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SAP Catch Weight Management: a solution for the food industry

This document provides the concept of catch weight, importance of the SAP Catch Weight Management solution (CWM), challenges and benefits of using SAP as an ERP solution for improving operational efficiencies.

This document describes the design and intended use of CWM within purchase order management and inventory management for the food industry. It also describes the processes that work out of box in S/4HANA and the configuration that is required for activation.

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Concept of catch weight

In the food manufacturing industry, catch weight is defined as the actual weight of an individual food item that is sent to the buyer and is usually applicable in the case of pricing the products with variable weights, particularly the ones that vary in sizes. For example, products like meats, steaks, seafood, blocks of cheese, fruits and vegetables.

These units are typically bought, sold in bulk and invariably priced by their weight, instead of the discrete units of measure. Chicken breasts are a good example.

A single unit, which is often sold in a package of four, never costs the same because each package is irregular in size and has different weights.

This means two packages having four pieces each could contain different amounts of chicken by weight. Now, selling them at a uniform price could mean that one customer gets 22 ounces of chicken, another gets 24, while another gets 26 ounces -- all for the same price.

Therefore, the prices of those packages must reflect that difference and that’s why the packages are priced by weight.

Why catch weight is important in the food industry

Catch weight management has major implications on food manufacturers' time and money. It is easier for manufacturers to manage inventory like peanut butter because there is no change in its weight or price when a customer buys a single jar or five cases.

But for dairy and meat manufacturers or distributors who sell blocks of cheese and cuts of meat, there is a need to manage products with weight variability.

The cost of this type of items changes based on weight.

For example, no two cases of beef will have the same weight, even if they have the same number of items. One case could have bigger cuts and weigh more than the other.

Implications for businesses

If the manufacturers and distributors price their items based on average weight, there may be times when the item would either be underweight or overweight.

If they constantly sell an underweight item, the customer might feel cheated. As a result, they might lose the customer for good, and their reputation may go down.

If they sell products that are slightly overweight, the slight changes in weight may not seem significant to the naked eye. But when multiplied by the thousands of orders filled over time, huge losses will be the result! This has a huge impact on the cost of goods sold as well as overall profits. Inconsistency in size calls for consistency in the calculation.

Having proper catch weight management in place will help avoid costly errors, which is why the SAP Catch Weight Management solution becomes important for products with variable weights.

What are the challenges of using catch weight?

Manufacturers have had their fair share of issues using catch weight, since they have invariably relied on manual way of doing it. Unsurprisingly it is extremely labor-intensive, error prone and requires the organizations to put huge costs into it.

For example, manufacturers hiring a person who stops the line to weigh and record the weight of every single package using a pen and paper. Not only does it create ground for human errors, but forces manufacturing organizations to invest a massive amount of cost and time into tracking weight manually.

Food manufacturers and distributors who do not want to lose time or money need to find an alternative that offers a sustainable solution to this issue that will save money and time.

Using the Catch Weight Management solution in the food industry provides multiple benefits in improving operational performance and reducing financial loses.

Benefits of SAP Catch Weight Management

SAP provides various essential catch weight management functions that aid the food industry in managing and pricing their variable weight products. The unified databases that SAP offers makes it much simpler to track the weight of your goods and keeping the number associated with the assigned product throughout the supply chain journey.

- **Flexibility:** Flexible and scalable pricing by catch weight
- **Accuracy:** Increased accuracy in billing, invoicing, stock level verification and inventory valuation
- **Transparency:** Increased transparency from procurement through sales process and accuracy resulting in increased customer satisfaction
- **Efficiency:** Reduced manual effort in recording and reporting nominal weight and catch weight conversions

SAP Catch Weight Management solution

SAP provides out of the box functionality to cater to complex requirements of the food industry. In the Catch Weight Management solution (CWM), products are managed in two different units of measurement.

CWM predominantly uses two units of measure:

- **Inventory unit (base UoM or BUoM):** It refers to the unit of measure in which the product is sold, received, transferred, picked and shipped.
- **Catch weight unit (parallel UoM or PUom):** It refers to the unit by which the item is weighed and invoiced. Valuation of stock takes place in parallel UoM

Business functions supported by SAP Catch Weight Management (CWM) solution

SAP CWM manages products through various functions and processes within supply chain including purchasing, production, quality management, sales and distribution in two unit of measurements that are independent of each other.

