

Automatic Packaging in SNC – A Case Study



Applies to:

APO Supply Network Collaboration (SNC). For more information, visit the [Supply Chain Management homepage](#).

Summary

The article is intended for consultants and planners involved in the Supply Network Collaboration (SNC) module of SAP SCM. The article essentially describes the Automatic Packaging concept and configuration steps with the help of a self-created Case Study.

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Case Study

The supplier wants to do a three level packing of the Final Finished Product (FPC), "T-RI999". 100 Units of the product needs to be packed in a packaging material "PGSMALLBOX". 5 units of the small boxes needs to be packed in the packing material "PGLARGEBOX" and finally 2 units of the large box needs to be packed in "PGWIREBASKET". This packing should be done automatically before publishing an Advanced Shipment Notice (ASN).

Business Solution

Multilevel packing of products can be done within SAP SNC before publishing an ASN. The packing of products can be done either manually or automatically. Configuration of a Packaging Specification is required for enabling automatic packing. But, more importantly the master data needs to be correctly setup for the main product and the packaging material.

Give the above case study, the master data for both the product and individual packaging material needs to be defined. SAP SNC also requires creation of a Packaging Specification, which will be used while executing Automatic Packaging.

The key steps of this configuration are as follows

- Step 1: Define Packing Material Type
- Step 2: Define Packing Groups For Products
- Step 3: Maintain Allowed Packaging Material Types For Packing Group
- Step 4: Product Master Data
- Step 5: Define Products For Packing Material
- Step 6: Define Number Range for Packaging Specification
- Step 7: Define Packaging Specification Group
- Step 8: Creating Package Specification Details on SNC WEB UI
- Step 9: Check and Activate

Configuration

Step1: Define Packing Material Type

The product needs to be packed in three levels of packing material namely, PGBOXSMALL, PGBOXLARGE & PGWIREBASKET. Each of these needs to be defined as a packing material.

SPRO-> IMG> SCM Basis > Pack > Handling Units > Define Packing material type

- 0007- Wire Basket – Closed packing
- 0008 – Box Large – Closed packing
- 0009 – Box Small – Closed packing

Closed Packing is selected for closed packaging materials, during packing the total volume is not increased by the loading volume of the contents. If this setting is checked here, then it must also be selected in the Product Master for the packing material.

Change View "Packaging Material Types": Overview

PkMT	Description	PMCat	TW Variable	C	Status Pr
0001	Pallets	Packaging Materials	<input type="checkbox"/>	<input type="checkbox"/>	
0002	Container	Packaging Materials	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
0003	Truck	Means of Transport, Transport	<input type="checkbox"/>	<input type="checkbox"/>	
0004	Lid	Auxiliary Packaging Material	<input type="checkbox"/>	<input type="checkbox"/>	
0005	Box	Packaging Materials	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
0006	Crate	Packaging Materials	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
0007	Wire Basket	Packaging Materials	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
0008	Box Large	Packaging Materials	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
0009	Box Small	Packaging Materials	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
0010	Carton	Packaging Materials	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
0011	Mount	Packaging Materials	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
0012	Load	Packaging Materials	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

