Products and Materials

Purpose

The purpose of this page is to provide useful information on Products and Materials Management.

Overview

Product (or Material) is the very basic master data element of the APO Planning processes. The product data is stored in the low layers of the SCM Database Hierarchy. Product is the core of any location-products, which have to be assigned to models and planning versions, and later on to transportation lanes and other transactions. All these advanced processed use and call the Product Master Data. If Product is not created directly in APO system but transferred through CIF then the ECC-Material will be converted to an APO-Product.

Transaction for Product master data maintenance: /N/SAPAPO/MAT1

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S/4Hana APO Product Master Data:

Maintain Products in APO

1. Maintain Products using /SAPAPO/MAT1 transaction - TEST CASE
2. Maintain Products using the Core Interface (CIF Transfer)
3. Maintain Products via MASSD
4. There are other function modules / BAPIs that are able to create/change/delete or read products and product-locations in APO. These other solutions generally use the function module: /SAPAPO/DM_PRODUCTS_MAINTAIN to execute Database changes. This FM is the main module and basically all of the product maintenance processes have to cross it in order to keep data consistency. Change documents for product related data is collected in this module. There is a user exit for customer enhancements available: EXIT_SAPMMDUSER_005, ZXMDUSER05.

Related BAPis:
  BAPI_PRDSRVAPS_SAVEMULTI2
  BAPI_PRDSRVAPS_GETLIST2
  BAPI_PRDSRVAPS_DELMULTI
  BAPI_PRDSRVAPS_REQUESTLIST2

Model 000 is automatically assigned to every location-product via a CIF transfer. For additional model assignments transaction /n/sapapo/scc07 can be used.

1. Create a Work Area for the model
2. Change
3. Under the map, select “Work Area” tab > “Add objects”
4. Fill selection criteria and “Run”, then Save.

**Field mapping between ERP and SCM:**

The table below provides a comparison between relevant Master data fields in SCM and ECC.

<table>
<thead>
<tr>
<th>Fields in APO/SCM Tr: /N/SAPAPO/MAT1</th>
<th>Fields in ERP Tr: MM02</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production Planner (Admin)</td>
<td>MRP Controller (MRP1)</td>
<td>On the APO side the Responsible Planner needs to be created corresponding to the MRP Controller in ERP before transfer of Material Master</td>
</tr>
<tr>
<td>UoM, Alt. UoM</td>
<td>UoM, Alt. UoM</td>
<td>Additional Data &gt;&gt; UoM</td>
</tr>
<tr>
<td>Check Mode (ATP)</td>
<td>Strategy Group (MRP3)</td>
<td></td>
</tr>
<tr>
<td>ATP Group (ATP)</td>
<td>Availability Check (MRP3)</td>
<td></td>
</tr>
<tr>
<td>Checking Horizon (ATP)</td>
<td>Replenishment Lead Time (MRP3)</td>
<td>For Procurement type E=Replenishment Lead Time, F=PDT+GR Processing Time</td>
</tr>
<tr>
<td>Purchasing Group (SNP2)</td>
<td>Corresponding fields (MRP1/Purchasing)</td>
<td></td>
</tr>
<tr>
<td>Proposed Strategy (Demand)</td>
<td>Strategy Group (MRP3)</td>
<td></td>
</tr>
<tr>
<td>Consumption Mode (Demand)</td>
<td>Consumption Mode (MRP3)</td>
<td></td>
</tr>
<tr>
<td>Backward/Fwd. consumption Period (Demand)</td>
<td>Corresponding fields (MRP3)</td>
<td></td>
</tr>
<tr>
<td>Assembly Planning (Demand)</td>
<td>Mixed MRP indicator (MRP3)</td>
<td></td>
</tr>
<tr>
<td>Procedure (Lot Size)</td>
<td>Corresponding fields (MRP1)</td>
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<tr>
<td>Min and Max Lot size (Lot Size)</td>
<td>Corresponding fields (MRP1)</td>
<td></td>
</tr>
<tr>
<td>Assembly scrap % (Lot Size)</td>
<td>Corresponding fields (MRP1)</td>
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<tr>
<td>Rounding value (Lot Size)</td>
<td>Corresponding fields (MRP1)</td>
<td></td>
</tr>
<tr>
<td>Rounding profile (Lot Size)</td>
<td>Corresponding fields (MRP1)</td>
<td></td>
</tr>
<tr>
<td>Safety Stock, Service Level (Lot Size)</td>
<td>Corresponding fields (MRP2)</td>
<td></td>
</tr>
<tr>
<td>Maximum Stock Level (PPDS)</td>
<td>Maximum Stock Level (MRP1)</td>
<td></td>
</tr>
<tr>
<td>---------------------------</td>
<td>---------------------------</td>
<td></td>
</tr>
<tr>
<td>Opening Period (PPDS)</td>
<td>Schedule Margin Key (MRP2)</td>
<td></td>
</tr>
<tr>
<td>PPDS Planning Time Fence (PPDS)</td>
<td>Planning Time Fence (MRP1)</td>
<td></td>
</tr>
<tr>
<td>Display Production Unit (PPDS)</td>
<td>Production unit (Work Scheduling)</td>
<td></td>
</tr>
<tr>
<td>Procurement Type (Procurement)</td>
<td>Corresponding field (MRP2)</td>
<td></td>
</tr>
<tr>
<td>Planned Delivery Time (Procurement)</td>
<td>Corresponding field (MRP2)</td>
<td></td>
</tr>
<tr>
<td>GR Processing Time (GR/GI)</td>
<td>Corresponding field (MRP2)</td>
<td></td>
</tr>
<tr>
<td>Loading Group (GR/GI)</td>
<td>Loading Group (Sales General/Plant)</td>
<td></td>
</tr>
</tbody>
</table>

