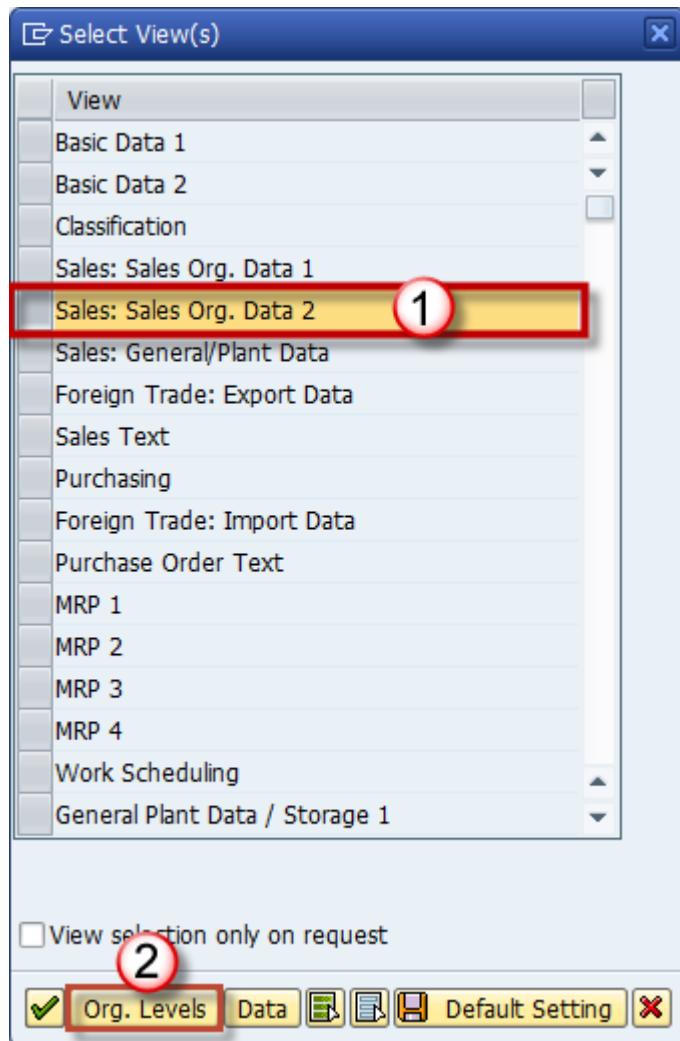
Usage of those two transactions is absolutely the same in steps so we will cover only the differences between the two.

By entering the appropriate t-code, we are presented the initial screen where we are supposed to enter our material number which material master data we want to change and display.

The screenshot shows the SAP initial screen for MM02 and MM03 transactions. The title bar says "Change Material (Initial Screen)". Below it are buttons for "Select View(s)", "Org. Levels", and "Data". The main area has a "Material" field containing "10599999" (circled with a red number 2). Below it is a "Change Number" field.

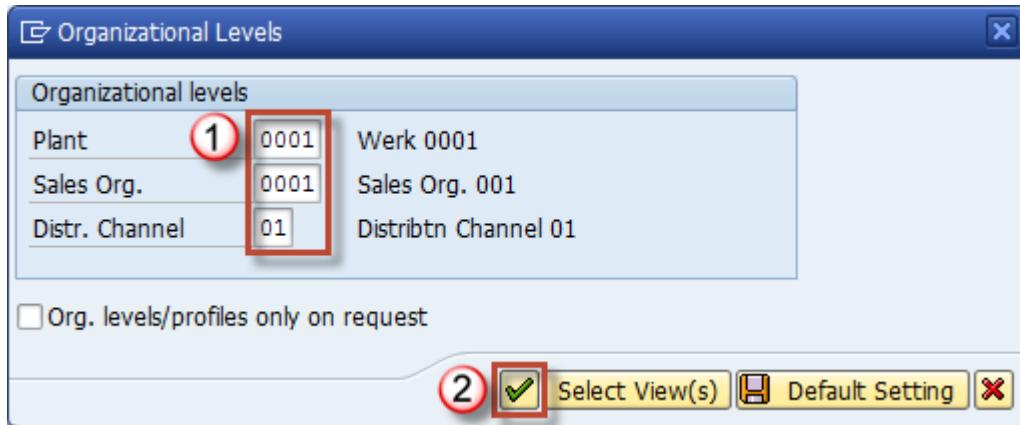
Initial screen for MM02 and MM03 transaction

The next step is choosing the views which data we want to change/display. For example, we will choose sales organization data 2 view. You can choose one or more organizational levels for change/display. Now click on Organizational Levels just as on the screen below:



Organizational level selection

Now we're on the screen where we are supposed to enter the organizational levels:



Organizational levels

After we have chosen the levels we want to change/display, we can see the desired view.

In MM02, we have the ability to change the data...

Sales: sales org. 1 Sales: sales org. 2 Sales: General/Plant Foreign trade ...

Material	10599999	LCD TV 40"	
Sales Org.	0001	Sales Org. 001	
Distr. Chl	01	Distribtn Channel 01	

Grouping terms

Matl statistics grp	1	'A' Material	Material pricing grp	01	Normal
Volume rebate group	01	Maximum Reb...	Acct assignment grp	03	
Gen. item cat. grp	NORM	Standard item	Item category group	NORM	Standard item
Pricing Ref. Matl					
Product hierarchy	0010000001		LCD TV 40"		
Commission group	01	Commission Group 1			

Product attributes

<input type="checkbox"/> Product attribute 1	<input type="checkbox"/> Product attribute 2	<input type="checkbox"/> Product attribute 3
<input type="checkbox"/> Product attribute 4	<input type="checkbox"/> Product attribute 5	<input type="checkbox"/> Product attribute 6
<input type="checkbox"/> Product attribute 7	<input type="checkbox"/> Product attribute 8	<input type="checkbox"/> Product attribute 9
<input type="checkbox"/> Product attribute 10		

MM02 screen

While in MM03, we can only display data without the possibility to change it (fields are greyed out).

Sales: sales org. 1 Sales: sales org. 2 Sales: General/Plant Foreign trade ...

Material	10599999	LCD TV 40"	
Sales Org.	0001	Sales Org. 001	
Distr. Chl	01	Distribtn Channel 01	

Grouping terms

Matl statistics grp	1	'A' Material	Material pricing grp	01	Normal
Volume rebate group	01	Maximum Reb...	Acct assignment grp	03	
Gen. item cat. grp	NORM	Standard item	Item category group	NORM	Standard item
Pricing Ref. Matl					
Product hierarchy	0010000001		LCD TV 40"		
Commission group	01	Commission Group 1			

Product attributes

<input type="checkbox"/> Product attribute 1	<input type="checkbox"/> Product attribute 2	<input type="checkbox"/> Product attribute 3
<input type="checkbox"/> Product attribute 4	<input type="checkbox"/> Product attribute 5	<input type="checkbox"/> Product attribute 6
<input type="checkbox"/> Product attribute 7	<input type="checkbox"/> Product attribute 8	<input type="checkbox"/> Product attribute 9
<input type="checkbox"/> Product attribute 10		

MM03 screen

In MM02 after you have done appropriate changes, you can save the transaction data, and you are done.

In MM03, you can just go back to exit the transaction.

Advanced tools in material master creation

Copying an existing material master data into new material – this function is available on the first screen of MM01 transaction. The process is as follows:

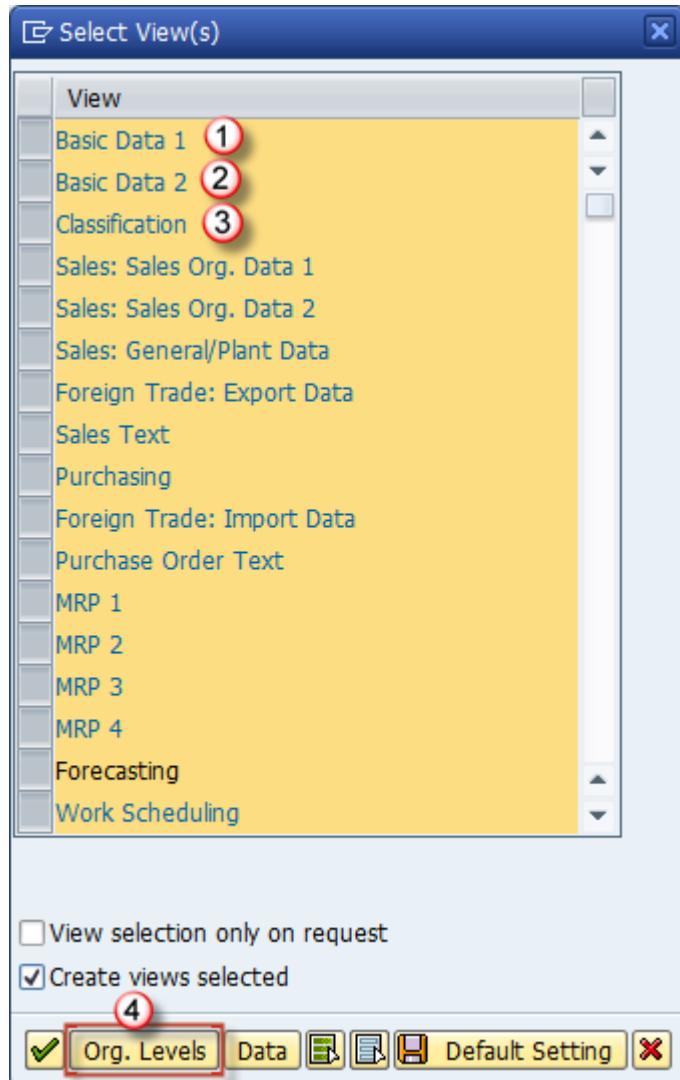
1. **Material:** here you should enter material number that you want to create.
2. **Copy from... Material:** enter our existing material from which we want to copy the data.
3. Click on **Select Views** button.

Create Material (Initial Screen)

Select View(s)	Org. Levels	Data
3		
Material	1 10599997	
Industry sector	M Mechanical engin...	
Material Type	FERT Finished Prod...	
Change Number		
Copy from...		
Material	2 10599999	

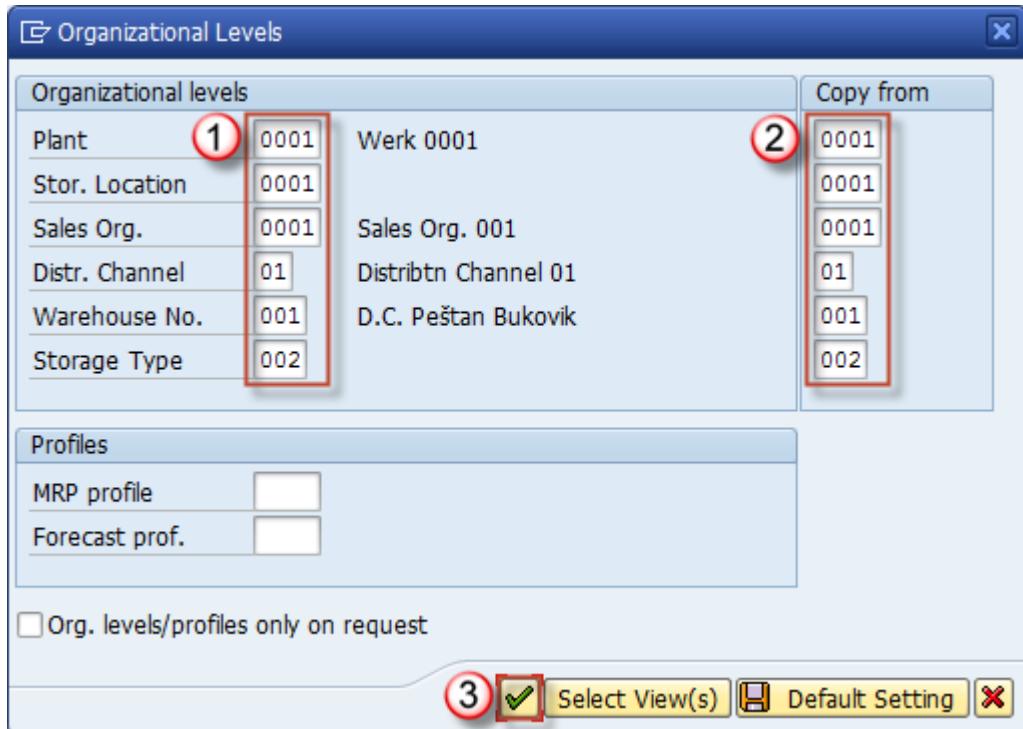
Selection for copying an existing material into a new one

1) – 2) – 3) – etc. Select the views you need to copy to new material and click **4)** to confirm.



Selecting the views to be copied to new material

1. You can choose which organizational levels will be created for our new material.
2. And from which organizational levels of reference material master data should be copied
3. Confirm.



Selecting organizational levels

Afterwards, you are presented a screen for view maintenance.

You can select any view and change data that differ from reference material and the new one.

For example, weight and description.

You should check all the other view and change the material specific data.

You should go through the additional data (descriptions for other languages, units of measure) as this data should be different for our new material.

1. Changing material description as this is our 24“ model not 40“.
2. Changing gross weight.
3. Changing net weight.

The screenshot shows the SAP Material Master Data Maintenance screen. The top navigation bar includes tabs for 'Basic data 1', 'Basic data 2', 'Classification', and 'Sales: sales org. 1'. The main area displays material details for material number 10599997, specifically for the description 'LCD TV 24"'. A red circle labeled '1' is positioned over the '1' in the serial number field.

General data				
Base Unit of Measure	PCS	Piece	Material Group	100
Old material number			Ext. Matl Group	
Division	10		Lab/Office	
Product allocation			Prod.hierarchy	
X-plant matl status	<input type="checkbox"/>		Valid from	
<input type="checkbox"/> Assign effect. vals			GenItemCatGroup	NORM Standard item

Material authorization group	
Authorization Group	<input type="checkbox"/>

Dimensions/EANs				
Gross Weight	20,790	2	Weight unit	KG
Net Weight	18,843	3		
Volume			Volume unit	<input type="checkbox"/>
Size/dimensions				
EAN/UPC			EAN Category	<input type="checkbox"/>

Changing the material specific data

Afterwards, we need to save the transaction data.

Mass creation – in order to create multiple materials at once, you should have access to a function that supports that. It is either by using eCatt tool or by creating a **LSMW** (Legacy System Migration Workbench) or **BDC** (Batch Data Communication) recordings or by using a **BAPI** (Business Application Programming Interface). You can also use mass maintenance transaction **MM17** to create views in some cases, but you must keep in mind that not all of the organizational levels should contain the same data (MM17 requires that all data for the materials and organizational levels you select should be the same).

Mass creation is always considered not to be end users responsibility, but a module specialists work to be done in **MM17** (or in case of LSMW, BDC or BAPI, it is considered to be developers or consultants work), so you do not have to understand in detail, you just have to

know the concept, and that there is that kind of possibility for mass data maintenance. These functions are also used in ***mass changing of material master data***.

For this purpose, you can use **MM17** (if something can't be accomplished by this transaction it can be done using LSMW, BDC or BAPI).

MM17 – mass changing material master

Enter the transaction.

Select the data type you need to change, for example, we need to change a field in general data. Execute.