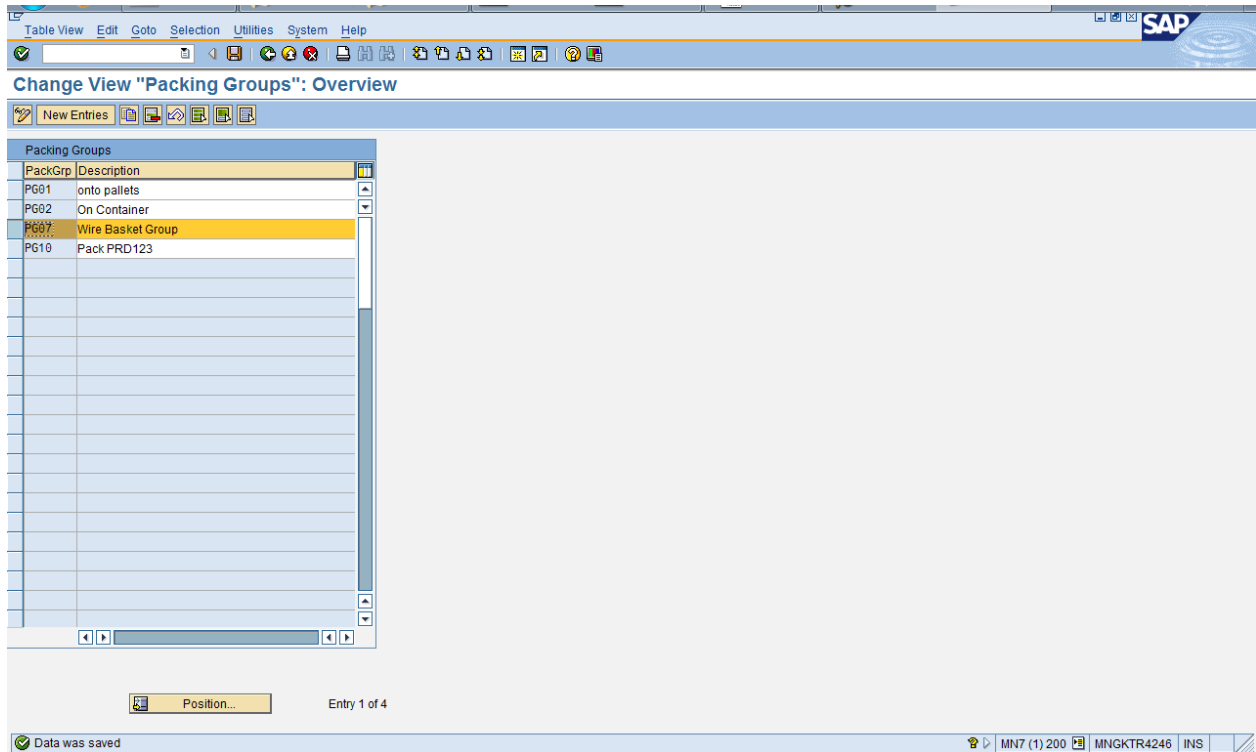
Position... Entry 1 of 12

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Step 2: Define Packing Groups For Products

The packing material types need to be organized under Packing Groups. You can choose a single Packing group for all the three Packing material.

- SPRO> IMG> SCM Basis > Pack > Handling Units > Define Packing groups for products
 - PG07, Wire Basket Group



Step 3: Maintain Allowed Packaging Material Types For Packing Group

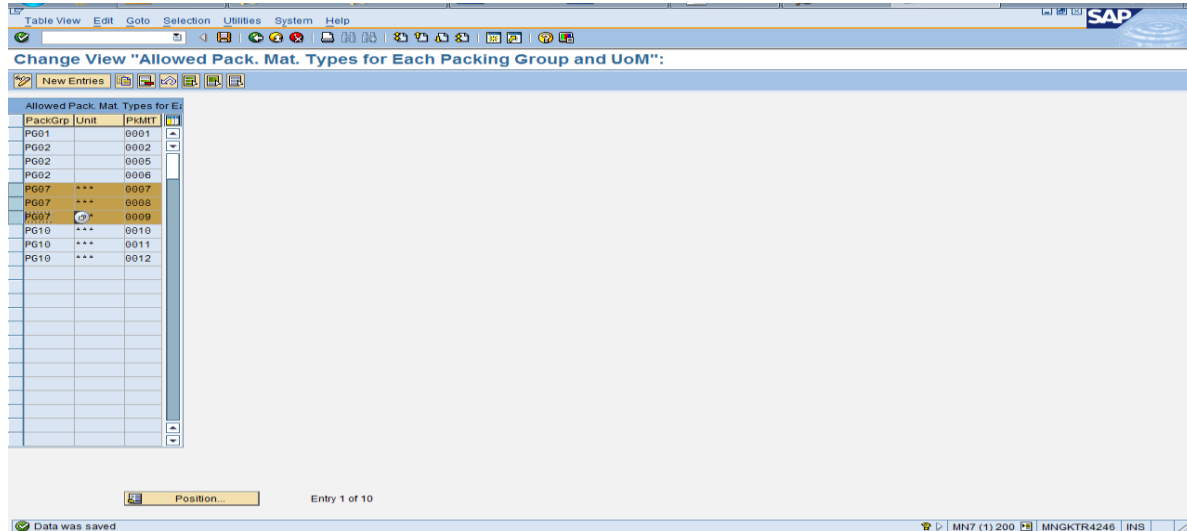
In this IMG activity, you define the allowed packaging material for the individual packing groups.