Purchasing

Purchase order price unit same as parallel valuation UoM

Production

Confirmations, quality usage and decisions in both Base UoM and PUoM

Inventory

Goods receipt and stock transfers can be in both base UoM and PUoM

Physical Inventory

Inventory adjustments must be in both base UoM and PUoM

Sales and Distribution

Flexible conversion between pricing condition using UoM and PUoM

Handling Unit Management

Loading weight calculation using both base UoM and PUoM

Financial Accounting & Controlling

Valuation of stock in PUoM

Enabling catch weight management in S/4HANA

Activation of SAP Catch Weight Management functionality:

- SAP CWM is an industry specific solution, enablement of functionality requires activating business functions through switch framework for CWM to display the industry solution in an implementation guide.
- SAP CWM requires enterprise add-on, EA-SCM.
- A separate license is required to maintain SAP CWM functionality.
- SAP CWM can be activated at client level and once activated the full scope can be used.

The two-step process:

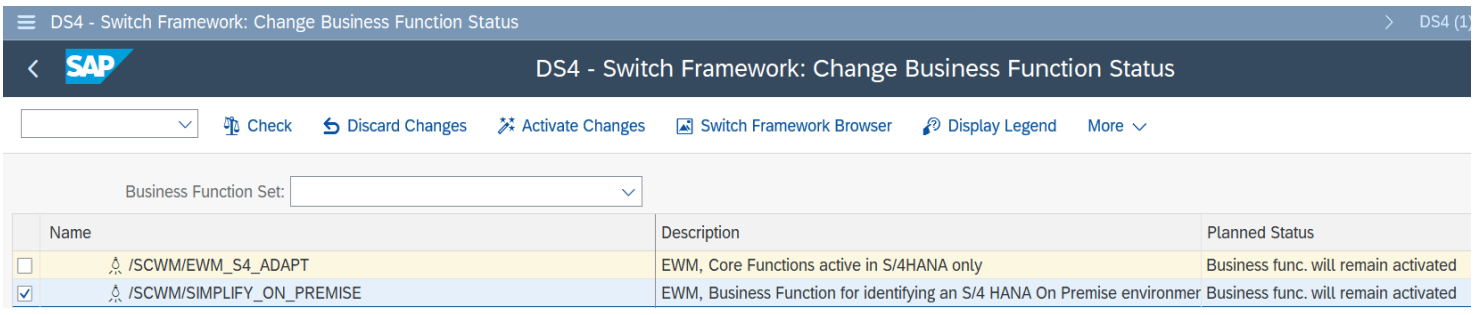
Preparation

- System checks all technical components have been installed and set correctly. The system checks if any master and transaction data exists that cannot be used within SAP CWM.
- System outputs the result of the check in a list using messages. Messages with the red traffic light status informs you that the prerequisites for preparation have not been met.
- If you receive messages with a red status, you need to eliminate the causes of them before checking the prerequisites for preparation again.
- You should also check the messages with traffic light yellow status and if necessary, eliminate the cause of these messages as well. Messages with a yellow status are only warnings in the first step, but the system will set them to red during the second step of the SAP CWM activation process.
- Once all prerequisites have been met, the status can be saved in preparation mode.

Activation

- Once the preparation for activation of SAP CWM has been completed, you can proceed with the second step, the actual activation of SAP CWM.
- System checks once again whether master and transaction data exists that cannot be used within SAP CWM.
- Prerequisites for activation are met once the system changes the status of all messages to green. Finally, you will be able to save the status as active.

Details of Business Function



Maintenance of material master

As mentioned previously, catch weight products predominantly uses two units of measure:

Inventory unit (Base UoM): refers to the unit of measure in which the product is sold, received, transferred, picked and shipped.

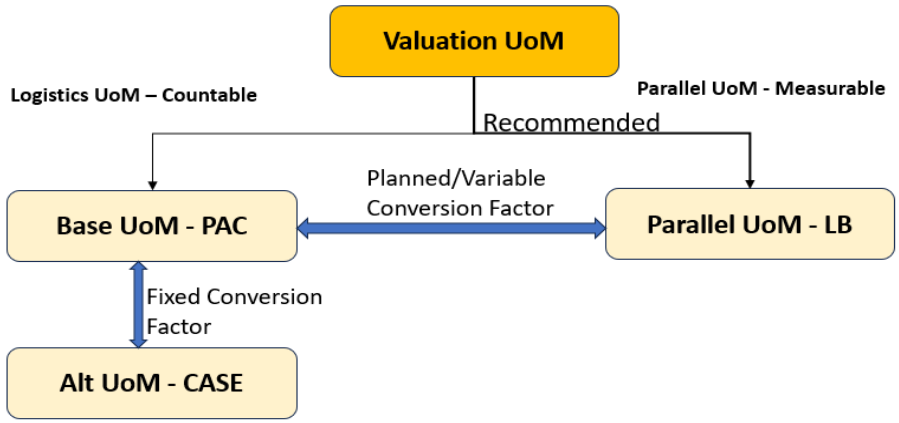
Catch weight unit (Parallel UoM): refers to the unit by which the item is weighed and invoiced.