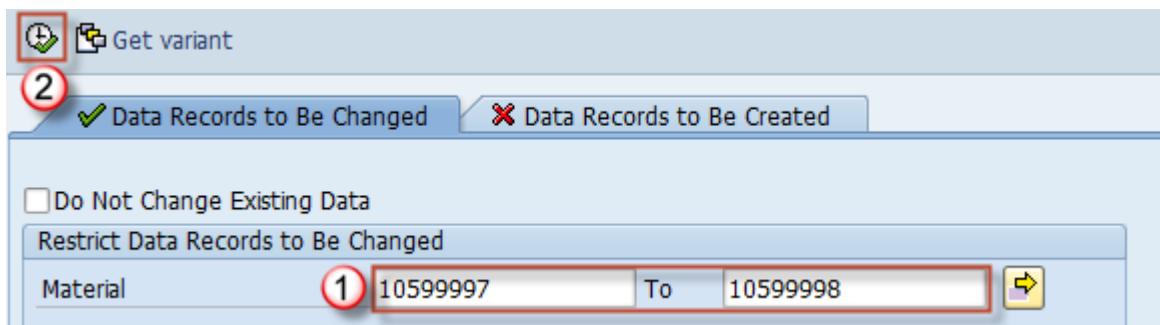
The screenshot shows the SAP MM17 transaction screen. The title bar displays 'mm17' and a red circle with the number '1'. The toolbar includes standard SAP icons for file operations like save, print, and search. The main title is 'Mass Maintenance: Materials (industry)'. Below it, there's a toolbar with a green plus sign icon and a red circle with the number '3'. The object type is set to 'BUS1001' and the variant name is empty. The interface has two tabs: 'Tables' (selected) and 'Fields'. The 'Tables' tab displays a list of material data tables:

Short Description	Table Name
General Material Data	MARA
Material Descriptions	MAKT
Plant Data for Material	MARC
Material Valuation	MBEW
Storage Location Data for Material	MARD
Units of Measure for Material	MARM
Sales Data for Material	MVKE
Forecast Parameters	MPOP
Planning Data	MPGD_MASS
Tax Classification for Material	MLAN
Material Data for Each Warehouse Number	MLGN
Material Data for Each Storage Type	MLGT

Initial screen for transaction MM17

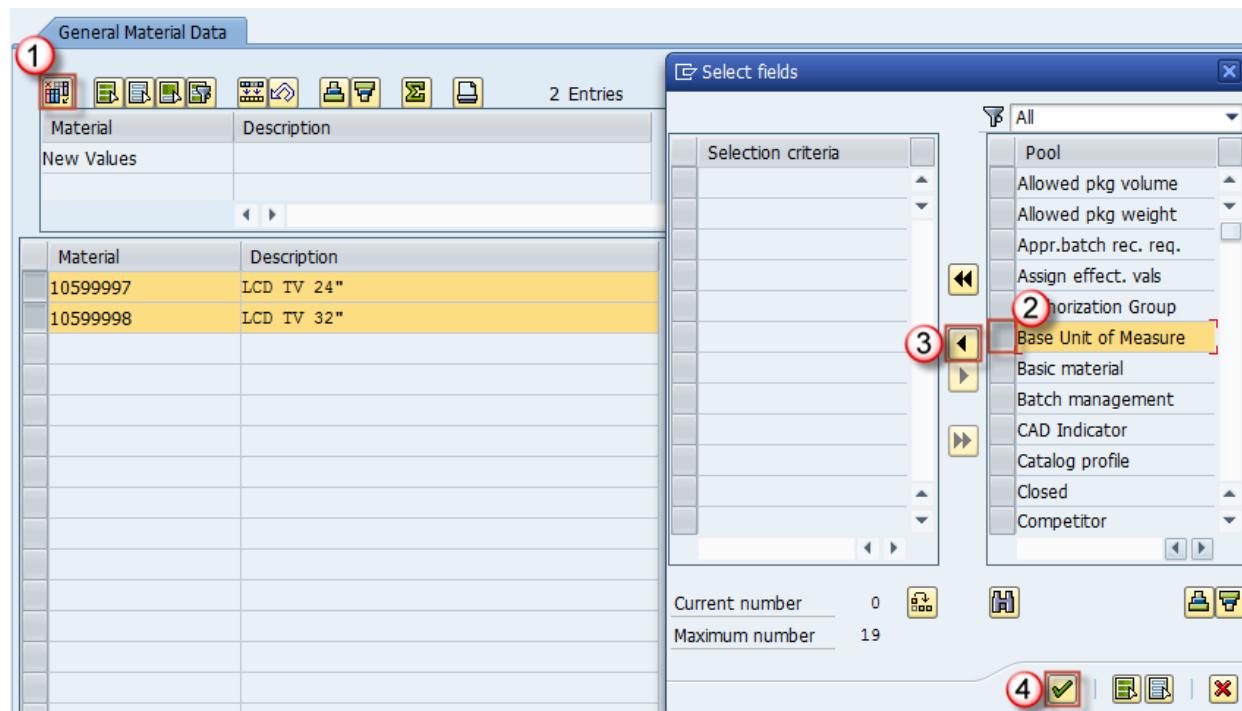
1. Enter the material range or list for which we want to change the data and execute –

- Enter the material range or list for which we want to change the data



On the next screen follow the instruction below:

- When clicking on this button – you will get the **Select fields** screen. Check the appropriate field (we are changing base unit of measure for our two materials).
- Click the arrow pointing to the left to add the selected field to the list of fields to be changed.
- Click the OK button.



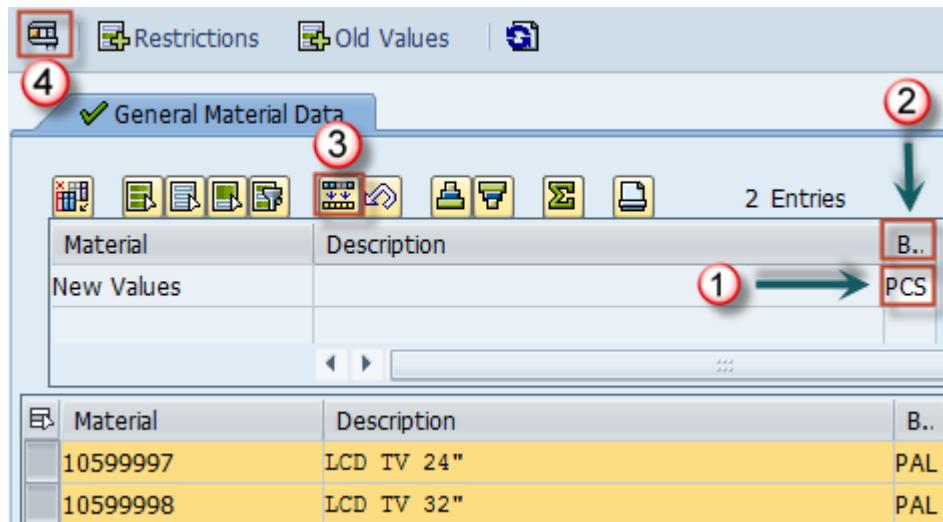
Selecting the appropriate field needed to be changed for multiple materials

Now we are presented with the next screen where we can input our value to be transferred.

Let's say we have maintained PAL – pallet as the base unit of measure for our TV sets 24 and 32" and we need to change that to PCS – pieces.

- Enter the value you want to copy in the box.
- Click on the column heading.

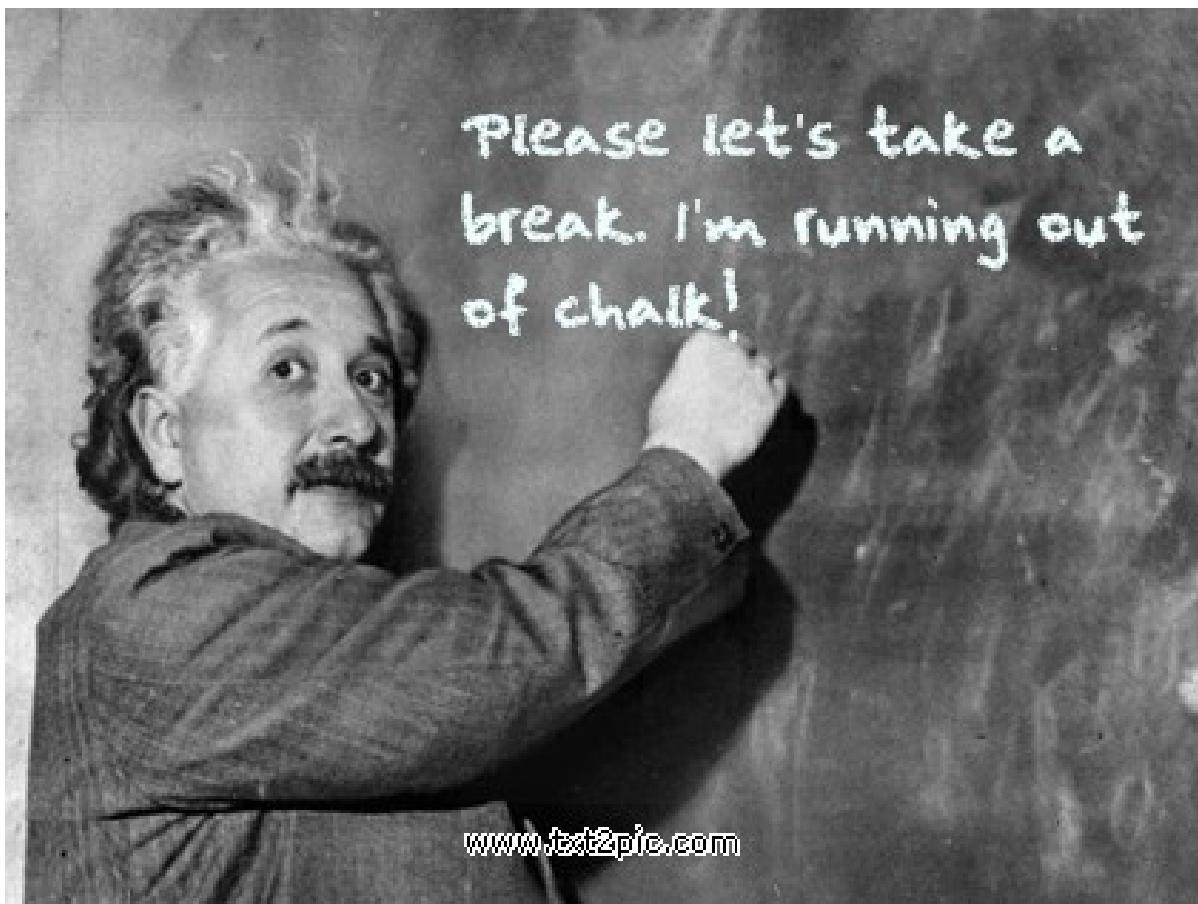
3. Select the button, to overwrite the old values by „PCS“.
4. Execute.



Performing the change

Now your settings are saved, and your material master data is changed.

In our next lesson, you will learn how to maintain purchase info record.



Chapter 2-Purchase Info Record

Purchase info records are information about terms for purchasing a specific material from a vendor. They are maintained at vendor/material combination and can contain data for pricing and conditions, overdelivering and underdelivering limits, planned delivery date, availability period.

Number ranges for info record

Number ranges for info records are defined in customizing, and they are most frequently assigned to a group. In standard SAP, there are two number ranges, one for stock material and other for non stock material. This means that our purchase info record is going to be assigned a unique number upon creation, which can be used later for changing the info record or displaying it. Info records for materials with inventory will have their numbers auto incremented. Materials without inventory can have totally different info record numbers.

Creation of info record

Procurement types in info recordStandard

A standard info record contains information for standard purchase orders. The info records can be created for materials and services with and without master records

Subcontracting

A subcontractor info record contains ordering information for subcontract orders. For example, if you subcontract the assembly of a component, the subcontractor info record would include the vendor's (subcontractor's) price for assembling the component.

Pipeline

A pipeline info record contains information on a vendor's commodity that is supplied through a pipeline or pipes (for example, oil or water) or by similar means (for example, electricity through the mains). The info record contains the vendor's price for the use of such commodities by the buyer ("pipeline withdrawals"). You can keep withdrawal/usage prices for different validity periods.

Consignment

A consignment info record contains information on a material that vendors keep available at their own cost on the orderers premises. The info record contains the vendor's price for withdrawals by the orderer from consignment stock. As in the case of the pipeline info record, you can keep prices for different validity periods.

Purchase info records can be created for every type of procurement, and are processed using the transaction code **ME11**.

Step 1)

Enter transaction ME11 in command prompt.

Key for creating the info record is Vendor/Material combination. You can enter purchasing organization and/or Plant. You have to choose an info category for desired procurement type.

Press **ENTER** to proceed to the next screen.

The screenshot shows the SAP ME11 transaction screen. At the top, the transaction code 'ME11' is entered in the command field, which is circled with a red number '1'. Below the command field, the title 'Create Info Record: Initial Screen' is displayed. The main area contains several input fields: 'Vendor' with value 'VENDOR1', 'Material' with value '10599999', 'Purchasing Org.' with value '0001', and 'Plant' (which is empty). Below these fields is a section titled 'Info category' containing four radio buttons. The 'Standard' option is selected and highlighted with a red circle and a red number '2'. The other options are 'Subcontracting', 'Pipeline', and 'Consignment'. A red circle with a red number '3' is placed over the 'Standard' radio button.

Step 2)

Here you give information on **Info Record General Data**. This information is maintained for all procurement types (maintained only once for all: Standard, Subcontracting, Pipeline, Consignment), and there are the most relevant fields:

Reminder 1, 2, 3: These three fields indicate remainders to be issued to vendor. Negative value indicates that the vendor should be prior to quotation or delivery date.

Vendor mat. No: Material number that is used by the vendor for this material.

Vendor material group: material group used by the vendor for this material.

Sales person: Name of the contact person.

Telephone: phone number of contact person or vendor

Return agreement: this can indicate if goods return is available, and if there are refunds available.

Order unit: unit in which this material is ordered by vendor.

Certificate category: type of certificate issued by the vendor that applies to this material.

Country of origin: country in which this material is produced.

Create Info Record: General Data

Purch. Org. Data 1	Conditions	Texts
Info Record		
Vendor	VENDOR1	Vendor 1
Material	10599999	LCD TV 40"
Material Group	100	Material group 100
Vendor Data		
1st Rem./Exped.	-1 Days	①
2nd Rem./Exped.	1 Days	②
3rd Rem./Exped.	7 Days	③
Vendor Mat. No.	79855899	④
Vendor Subrange		⑤
VSR Sort No.		⑥
Vendor Mat. Grp	1200	⑦
Points	/ 1 PCS	⑧
Salesperson	John Doe	⑨
Telephone	+999 999 999 999	⑩
Return Agmt	03	⑪
Prior Vendor		⑫
Origin Data		
Certif. Cat.	1	⑬
Certificate		⑭
Valid to		⑮
Ctry of Origin	AT	⑯
Region		⑰
Number		⑱
Manufacturer		⑲
Supply Option		
Available from		⑳
Available to		㉑
<input type="checkbox"/> Regular Vendor		
Purchase Order Unit of Measure		
Order Unit	PAL	㉒
Conversion	1 PAL <-> 12 PCS	㉓
Var. Order Unit	Not active	㉔

After entering all the desired data, we can click the button Purch. Org. Data 1 to be transferred to the screen for entering Purchase Organization dependent information.

Purch. Org. Data 1 Conditions Texts

Step 3)

This view is maintained separately for every procurement type. We have chosen Standard procurement type, and we can populate several relevant fields here.

1. **Planned delivery time:** default time in days in which the material delivery is planned.
2. **Purchasing group:** purchasing group mentioned in material master lessons.
3. **Standard quantity:** standard purchase quantity for material.

4. **Minimum quantity:** do not allow procurement of a quantity less than stated here.
5. **Maximum quantity:** we do not want to purchase more than this quantity at a time.
6. **Net price:** net price of material per procurement unit.
7. **Incoterms:** trading and delivery terms.

Create Info Record: Purch. Organization Data 1

General Data		Conditions	Texts																																																
Info Record																																																			
Vendor	VENDOR1	Vendor 1																																																	
Material	10599999	LCD TV 40"																																																	
Material Group	100	Material group 100																																																	
Purchasing Org.	0001	Standard																																																	
Control <table border="1"> <tr> <td>Pl. Deliv. Time</td> <td>1</td> <td>Days</td> <td>Tol. Underdl.</td> <td><input type="checkbox"/></td> <td>No MText</td> </tr> <tr> <td>Purch. Group</td> <td>2</td> <td>001</td> <td>Tol. Overdl.</td> <td><input type="checkbox"/></td> <td>Ackn. Rqd</td> </tr> <tr> <td>Standard Qty</td> <td>3</td> <td>40</td> <td>PAL</td> <td><input type="checkbox"/></td> <td>Unlimited</td> </tr> <tr> <td>Minimum Qty</td> <td>4</td> <td>20</td> <td>PAL</td> <td><input type="checkbox"/></td> <td>GR-Bsd IV</td> </tr> <tr> <td>Rem. Shelf Life</td> <td></td> <td>D</td> <td></td> <td><input type="checkbox"/></td> <td>No ERS</td> </tr> <tr> <td>Shippg Instr.</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Max. Quantity</td> <td>5</td> <td>200</td> <td>PAL</td> <td>Rndg Prof.</td> <td>Procedure</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td>UoM Group</td> </tr> </table>				Pl. Deliv. Time	1	Days	Tol. Underdl.	<input type="checkbox"/>	No MText	Purch. Group	2	001	Tol. Overdl.	<input type="checkbox"/>	Ackn. Rqd	Standard Qty	3	40	PAL	<input type="checkbox"/>	Unlimited	Minimum Qty	4	20	PAL	<input type="checkbox"/>	GR-Bsd IV	Rem. Shelf Life		D		<input type="checkbox"/>	No ERS	Shippg Instr.						Max. Quantity	5	200	PAL	Rndg Prof.	Procedure						UoM Group
Pl. Deliv. Time	1	Days	Tol. Underdl.	<input type="checkbox"/>	No MText																																														
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Max. Quantity	5	200	PAL	Rndg Prof.	Procedure																																														
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Conditions <table border="1"> <tr> <td>Net Price</td> <td>6</td> <td>2.800,00</td> <td>EUR</td> <td>/</td> <td>1</td> <td>PAL</td> <td>Valid to</td> <td>31.12.9999</td> </tr> <tr> <td>Effective Price</td> <td></td> <td>2.800,00</td> <td>EUR</td> <td>/</td> <td>1</td> <td>PAL</td> <td><input type="checkbox"/></td> <td>No Cash Disc.</td> </tr> <tr> <td>Qty Conv.</td> <td>1</td> <td>PAL</td> <td><-></td> <td>1</td> <td>PAL</td> <td></td> <td>Cond. Grp</td> <td></td> </tr> <tr> <td>Pr. Date Cat.</td> <td></td> <td colspan="5">No Control</td> <td></td> <td></td> </tr> <tr> <td>Incoterms</td> <td>7</td> <td>EXW</td> <td>Wien</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>				Net Price	6	2.800,00	EUR	/	1	PAL	Valid to	31.12.9999	Effective Price		2.800,00	EUR	/	1	PAL	<input type="checkbox"/>	No Cash Disc.	Qty Conv.	1	PAL	<->	1	PAL		Cond. Grp		Pr. Date Cat.		No Control							Incoterms	7	EXW	Wien								
Net Price	6	2.800,00	EUR	/	1	PAL	Valid to	31.12.9999																																											
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Pr. Date Cat.		No Control																																																	
Incoterms	7	EXW	Wien																																																

Step 4)

Press the Conditions button to enter the next screen.