When packing materials or handling units, the system checks whether the packaging material type of the packaging material is permitted as packaging for the packing group of the material.

SPRO> IMG> SCM Basis > Pack > Handling Units > Maintain Allowed Packaging Material Types For Packing Group

- PG07, ***, 0007
- PG07, ***, 0008
- PG07, ***, 0009

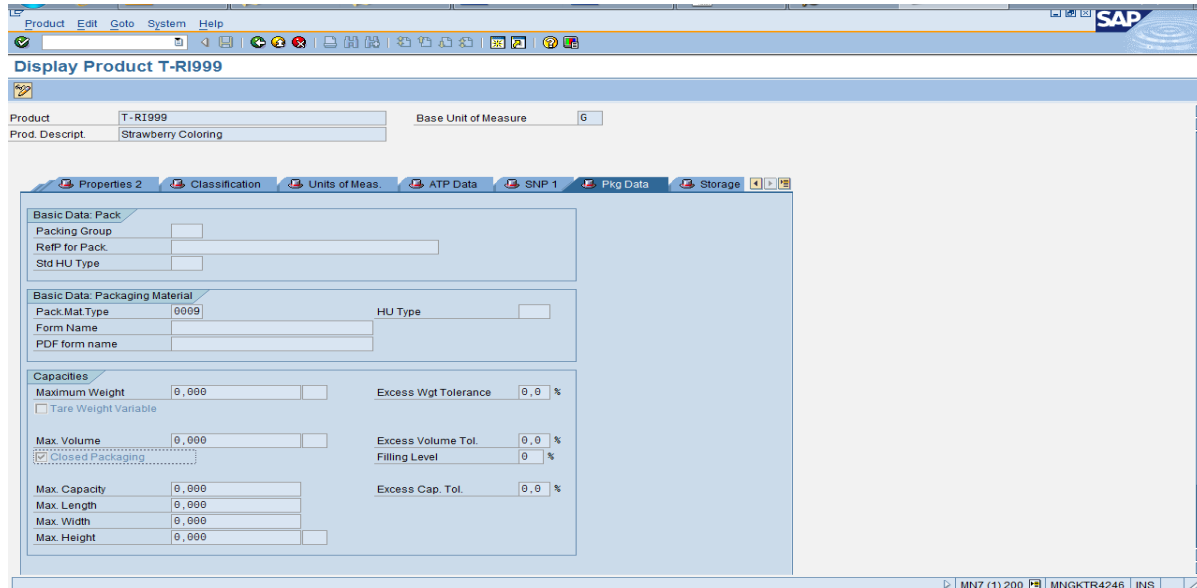
*** = Unit independent.



Step 4: Product Master Data

The product which needs to be packed e.g. T-RI999, needs to be updated with the Packing Material Type in the product master details. For example, the product needs to be packed in PGSMALLBOX, which has the defined packing material type as 0009.

Advanced Planning and Optimization > Master Data > Product > Product



Step 5: Define Products for Packing Material

The three products namely PGSMALLBOX, PGLARGEBOX and PGWIREBASKET need to be defined as Products within SAP APO and the details of the Packing Group and Packing Material type needs to be defined. These products need not be defined for any particular location as they are packing materials.

Product	Packing Group	Pack. Mat. Type
PGBOXSMALL	PG07	0009 (i.e. Small Box)
PGBOXLARGE	PG07	0008 (i.e. Large Basket)
PGWIREBASKET	PG07	0007 (i.e. Wire Basket)

Also, check the “Closed Packing” option.

Advanced Planning and Optimization > Master Data > Product > Product

PGBOXSMALL

Product: PGBOXSMALL Base Unit of Measure: EA
 Prod. Descript: Box small

Properties 2 Classification Units of Meas. ATP Data SNP 1 Pkg Data Stor...

Basic Data: Pack
 Packing Group: PG07
 RefP for Pack.:
 Std HU Type:

Basic Data: Packaging Material
 Pack.Mat.Type: 0009 HU Type:
 Form Name:
 PDF form name:

Capacities
 Maximum Weight: 0,000 Excess Wgt Tolerance: 0,0 %
 Tare Weight Variable
 Max. Volume: 0,000 Excess Volume Tol.: 0,0 %
 Closed Packaging Filling Level: 0 %
 Max. Capacity: 0,000 Excess Cap. Tol.: 0,0 %
 Max. Length: 0,000
 Max. Width: 0,000
 Max. Height: 0,000

Product PGBOXSMALL saved

PGBOXLARGE

Product Edit Goto System Help

Product: PGBOXLARGE Base Unit of Measure: EA
 Prod. Descript: Box large

Properties 2 Classification Units of Meas. ATP Data SNP 1 Pkg Data Stor.