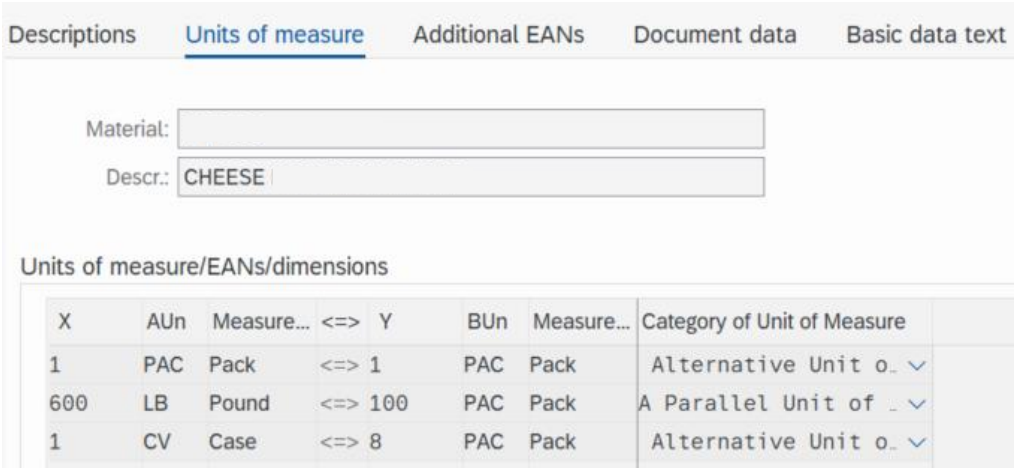
Definition of material with two units of measure

- Defining a material as catch weight is managed in “Additional Data” of material master
- Two Units of Measure (UoM) must be defined:
  - Base Unit of Measure (BUoM)
  - Parallel Unit of Measure (PUoM)
  - Optionally, additional Unit (Alternate UoM) can be maintained

Relation between Units of measure

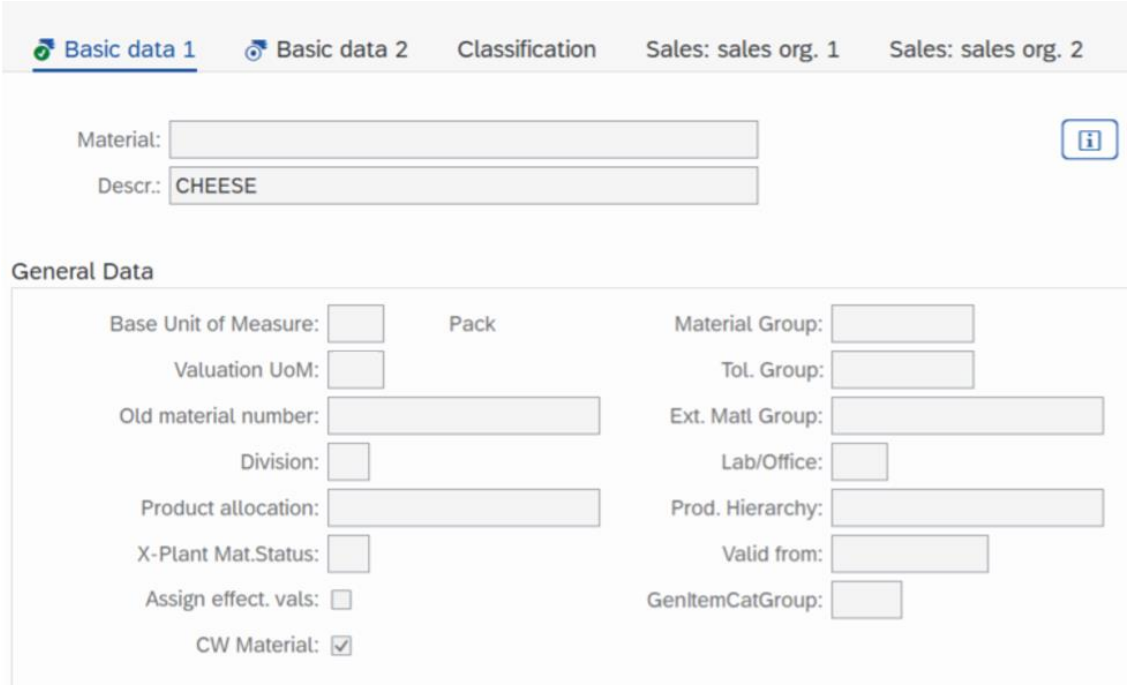
SAP recommends using BUom as countable unit (pack/case) and PUoM as measurable unit (lb/kg). Fixed conversion factor can be maintained between base and alternate unit and planned/variable conversion factor can be maintained between base and parallel unit.





Maintenance of material master – cont'd

Under the basic data 1 view – Valuation UoM is maintained as Parallel UoM by default and the CW material check box appears after maintaining Parallel UoM as lb in additional data tab.



