



Understanding the PO4 segment and its values

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Understanding the PO4 segment and its values

Introduction:

There is often confusion on how the data in the PO4 segment should be interpreted. The PO4 segment appears in both the PO (850) and the ASN (856) transactions. This document is an attempt to clarify the definition of each value and the various scenarios in which the PO4 segment is sent /used. The examples will illustrate how the PO and ASN transactions should look when the PO4 segment is involved.

Defining the PO4 segment values:

When the PO401 value is sent by itself: The value represents the number of ‘eaches’ or saleable units in the carton (on which a UCC128 label is placed in most situations).

To illustrate, let’s use a carton that has a UCC 128 label on the outside of the box. When the box is opened, there are six (6) ‘saleable’ units inside of the box. This means that the PO401 value would be six (6) and the PO4 segment of information in the EDI transmissions would be:

PO4*6~

The 850 PO data for the item would then look like this:

PO1**6*EA*5.00**CB*12345678~
PO4*6~

The breakdown of the PO data above is as follows:

- PO1**6*EA*5.00**CB*12345678~
 - Element PO102 = Quantity ordered of this item
 - Element PO103 = the unit of measure (EA or eaches)
 - Element PO104 = the cost of the saleable unit of item
 - Element PO106 = the qualifier indicating that an 8 digit SKU value will be sent in the PO107
 - Element PO107 = the 8 digit SKU value of 12345678
- PO4*6~
 - Element PO401 = 6 saleable units inside the carton

The 856 ASN data would then look like this:

HL*3*2*P~
MAN*GM*00008827770000000236~
HL*4*3*I~
LIN**CB*12345678~
SN1**6*EA~
PO4*6~

The breakdown of the data above is as follows:

- MAN*GM*00008827770000000236~
Element MAN01 = Qualifier 'GM'
Element MAN02 = the 20 digit UCC128 label value 00008827770000000236 for the carton containing 6 saleable units of the 8 digit SKU 12345678
- SN1**6*EA~
Element SN102 = number of saleable units of the 8 digit SKU 12345678 shipped in this carton
- PO4*6~
Element PO401 = 6 saleable units inside the carton

When the PO401 and PO414 values are sent for an item: The PO401 value now represents the number of 'inner containers' in the carton (on which a UCC128 label is placed in most situations). The PO414 then represents the number of saleable items inside each inner container in the carton that has the UCC128 label on it.

To illustrate, let's use a carton that has a UCC128 label on the outside of the box. When the box is opened, there are two (2) additional boxes inside of the box. When one of the smaller boxes is opened, there are three (3) saleable units inside. This means that the PO401 value would be two (2), the PO414 would be three (3) (for a total of six (6) saleable units), and the PO4 segment of information in the EDI transmissions would be:

PO4*2*****3~

To further expand the example, let's assume that Shopko ordered twelve (12) 'eaches' of an item and the standard method for packing the item is six (6) within a carton, with two (2) inner containers and three (3) saleable units in each inner container.

The 850 PO data would look like this:

PO1**12*EA*5.00**CB*12345678~
PO4*2*****3~

The breakdown of the data above is as follows:

- PO1**12*EA*5.00**CB*12345678~
Element PO102 = Quantity ordered of this item
Element PO103 = the unit of measure (EA or eaches)
Element PO104 = the cost of the saleable unit of item
Element PO106 = the qualifier indicating that an 8 digit SKU value will be sent in the PO107
Element PO107 = the 8 digit SKU value of 12345678
- PO4*2*****3~
Element PO401 = 2 inner containers inside the carton
Element PO414 = 3 saleable units inside each inner container inside the carton

And the 856 ASN data would look like this:

```
HL*3*2*P~
MAN*GM*00008827770000000236~
HL*4*3*I~
LIN**CB*12345678~
SN1**6*EA~
PO4*2*****3~
HL*3*2*P~
MAN*GM*00002227770000000290~
HL*4*3*I~
LIN**CB*12345678~
SN1**6*EA~
PO4*2*****3~
```