Basic Data: Pack
 Packing Group: PG07
 RefP for Pack:
 Std HU Type:

Basic Data: Packaging Material
 Pack.Mat.Type: 0008 HU Type:
 Form Name:
 PDF form name:

Capacities
 Maximum Weight: 0,000 Excess Wgt Tolerance: 0,0 %
 Tare Weight Variable
 Max. Volume: 0,000 Excess Volume Tol.: 0,0 %
 Closed Packaging Filling Level: 0 %
 Max. Capacity: 0,000 Excess Cap. Tol.: 0,0 %
 Max. Length: 0,000
 Max. Width: 0,000
 Max. Height: 0,000

PGWIREBASKET

Product Edit Goto System Help

Product: PGWIREBASKET Base Unit of Measure: EA
 Prod. Descript: Wire basket

Properties 2 Classification Units of Meas. ATP Data SNP 1 Pkg Data Storage

Basic Data: Pack
 Packing Group: PG07
 RefP for Pack:
 Std HU Type:

Basic Data: Packaging Material
 Pack.Mat.Type: 0007 HU Type:
 Form Name:
 PDF form name:

Capacities
 Maximum Weight: 0,000 Excess Wgt Tolerance: 0,0 %
 Tare Weight Variable
 Max. Volume: 0,000 Excess Volume Tol.: 0,0 %
 Closed Packaging Filling Level: 0 %
 Max. Capacity: 0,000 Excess Cap. Tol.: 0,0 %
 Max. Length: 0,000
 Max. Width: 0,000
 Max. Height: 0,000

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Step 6: Define Number Range for Packaging Specification

In order to enable Automatic Packing it is necessary to enable a number range to be allocated for packing.

SPRO> IMG> SCM Basis > Pack > Packaging Specification > Define Number Range for Packaging Specification

The screenshot shows the SAP SPRO transaction 'Maintain Number Range Intervals'. The 'NR Object' is set to 'Packaging Spec.'. The main area displays a table with the following data:

No.	From number	To number	Current number	Ext.
01	00000000000000000001	00000000000010000000	10	<input type="checkbox"/>
02	0000000000010000001	000000000009999999	10000010	<input type="checkbox"/>
03	0000000000100000000	000000000099999999	100000159	<input type="checkbox"/>

At the bottom of the screen, the status bar shows 'Entry 1 / 3' and 'MN7 (1)200 MNGKTR4246 INS'.

Step 7: Define Packaging Specification Group

You can use the available packaging specification group.

“Act with CT” field is used to define whether or not packaging specifications with a certain [packaging specification group](#) can be activated without a condition record.

If you want to activate packaging specifications without a condition record, set this indicator to no.

SPRO> IMG> SCM Basis > Pack > Packaging Specification > Define Packaging Specification Group

The screenshot shows the SAP SPRO transaction 'Define Packaging Specification Group' in the 'Overview' view. The table displays the following data:

PS Group	Description	N	Level Set	Activation
KIT0			KITTING	<input checked="" type="checkbox"/>
KITR			KITTINGR	<input checked="" type="checkbox"/>
KITS			KITTINGS	<input checked="" type="checkbox"/>
ROH	Test group Rohit	01		<input type="checkbox"/>
SAP	SAP Default Packspec.Group	02	PALLETDATA	<input type="checkbox"/>
SHR	Packaging Mat	01		<input type="checkbox"/>
VAS	Example for VAS			<input checked="" type="checkbox"/>

At the bottom of the screen, the status bar shows 'Entry 1 of 7' and the user information 'MN7 (1) 200 | MNGKTR4246 | INS'.