General Data **Conditions** Texts

This screen is used for maintaining pricing conditions and as you can see, price that was entered on the previous screen was transferred to this screen.

1. **Condition type:** you can enter a condition type in this field.
 2. **Amount per unit:** in these 4 fields you can enter an amount and amount unit (for example 2.800 EUR) and quantity for which this amount is valid (1 PAL).
 3. **Valid from.**
 4. **Valid to.** Fields 3 and 4 represent a validity period for condition(s). It means that this condition is valid from 10.05.2013. until 31.12.9999. (infinite future validity).

Step 5)

Standard texts for this material/vendor combination can be defined in Texts view of the purchase info record.

You can enter the info record note in these five lines, and it will be active only if a check box for info record note is ticked.

Same logic as previous except that this is a standard item text that will be copied to purchase order item.

General Data		Purch. Org. Data 1	Conditions																
Info Record																			
Purchasing Org.	0001	Standard	Language EN																
<table border="1"> <thead> <tr> <th colspan="2">Info record texts</th> <th>More text</th> <th>Status</th> </tr> <tr> <th>TxtType</th> <th>Text</th> <th></th> <th></th> </tr> </thead> <tbody> <tr> <td><input type="checkbox"/> Info record note</td> <td>(1)</td> <td></td> <td></td> </tr> <tr> <td><input type="checkbox"/> Purchase order text</td> <td>(2)</td> <td></td> <td></td> </tr> </tbody> </table>				Info record texts		More text	Status	TxtType	Text			<input type="checkbox"/> Info record note	(1)			<input type="checkbox"/> Purchase order text	(2)		
Info record texts		More text	Status																
TxtType	Text																		
<input type="checkbox"/> Info record note	(1)																		
<input type="checkbox"/> Purchase order text	(2)																		

Once you have entered all the desired information about our material/vendor combination you can save the transaction data and will be presented with information about the purchase info record number assigned to our info record. We can use it for future reference to edit or display our record.

Purchasing info record 5300003500 0001 created

Now we can set up the other three procurement type info records, which you need to maintain only in the Purchase Organization data 1 screen.

Change and display of info record

We said that the transaction used to create info record is **ME11**. When we need to change the info record we can use **ME12** t-code, and for display only we should use **ME13**, just as SAP standards are.

Step 1)

Transaction code to change the info record.

Vendor, material, purchase organization, plant, info record number data: we use it to identify what exactly we need to change in our session. If we fill in all the fields, we will be able to change all the existing views and data in those views. For example, if we don't specify Purchase Organization we will not be able to edit the Purchase organization Data 1 View.

Info category (purchasing type). We are changing the data for this info category (only for views that are info category dependent).

The screenshot shows the SAP ME12 'Change Info Record: Initial' dialog box. At the top, there is a toolbar with a green checkmark icon, the text 'ME12', a red circle labeled '1' over a dropdown arrow, and other standard icons. Below the toolbar is the title 'Change Info Record: Initial'. The main area contains five input fields: 'Vendor' (VENDOR1), 'Material' (10599999), 'Purchasing Org.' (0001), 'Plant' (empty), and 'Info Record' (5300003500). A red box highlights the 'Info Record' field, and a red circle labeled '2' is positioned to its right. At the bottom left, there is a 'Info category' section with four radio buttons: 'Standard' (selected, highlighted with a red box and red circle labeled '3'), 'Subcontracting', 'Pipeline', and 'Consignment'. The 'Standard' button has a checked appearance.

If we hit the **ENTER** button, we will be presented the following screen. In case of ME12, we will be able to change the contents of the fields, and if we are using ME13 we will only be able to display the data.

Change Info Record: General Data

Purch. Org. Data 1	Conditions	Texts
Info Record	5300003500	
Vendor	VENDOR1	Vendor 1
Material	10599999	LCD TV 40"
Material Group	100	Material group 100
Vendor Data		Origin Data
1st Rem./Exped.	1-	Days
2nd Rem./Exped.	1	Days
3rd Rem./Exped.	7	Days
Vendor Mat. No.	79855899	
Vendor Subrange		
VSR Sort No.		
Vendor Mat. Grp	1200	
Points	/ 1 PCS	
Salesperson	John Doe	
Telephone	+999 999 999 999	
Return Agmt	03	
Prior Vendor		
Supply Option		
Available from		
Available to		
<input type="checkbox"/> Regular Vendor		
Purchase Order Unit of Measure		
Order Unit	PAL	
Conversion	1	PAL <-> 12 PCS
Var. Order Unit	Not active	

In ME12 after making changes to the view data fields, we can save. In ME13 though, we can go back when we are finished with reviewing the info record data since there's no option to save as changes are not possible in display mode.

Display Info Record: Purch. Organization Data 1

General Data		Conditions	Texts			
Info Record	5300003500					
Vendor	VENDOR1	Vendor 1				
Material	10599999	LCD TV 40"				
Material Group	100	Material group 100				
Purchasing Org.	0001	Subcontracting				
Control						
Pl. Deliv. Time	1 Days	Tol. Underdl.	0,0 %			
Purch. Group	001	Tol. Overdl.	0,0 %			
Standard Qty	40	<input type="checkbox"/> Unlimited	Conf. Ctrl <input type="checkbox"/>			
Minimum Qty	20	<input type="checkbox"/> GR-Bsd IV	Tax Code <input type="checkbox"/>			
Rem. Shelf Life	0 D	<input type="checkbox"/> No ERS				
Shippg Instr.	<input type="checkbox"/>	<i>Changes are not possible in display mode!</i>				
Procedure <input type="checkbox"/>						
Max. Quantity	200	Rndg Prof. <input type="checkbox"/>	UoM Group <input type="checkbox"/>			
Conditions						
Net Price	2.750,00	EUR	/ 1	PAL	Valid to	31.12.9999
Effective Price	2.750,00	EUR	/ 1	PAL	<input type="checkbox"/> No Cash Disc.	
Qty Conv.	1	PAL	<->	1	PAL	Cond. Grp <input type="checkbox"/>
Pr. Date Cat.	<input type="checkbox"/>	No Control				
Incoterms	<input type="checkbox"/>					

Chapter 3 - Purchasing overview

Purchasing is a component of SAP MM module and its process can be roughly depicted in below diagram.



MRP (material resource planning) creates procurement proposal and later gets converted into Purchase Requisition. Next step is assigning source to Purchase Requisition, and release of

Purchase Requisition. The PR gets converted to Purchase Order and upon goods receipt an invoice receipt can be done to complete the purchasing process. Additionally payment is processed (in FI module). Procurement doesn't have to start by the MRP, it can be initiated by consumption based planning or by direct creation of PR or PO. MRP is a system function to determine the material requirements on both the material and BoM level. A BoM (Bill of Materials) is a list of components and subcomponents a single material is consisting of. One of the mere basic documents in Purchasing in SAP is a purchase requisition.

Purchase requisition

Purchase requisitions can be created automatically by system or manually. They can be converted in purchase orders but only upon release (approval of purchase requisition). We will cover several topic in this lesson that can help understand and create the purchase requisition. Number ranges in purchase requisitions are required just as in other document, for the purpose of assigning the document number to new created documents. Later, these number ranges are being assigned to different document types we can define to be used in purchase requisition processing. We will also cover requirement tracking number which is basically a number/letter combo which can be uniquely assigned to multiple documents in order to track certain important requirements.

You will see how the source determination works and why it's useful, as well as how this source can be assigned to our purchasing document. Finally, you will find out how to process the purchase requisition, from its creation until converting it to a purchase order.

Number ranges for Purchase Requisition

Assigning of number ranges for purchase requisition works on document type. Several different number ranges can be created and afterwards assigned to a specific purchase requisition type.

This is done in customizing. Requisition document types can have two number ranges assigned. One internal and one external range are assigned to each document type. Internal number ranges are being automatically incremented by the system, and external are assigned manually. Screen below represents a list of number ranges for purchase requisition. From number is the first number in the range, To number is the last available number and the current number is the last

Maintain Number Range Intervals				
		Purchase requisition		
Intervals				
M.	From number	To number	Current number	E..
01	0010000000	0019999999	10003219	<input type="checkbox"/>
02	0090000000	0099999999		<input checked="" type="checkbox"/>
03	2000000000	2999999999		<input checked="" type="checkbox"/>
04	3000000000	3999999999	0	<input type="checkbox"/>

assigned number to a document. In addition, there is a check box indicating if this is an external number range.

For example, an internal number range can be defined as a range from 20000000 to 30000000, in this case documents of the document type that is assigned this interval will be numerated starting from 20000001 and will be incremented by 1 for each new document created. The last number available for this interval will be 30000000, and if your documents fill up the entire number range it has to be extended. It will rarely happen as it would mean that you would have 10 million purchase requisition documents.

Document type definition

Document type definition is an action of defining different document types for a purchase requisition. It is useful in grouping purchase requisitions and specifying its use in more detail. For example, we can have standard PRs, subcontracting and stock transfer. Every document type suits a special need and is configured to be used in that way.

In document type definition, you can define a number of options. Number intervals (internal and external), item interval, field selection key, control indicator, overall release indicator (defines if all the items in PR are released simultaneously or individually). Standard Purchase Requisition document type in SAP is defined in all installations as NB.

T...	Doc. Type Descript.	ItmInt.	NoRgeInt	NoRge Ext	FieldSel.	C..	O.	Lay...	Doc
FO	Framework Requisn	10	01	02	FOF		<input type="checkbox"/>	SRV	
NB	Purchase Requisition	10	01	02	NBB		<input type="checkbox"/>		
RV	Outl. Agmt Requisn	10	01	02	RVB	R	<input type="checkbox"/>		

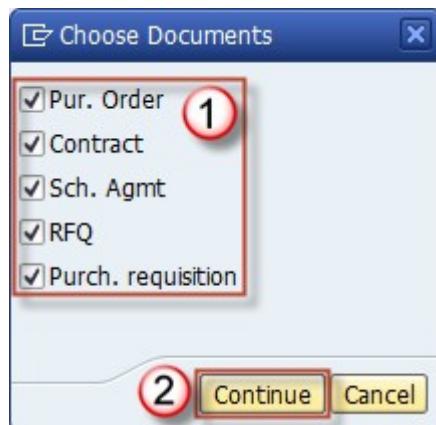
Requirement tracking number

This number is used for tracking specific requirements. It can be entered during purchase requisition creation and is copied into purchase order document.

It is maintained on item level and items can be selected by this number in several reports like **MELB**.

Execute **MELB** transaction.

Click the **Choose** button.



When you click **Continue**, you will be back to the initial selection screen. You also have a variety of select options and should choose the most suitable options to narrow the search.

Enter requirement tracking number(s).

Execute.

Purchasing Transactions per Requirement Tracking Number

Choose...	Requirement tracking number	to							
2	1								
	Purchasing organization								
	Document Type								
	Purchasing Group								
	Plant								
	Supplying Plant								
	Item Category								
	Account Assignment Category								
	Material	to							
	Material Group		to						
	Short Text								

You will be presented a list of documents containing the tracking number.

Source determination

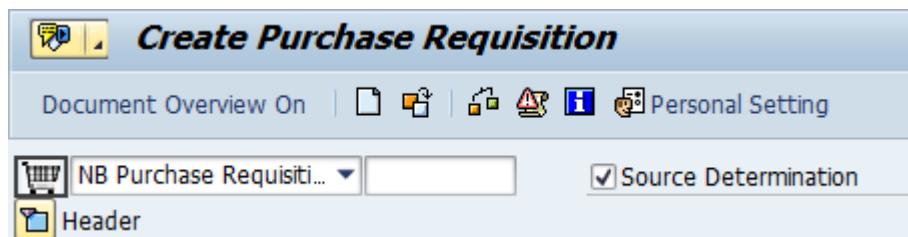
Source determination assists in finding the most suitable source for a requirement, for example, it can suggest which outline agreement, which internal procurement source (plant) or which vendor can be used for ordering specific materials at given time. Source determination take various data as parameters for the actual determination process. These include Outline agreement, Purchase info record, Plant in our company, Quota arrangement, Source list. All this is taken into account while determining the best possible source for a requirement.

First check is done via **Quota Arrangement** where system determines if there is a suitable source with the relevant quota arrangement for the material, and if suitable source is found it is selected, and additional search for the source is aborted.

If not, system takes **source list** into account and searched for valid sources there. A source list consists of fixed and blocked records. **Fixed records** are for fixed vendors for specific material valid for a certain period. **Blocked records** cannot be used as a source while they are in this status.

Finally system looks up the **outline agreement** and **info record** for credible sources and assigns them the requisition. You have seen in the previous lesson what is a purchase info record, and outline agreement is a scheduling agreement or contract which is also used in the source determination process as input information.

To use the source determination, you need to tick the Determine Source check-box on the purchase requisition initial screen.



Assignment of source

System can perform background or foreground source assignment. If the search is done in the foreground mode, and more than one valid source is found, a selection list appears from which user should select the appropriate source. If only one suitable source is found, it is assigned automatically. If the search is done in the background, a single source must be determined and to accomplish that the system will perform various functions in the lookup. For example, outline agreements have priority over the purchase info record source and in case of conflict an outline agreement source is selected.

If more than one valid source is found in outline agreements, unique valid source will be the one for the regular vendor, and if neither record is for a regular vendor, source will have to be determined manually. You can see how two sources are offered by the system, from which we have to choose the better manually.

The screenshot shows the SAP ERP interface for material number 10599999, LCD TV 40". The "Source of Supply" tab is selected. A message "Assigned Source" is displayed above a table showing vendor information. A warning message "Choose a source of supply" is visible at the bottom left.

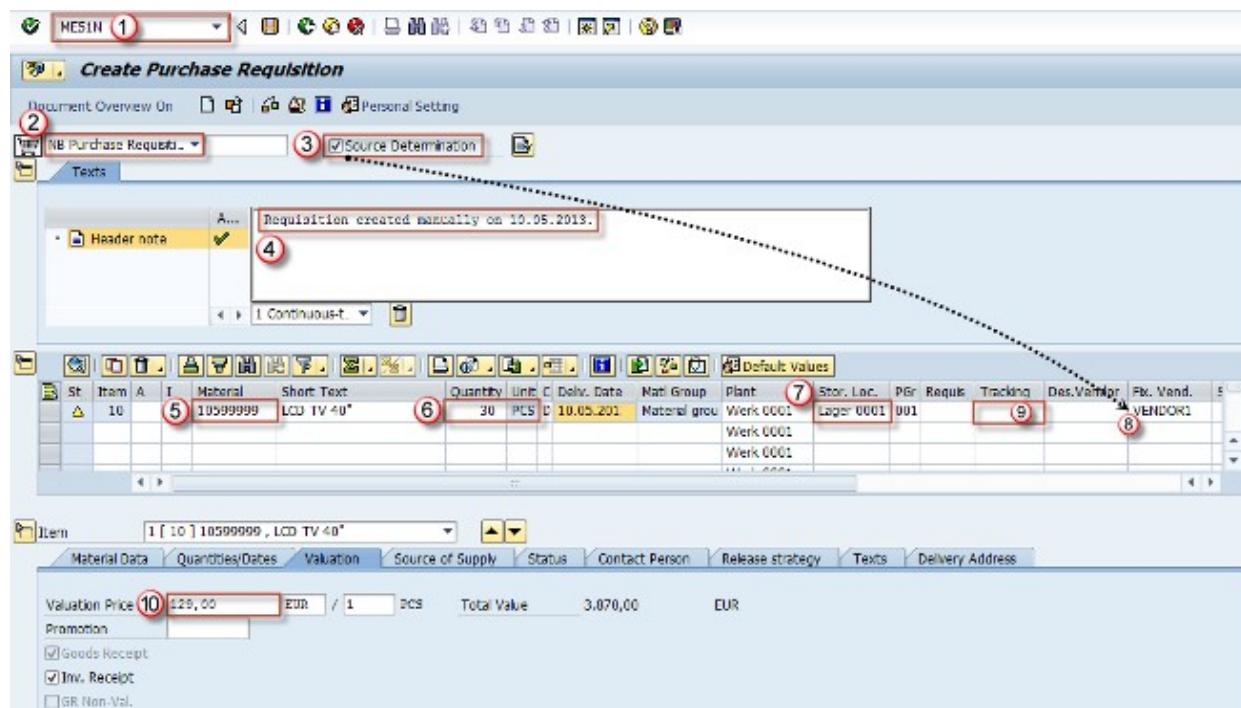
A	Vendor	PPI.	Name 1	Info/agmt.	It...	Net p...	Crcy	O...	Real. Date	POrg	Plant	Text
VENDOR1	Vendor 1		5300003500		233,33	EUR			21.05.2013	0001		Standar...
VENDOR2	Vendor2		5300003501		107,50	EUR			19.05.2013	0001	0001	Standar...