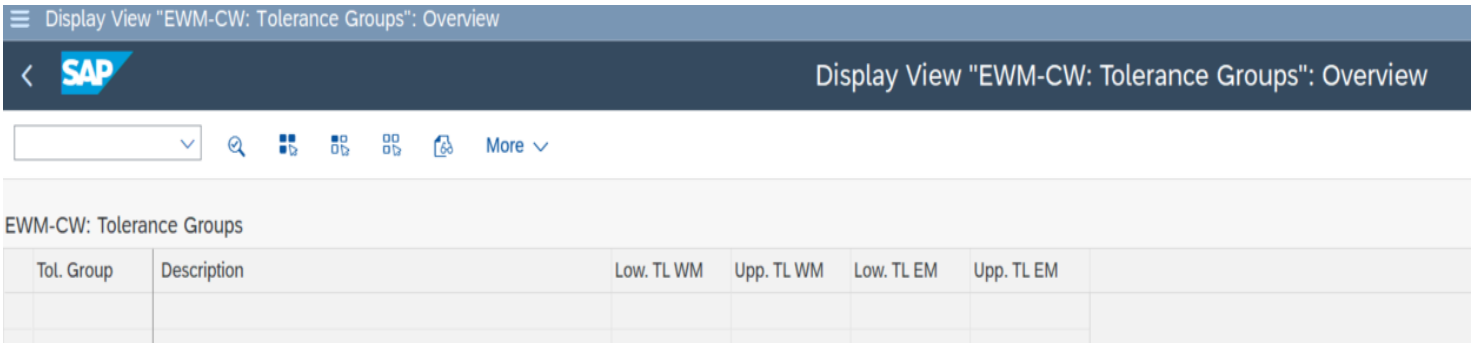
*Note: Do you price the item by weight or by pieces? This decision will determine whether the item should be set up as a catch weight item. If you plan on pricing the items by piece rather than by weight, you should not configure the item as catch weight unless it is a CW item.

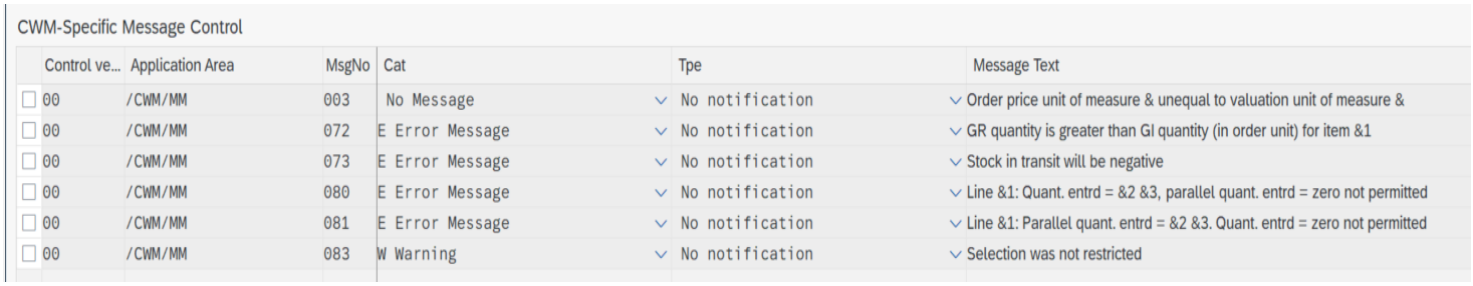
Tolerance groups for catch weight material

- Tolerance group is assigned to catch weight material. This prevents the number of incorrect entries made by users throughout the entire logistics process.
- System compares the values entered during the logistics process for the logistics quantity and the parallel quantity with the plan conversion factor for the base unit of measure and parallel unit of measure defined in the material master for the catch weight material. If the system discovers a percentage variance, it issues a message based on the tolerance group levels.
- Multiple tolerance values can be configured per client requirements and can be assigned to each material.
- Assignment of tolerance group takes place in basic data 1 view.