Step 8: Creating Package Specification Details on SNC WEB UI

Log in to the SNC WEBUI through the supplier login. Go to the Master Data > Packaging > Packaging Specification Details

Alert Monitor

Selection

Show: [dropdown] [Reset] [Go] [Close Selection] [Set Notification]

Planner: [dropdown] To [dropdown] [arrow]

Customer: [dropdown] To [dropdown] [arrow]

Supplier: [dropdown] To [dropdown] [arrow]

Location: [dropdown] To [dropdown] [arrow]

My Location: [dropdown] To [dropdown] [arrow]

Product: [dropdown] To [dropdown] [arrow]

My Product No.: [dropdown] To [dropdown] [arrow]

APN: [dropdown] To [dropdown] [arrow]

APN Type: [dropdown] [arrow]

Product Group Type: [dropdown] [arrow]

Statistical View

[Reset to Default]

Grouping Criteria 1: [Alert Type (Long)] Grouping Criteria 2: [dropdown] Grouping Criteria 3: [dropdown] Display Alerts By: [Alert Priority]

Click on "Create" Button.

Packaging Specification Details

Pack. Spec. ID: 10000008 Change Number: [dropdown] [Go]

[Create] [Change] [Display] [Check] [Save] [Activate] [Deactivate] [Create 2nd Version] [Delete] [Copy]

Packaging Specification Header Data

Packaging Specification Group: SAP - SAP Default Pack...

Packaging Specification Identifier: 10000008

Packaging Specification Desc.: Testing2

Packaging Specification Status: Active

Pack. Spec. Change Number: 00000001

Content

[Add Content] [Delete Content]

View [Standard View] [Settings]

Cont. Seq. No.	Product	Product Desc.	My Product No.	Quantity
1	T-R999	Strawberry Coloring		1

Click on “Add Content” button. This is use to include the details of the main product which needs to be packed.

Two fields needs to be filled namely, the Product and the Quantity. As per the case study Put T-RI999 and Quantity field should be “1”. This field is used to specify the minimum quantity of the product which can be packed.

Click on “Level” Tab. Here the three levels of packing will be defined along with the Element details.

The order to follow is from the lowest level of packing to the highest also mentioning the quantity which will determine how many units of the lower level elements will get packed into a higher level element.

Example 100 units of T-RI999 into PGBOXSMALL, 5 units of PGBOXSMALL into PGBOXLARGE and then 2 units of PGBOXLARGE into a PRWIREBASKET.

Click on the “Add Level” Button and enter the following

Level Sequence	Target Quantity	HU
1	100	Tick

Then select the Level Sequence 1 which is just created and click on the “Add Element” button.

Element Seq No	Packaging Material	Quantity
1	PGSMALLBOX	1

The screenshot shows the SAP Supply Network Collaboration (Supplier View) interface. The 'Level' tab is active, displaying a table with columns: Level Sequence No., Target Quantity, Minimum Quantity, Round Quantity, and HU. The table contains three rows: Level 1 (Target: 100, HU: Tick), Level 2 (Target: 5, HU: Tick), and Level 3 (Target: 2, HU: Tick). Below this, the 'Related Elements' section is visible, showing a table with columns: Elem. Seq. No., Packaging Material, Pack. Mat. Description, HU-Relevance, and Quantity. The table contains one row: Element 1, Packaging Material PGBOXSMALL, Description Box small, HU-Relevance 1, and Quantity 1.

Similarly add the other two levels and and elements as below

Level Sequence	Target Quantity	HU
2	5	Tick

Element Seq No	Packaging Material	Quantity
1	PGLARGEBOX	1

Supply Network Collaboration (Supplier View)

Pack. Spec. Change Number: 00000001

Content Level Admin Details

Level

Add Level Delete Level

View [Standard View] Settings

Level Sequence No.	Target Quantity	Minimum Quantity	Round Quantity	HU
1	100	0	0	<input checked="" type="checkbox"/>
2	5	0	0	<input checked="" type="checkbox"/>
3	2	0	0	<input checked="" type="checkbox"/>

Related Elements

Add Element Delete Element

View [Standard View] Settings

Elem. Seq. No.	Packaging Material	Pack. Mat. Description	HU-Relevance	Quantity
1	PGBOXLARGE	Box large	1	1

Done

Local intranet | Protected Mode: Off

Level Sequence	Target Quantity	HU
3	2	Tick
Element Seq No	Packaging Material	Quantity
1	PGWIREBASEKET	1

Supply Network Collaboration (Supplier View)

Pack. Spec. Change Number: 00000001

Content Level Admin Details

Level

Add Level Delete Level

View [Standard View] Settings

Level Sequence No.	Target Quantity	Minimum Quantity	Round Quantity	HU
1	100	0	0	<input checked="" type="checkbox"/>
2	5	0	0	<input checked="" type="checkbox"/>
3	2	0	0	<input checked="" type="checkbox"/>

Related Elements

Add Element Delete Element

View [Standard View] Settings

Elem. Seq. No.	Packaging Material	Pack. Mat. Description	HU-Relevance	Quantity
1	PGWIREBASKET	Wire basket	1	1

Done

Local intranet | Protected Mode: Off

Step 9: Check and Activate

Click on the “Check” button and then on “Activate” button so that the “Packaging Specification” is activated for use in Automated Packing.