Creating a purchase requisition

Purchase requisition creation can be done in t-code ME51N (or the older version ME51 – not recommended) and is a straight forward process.

Step 1)

1. Execute **ME51N** transaction.
2. **Purchase requisition document type:** NB – standard.
3. **Source determination:** ON or OFF.
4. **Header note.**
5. **Material:** material number.
6. **Quantity and UoM.**
7. **Storage location:** in which the material is stored.
8. **Vendor:** automatically determined by using source determination – field number 3.



- Tracking number:** covered in previous topics, a desired value can be entered manually.
- Valuation price:** copied from material master data if maintained there, if not must be entered manually (if this field is not set as optional).

After entering the desired information in the fields, we can save transaction data.

Purchase requisition number 0010003210 created

Changing and displaying a purchase requisition

Purchase requisition can be changed after initial entry. T-code is **ME52N** while the display mode can be accessed through transaction **ME53N**. For example, we can enter Tracking Number in change mode through **ME52N**:

NB Purchase Requisiti... 10003210 Source Determination

Texts

Header note	A...	Requisition created manually on 10.05.2013.	
1 Continuous-t...			

Default Values

St...	Item	A	I	Material	Short Text	Quantity	Unit	C	Deliv. Date	Matl Group	Plant	Stor. Loc.	PGr	Requisnr.	Tracking...
10	10599999			LCD TV 40"	30	PCS	D	10.05.2013	Material gro...	Werk 0001	Lager 0001	001	1	123456	

Item 1 [10] 10599999 , LCD TV 40"

Material Data **Quantities/Dates** **Valuation** **Source of Supply** **Status** **Contact Person** **Release strategy** **Texts** **Delivery Address**

Valuation Price 129,00 EUR / 1 PCS Total Value 3.870,00 EUR

Promotion

Goods Receipt
 Inv. Receipt
 GR Non-Val.

Afterwards we can see in display mode that our requirement tracking number is 123456:

Display Purchase Req. 10003210

Document Overview On Personal Setting

NB Purchase Requisiti... 10003210

Texts

Header note	A...	Requisition created manually on 10.05.2013.	
1 Continuous-t...			

Default Values

St...	Item	A	I	Material	Short Text	Quantity	Unit	C	Deliv. Date	Matl Gro...	Plant	Stor. Loc.	PGr	Req. Tracking Number	De...	Fx. Vend.
10	10599999			LCD TV 40"	30	PCS	D	10.05.2013	Material gr...	Werk 0001	Lager 0001	001	123456	VENDOR1		

Item 1 [10] 10599999 , LCD TV 40"

Material Data **Quantities/Dates** **Valuation** **Source of Supply** **Status** **Contact Person** **Release strategy** **Texts** **Delivery Address**

Valuation Price 129,00 EUR / 1 PCS Total Value 3.870,00 EUR

Promotion

Goods Receipt
 Inv. Receipt
 GR Non-Val.

Releasing purchase requisition items

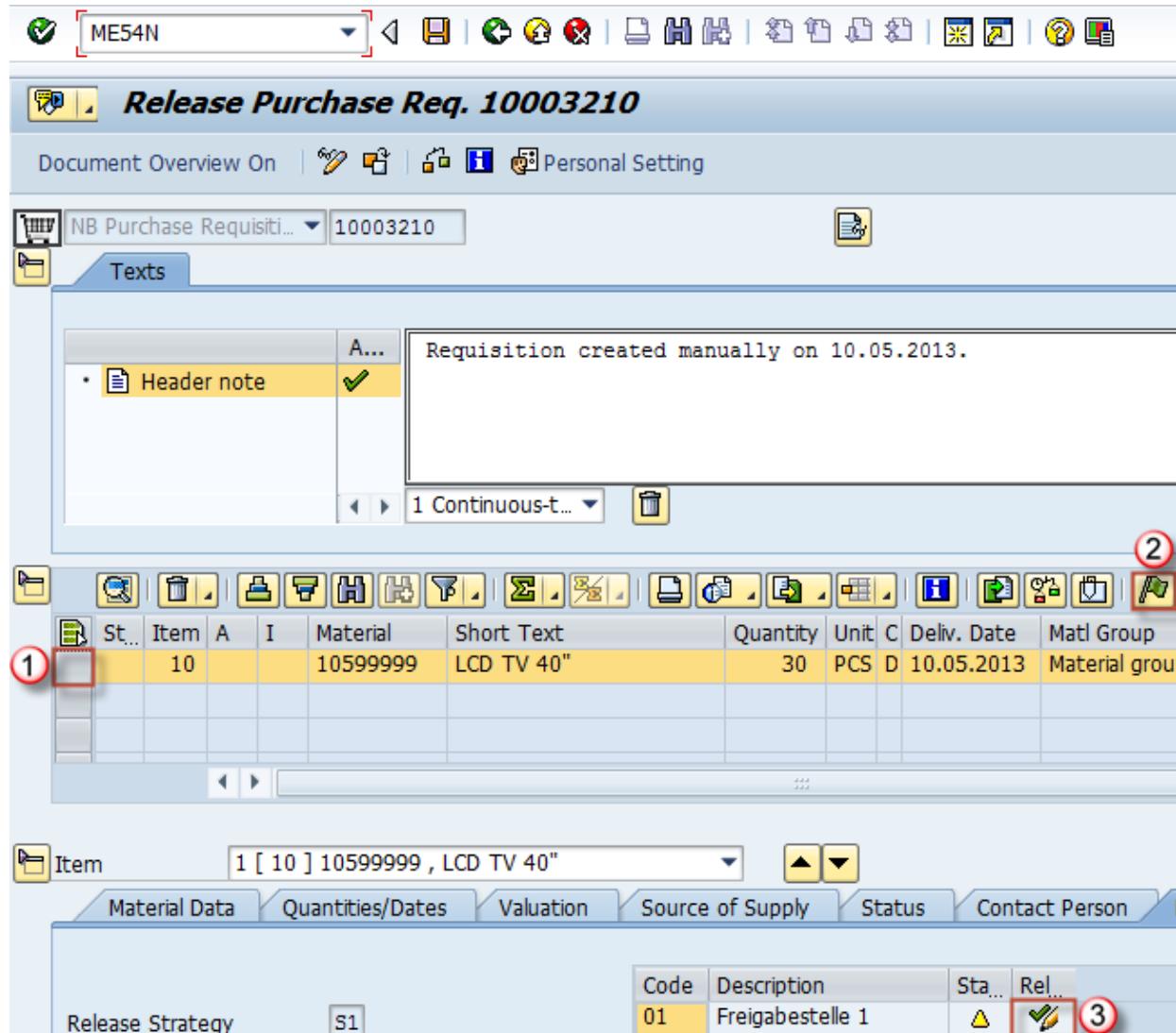
Purchase requisition needs to be released in order to be converted to a purchase order. Release can be executed in t-code ME54N. There is a possibility to release a single PR item or multiple items at once.

Step 1)

First you can select the items that you want to release and then click on button number...

1. A green flag-like icon which will release the items selected.
2. You can use this button to release single item on item level.
3. Any way you will see the information in the status bar that the release has been executed.

After you have finished releasing the items, you can save your changes.



Converting purchase requisition into purchase order

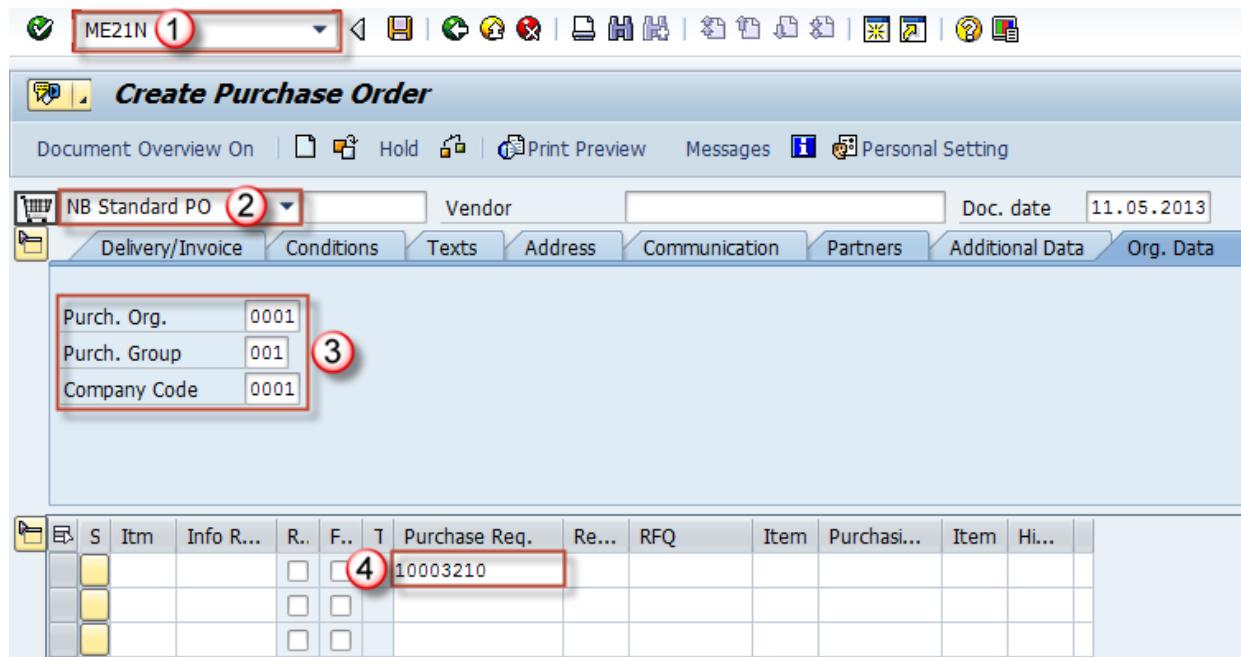
Upon release purchase requisitions can be converted into purchase orders. This can be accomplished in transaction code **ME21N** – Creation of purchase order.

Process for converting a PR into PO is straight forward, and the steps for performing it are as follows:

Step 1)

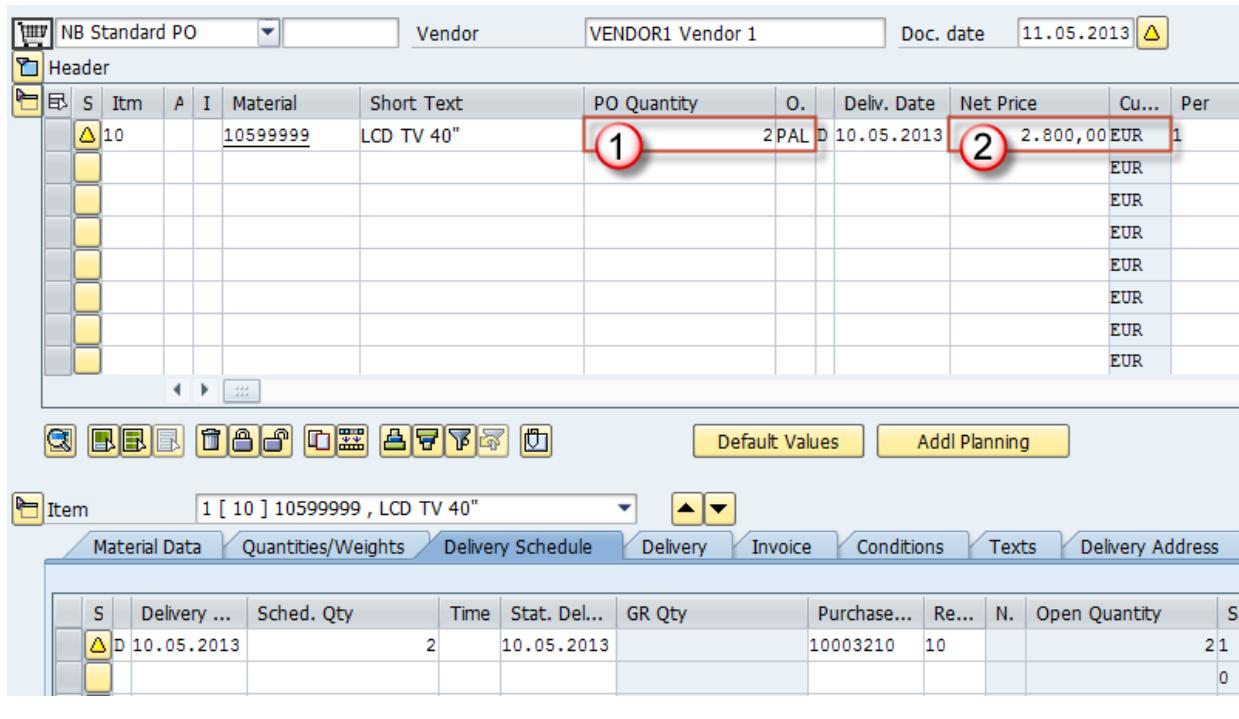
1. Execute transaction code **ME21N**.
2. Choose the appropriate purchase order type: in our case NB – standard PO.
3. Organizational levels: enter them according to needs.
4. Purchase requisition: enter the purchase requisition number released in the previous lesson.
5. Hit ENTER.

You may have to hit ENTER quite a few times to go through several warning messages.



Step 2)

1. **PO quantity:** you can see that the PO quantity is rounded down to 2 PAL. That is because we have entered 30pcs on PR, and we have set our order unit to be PAL in our info record, so we have to order in pallets, and system rounds it down.
2. **Net price:** net price field is being populated from purchase info record. Save the PO and you are finished with converting a purchase requisition into the purchase order.



Chapter 4-Quotations

Quotations are requests for vendors to provide us information about their best prices, terms and conditions, schedule of deliveries and other information in order to select the best source for our procurement needs.

Below you can see the process flow for quotations in purchasing in SAP MM module.



Quotation process is started with creation of a request for quotation, and afterwards maintenance of the quotations to input all the information received from possible vendors. Then we want to compare the offers and select the best suitable one(s) rejecting the others.

In SAP, there are several transaction used in the process. Below you can see how RFQs are created, quotation processing based on RFQ, comparison, selection and rejection process and source list generation.

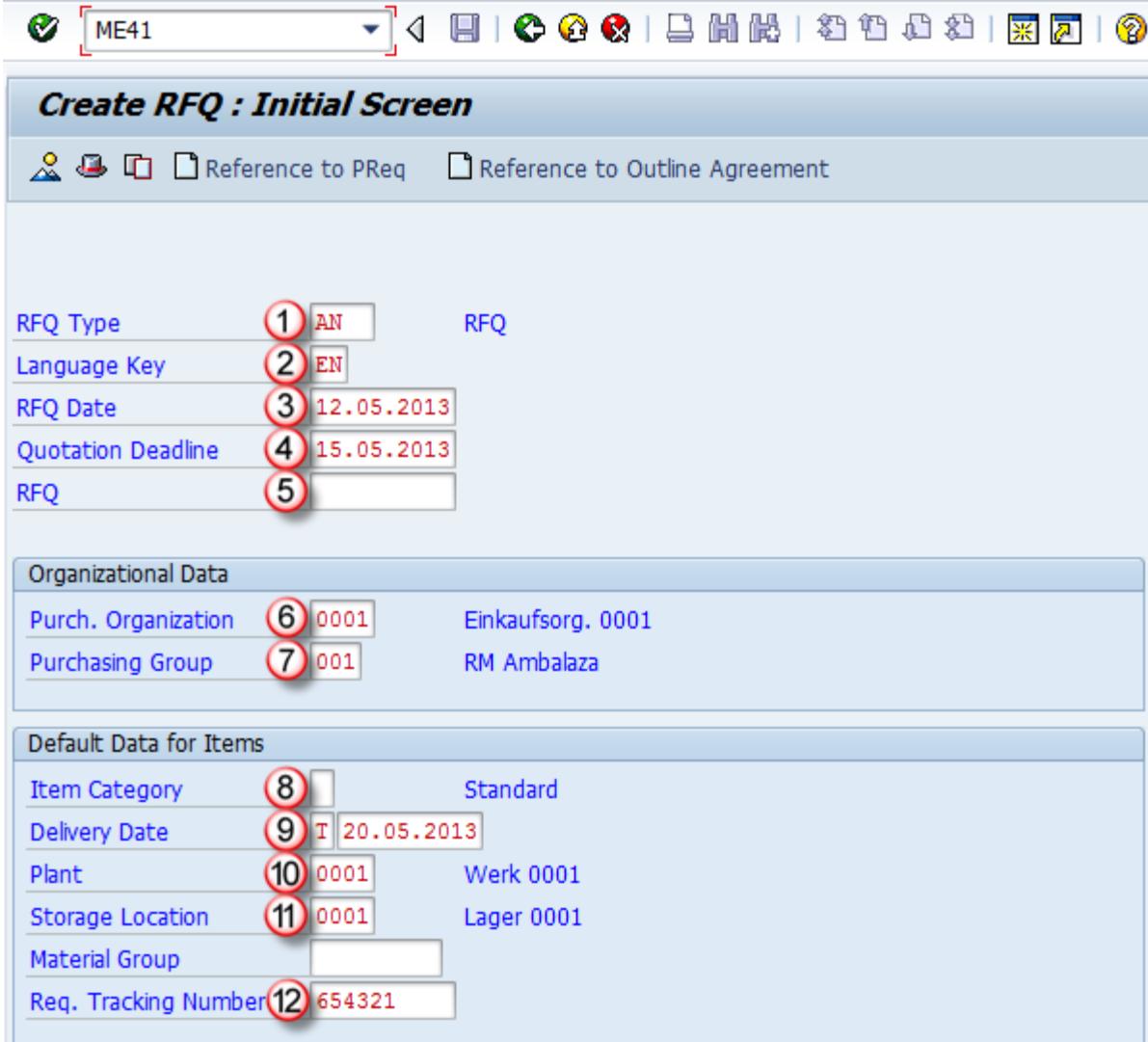
Request for quotation

First we need to create a request for quotation. RFQs can be created by transaction **ME41**. We can create a new RFQ from scratch, or create one referencing to an existing purchase requisition or outline agreement. If you want to create the RFQ using a reference document, you will just need to click the appropriate button and enter the referencing document number.