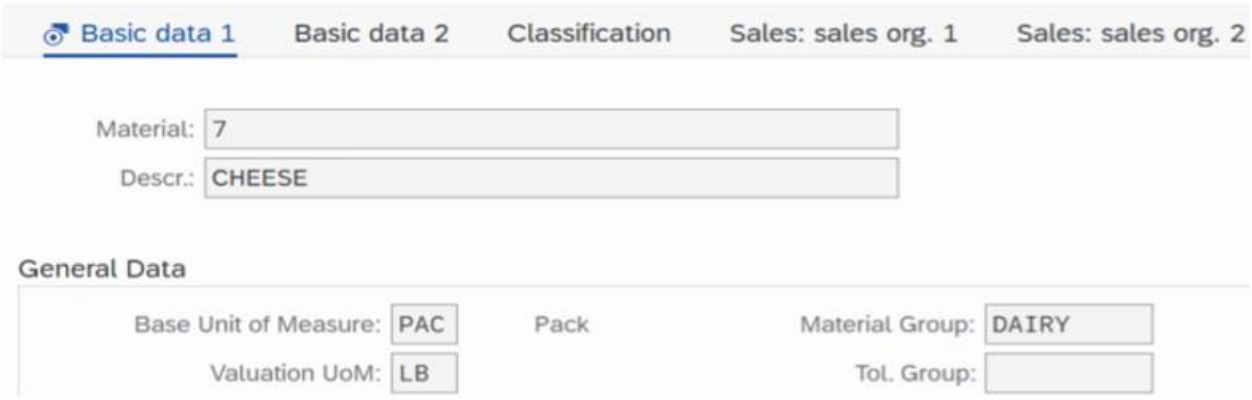
For example, the check weight of one pack of cheese can be maintained as 200 grams with a tolerance of 10%. If the weight of the material produced/procured is 170 grams or 225 grams, then the system will not allow it to post a goods receipt, and an error message will be issued.

Tolerance group maintenance and error messages





Assignment of tolerance group to material



Pricing of catch weight items

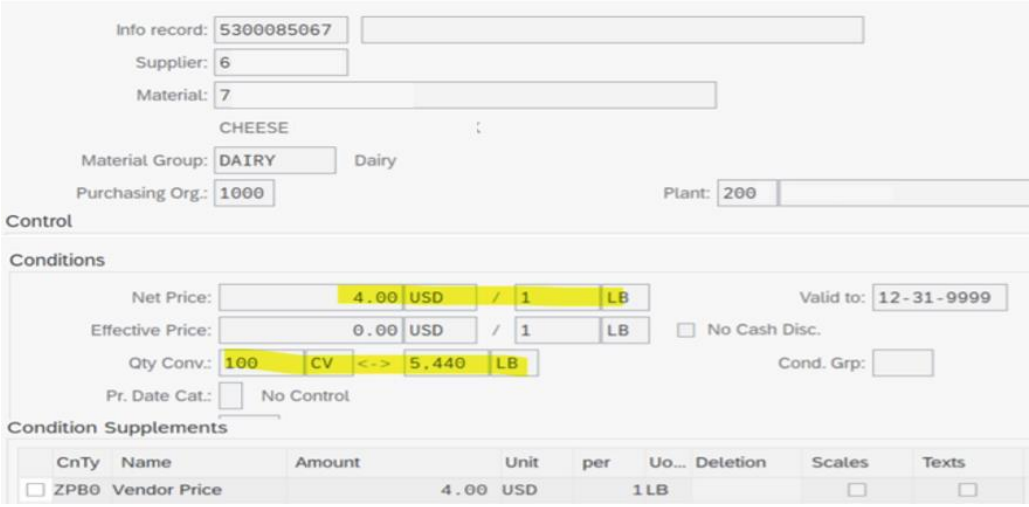
Pricing considerations apply only to a catch weight item that is purchased or sold because the item should be priced by weight, not by the countable unit (package), regardless of the inventory base unit. The desired pricing approach for an item must be defined in the default unit of measure for sales and purchasing (because this unit of measure will be assigned when line items are created on sales orders and purchase orders) and in the purchase info records.

- **Pricing based on weight** – This represents the traditional approach to Catch Weight items, where price agreements are defined in terms of weight, and invoicing reflects the actual weight. The setup information for pricing by weight can apply to purchase prices. With a purchased item, you should specify the weight unit of measure for pricing in purchase info records. The weight unit of measure might reflect the item's inventory unit of measure.
- **Pricing based on countable unit (package)** – As a typical example, a box of the product is filled to a minimum weight or an even higher weight, and the purchase price or sales price is expressed per package. This approach does not require designation of a Catch Weight item. Again, if you plan on pricing the items by piece rather than weight, you should not configure the item as Catch Weight.

Purchase information records (PIR)

The two units of measure are maintained for the purchasing document. Order unit is the one which will be purchase unit of measure (case/package/box) and another unit of measure is pricing unit of measure that will be based on weight or parallel unit of measure (lb/kg).

At the time of creating purchase info records, order unit can be assigned and if there are no alternate unit of measure available, then the system will assign Base Unit of measure (inventory unit) by default. While defining pricing, price per weight basis (parallel unit) can also be assigned.



Purchase order management and inventory management

Process flow – purchasing and inventory

The figure below describes the standard business process flow for purchasing from order creation to goods receipt, then to invoice with considering different unit of measures.