The breakdown of the data above is as follows:

- MAN*GM*00008827770000000236~
Element MAN01 = Qualifier 'GM'
Element MAN02 = the 20 digit UCC128 label value 00008827770000000236 for carton #1 containing 6 saleable units of the 8 digit SKU 12345678
- SN1**6*EA~
Element SN102 = number of saleable units of the 8 digit SKU 12345678 shipped in this carton
- PO4*2*****3~
Element PO401 = 2 inner containers inside carton #1
Element PO414 = 3 saleable units inside each inner container inside Carton#1
- MAN*GM*00002227770000000290~
Element MAN01 = Qualifier 'GM'
Element MAN02 = the 20 digit UCC128 label value 00002227770000000290 for carton #2 containing 6 saleable units of the 8 digit SKU 12345678.
- SN1**6*EA~
Element SN102 = number of saleable units of the 8 digit SKU 12345678 shipped in this carton
- PO4*2*****3~
Element PO401 = 2 inner containers inside carton #2
Element PO414 = 3 saleable units inside each inner container inside carton#2

This format is used as a result of each carton having only six (6) items. Since the ASN needs to indicate the UCC128 value that would be on the carton, the MAN segment is repeated, reflecting the two label values and the quantities inside each carton on which a label is placed. The value in the SN1 segment indicates the total number of saleable items in each carton.

This value should be equal to the sum of the PO4 segment values (in this example it would be 6=2x3 where 6 is the # of items in the carton, 2 is the number of inner containers, and 3 is the number of saleable units in each inner container). Since the order was for twelve (12) saleable items, there are two (2) cartons with the six (6) items in each carton.

Defining the PO4 segment values when the Pallet or Tare level is sent in the Advance Ship Notice or ASN (856):

When the PO401 value is sent by itself:

Since the UCC128 label is now placed on the Tare or Pallet, the MAN segment now appears at the Tare or Pallet level. The PO401 value still represents the number of 'eaches' or saleable units in the carton. In this scenario, the Pack level now includes the Carton UPC (identified in the MAN segment at the Pack level with the qualifier 'UC' and the fourteen (14) digit carton UPC). The quantity sent in the SN1 segment should identify the total number of eaches that have been ordered. The PO401 value then will indicate the number of eaches within a single carton. This will then help the system 'calculate' the number of cartons that will be shipped (this is done as there is no longer a UCC128 label on each carton which would have indicated the number of cartons shipped).

To illustrate, let's use the following example: An order is being created for 480 'eaches' of an item. This item is packed in multiple cartons on a pallet or tare that now has the label on it. The UCC128 label value is sent, identifying the pallet. Each carton on the pallet has the same Carton UPC value on it as it is for the same item, simply packed in multiple cartons. When the box is opened, there are twelve (12) 'saleable' units inside of each box. This means that the PO401 value would be twelve (12) and the PO4 segment of information in the EDI transmissions would be:

PO4*12~

This means the 850 PO data would be:

PO1**480*EA*5.00**CB*12345678~
PO4*12~

The breakdown of the data above is as follows:

- PO1**480*EA*5.00**CB*12345678~
Element PO102 = Quantity ordered of this item
Element PO103 = the unit of measure (EA or eaches)
Element PO104 = the cost of the saleable unit of item
Element PO106 = the qualifier indicating that an 8 digit SKU value will be sent in the PO107
Element PO107 = the 8 digit SKU value of 12345678
- PO4*12~
Element PO401 = 12 saleable units inside the carton

To further the illustration, the ASN 856 transmission would look like this (now including the Tare level information):

HL*3*2*T~
MAN*GM*00100736080000014486~
HL*4*3*P~
MAN*UC*10073608006610~
HL*5*4*I~
LIN**UP*73608006613~
SN1**480*EA~
PO4*12~

The breakdown of the data above would be:

