ESPRESSO TUTORIALS

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Demand-Driven Replenishment in SAP® Purchasing (MM)

- Reorder point planning, stochastic and time-phased MRP
- Material master data, including lot sizes and how to calculate them
- Planning, planning process, stock/requirements lists (transaction MD04), and forecasts
- Customizing of the basic settings and processes

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2 MRP procedures in consumption-based MRP

This chapter presents the different procedures for consumption-based MRP, as well as special features of and the most important settings for these procedures. The chapter explains the fundamental terms that are important for MRP in the SAP system. Which of the four procedures you ultimately decide on depends on the data that is available in the system. For example, the forecast, which is essential for some procedures, can be executed only if historical values are available.

2.1 Manual reorder point planning

2.1.1 Definition

In manual reorder point planning, the SAP system compares the anticipated available stock with the reorder point in the material master. Using the MRP indicator *VB* in the material master, you assign the MRP procedure to the material (see Figure 1.4). With this type of MRP, you maintain the reorder point and the safety stock manually in the MRP 1 (reorder point) and MRP 2 (safety stock) (see Section 3.1) views.

The reorder point

The reorder point is a stock quantity. When this quantity is reached, or if the level of stock falls below this quantity, procurement should be triggered to ensure that the material is always available in sufficient quantity during the procurement process.

The safety stock

The safety stock is used to bridge the material requirements in the event of any delay in procurement (delivery delay or problems during production). It is part of the reorder point.

When the reorder point is reached or the stock available falls below this level, more of the material should be ordered. In an ideal situation, the goods receipt should be posted when the safety stock level is reached (see Figure 2.1).

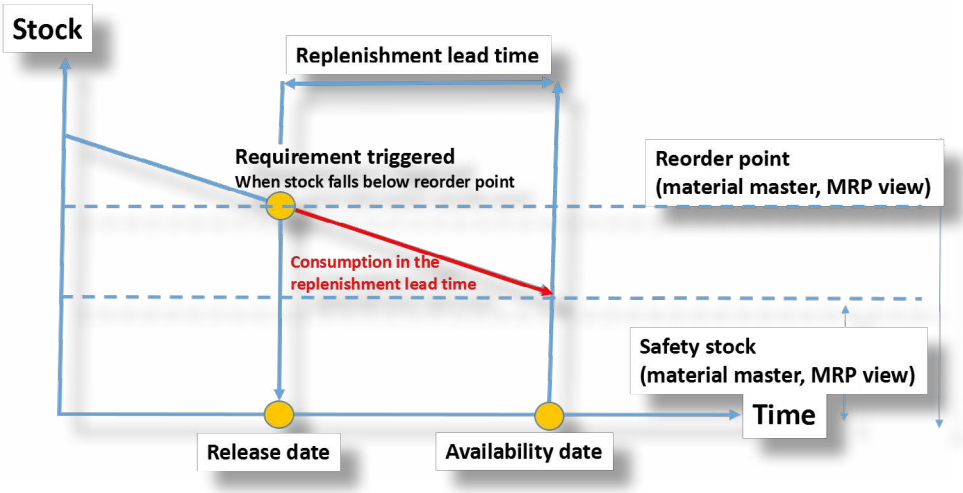

Figure 2.1: Procurement in reorder point planning

To determine the reorder point, you need the safety stock, the replenishment lead time, and the consumption during the replenishment lead time. You use the following formula to calculate the reorder point:

Reorder point = safety stock + (daily requirement × replenishment lead time in days).

The safety stock figure and the reorder point come from the material master.

2.1.2 The replenishment lead time

The *replenishment lead time* is made up of the purchasing department processing time (set in the plant parameters in Customizing, see Section 8.2), the planned delivery time (material master), and the goods receipt processing time (material master), as shown in Figure 2.2.

Figure 2.2: Replenishment lead time

You maintain the *purchasing department processing time* in workdays. This figure indicates the time that the buyer needs to convert a purchase requisition from MRP into a purchase order. You maintain the figure in the plant parameters in Customizing as follows: Materials Management • Consumption-Based Planning • Plant Parameters • Carry Out Overall Maintenance of Plant Parameters, setting it at plant level (for the setting, see Figure 2.3). This time is not dependent on the material, as in principle, the same effort is required regardless of whether the order is for 100 tons of gravel or one screw.

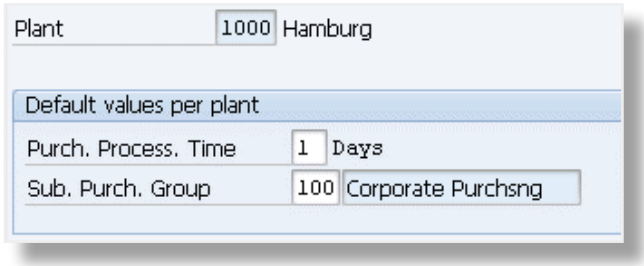

Figure 2.3: Purchasing department processing time

The *planned delivery time* is the time that the supplier needs to deliver the material. For material produced in-house, this time is the time required for in-house production. In the material master, this field must be defined as a mandatory field. In contrast, in the purchasing info record, you can maintain a separate planned delivery time in the purchasing organization data for the combination of supplier, material, purchasing organization, and plant. For example, to deliver to a plant in Berlin, a supplier needs one day; to deliver to a plant in Heidelberg, the supplier needs three days. If the planned delivery time in the material master has different values to the planned delivery time in the purchasing info record, the rule “from specific to general” applies (see Figure 2.4).