Purchase order (PO)	Goods receipt (GR)	Invoice verification
Purchase order will be created in two units, order unit and parallel unit. Order unit is for logistics quantity and parallel unit is for pricing.	Goods receiving can be performed in order unit, base unit and parallel unit. Actual weight is captured during this process.	Vendor will submit invoice for order quantity unit and parallel quantity unit and pricing will be based on parallel unit.

Creation of purchase order

The process of entering a purchase order for a catch weight item is slightly similar to the process for a non-catch weight item.

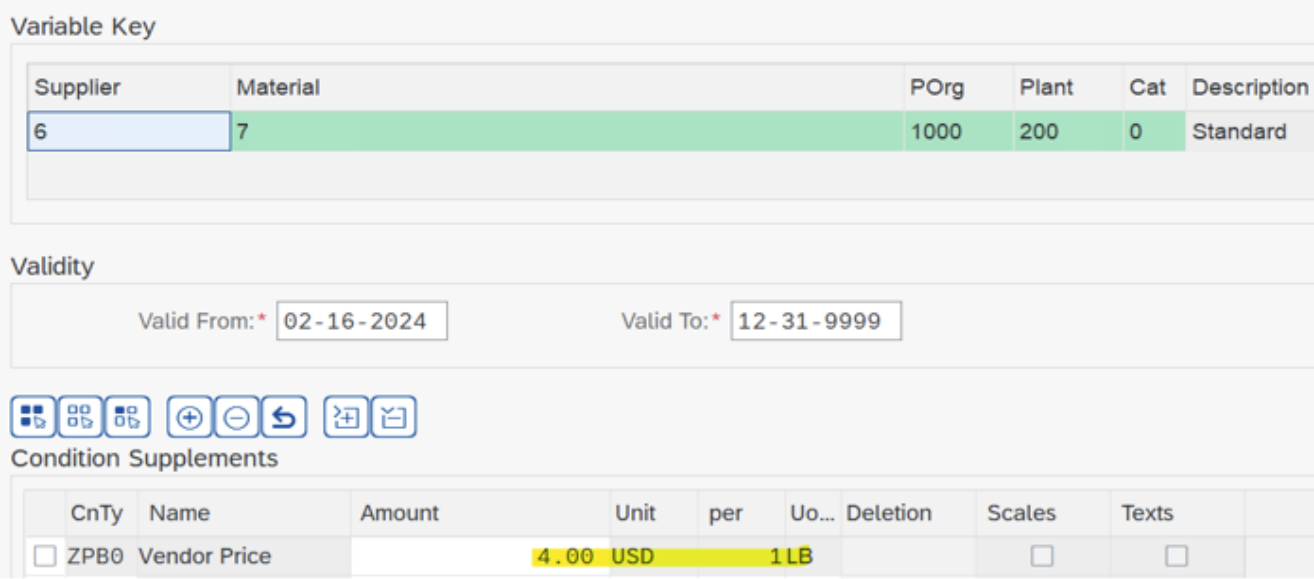
Catch weight works seamlessly with purchase info records. Pricing is controlled by purchase quantity, so the standard features for default price records are used.

In the following example, item is “CHEESE" and is a catch weight control item. The catch weight item has a nominal weight of 6.8 pounds.

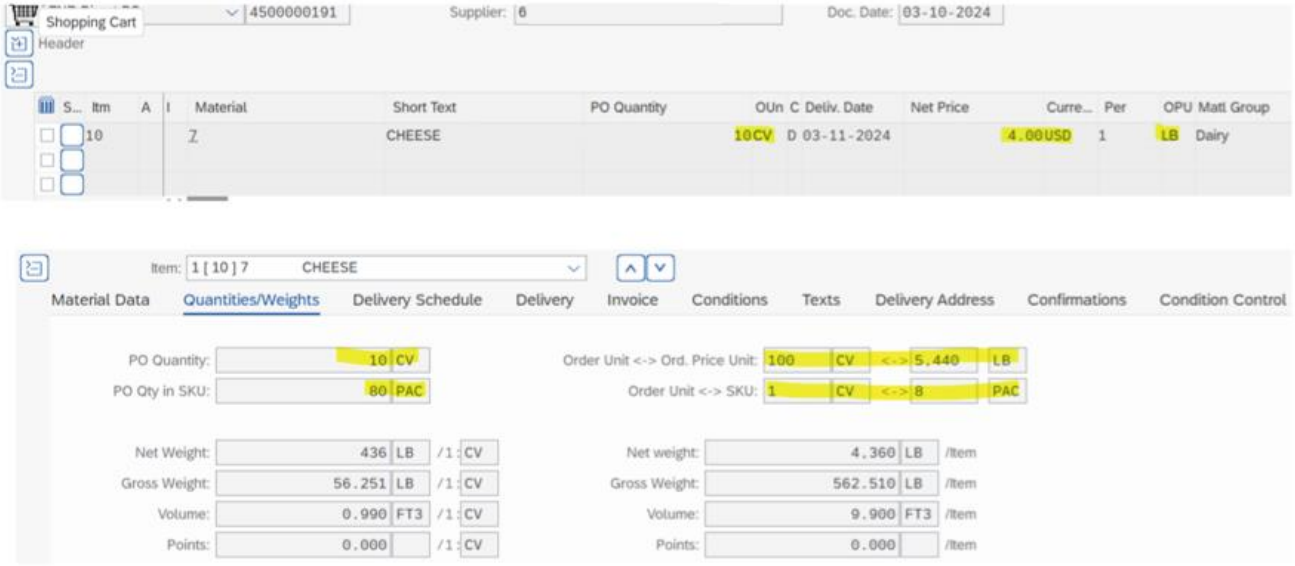
The figure below details out multiple units maintained on item master along with the catch weight unit.