Step 10: Using the Packaging Speciation in Automatic Packing

1. Choose any Purchase order which is in approved state and click on “Create ASN” button.
2. Provide an ASN Number if required.
3. Click on “Packing” Button as below

The screenshot shows the 'Check and Activate' screen in SAP. The top navigation bar includes buttons for 'Check', 'Save Draft', 'Publish ASN', 'Reset', and 'Download'. Below this, there are tabs for 'General', 'Shipping Details', 'Ship-From Location Details', 'Customer Location Details', 'Ship-To Location Details', 'Unloading Point', 'Supplier Address Details', and 'Customer Address Details'. The main area contains various input fields for 'ASN No.', 'Customer Location', 'Delivery Date (ETA)', 'Shipping Date', 'Document Date', 'Invoice Recipient', 'My Customer Location No.', 'Ship-From Location', 'My Ship-From Location', 'Number of Sites', and 'Document Time'. Below these fields is the 'ASN Items' section, which includes a table with columns for 'Item No.', 'Product', 'Prod. Desc.', 'ASN Qty', 'Supt. Cumt. Qty', 'Qty UoM', 'Purch. Doc. No.', 'PD Item', 'Purch. Doc. Type', 'Mfr', and 'MPN'. The table contains one row with item 1, product T-RB99, and quantity 950.

4. In this screen assign the “Pack Spec Identifier” as the one which was created above. And then click on “Automatic Packing” Button.

The screenshot shows the 'ASN Packing' screen in SAP. The top navigation bar includes buttons for 'Automatic Packing', 'Check ASN', 'Save ASN / Draft', 'Save ASN / Publish', 'Reload ASN', and 'ASN Details'. Below this, there is a table with columns for 'Item No.', 'Product', 'Product Description', 'ASN Quantity', 'Qty UoM', 'Packed Quantity', 'Packed Percentage', 'Pack. Spec. Identifier', 'Serialized', 'Weight', and 'Weight UoM'. The table contains one row with item 000001, product T-RB99, and quantity 950. Below the table is the 'HU - Hierarchical view' section, which includes a table with columns for 'Pack Level01', 'Pack Level02', 'Pack Level03', 'Pack Level04', and 'Pack Level05'.

5. The below screen capture the results of automatic packaging.
 - a. The quantity 950 units below were packed in 100 units in each small pack.
 - b. 5 small boxes were packed in a large box.
 - c. 2 large boxes were packed into a single wire basket.

The screenshot shows the 'ASN Packing' screen in SAP, displaying the results of automatic packaging. The top navigation bar includes buttons for 'Automatic Packing', 'Check ASN', 'Save ASN / Draft', 'Save ASN / Publish', 'Reload ASN', and 'ASN Details'. Below this, there is a table with columns for 'Item No.', 'Product', 'Product Description', 'ASN Quantity', 'Qty UoM', 'Packed Quantity', 'Packed Percentage', 'Pack. Spec. Identifier', 'Serialized', 'Weight', and 'Weight UoM'. The table contains one row with item 000001, product T-RB99, and quantity 950. Below the table is the 'HU - Hierarchical view' section, which includes a table with columns for 'Pack Level01', 'Pack Level02', 'Pack Level03', 'Pack Level04', and 'Pack Level05'. The table shows a hierarchy of packaging levels, including 'Pack Level01' with item -PGWIREBASKET-HU000528, 'Pack Level02' with item -PBOXLARGE-HU000529, 'Pack Level03' with items -PBOXSMALL-HU000530, -PBOXSMALL-HU000531, -PBOXSMALL-HU000532, -PBOXSMALL-HU000533, and -PBOXSMALL-HU000534, and 'Pack Level04' with item 000001 --T-RB99 --100G.

Related Content

[Product Quantities in the Smallest Packaging Unit](#)

[Production Data Structure \(PDS\)](#)

For more information, visit the [Supply Chain Management homepage](#)

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