In this case, we are creating a new RFQ with no reference document.

Step 1) In transaction ME41 , enter:

1. **RFQ type:** quotation type (AN - standard RFQ).
2. **Language key:** language to be used in quotation (EN - English).
3. **RFQ data:** Todays date.
4. **Quotation deadline:** this date has to be before delivery date.
5. **RFQ number:** enter a number you want to assign to quotation (if you want it to be assigned internally leave this field blank).
6. **Purch. organization:** purchase organization (e.g. 0001).
7. **Purchasing group:** purchasing group (e.g. 001).
8. **Item category:** default is blank – standard item.
9. **Delivery date:** requested delivery date.
10. **Plant.**
11. **Storage location:** SLoc for goods receipt.
12. **Requirement tracking number.**



The screenshot shows the SAP ME41 'Create RFQ : Initial Screen'. The interface includes a toolbar with icons for search, refresh, and navigation. Below the toolbar, there are two buttons: 'Reference to PReq' and 'Reference to Outline Agreement'. The main area contains several input fields grouped into sections:

- RFQ Type:** AN (Field 1)
- Language Key:** EN (Field 2)
- RFQ Date:** 12.05.2013 (Field 3)
- Quotation Deadline:** 15.05.2013 (Field 4)
- RFQ:** (Field 5)

Organizational Data:

- Purch. Organization:** Einkaufsorg. 0001 (Field 6)
- Purchasing Group:** RM Ambalaza (Field 7)

Default Data for Items:

- Item Category:** Standard (Field 8)
- Delivery Date:** 20.05.2013 (Field 9)
- Plant:** Werk 0001 (Field 10)
- Storage Location:** Lager 0001 (Field 11)
- Material Group:** (Field 12)
- Req. Tracking Number:** 654321 (Field 12)

Press **ENTER**, and you will be located on header data screen.

Step 2)

Validity range: enter the range for the validity period.

Other information such as **collective number** (collective management of multiple documents),

deadline for bid submission, **closing date** for applications and **binding period** for quotation.

Collective number – Coll.no is a very important field as you can later compare quotations based on this information, or find RFQs using this number.

You can enter the warranty date if applicable.

Target value: threshold value for warning message during the creation of the contract release order.

Create RFQ : Header Data



RFQ	<input type="text"/>	Company Code	0001	Purchasing Group	001
RFQ Type	AN			Purch. Organization	0001
Vendor	<input type="text"/>				

Administrative Fields

RFQ Date	12.05.2013	Item Interval	10	Coll. No.	2 190123
Language	EN	Subitem Interv.	1	QuotDdln	15.05.2013
Validity Start	1 12.05.2013	Validity End	21.05.2013	Apply By	15.05.2013
		Warranty	3 21.06.2013	Bindg Per.	21.05.2013

Terms of Delivery and Payment

4	Targ. Val.	12000
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Reference Data

Your Reference	<input type="text"/>	Salesperson	<input type="text"/>
Our Reference	<input type="text"/>	Telephone	<input type="text"/>

You should inspect the toolbar to see which screens can be called by using the icons.

Step 3)

Among the icons in the toolbar you will find “Vendor Address“ button, where you can: Vendor address button. Choose the appropriate vendor. If it's one time vendor, after entering vendor number you need to specify vendor address.

Create RFQ : Vendor Address



RFQ		Company Code	0001	Purch. Group	001
RFQ Date	12.05.2013	RFQ Type	AN	Purchasing Org.	0001
Vendor	1 VENDOR1				

Name	
Title	Company
Name	Vendor 1

Search Terms		
Search term 1/2	VENDOR	1

Street Address		
Street/House number	Address	1
Postal Code/City	1234	Wien
Country	AT	Austria
Time zone	CET	

PO Box Address	
PO Box	
Postal code	
Company postal code	

Step 4)

In the toolbar, you will also find the overview button which calls the item overview screen.



Item overview screen is the place where you can enter item information, materials, quantities...

Material number: insert materials to be procured.

RFQ quantity: enter needed quantity and unit of measure.

You can inspect more screens from toolbar and save the document.

Create RFQ : Item Overview

The screenshot shows the SAP Create RFQ: Item Overview screen. At the top, there is a toolbar with various icons. Below the toolbar, the header includes fields for RFQ (blank), RFQ Type (AN), RFQ Date (12.05.2013), Vendor (VENDOR1), and Vendor 1. The RFQ Items table has columns: Item, Material, Short Text, RFQ Quantity, O., Deliv. Date, Mat. Grp, P..., and S... . Two rows are visible: one for item 10 with material 10599999 and quantity 20 PAL, and another for item 20. A status message at the bottom indicates "RFQ created under the number 6000000002".

Item	Material	Short Text	RFQ Quantity	O.	Deliv. Date	Mat. Grp	P...	S...
10	10599999	LCD TV 40"	20	PAL	D 20.05.2013	100	0001	0001
20					D 20.05.2013		0001	0001

RFQ created under the number 6000000002

You can always go back to edit the request for quotation using the t-code **ME42** or display it's information using **ME43**. Repeat the above process to send the RFQ to all of the vendors from which you are requesting a quotation.

Request for quotation per Collective Number

Afterwards, if you have maintained a collective number in your quotations (we have used 190123), you can review all of the quotations for the collective number by using transaction code **ME4N**.

Step 1)

1. Enter transaction **ME4S**.
2. Enter a **collective number** for which you want to see the available RFQs.
3. **Execute** the transaction.

RFQs per Collective Number

Filter Type	Value	Action
Collective number	190123	
Purchasing organization	0001	
Scope of List	ANFR	
Selection Parameters		
Document Type		
Purchasing Group	001	
Plant	0001	
Item Category		
Delivery Date		
Deadline Subm. of Quotations		
Document Number		
Vendor		
Supplying Plant		
Material		
Material Group		
Document Date		
Intern. Article No. (EAN/UPC)		
Vendor's Material Number		
Vendor Subrange		
Promotion		
Season		
Season Year		
Short Text		
Vendor Name		

Step 2)

You can see two requests for quotation in the following screen.

RFQ for vendor 1.

RFQ for vendor 2.

RFQs per Collective Number									
RFQ	Type	Vendor	Name	PGp	RFQ Date				
Item	Material		Short Text			Mat. Group			
D	I	S	Plnt	Quot.	Date	RFQ	Quantity	Un	Quot.Net Price Curr. per Un
6000000002	AN	VENDOR1	Vendor 1			001	12.05.2013		
Collective RFQ 190123									
00010	10599999		LCD TV 40"			1	100		
A	0001	15.05.2013		20	PAL	1.280,00	EUR	1	PAL
In stockkeeping unit									
240		PCS		106,67	EUR			1	PCS
6000000003	AN	VENDOR2	Vendor2			001	13.05.2013		
Collective RFQ 190123									
00010	10599999		LCD TV 40"			2	100		
A	0001	15.05.2013		20	PAL	1.290,00	EUR	1	PAL
In stockkeeping unit									
240		PCS		107,50	EUR			1	PCS

Creating quotations

Using transaction code **ME47**, we can create a quotation based on a request for quotation.

Step 1)

1. **Transaction code** for quotation maintenance – **ME47**.
2. **RFQ**: request for quotation that we are using as a reference document.
3. Press **ENTER**.

Step 2)

1. RFQ quantity
2. Delivery date
3. Net price per unit of measure
4. Storage Location

Maintain Quotation : Item Overview

Item	Material	Short Text	RFQ Quantity	O.	Deliv. Date	Net Price	Per	O...	Mat. Grp	Plnt	Sloc	D	R	T.
10	10599999	LCD TV 40"	20	PAL D	20.05.2013	1.280,00	1PAL	100	0001	0001				

Item details you will be presented the following screen. You may change details as per your requirements

Maintain Quotation : Item 00010

Item	6000000002	10	ItCat.		Plant	0001
Material	10599999		Mat. Grp	100	Stor. Loc.	0001
Short Text	LCD TV 40"					
RFQ Quantity	20	PAL	QuotDdl	15.05.2013		
Delivery Date	D	20.05.2013				

1st Rem./Exped.	1-	TrackingNo	654321
2nd Rem./Exped.	1	V. Mat.	79855899
3rd Rem./Exped.	7		
No. Exped.	0		

Net Order Price	1.280,00	EUR	/	1	PAL	InfoUpdate	
Qty Conv.	1	PAL <-> 1		PAL			
Quot. Comment					Tax Code		
<input type="checkbox"/> Rej. Ind.							

Additional data you can access some additional information on item level.



Maintain Quotation : Item 00010 Additional Data



Item	10	Item Cat.	
Material	10599999	Matl Group	100
Short Text	LCD TV 40"	Plant	0001
		Stor. Loc.	0001

Administration	Weights and Volumes for 1 Order Unit
Pl. Deliv. Time	Net Weight 295,812 KG
Revision Level	Gross Weight 323,856
Prior Vendor	Volume
Season	Points
Kanban Indicat.	
AT-Relevant	
Reason for Ord.	

Conditions	
Condition Group	<input type="checkbox"/> No Cash Disc.
Vendor Subrange	Promotion
Pr. Date Cat.	No Control
Incoterms	EXW Wien

GR Control	
Rem. Shelf Life	Batch
Latest GR Date	Vendor Batch
QM Control Key	

If you want to change general header data click on the “Hat“ icon.



Maintain Quotation : Header Data



RFQ	6000000002	Company Code	0001	Purchasing Group	001
RFQ Type	AN	Purch. Organization 0001			
Vendor	VENDOR1	Vendor 1			

Administrative Fields

RFQ Date	12.05.2013	Item Interval	10	Coll. No.	190123
Language	EN	Subitem Interv.	1	QuotDdl	15.05.2013
Validity Start	12.05.2013	Validity End	21.05.2013	Apply By	15.05.2013
		Warranty	21.06.2013	Bindg Per.	21.05.2013

Terms of Delivery and Payment

Payment Terms		Currency	EUR	
Payment in	Days	Exch. Rate	1,00000	<input type="checkbox"/> Ex.Rate Fx
Payment in	Days	Incoterms		
Payment in	Days Net	Targ. Val.	12.000,00	

Reference Data

Quotation Date		Quotation	
Your Reference		Salesperson	
Our Reference		Telephone	

If you choose Item Conditions icon/button you can maintain pricing conditions for the currently selected item. Here, you can enter conditions like surcharge, freight cost, discount etc.

If you are done, you can save the data. If you need to change the quotation, you can do it by using the same t-code (**ME47**), or you can display it's data by using **ME48**.

Quotation for RFQ 600000002 maintained

You can repeat the process to create quotations for all of the RFQs. If certain vendor didn't answer your request for quotation, then you will not create a quotation for the vendor.

Price comparison for quotations

After your quotations are entered, you can compare them to select the best available offer at this moment. We can compare the quotations in transaction code **ME49**.

We can select which quotations will be compared by using the collective number we addressed before to be an important field that is maintained on RFQ (or directly on the quotation).

If we forget to enter the collective number, we will have to supply all the quotation numbers in the selection field “Quotation“.

Step 1)

1. In transaction **ME49**, Enter
2. **Purchasing organization** (e.g. 0001).
3. **Collective RFQ** (we have used 190123).
4. Execute the transaction.

Price Comparison List

3			
Purchasing Organization	① 0001	to	
Quotation	<input type="text"/>	to	
Collective RFQ	② 190123	to	
Vendor	<input type="text"/>	to	
Material	<input type="text"/>	to	

Comparison Values

Reference Quotation	<input type="text"/>
<input type="checkbox"/> Mean Value Quotation	
<input type="checkbox"/> Minimum Value Quotation	
Percentage Basis	<input type="text"/>
Max. No. Quotations per Page	12

Price Calculations

<input type="checkbox"/> Include Discounts	
<input type="checkbox"/> Include Delivery Costs	
<input type="checkbox"/> Determine Effective Price	

The comparison list looks like this:

Price Comparison List in Currency EUR

		Quotation	Material	Vendor	Additional Info
Material	Quot.:	6000000002			
Sh. Text	Bidder:	VENDOR1	①		
Qty. in Base Unit	Coll. No. :	190123			
10599999	Val.:	25.600,00			
LCD TV 40"	Price:	106,67			
240 PCS	Rank:	1 100 %	2	100 %	
Total Quot.	Val.:	25.600,00			
	Rank:	1 100 %	2	100 %	

From the list we can see that Vendor1 have proposed a better price.

What we need to do is check the **effective price** (with discounts, freight cost and other conditions). We will go back to the selection screen and we will tick three check boxes.

Step 1)

1. Check all the boxes in the Price Calculations section.
2. Execute the transaction.

Price Comparison List

Purchasing Organization	0001
Quotation	
Collective RFQ	190123
Vendor	
Material	

Comparison Values

Reference Quotation	
<input type="checkbox"/> Mean Value Quotation	
<input type="checkbox"/> Minimum Value Quotation	
Percentage Basis	<input type="checkbox"/>
Max. No. Quotations per Page	12

Price Calculations

Include Discounts 1
 Include Delivery Costs
 Determine Effective Price

Our results have changed significantly.

Now Vendor2 has the better price, and price of Vendor1 has gone up 256 EUR because of freight cost. Now we can conclude that our Vendor2 has the best price, and we can proceed with the process.

Material	Quot.:	6000000003	6000000002
Sh. Text	Bidder:	VENDOR2	VENDOR1
Qty. in Base Unit	Coll. No. :	190123	190123
10599999	Val.:	25.800,00	25.856,00
LCD TV 40"	Price:	107,50	107,73
240 PCS	Rank:	1 100 %	2 100 %
Total Quot.	Val.:	25.800,00	25.856,00
	Rank:	1 100 %	2 100 %

If you select Mean value quotation and Minimum value quotation on the previous screen, you will get the result as they are shown below on the screen.

Average price on all the quotations.

Minimum price for all the quotations.

Material	Quot.:	6000000003	6000000002	MEAN	1	MINIMUM	2
Sh. Text	Bidder:	VENDOR2	VENDOR1				
Qty. in Base Unit	Coll. No. :	190123	190123				
10599999	Val.:	25.800,00	25.856,00		25.828,00		25.800,00
LCD TV 40"	Price:	107,50	107,73		107,62		107,50
240 PCS	Rank:	1 100 %	2 100 %				
Total Quot.	Val.:	25.800,00	25.856,00		25.828,00		25.800,00
	Rank:	1 100 %	2 100 %				

After comparing the prices/conditions, you can decide which offers to accept and which ones to reject.

Selection and rejection

You should still keep the ME49 report open as you can do further processing through its interface. In the next step, we want to choose our favourite vendor.

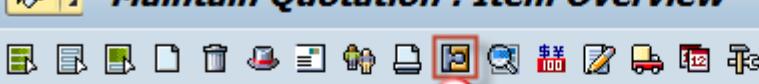
Step 1)

1. Select the quotation that's favourable (you want to process it further as it's having the best conditions).
2. Choose the Edit Quotation button on the toolbar.