Below figure shows how pricing can be maintained in parallel unit on purchase info record.

Pound is the parallel unit and per pound price is maintained as $4 as vendor price.



Purchase order – order is created for 10 cases as purchase order unit is maintained in cases in our example. Based on unit conversion for parallel unit and pricing in PIR, system will provide all conversions onto purchase order.

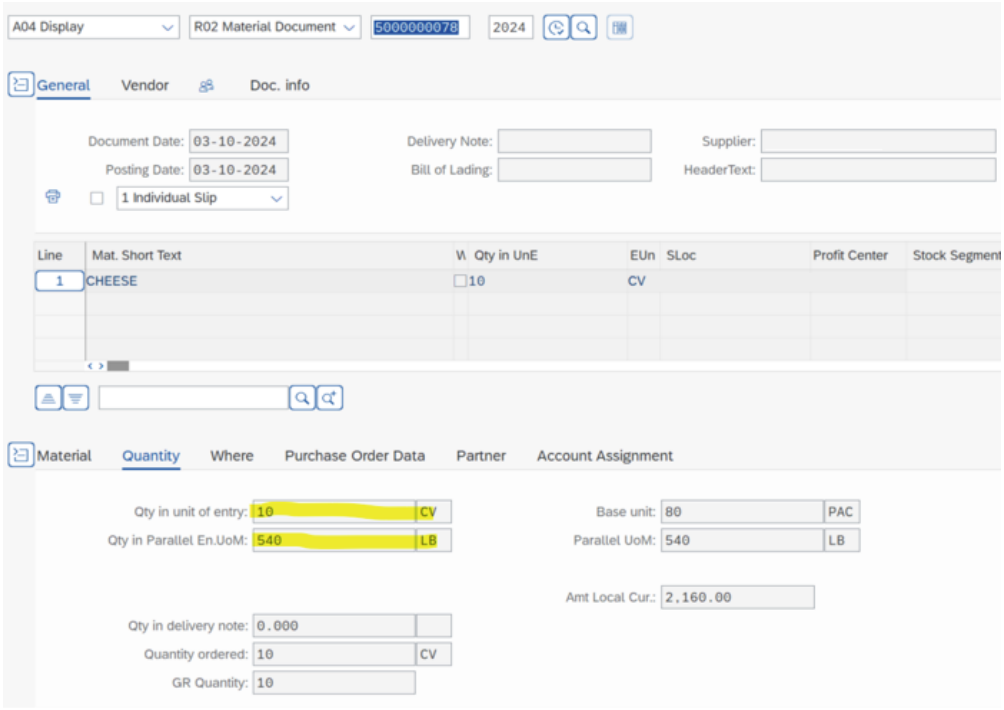


Receiving process with catch weight item

During the receiving of goods against purchase order, each case's weight needs to measured and the actual catch weight needs to be entered. If there are multiple quantities that are received under one line item, then the average weight is being entered against that line item.

The figure below shows the goods receipt against the purchase order.

Expected catch weight as per conversion is maintained as 544 lb for 10 cases in material master. Actual receiving occurred after measuring weight for all 10 Cases is 540 lb.



Note:

- For every receiving, SAP stores the average actual weight against inventory unit, in this example inventory unit is PAC. Actual catch weight stored per inventory unit is 6.75 lb (total actual weight received/total quantities in base unit).
- Stock overview can be viewed in different units: base unit, alternate unit and parallel unit.
- Inventory adjustments can be done in base unit and in parallel unit.