**Product Profiles:**

Different Types of product profiles are available at the /SAPAPO/MAT1 transaction.

- Once a profile is assigned to Product-Location Master then the attributes in the profile tab are greyed out for the material and the specific profile will apply its settings.
- Technically the /SAPAPO/MATLOC (and /SAPAPO/MATLSIM) tables are connected to the specific profile's database table with the profile's ID (e.g., Demand profile: /SAPAPO/RQMKY-RQMID field exist in the first two tables).
- Of course there is not only a pre-defined profile gets an ID. If any of the fields on the profile's tab are modified (without a profile assigned) then the entry will generate a profile ID and the entered data will be similarly stored in the profile table as with pre-defined profiles. The ID also connects the /MATLOC (/MATLSIM) and the profiles DB table.
- Tabs at /SAPAPO/MAT1 and DB tables:
  Lot Size Profile: Lot Size tab / db table: /SAPAPO/MATLOTSZ Field: LSZID
  Demand Profile: Demand tab / db table: /SAPAPO/MATRQ - Field: RQMID
  SNP Demand Profile: SNP2 tab / db table: /SAPAPO/SNP01 - Fields: DPRID / DPREX
  SNP Supply Profile: SNP2 tab / db table: /SAPAPO/SNP02 - Fields: SPRID / SPREX
  Deployment Profile: SNP2 tab / db table: /SAPAPO/SNP11 - Fields: DPLID / DPLEX
The global product’s attributes/fields take their places in the /SAPAPO/MATKEY table

/SAPAPO/MATKEY: - Database table for Products

- MANDT
- MATID: Material ID (Primary key, unique identifier)
- MATNR: Material Number

/SAPAPO/MATTXT: Material Text

- MANDT+MATID+LANGU are together forming a unique identifier

/SAPAPO/MATMAP: - Material mapping between ECC and APO

This table is used for displaying the mapping between the Material raised in ECC (R/3) and sent through CIF then landed as „Product” inside the SCM-APO system. These materials (search with: MATID,MATNR) are also can be found in MATKEY but with other fields.

- MANDT
- EXT_MATNR: Material Number in R/3 system
- MATID: Material ID in SCM/APO
- MATNR: Material Number in SCM/APO
- LOGSYS: Name and Client of the system where the material is originated (ERP sys).

/SAPAPO/MATLOC - Location dependent fields of a Productlocation

- MATLOC ID : unique key (As there can be more product or location ID similar here. Eg. One product can be assigned to many locations or locations can be assigned to many products.)

/SAPAPO/V_MATLOC - This is a JOIN RESULT TABLE made of MATLOC+MATKEY+LOC so the MATLOC table will include:

- MANDT
- MATID
- LOCID
- MATLOC ID

However, additionally:
Therefore, it is easier to look up and check records based on product or location names.