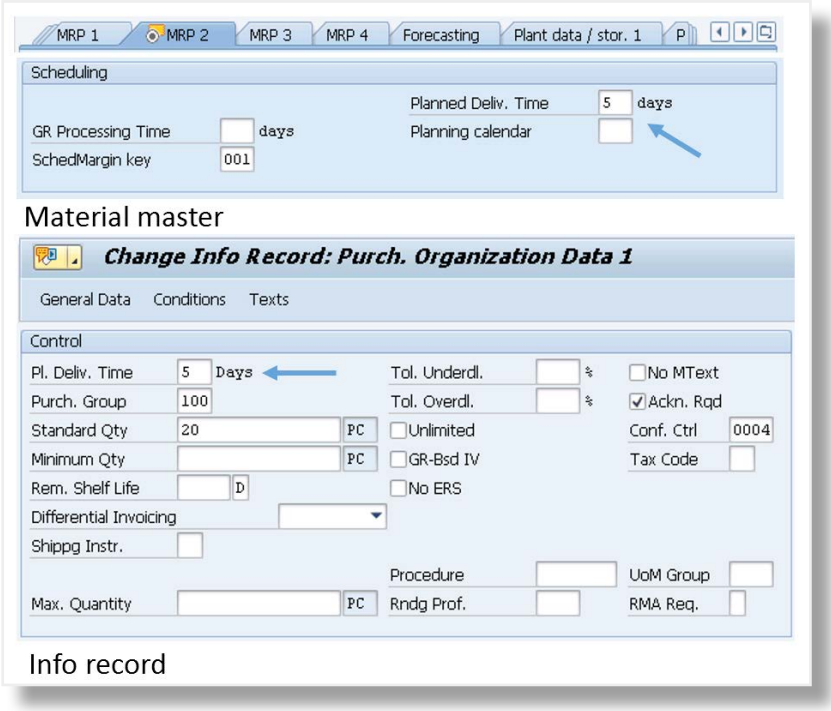

Figure 2.4: Planned delivery time in the material master and purchasing info record

Due to the combination of material and supplier, the purchasing info record is the more specific master record. Therefore, to calculate the replenishment lead time, the value for the planned delivery time is taken from this master record. You maintain the planned delivery time in calendar days. This is because, for example, the transport of goods from abroad by ship does not stop at weekends or on public holidays.

You enter the *goods receipt processing time* in the material master record in the Purchasing view under Other Data (see Figure 2.5).

This value indicates the time required after delivery to check the material and transfer it to stock. The goods receipt processing time is specified in workdays because the goods receipt department is active only on these days.

Figure 2.5: Goods receipt processing time

2.1.3 The net requirements calculation

With the *net requirements calculation*, the SAP system checks whether a procurement proposal should be created in MRP at all. To do this, the system compares the reorder point with the anticipated warehouse stock (stock, purchase order, production orders, etc.) available. If the reorder point is the higher number, there is a material shortage. In this case, a procurement proposal is created for the previously defined lot size (see Section 3.1.2) (see Figure 2.6).

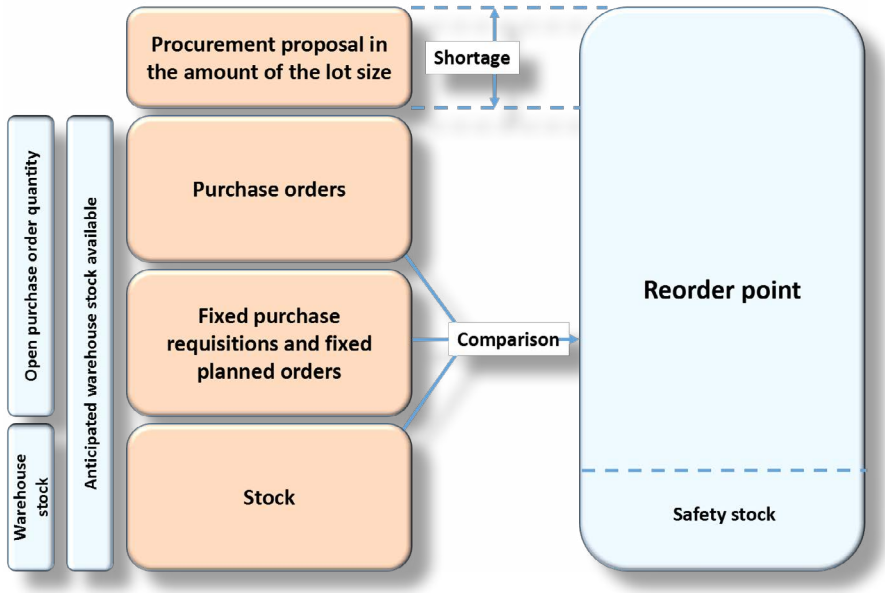

Figure 2.6: Net requirements calculation in manual reorder point planning

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