Price Comparison List in Currency EUR			
<input type="button" value="Quotation"/> <input type="button" value="Material"/> <input type="button" value="Vendor"/> Additional Info <input type="button" value="Print"/>			
2			
Material	Quot.:	6000000003	6000000002
Sh. Text	Bidder:	VENDOR2	VENDOR1
Qty. in Base Unit	Coll. No. :	190123	190123
10599999	Val.:	25.800,00	25.856,00
LCD TV 40"	Price:	107,50	107,73
240 PCS	Rank:	1 100 %	2 100 %
Total Quot.	Val.:	25.800,00	25.856,00
	Rank:	1 100 %	2 100 %

Step 2) Now you are in the **ME47** transaction. Here you can choose the item and go to the item details screen.

1. Select the item.
2. Click on the item details icon.

Maintain Quotation : Item Overview											
											
RFQ	6000000003	RFQ Type	AN			RFQ Date	13.05.2013				
Vendor	VENDOR2	Vendor2				QuotDdln	15.05.2013				
Quotation Items											
1	Item	Material	Short Text	RFQ Quantity	O.	Deliv. Date	Net Price	Per	O.		
	10	10599999	LCD TV 40"	20	PAL D	21.05.2013	1.290,00		1 PAL		

Step 3)

Enter (or choose from the list of available values) **B** or **C** for the **InfoUpdate** field in Quotation data section to update the info record. In this field, you can also find rejection indicator used to reject the quotation item. We will use it to reject the other offer.

Maintain Quotation : Item 00010

Item	6000000003	10	ItCat.		Plant	0001
Material	10599999		Mat. Grp	100	Stor. Loc.	0001
Short Text	LCD TV 40"					
Quantity and Date						
RFQ Quantity	20	PAL	QuotDdln	15.05.2013		
Delivery Date	D	21.05.2013				
Deadline Monitoring						
1st Rem./Exped.		TrackingNo		654321		
2nd Rem./Exped.		V. Mat.				
3rd Rem./Exped.						
No. Exped.	0					
Quotation Data						
Net Order Price	1.290,00	EUR	/	1	PAL	<input type="checkbox"/> InfoUpdate 1
Qty Conv.	1	PAL	<->	1	PAL	
Quot. Comment						<input type="checkbox"/> Tax Code
<input type="checkbox"/> Rej. Ind.						

Save the data.

InfoUpdate field is used to update the info record in several ways:

' ' (blank) The info record is not updated.

'A' If an info record exists at plant level, it is updated. Otherwise an info record at purchasing organization level is updated.

'B' If plant conditions are allowed for the plant, an info record at plant level is updated.

'C' If plant conditions are not necessary for the plant, an info record at purchasing organization level is updated.

Rejecting quotations

You should head back to the report screen. Once there, you can select the other quotation (we want it to be rejected), and repeat the process until you are on the item details screen. You will not enter the information into InfoUpdate field but will tick the "Rej. Ind." check box. By this, you are rejecting the

quotation item.

Step 1)

Rejection indicator.

The screenshot shows the SAP 'Maintain Quotation : Item 00010' interface. The 'Quotation Data' section is highlighted, specifically the 'Rej. Ind.' checkbox which is checked and circled in red. Other visible fields include Net Order Price (1.280,00 EUR), Qty Conv. (1 PAL <-> 1 PAL), and a comment field containing '1'. The 'Deadline Monitoring' and 'Quantity and Date' sections are also partially visible.

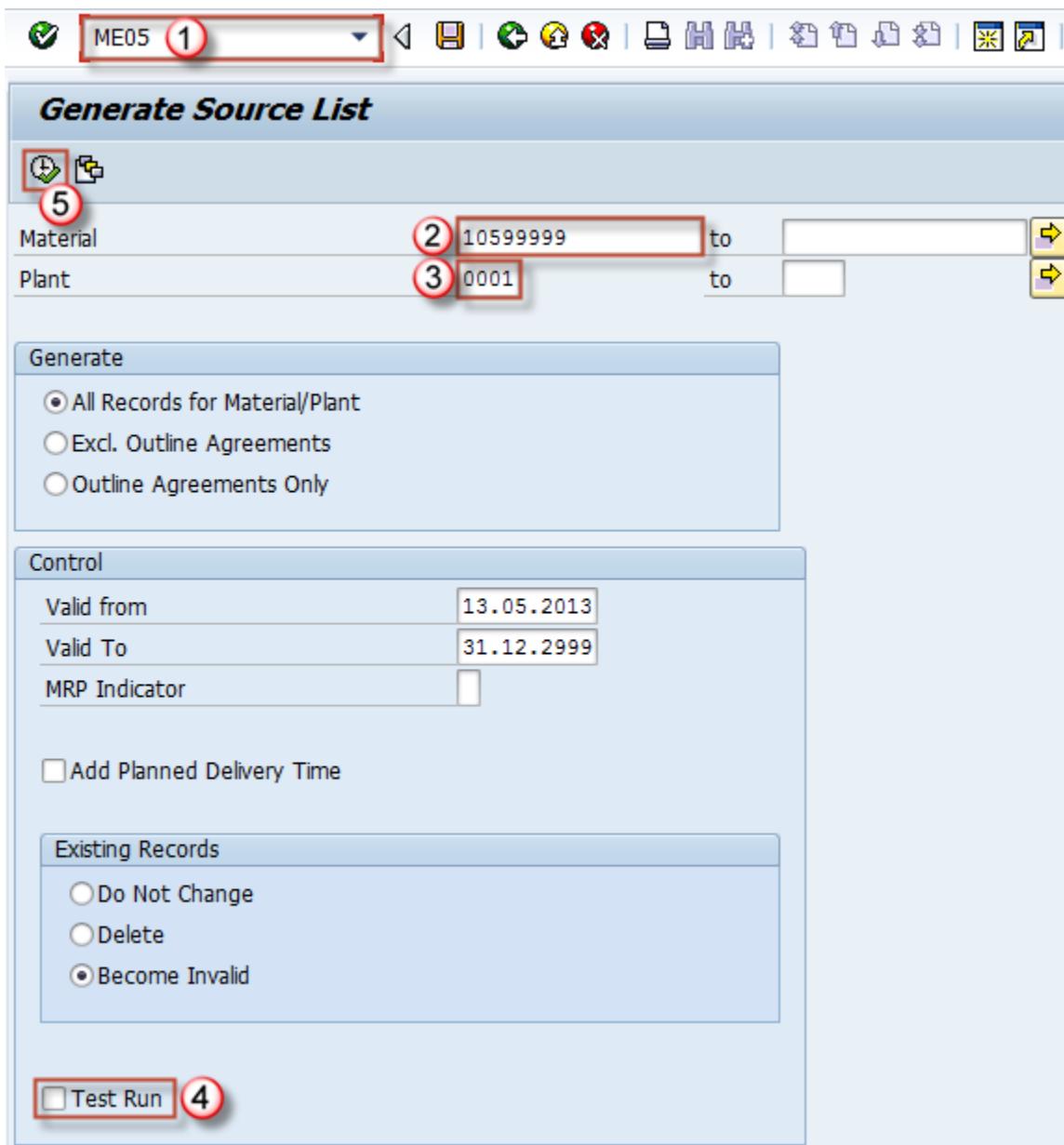
You will be prompted to print the rejection message for the items being rejected so you could inform the vendor of the status of his offer. You can repeat the process for all the vendors and items that are rejected. This now leaves us with one open quotation for the item.

Creating a source list

Step 1) This is optional. You can create a source list in **ME05** transaction. A source list is a list of possible sources for a material. If a source list requirement exists for the material, you must create a source list to proceed with the ordering.

1. Execute t-code **ME05**.
2. Enter material, or material list/range.

3. Enter plant.
4. Untick the test run check box to perform the transaction instead of using the test mode.
5. Execute the transaction.

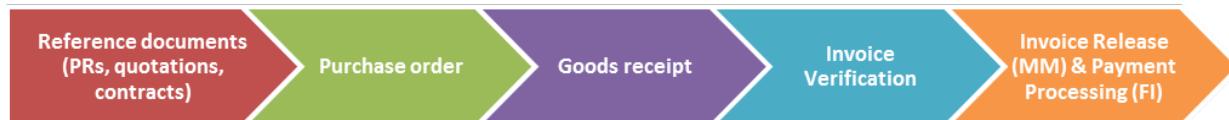


On the results screen select the appropriate line item and click on the save button.

You have created a source list.

Chapter 5- Purchase orders

Purchase orders are used for a number of processes in procurement. They can be used for internal procurement (from one plant to another), external procurement of goods (direct consumption or stock) and services. It can also be used for subcontracting, third-party and consignment processes. Purchase order processing is shown in the following diagram.



Purchase orders can be created with reference to a purchase requisition, RFQ, quotation, another purchase order, contract, sales order.

Number range for purchase order

Number ranges for purchase orders are first defined and then assigned to a document type. Different document types can have a different number range or share the same number range. Number range can be set to start from 4500000000 and to end by 4599999999. It means that 100.000.000 documents can be created before the range is exceeded.

Maintain Number Range Intervals					
		NR Object		Purchasing document	
Intervals					
N.	From number	To number	Current number	E..	
41	4100000000	4199999999		<input checked="" type="checkbox"/>	
44	4400000000	4499999999		<input checked="" type="checkbox"/>	
45	4500000000	4599999999	4500018399	<input type="checkbox"/>	
46	4600000000	4699999999	0	<input type="checkbox"/>	
55	5500000000	5599999999	0	<input type="checkbox"/>	
56	5600000000	5699999999		<input checked="" type="checkbox"/>	
60	6000000000	6099999999	6000000003	<input type="checkbox"/>	
61	6100000000	6199999999		<input checked="" type="checkbox"/>	

In PO document type definition (in customizing), we can assign the number range to a purchase order document type. Just like we did for purchase requisitions, we assign two number

ranges, one internal and one external. You can use external number range to define the document number prior to saving the document. Internal number ranges increment with every saved document. The current number is saved in the background to let the system know which is the next number it should assign to a purchase order.

Create, change and display a standard PO

Creating a standard purchase order Purchase orders are created by using standard transaction ME21N (or ME21 – the old instance of the transaction).

Step 1)

1. Enter transaction code **ME21N**.
2. Enter vendor.
3. Enter material number that needs to be procured.
4. Enter the quantity and unit of measure (optional – system uses UoM from purchase info record).
5. Press **ENTER** to confirm the data entered.

The screenshot shows the SAP ME21N transaction screen for creating a purchase order. The transaction code 'ME21N' is entered in the top-left field (1). The vendor 'VENDOR1 Vendor 1' is selected in the vendor field (2). A purchase order item is being entered in the grid, with the material number '10599999' in the Material column (3) and a quantity of '10 PAL' in the PO Quantity column (4).

Column	Value
Material	10599999
PO Quantity	10 PAL

Purchase order item is now populated with information from purchase info record and material master, in combination with the vendor master data. This can be seen on the next few screens. Delivery date and net price are populated from information supplied in master data.

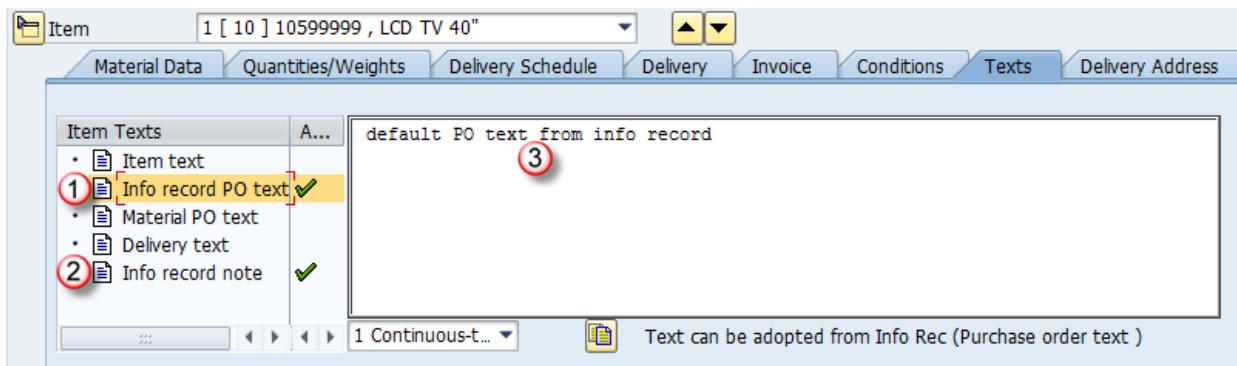
In below screenshot , Blocks **1** and **2** were populated from purchase info record, while **3** was populated from vendor master.

Default texts populated via purchase info record master data.

Info record PO text – text populated from info record master.

Info record note – populated from info record master.

Text in this field is the same as in our info recod.



Step 2)

You can see that purchase order contains several tabs at header level.

On the "Status" tab, you can find some information about the status of the purchase order.

In this block, you can find general status (Active) as well as purchase order confirmation (Not Yet Sent), Delivery status and Invoice status.

This is information about quantities and value, ordered qty and value, delivered qty and value, still to deliver qty and value, Invoiced qty and value, and finally downpayment information.

1	Delivery/Invoice	Conditions	Texts	Address	Communication	Partners	Additional Data	Import	Org. Data	Status																									
1	Active (2) Not Yet Sent Not Delivered Not Invoiced	3	<table border="1"> <tr> <td>Ordered</td> <td>10</td> <td>PAL</td> <td>28.000,00</td> <td>EUR</td> </tr> <tr> <td>Delivered</td> <td>0</td> <td>PAL</td> <td>0,00</td> <td>EUR</td> </tr> <tr> <td>Still to deliv.</td> <td>10</td> <td>PAL</td> <td>28.000,00</td> <td>EUR</td> </tr> <tr> <td>Invoiced</td> <td>0</td> <td>PAL</td> <td>0,00</td> <td>EUR</td> </tr> <tr> <td>Down paymts</td> <td></td> <td></td> <td>0,00</td> <td>EUR</td> </tr> </table>	Ordered	10	PAL	28.000,00	EUR	Delivered	0	PAL	0,00	EUR	Still to deliv.	10	PAL	28.000,00	EUR	Invoiced	0	PAL	0,00	EUR	Down paymts			0,00	EUR							
Ordered	10	PAL	28.000,00	EUR																															
Delivered	0	PAL	0,00	EUR																															
Still to deliv.	10	PAL	28.000,00	EUR																															
Invoiced	0	PAL	0,00	EUR																															
Down paymts			0,00	EUR																															

Other tabs contain information about Organizational Data, Import, Additional Data, Partners, Communication, Address, Texts, Conditions, Delivery/Invoice information.

Step 3)

Delivery/Invoice tab holds data about payment terms and trading terms. You can insert payment terms here (like =D06 – payment 30 days after delivery), trading terms (in two incoterms fields – for example EXW Wien).

NB Standard PO

Vendor VENDOR1 Vendor 1

Doc. date 13.05.2013

Delivery/Invoice Conditions Texts Address Communication Partners Additional Data Import

Payment Terms	OD06	Currency	EUR
Payment in	30 days	Exchange Rate	1,00000
Payment in	days		<input type="checkbox"/> Exch.Rate Fixed
Payment in	days net		
Incoterms			<input type="checkbox"/> GR Message

Step 4)

Organizational data holds the information on the purchasing organization, purchasing group and company code. You could choose another purchaseing group if you needed to.

Purch. Org.	0001	Einkaufsorg. 0001
Purch. Group	001	Purch.Group X
Company Code	0001	SAP A.G.

Other tabs

In **Conditions** tab, you can find data about prices and conditions on header level.

Texts tab is used to maintain header level texts.

Address tab holds the vendor address data.

In the **Additional Data** tab, you can find Collective number and VAT registration number of the vendor.

At the item level purchase order contains additional information on items

On the **delivery schedule** tab, we can enter the desired delivery schedule and quantities that are to be delivered at a certain date.

Material Data											
S		Delivery ...	Sched. Qty	Time	Stat. Del...	GR Qty	Purchase...	Re...	N.	Open Quantity	S... p
	D	14.05.2013	10		14.05.2013					101	
										0	
										0	
										0	

Material data tab contains information about vendor material number, batch, vendor batch, EAN code etc. Some of the data is populated from purchase info record.

On the **delivery tab**, you can set delivery tolerance percentages (over and under delivery), set delivery status, delivery remainder settings and other information.

Invoice tab holds information on invoice related data and a field “Tax“ that should be filled if applicable (in our case the tax code is **V1** for both items).

Conditions tab is used to specify conditions on item level.

Delivery address – our company address, it can be changed if we want the material delivered elsewhere.

The screenshot shows the SAP Purchase Order creation interface with the 'Delivery Address' tab selected. The form includes fields for Title (Company), Name (Waldorf 1), Street/House number (AAA), District, Postal Code/City (11112 Waldorf), Country (DE Germany), and Region. There are also buttons for 'Address details', 'Address', 'Vendor', and 'SC vend'. The top navigation bar includes tabs for Material Data, Quantities/Weights, Delivery Schedule, Delivery, Invoice, Conditions, Texts, Delivery Address, and Confirmations.