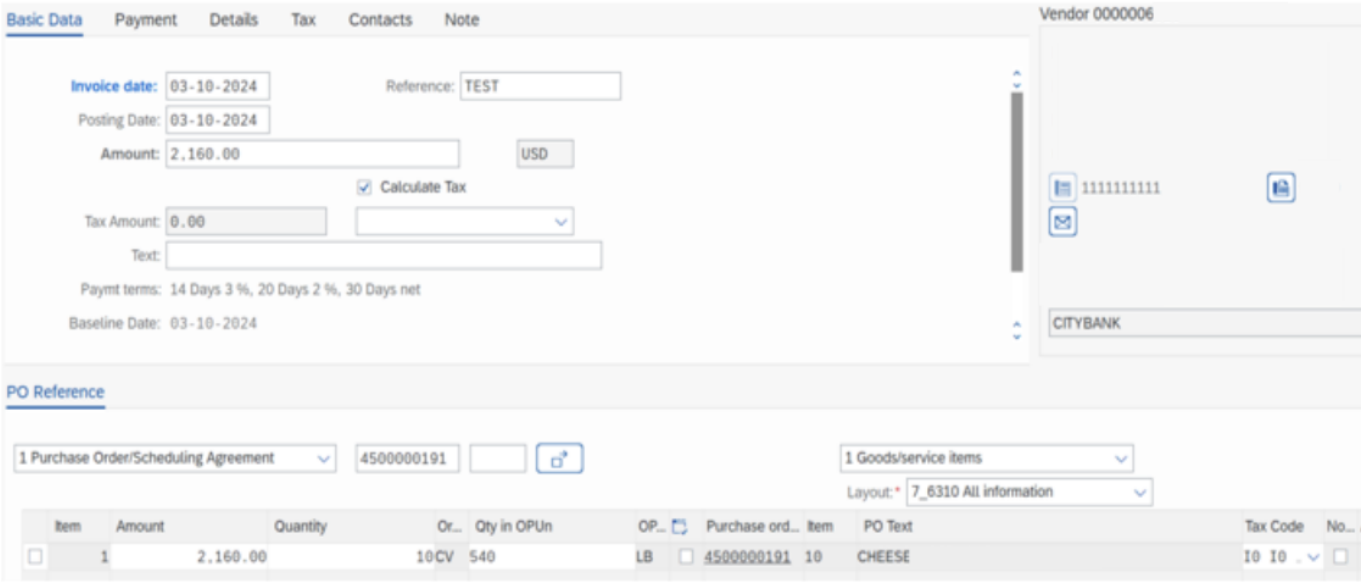
Invoicing process with catch weight item

The vendor submits the invoice as per the purchase order with pricing maintained in parallel unit. Both order unit and parallel unit quantity along with amount can be provided as input in SAP invoice in order to perform the invoice verification process.

In the example, purchase order was created with 10 cases with 544 lb as planned catch weight, based on price per pound ($4) – total value of PO = $2,176.

When goods receipt takes place, actual CW of the 10 cases is being recorded as 540 lb Financial accounting posted amount is based on actual weight received not the quantity received (i.e., $2,160).

At the time of invoicing, based on GR actual catch weight, SAP proposed 540 lb as GR quantity and calculated the total PO amount based on actual catch weight received (i.e., $2,160).



SAP Catch Weight Management implementation

A Typical Food Distribution Challenge

The current manage supplier confirmation SAP Fiori application is not compatible with the catch weight Management feature. It was showing error messages while performing the below tasks:

- During creation of the supplier confirmation through the manage supplier confirmation feature
- Supplier confirmations created from transaction ME22N, or purchase order advanced application cannot be subjected to flexible workflow

Scenario implemented

SAP Direct Purchase Order confirmation scenario with Ariba integration involves the process of confirming purchase orders initiated in SAP systems through integration with Ariba. Details on how the process is implemented:

1. **Purchase order creation:** The procurement process starts with the creation of a purchase order within the SAP system (S/4HANA Private Cloud implementation). This purchase order contains details such as items to be purchased, quantities, pricing, delivery dates and other relevant information.

2. **Transmission to Ariba:** Once the purchase order is created in SAP, it is transmitted or replicated to Ariba via integration mechanisms such as SAP Ariba Cloud Integration Gateway (commerce cloud implementation). This confirms that the purchase order data is synchronized between the SAP system and Ariba platform.

3. **PO confirmation:** After reviewing the purchase order, the supplier confirms the order within the Ariba platform. This confirmation acknowledges acceptance of the order and commitment to deliver the goods as per the agreed upon terms.

4. **Acknowledgment transmission:** Upon confirmation by the supplier in Ariba, the confirmation information is transmitted back to the SAP system. This confirms that the SAP system is updated with the latest status of the purchase order, including the confirmation details.

5. **Buyer Approval:** Upon receiving the updates from Ariba to the SAP system, if there are deviations in supplier confirmations from the original quantity, delivery date and price, then that confirmation is subjected to approval in the SAP system. In SAP, after buyer approval the purchase order status is updated to reflect the confirmation from the supplier.

6. **Manual supplier confirmation:** Alternately, if supplier is not onboarded on the Ariba platform then those confirmations are managed through direct input into the SAP transaction by updating the confirmation details.

To learn more about SAP Catch Weight Management, contact:

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