/SAPAPO/MATLSIM - Planning Version dependent LocationProduct fields

- MATID
- LOCID
- SIMID – Planning version ID (Version that belongs to the location product) (APO Planning versions are stored in table /SAPAPO/APO01)

/SAPAPO/V_MLSIM : View table for MATNR - LOCNO searchability

/SAPAPO/MATLSPP - SPP related Fields

- MATID
- LOCID
- SIMID

/SAPAPO/MATMOD - View table : /SAPAPO/V_MATMOD - completed with MATNR and LOCNO

PRIMARY KEY consists of

- MANDT
- MATID
- LOCID
- MODEL: Model Name in Supply Chain Network

EWM product tables:
/SAPAPO/MATLWH - Location Product for Location Warehouse

Keys that make the entry unique:

- MANDT
- MATID
- SCUGUID Supply Chain Unit GUID
- ENTITLED_ID Party Entitled to Dispose (GUID)

/SAPAPO/MATLWHST Location Product for Location Whse and Subloc. Storage Type

Keys that make the entry unique:

- MANDT
- MATID Internal Number (UID) for Product
- SCUGUID Supply Chain Unit GUID
- ENTITLED_ID Party Entitled to Dispose (GUID)
- LGTYP Storage Type

/SAPAPO/MATPACK Product: Packing/Packaging Data

/SAPAPO/MARM Units of Measure

Keys that make the entry unique:

- MANDT Client (APO Conversion to Client-Dependency)
- MATID Internal Number (UID) for Product
- MEINH Alternative Unit of Measure - The unit of measures defined on the product master

Base Unit of Measure, MEINS is placed in /SAPAPO/MATKEY

/SAPAPO/MATRO Requirement Profile in Material Master

- RQMID connect this table to /SAPAPO/MATLOC table - thus location-products are connected.

/SAPAPO/MATLOTSZ Lot Sizes & Days' Supplies for Material Master

- LSZID - connect this table to /SAPAPO/MATLOC table - thus location-products are connected.
Product database table inconsistencies:

- If there are inconsistencies observed in the above Master Data tables (e.g.: DBSQL_DUPLICATE_KEY_ERROR in ST22 transaction dump log) the following note can be used for removing them. Please consider every consequences before using them in your system (these reports consider only standard environments and no special data scenarios). It is always advised to reveal the root cause of the inconsistencies.
- Here is a step by step analysis and resolution steps for these kind of dumps that considers user exits, custom codes.

668792 - Product Maintenance: Handling Database Inconsistencies
1478635 - Product: Inconsistencies /SAPAPO/MATMOD /SAPAPO/MATLOC
1925136 - Correct inconsistencies in /SAPAPO/MATPACK table
485981 - Product profiles: Correction of inconsistencies (eg in case of error Message no. /SAPAPO/MAT008) - this report is able to split LSZID/RQMID ids to different ones for different location-products, where the Profile ID is the same - standard report exists:
/SAPAPO/MAT_PROFILES_ADJUST
1402701 - Deletion of location dependent penalty costs
2157346 - Orphaned entries for the table /SAPAPO/MATLOTSZ

Product Memo:

Product Memo function is accessible from product related transactions in APO system eg. /SAPAPO/MAT1, /SAPAPO/POV1, /SAPAPO/RRP3 via the Menu / Edit / Maintain Product Memo path.
The memos are:

- saved on the logon language and
- readable only on the same logon language with the following addition:
- Due to backwards accessibility reasons the memos (creation time is before SAP Note 1711537 installed) which are created in English are accessible independently from logon language (provided by SAP Note 1851665).

responsible FM: /SAPAPO/EDIT_MAT_TEXT
Text headers are stored in DB table: STXH
TDNAME: GUID is a combination of MATID and LOCID, it is advised to search with 1-2 characters + wildcard (*)
TDOBJECT: MDTXT (it must be defined in SE75 transaction in case it would be missing)
TDID: LTXT

MATRQ table and RQMID:

There are some functions eg. BW, where /SAPAPO/MATLOC-RQMID field needs to be filled in order to display loc-product master data (from Eg. Demand tab PEG_FUTURE_MAX) in a BW transaction. The field is initially displayed with 100.000:00 value. However it is not reflected in the MATRQ table – as there is no RQMID maintained in //MATLOC. This field needs to be toggled and saved in the UI or MASSD to achieve the BW function’s expectation. The /SAPAPO/MATLOC-RQMID entry is basically created if at least one of the /SAPAPO/MATRQ relevant field is maintained.