Confirmation tab holds data specific for the item confirmation control and rejection indicator.

The screenshot shows the SAP Purchase Order creation interface with the 'Confirmations' tab selected. It displays fields for Item (1 [10] 10599999 , LCD TV 40"), Conf. Control, Order Ack., Acknowl.Reqd, and Rejection Ind. The top navigation bar includes tabs for Material Data, Quantities/Weights, Delivery Schedule, Delivery, Invoice, Conditions, Texts, Delivery Address, and Confirmations.

When all the data is double-checked for mistakes and entered accurately we can save the purchase order.

Standard PO created under the number 4500018386

Changing purchase order

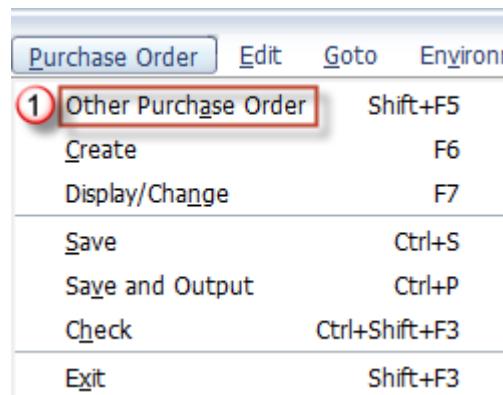
Step 1)

For changing an existing purchase order you can use transaction code **ME22N** (or **ME22** - the old version).

The screenshot shows the SAP ME22N interface. The title bar says "Standard PO 4500018386". The header section includes "Document Overview On", "Print Preview", "Messages", and "Personal Setting". Below the header is a table with columns: S, Itm, A, I, Material, Short Text, PO Quantity, O., Deliv. Date, Net Price, Cu..., and Per. One row is visible with material number 10599999 and short text "LCD TV 40\"", quantity 10 PAL, delivery date 14.05.2013, net price 2.800,00 EUR, and unit price 1 EUR.

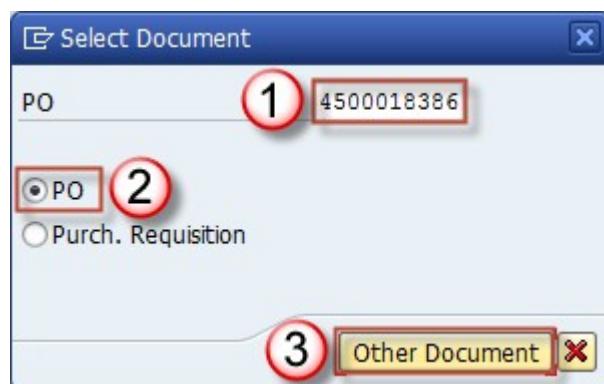
S	Itm	A	I	Material	Short Text	PO Quantity	O.	Deliv. Date	Net Price	Cu...	Per
	10			10599999	LCD TV 40"	10	PAL	D 14.05.2013	2.800,00	EUR	1
									EUR		
									EUR		
									EUR		
									EUR		
									EUR		

Immediately after executing transaction code, system will take you to the most recent purchase order you have created, changed or viewed. If you need to change some other purchase order, you can use the option which appears in the menu **Purchase order => Other Purchase Order**.



Step 2)

You will be presented a screen to enter the document you want to process



We can add another item and save our purchase order.

NB Standard PO				4500018386	Vendor	VENDOR1 Vendor 1	Doc. date	13.05.2013						
Header				S	Itm	A	I	Material	Short Text	PO Quantity	O.	Deliv. Date	Net Price	Cu...
					10			10599999	LCD TV 40"		10 PAL D	14.05.2013	2.800,00 EUR	
					20			10599998	LCD TV 32"		1 PAL D	13.05.2013	2.400,00 EUR	EUR

After saving we will be informed by the system that our PO is saved with changes.

Displaying purchase order

Displaying of purchase orders can be reached through t-code ME23N (or ME23 – old version). Everything looks and works the same as in change mode except that data isn't changeable, you can only display it.

NB Standard PO				4500018386	Vendor	VENDOR1 Vendor 1	Doc. date	13.05.2013						
Header				S	Itm	A	I	Material	Short Text	PO Quantity	O.	Deliv. Date	Net Price	Cu...
					10			10599999	LCD TV 40"		10 PAL D	14.05.2013	2.800,00 EUR	
					20			10599998	LCD TV 32"		1 PAL D	13.05.2013	2.400,00 EUR	EUR

Addl Planning

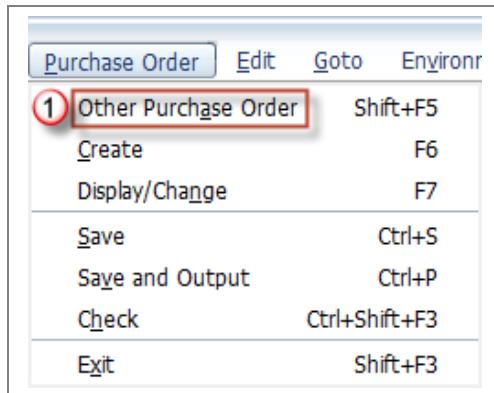
Item 1 [10] 10599999 , LCD TV 40"

Material Data Quantities/Weights Delivery Schedule Delivery Invoice Conditions Texts Delivery Ad

Overdeliv. Tol.	0,0 %	<input type="checkbox"/> Unlimited	1st Rem./Exped.	1-	<input checked="" type="checkbox"/> Goods Receipt			
Underdel. Tol.	0,0 %		2nd Rem./Exped.	1	<input type="checkbox"/> GR Non-Valuated			
Shipping Instr.				3rd Rem./Exped.	7	<input type="checkbox"/> Deliv. Compl.		
Stock Type	X Quality inspection			No. Exped.	0			
Rem. Shelf Life	0	D	Pl. Deliv. Time	1	GR Proc. Time	2	Latest GR Date	
QA Control Key				Incoterms	EXW	Wien		

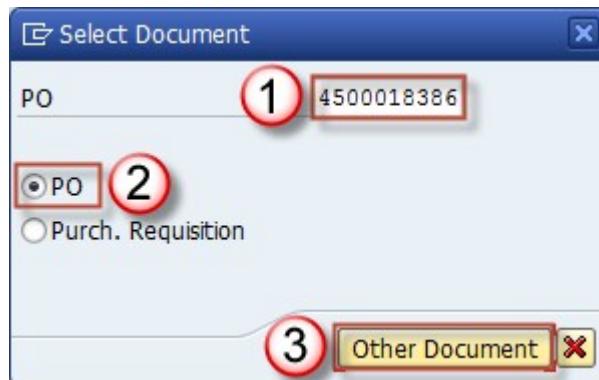
Here, you can also use the function to switch to another document. In menu follow the path - Purchase order => Other Purchase Order.

Step 1)



Step 2)

You will be transferred to a screen where you can enter the document number you want to display.



After reviewing the purchase order you can go back and exit the transaction.

Post goods receipt

Step 1) You can post the goods receipt for a purchase order using transaction code **MIGO**.

Let's say we want to do a goods receipt for our purchase order *4500018386*.

1. Choose **A01 - Goods Receipt**.
2. Choose **R01 - Purchase Order**.
3. Enter your purchase order number.
4. Press **ENTER**.

Step 2)

You can see that items from the purchase order have been transferred to the screen.

Here you can enter document data, posting date and choose the appropriate printing message type.

If you look at the Stock Type for both items, you can see that the first item is posted to quality inspection, and the second is posted directly to Unrestricted stock so it can be used before quality check. This is the example of the influence of the material master data on further processing in MM module. This is due to the Purchasing view check box “Post to inspection stock“, which is checked for LCD TV 40“ but isn’t checked for LCD TV 32“.

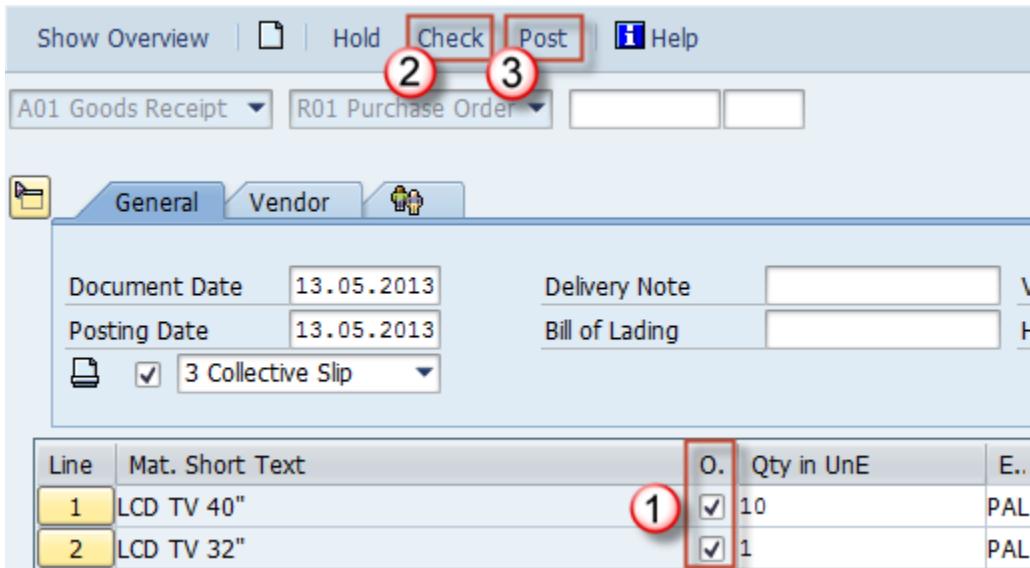
Step 2)

Now we can check if items are OK, and post the goods receipt (PGR).

These check boxes are used to confirm that items are OK, otherwise you won't be able to do a PGR.

After ticking the check boxes check if the document is ready for posting. If there are warnings or errors, system will show them in a pop-up screen. In our case, everything is ready for posting.

Post the document.



The screenshot shows the SAP Fiori interface for a purchase order. At the top, there are navigation links: 'Show Overview', a folder icon, 'Hold', 'Check' (highlighted with a red circle), 'Post' (highlighted with a red circle), and 'Help'. Below the navigation, there are dropdown menus for 'A01 Goods Receipt' and 'R01 Purchase Order'. The main area has tabs for 'General' (selected) and 'Vendor'. Under 'General', there are fields for 'Document Date' (13.05.2013), 'Delivery Note' (empty), 'Posting Date' (13.05.2013), 'Bill of Lading' (empty), and a checkbox for '3 Collective Slip' which is checked. A red circle labeled '2' is over the 'Check' button, and a red circle labeled '3' is over the 'Post' button. Below this, a table lists purchase order lines:

Line	Mat. Short Text	0.	Qty in UnE	E..
1	LCD TV 40"	1	10	PAL
2	LCD TV 32"	1	1	PAL

A red circle labeled '1' is over the quantity field for line 1. The entire row for line 1 is highlighted with a red box.

Document is saved and assigned a number.

 Material document 5000023570 posted

Invoice verification

Invoice verification is done via **MIRO** transaction.

Step 1)

1. Enter transaction code MIRO.
2. Choose invoice as a transaction type.
3. Enter the invoice date.
4. Enter the purchase order number.
5. Hit **ENTER**.

MIRO 1

Enter Incoming Invoice: Company Code 0001

Transaction 1 Invoice

Invoice date 13.05.2013

PO reference 4500018386

Step 2)

On Payment tab choose R - invoice verification.

Transaction 1 Invoice

Payment

Pmnt Block R Invoice verifica...

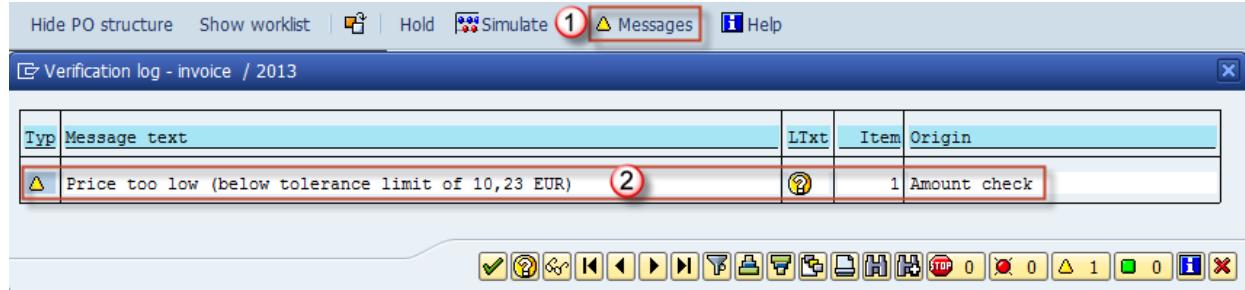
You can always check if the document has any problems.

1. Click **Messages** button.

2. Review the messages and fix the problems if there are any.
3. As it is shown on the below screen, I have a warning message that my price is too low, below tolerance limit.

It is only a warning message, and it will not stop me from further processing.

This message appeared as informational because I manually changed the item 1 price from 28.000 to 22.000 Err, just to show you the message.

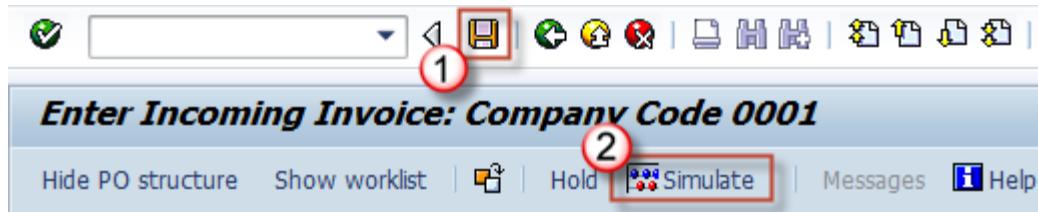


When I correct the price back to 28.000 for item 1 my message will disappear.

On the below screen, you can see that the document value is 30.400 and it is consisting of both item values (28.000 and 2.400).

Item	Amount	Quantity	O.	Purchase...	Item	Smart Number	PO Text	Tax Code	N.	A	Acct Assg'l
1	28.000,00	10	PAL	4500018386	10		LCD TV 40"	V9 V9 (Taxable/tax-exe...	<input type="checkbox"/>	<input type="checkbox"/>	
2	2.400,00	1	PAL	4500018386	20		LCD TV 32"	V9 V9 (Taxable/tax-exe...	<input type="checkbox"/>	<input type="checkbox"/>	

We can simulate the invoice creation by clicking button number 2 - **Simulate**.



Simulation results are shown on the below screen.

Position	G/L	Act/Mat/Ast/Vndr	Smart Number	Amount	C...
1K	161000	Vendor 1 / A-1234 Wien		30.400,00-EUR	
2S	191100	GR/IR-clearing - external procureme...		28.000,00 EUR	
3S	191100	GR/IR-clearing - external procureme...		2.400,00 EUR	

Saving is successful.

Document no. 5105621692 created (Blocked for payment)

Releasing the invoice

Our invoice request to be released manually, that is why it is blocked for payment. You can release the invoice by using t-code MRBR.

Step 1)

1. Execute t-code MRBR.
2. On the initial screen enter the company code and invoice number.
3. Check the release method (release manually if you want to process it in the second screen).

This can be done choosing Automatically (please note the difference with automatic release in MIRO transaction being blocked and automatic release in t-code MRBR as those are two different things).

Our document has a manual payment block, so we will select that option. Execute.

MRBR 1

Release Blocked Invoices

Selection of Blocked Invoices

Company Code	0001	to	[]
Invoice Document	5105621692	to	[]
Fiscal Year		to	[]
Vendor		to	[]
Posting Date		to	[]
Due Date		to	[]
Purchasing Group		to	[]
User		to	[]

Processing

Release Manually 3 Release Automatically

Move Cash Disc. Date

Blocking Procedure

Blocked Due to Variances
 Manual Payment Block 4 Stochastically Blocked

Display options

Variant []

Step 2)

Select the invoice you want to release.

Click on the flag icon - release.

Release Blocked Invoices

2

Sta...	Doc. No.	Year	Crcy	TranslDate	Exchange rate	L.cur	T	Posting Date	CoCd	Invoicing Pty	Name
1	5105621692	2013	EUR	14.05.2013	1,00000		RE	14.05.2013	0001	VENDOR1	Vendor 1

You can see that now the invoice has Status field filled with green flag – it means that it is released to FI.

	Sta...	Doc. No.	Year	Crcy	TranslDate	Exchange rate	L.cur	T	Posting Date	CoCd	Invoicing Pty	Name
		5105621692	2013	EUR	14.05.2013	1,00000		RE	14.05.2013	0001	VENDOR1	Vendor 1

financial department should now be able to see the invoice ready for payment.

Purchase order with reference

As stated in the PO overview, purchase orders can be created with reference to a purchase requisition, RFQ, quotation, another purchase order, contract, sales order etc. To reference a PO to a previous document you can use the appropriate function.