Product Master Lot Size adjusted to all locations of a product:

Before installation of the below 3 notes, you can meet situation:

- You have 1 product attached to 2 locations
- If you change a product lot size attributes on its location x, the attributes will be changed on its location y as well. This is not intended.
These 3 notes solve the problem if installed in their numerical ascending order:
Base Unit of Measure:
UoM cannot be changed via CIF transfer. This concept is to avoid inconsistencies. An error message is placed when the same product is trying to be transferred with a different UoM via CIF.

Please see: 1752912 - Product Base Unit of Measure cannot be changed via CIF

Product Number settings and input-output conversion routine for MATNR:
- The Product number length and DB storage settings are available in SPRO > SAP - Implementation Guide > SCM Basis > Master Data > Product > Specify Output Format of Product Number.
- For input output - conversion routine enhancement you can use the class-methods (SE24 transaction):
  /SAPAPO/CL_EX_PRODUC_CONVEX
  FM: CONVERSION_EXIT_PRODUC_INPUT & CONVERSION_EXIT_PRODUC_OUTPUT

BAPI_PRDSRVAPS_SAVEMULTI2 and deletion flag:
- You experience that while updating a product which has a deletion flag on it (Product and/or Location-Product level) with the BAPI: BAPI_PRDSRVAPS_SAVEMULTI2 the deletion flags are removed during the update. This is the standard process.
- If somebody wants to modify a product with a BAPI which is marked for deletion, there is the following possibility:
  Do the modifications with BAPI_PRDSRVAPS_SAVEMULTI2 (LVORM will be cleared) and after that run BAPI_PRDSRVAPS_DELMULTI, to set LVORM again.
- It is due to the logic that it makes no sense to update a product which has a deletion flag. The same logic applies to CIF.

Delete products:
SAP User Assistance
2116179 - About Product Master Data Deletion or Archiving Master Data Tables in SCM APO

EWM Material transfer via CIF and Batch flag:
2221258 - Integration of SAP EWM 9.40 and higher to a Batch on Plant SAP ERP System

Related SAP Notes/KBAs:
2116179 - About Product Master Data Deletion or Archiving Master Data Tables in SCM APO
2221258 - Integration of SAP EWM 9.40 and higher to a Batch on Plant SAP ERP System
2201276 - SPP specific Location Product fields are not visible in MASSD F4 help
2002459 - Deletion of Location Product in APO
2002591 - Deletion of product in APO
2002536 - Deleting Location Product for Location Warehouse in table /SAPAPO/MATLWH
1928130 - APO Upgrade 7.0: Missing Extra Attributes in tx /SAPAPO/MAT1
1851566 - Syntax error in /SAPAPO/sapldm_material after Upgrade
1841637 - Adding or removing SPP tab in material master data APO
1841718 - Restricting authorisation in master data transactions
1694542 - Block indicator update via MASSD error /SAPAPO/OO_TR402 or /SAPAPO/OO_TR400
1689027 - Version Dependent fields not displayed after upgrade to 7.01
1580614 - COM error unknown in transaction WUF
1608256 - MASSD gives error #No data meet the selection criteria # during Penalty Cost Ma
1589222 - CIF Failed-Data transfer via CIF/BAPI currently locked - user &1
1580014 - DRP PLANNER ID changed in MASSD, no entries written in table CDHDR
1566733 - MASSD Error message M&752
1523881 - MASSD variant change is not saved
1519355 - Field /SAPAPO/MARM-GEWI unit missing for product &1
1482893 - Wrong F1 Help Text in SPP Inv. Planning -Product Master
1143339 - Creating products for different Business System Groups
1374791 - Stockout costs for non-delivery adjusted
2035663 - Update request generated in SM13 by accessing product master
2058563 - Changes of shelf life relevant fields are logged to change document though no c
1825516 - MASSD - PRODUCT: no authorization check based on APO locations
2202824 - Dump DBSQL_TABLE_UNKNOWN when running /SAPAPO/MAT1 transaction
1626464 - MASSD: Deletion flag for Products that are still being used by other objects
1925136 - Correct inconsistencies in /SAPAPO/MATPACK table
2057095 - Inconsistencies between LiveCache and APO database (version dependent orders)
1042472 - Product: CIF transfer of International Article Number
793080 - CIF: Product transfer without reference material

Related Content:

Change Document SCM APO Master Data