You can create a PO referencing a previous document in t-code ME21N – choosing the reference document, or you can use other functions to accomplish that.

REFERENCING THROUGH ME58

In our case if we want to create a PO for a purchase requisition, we can use the transaction code ME58.

I will demonstrate the process starting from ME58 as it calls the ME21N and you can see that actually we create a PO in ME21N anyway.

Step 1)

1. Enter t-code **ME58**.
2. Choose Vendor and purchasing organization and
3. Select document types.
4. Execute.

ME58 1

Ordering: Assigned Purchase Requisitions

Purchasing Group	<input type="text"/>	to <input type="text"/>	<input type="button"/>
Purchasing Organization	<input type="text" value="0001"/> 2	<input type="text"/>	<input type="button"/>
Vendor	<input type="text" value="vandor1"/> 2	<input type="text"/>	<input type="button"/>
Outline Agreement	<input type="text"/>	<input type="text"/>	<input type="button"/>
Framework Order	<input type="text"/>	<input type="text"/>	<input type="button"/>
Item Category	<input type="text"/>	<input type="text"/>	<input type="button"/>
Plant	<input type="text"/>	<input type="text"/>	<input type="button"/>
Supplying Plant	<input type="text"/>	<input type="text"/>	<input type="button"/>
Delivery Date	<input type="text"/>	<input type="text"/>	<input type="button"/>
Release Date	<input type="text"/>	<input type="text"/>	<input type="button"/>
Scope of List	<input type="text" value="A"/>		
<input checked="" type="checkbox"/> Contracts <input checked="" type="checkbox"/> Scheduling Agreements <input checked="" type="checkbox"/> Entry Sheets 3			
Cost Center	<input type="text"/>	to <input type="text"/>	<input type="button"/>
WBS Element	<input type="text"/>	to <input type="text"/>	<input type="button"/>
Order	<input type="text"/>	to <input type="text"/>	<input type="button"/>
Asset	<input type="text"/>	to <input type="text"/>	<input type="button"/>
Asset Subnumber	<input type="text"/>	to <input type="text"/>	<input type="button"/>
Network	<input type="text"/>	to <input type="text"/>	<input type="button"/>
Operation Number	<input type="text"/>	to <input type="text"/>	<input type="button"/>
Sales Order	<input type="text"/>	to <input type="text"/>	<input type="button"/>
Sales Order Item	<input type="text"/>	to <input type="text"/>	<input type="button"/>

Step 2)

1. Choose the line for your vendor.
2. Select process assignment.

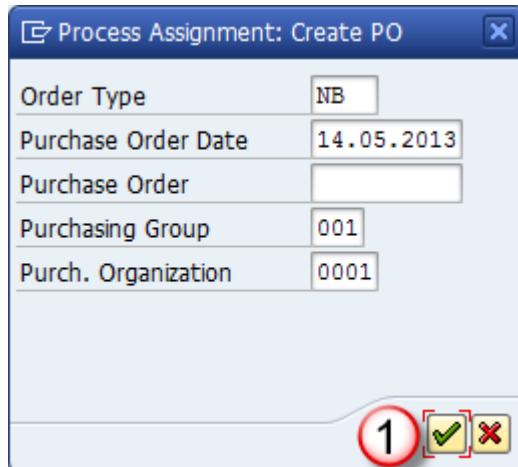
Process Assignment 2

POrg OTy. CoCd Outl.Agmt. ATy. Valid from .. to PReqs Processing Note

Vendor	VENDOR1	Vendor 1	1	2
0001 NB	0001 W/o Outl. Agmt			

Step 3)

Make sure that on the next screen the selected order type is **NB** (or other appropriate type which you wish to use at this moment). Date, purchasing group and organization also need to be checked before clicking the button **1**.

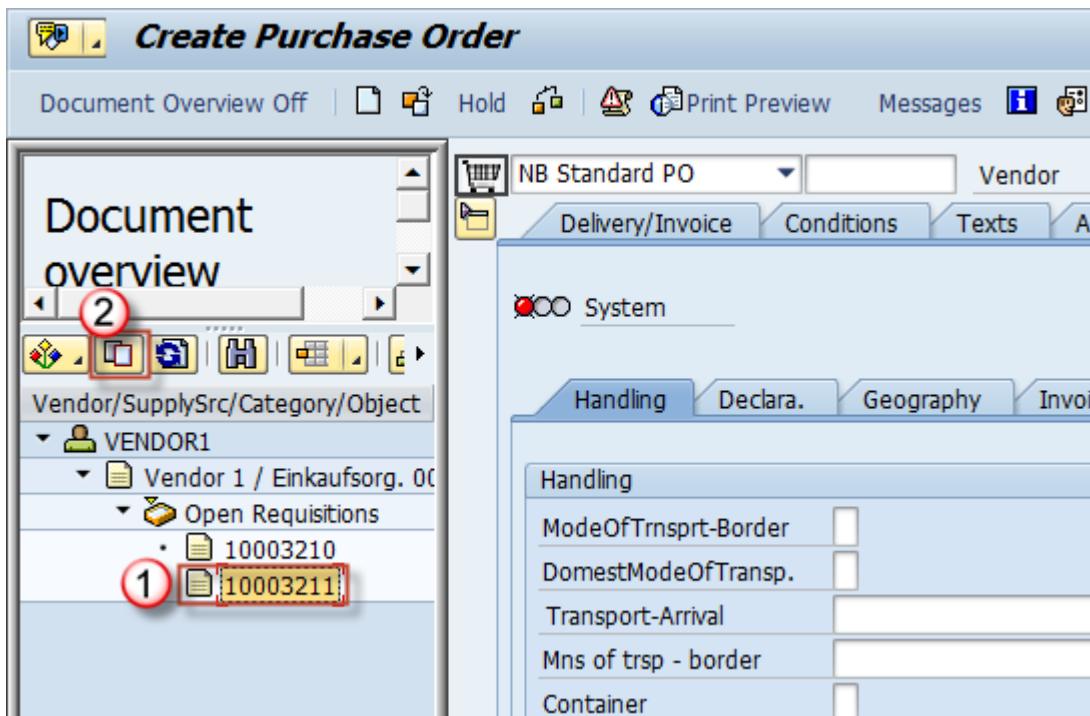


Step 4)

You will be redirected to the transaction **ME21N** by the system where you will be able to choose the requisition you want to use as a reference document for PO.

Choose PR number you want to use as a reference document.

Select the **Adopt** button.



Step 5)

You can see that our item has been transferred to new purchase order.

You can now save it, and it will be assigned a document number.

The screenshot shows the SAP ME21N Purchase Order creation screen. The header information includes: Document Type (NB Standard PO), Vendor (VENDOR1 Vendor 1), Document Date (14.05.2013), and a warning icon. The table below shows one item line:

S	Item	A	I	Material	Short Text	PO Quantity	O.	Deliv. Date	Net Price	Cu...	Per	O.
	10			10599998	LCD TV 32"	0,083	PAL	14.05.2013	2.400,00	EUR	1	PAL
										EUR		
										EUR		

Below the table are several icons for document management and planning, followed by 'Default Values' and 'Add Planning' buttons.

REFERENCING THROUGH ME21N Creating a PO directly from ME21N referencing to any suitable document is the fastest and least complicated way to do so. If you want to skip the ME58 or any other not needed step, you can create a PO using ME21N directly. This is mostly used by the MM users, and the process is as it is described in the next section.

Step 1)

Enter the transaction **ME21N**.

Choose the “Document Overview ON“ (if document overview isn’t open already).

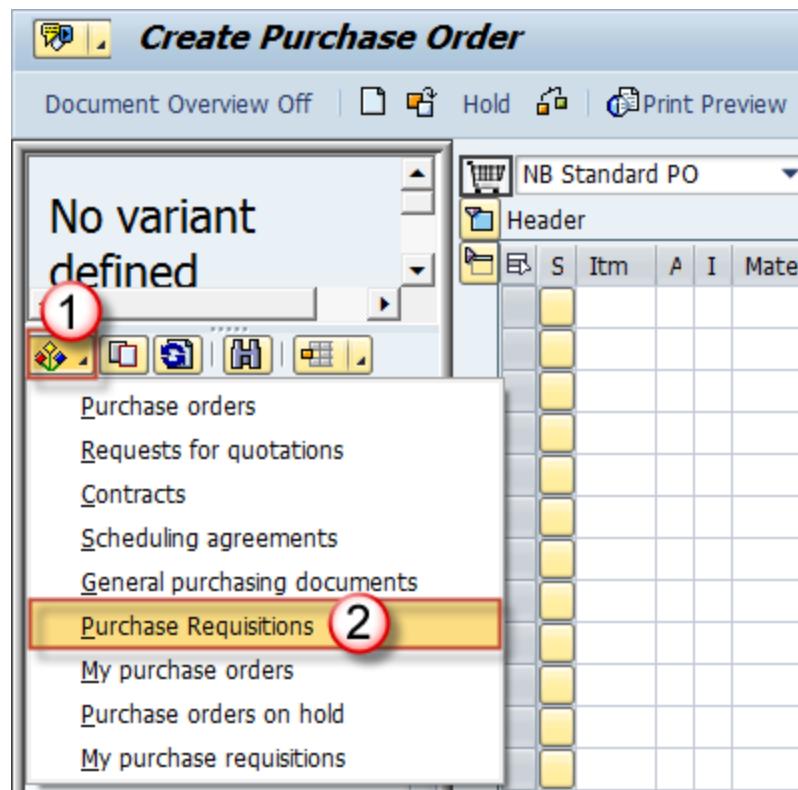
The screenshot shows the SAP ME21N Purchase Order creation screen. The 'Document Overview On' button in the toolbar is highlighted with a red box. The header information includes: Document Type (NB Standard PO), Vendor (VENDOR1 Vendor 1). The table below is empty:

S	Item	A	I	Material	Short Text	PO Quantity

Step 2) In the document overview screen, you can choose which document you will use for referencing purposes.

Choose the Selection Variant button.

Choose the document type for which you want to reference your PO.



Step 3)

On the selection screen enter your PR name (or find it by any other data – e.g. vendor, material number).

Execute the search.

General selections

Max. no. of hits	5000
<input type="checkbox"/> Open only	
<input type="checkbox"/> Released only	
<input type="checkbox"/> Assigned, open, and released	

Program selections

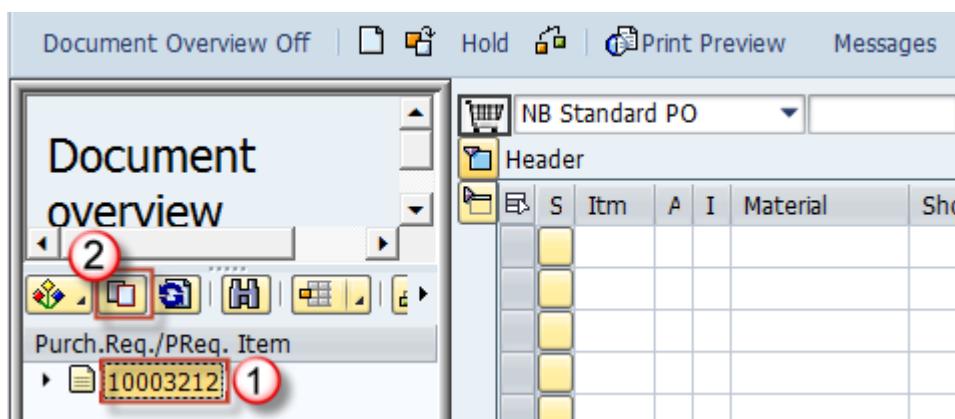
Name of Requisitioner/Reques		to		
Requisition (Request) Date		to		
Purchase Requisition Number	10003212	to		
Requirement Tracking Number		to		
Item Number		to		
Document Type		to		
Purchasing Group		to		
Purchasing Organization	0001	to		
MPN Material		to		

Step 4)

You are presented a screen with the documents relevant to your search.

Click the document number you want to use as a reference document.

Choose to Adopt the document.



You are done, now you can save your PO or make additional changes.

The referencing process is the same for any other reference document type. Just follow the steps above except choosing the appropriate document type in step 2.

Service purchase order

Service purchase orders are entered for services that are procured internally or externally. These purchase orders are different from standard ones as they don't require a goods receipt since they have no stock. Other than that, there are a few small differences in PO creation. First is the document type for these orders. It should be FO – Framework Order.

To procure a service directly for a cost center, we will follow the next procedure.

Step 1)

Go to transaction **ME21N**.

1. Choose document type FO – Framework Order.
2. Choose vendor.
3. Choose validity start for PO.
4. Choose Account Assignment Category - **K** and Item Category – **D**.
5. Enter the description for the service.
6. Enter the quantity and unit of measure.
7. Enter the price for the service (e.g. 900 EUR per 1 AU – activity unit).

S	Item	A	I	Material	Short Text	PO Quantity	O.	Deliv. Date	Net Price	Cu...	Per	O.
4	K	D	5	Consulting service	6	1 au	7	900 EUR	1	au	EUR	EUR

Step 2)

On item level, there are few fields you need to maintain in order to create a valid PO for service.

On the “Services“ tab, enter the information about your service, quantity and price.

Item 1 [10] Consulting service												
Services		Limits	Material Data		Quantities/Weights		Delivery Schedule		Delivery	Invoice	Conditions	Account
Line	D	Service No.	Short Text		Quantity	U.	Gross Price	Crcy	Over			
10	<input type="checkbox"/>		Consulting service		1	AU	900	EUR				
20	<input type="checkbox"/>							EUR				
30	<input type="checkbox"/>							EUR				
40	<input type="checkbox"/>							EUR				
50	<input type="checkbox"/>							EUR				
60	<input type="checkbox"/>							EUR				
70	<input type="checkbox"/>							EUR				
80	<input type="checkbox"/>							EUR				
90	<input type="checkbox"/>							EUR				
100	<input type="checkbox"/>							EUR				

You might be prompted for Account assignment information.

Step 3)

Here, you can enter the G/L account (it will be proposed in most cases), and cost center for service cost to be assigned.

G/L account.

Cost Center.

Account Assignment of Service in Line 10

G/L Account 1	400000	Company Code	0001
CO Area	0001		
Cost Center 2	SAP-DUMMY		
<input checked="" type="button"/> <input type="button"/> <input type="button"/> Rpt. AA on <input type="button"/> Auto repeat AA <input type="button"/>			

Step 4)

On the Limits tab, you can enter the limit for unplanned services.

Expected value that services should not exceed.

Item 1 [10] Consulting service

Services Limits Material Data Quantities/Weights Delivery Schedule Delivery Invoice

Overall Limit	1.500,00	EUR	<input type="checkbox"/> No limit
Expected value	900,00		
"Actual" Value	0,00		

Contract limits Other limit

Contract	Item	N	Limit	"Actual" Value	Short text
			<input type="checkbox"/>	0,00	
			<input type="checkbox"/>	0,00	

Step 5)

Now choose the Delivery tab and uncheck the Goods Receipt check box.

Services do not have goods receipt as they are not relevant for inventory management (they don't have stock).

Item 1 [10] Consulting service

Services Limits Material Data Quantities/Weights Delivery Schedule Delivery Invoice Conditions

Overdeliv. Tol.	<input type="text"/>	%	<input checked="" type="checkbox"/> Unlimited	1st Rem./Exped.	<input type="checkbox"/>	1	<input type="checkbox"/> Goods Receipt
				2nd Rem./Exped.	<input type="checkbox"/>		<input type="checkbox"/> GR Non-Valuated
				3rd Rem./Exped.	<input type="checkbox"/>		
				No. Exped.	<input type="text"/> 0		
				Pl. Deliv. Time	<input type="text"/>		
				Incoterms	<input type="text"/>		
				Latest GR Date	<input type="text"/>		
QA Control Key	<input type="text"/>						

Step 6)

Account assignment tab shows the information we were asked to enter in pop-up window.

If you are not asked to enter via pop-up you can enter information here.

Step 7)

We don't need storage location for our item as it's not stock relevant.

you can save your changes and get the document number.

Framework Order 4500018388 changed

Change and display mode are accessed through the same transactions as for a standard purchase order, **ME22N** and **ME23N**.

####

About the Author



Mihailo Sundic is a SAP techno-functional consultant specializing in Logistic modules and ABAP. Besides consulting, he is into technical writing for SAP and IT topics, with a decent number of tutorials created for both end user and consultant level. In his SAP career, he has been a part of various projects including SAP and Warehouse Management implementations, as well as in a vast number of custom developments in SAP Logistic modules. His plan is to be project oriented in future, and extending his knowledge outside logistic modules. Before SAP career, he was working as an application and database developer. He has an associate degree from College for Electrical Engineering and Computer Science Applied Studies Belgrade. He is 32 years old and a father of two, Andrej and Stefan.



About the Author

Krishna is a Computer Engineer and a SAP Consultant. He has over 8 years of experience working for many MNC's. Recently , he quit his cushy job and is on a mission to make education fun and free. This book is a step in that direction

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