- MAN*GM*00100736080000014486~
Element MAN01 = Qualifier 'GM'
Element MAN02 = the 20 digit UCC128 label value 00100736080000014486 for the pallet or tare
- MAN*UC*10073608006610~
Element MAN01 = Qualifier 'UC' (Carton UPC)
Element MAN02 = the 14 digit carton UPC value 10073608006610
- SN1**480*EA~
Element SN102 = the number of saleable units of the 12 digit item UPC 73608006613 shipped on this pallet
- PO4*12~
Element PO401 = the number of saleable units per carton – for this item it is 12

Keep in mind that the number of cartons is now a calculation. This value can be found by dividing the number of saleable units per carton by the total number of the item that was ordered ($480/12 = 40$ cartons on the pallet).

When the PO401 value is sent with the PO414 value: The PO401 value now represents the number of 'inner containers' in the carton. The PO414 then represents the number of saleable items inside each inner container in the box that is on the pallet or tare that has the UCC128 label on it.

In this scenario, the Pack level now includes the Carton UPC (identified in the MAN segment at the Pack level with the qualifier 'UC' and the fourteen (14) digit carton UPC). The quantity sent in the SN1 segment should identify the total number of eaches that have been ordered. The PO401 value then will indicate the number of 'inner containers' in the carton. The PO414 then represents the number of saleable items inside each inner container in the box that is on the pallet or tare that has the UCC128 label on it. This information will then help the system 'calculate' the number of cartons that will be shipped (this is done as there is no longer a UCC128 label on each carton which would have indicated the number of cartons shipped).

To illustrate, let's assume that a PO is created with forty-eight (48) 'eaches' of an item being ordered and the standard method for packing the item is twenty-four (24) within a carton, with four (4) inner containers and six (6) saleable units in each inner container.

The PO4 segment of information in the EDI transmissions would be:

PO4*4*****6~

This means the 850 PO data would be:

PO1**48*EA*5.00** UP*017082007728~
PO4*4*****6~

The breakdown of the data above would be:

- PO1**48*EA*5.00** UP*017082007728~
 - Element PO102 = Quantity ordered of this item
 - Element PO103 = the unit of measure (EA or eaches)
 - Element PO104 = the cost of the saleable unit of item
 - Element PO106 = the qualifier indicating that an 12 digit UPC value will be sent in the PO107
 - Element PO107 = the 12 digit UPC value of 017082007728
- PO4*4*****6~
 - Element PO401 = the number of inner containers per carton – in this item it is 4
 - Element PO414 = 6 saleable units inside each inner container inside carton

To further expand the example, the 856 ASN data would then look like this:

HL*3*2*T~
MAN*GM*00000170820012651346~
HL*4*3*P~
MAN*UC*017082071729~
HL*5*4*I*0~
LIN**UP*017082007728~
SN1**48*EA~
PO4*4*****6~

The breakdown of the ASN data is as follows:

- MAN*GM*00000170820012651346~
Element MAN01 = Qualifier 'GM'
Element MAN02 = the 20 digit UCC128 label value 00000170820012651346 for the pallet or tare
- MAN*UC*017082071729~
Element MAN01 = Qualifier 'UC' (Carton UPC)
Element MAN02 = the 14 digit carton UPC value 017082071729
- SN1**48*EA~
Element SN102 = the number of saleable units of the 12 digit item UPC 017082007728 shipped on this pallet
- PO4*4*****6~
Element PO401 = the number of inner containers per carton – for this item it is 4
Element PO414 = 6 saleable units inside each inner container inside carton

Keep in mind that the number of cartons is now a calculation. This value can be found by dividing the number of saleable units per carton by the total number of the item that was ordered ($48 / (4 \times 6) = 2$ cartons on the pallet).

Defining the PO4 segment values when the item is a display or pre-packed assortment:

The key to understanding the values in the PO4 segment for display or pre-packed assortments is to remember that each 'pre pack' should be treated as an 'each' and not an assortment of goods. To further clarify, the system used by Shopko defines all of their PO quantities in eaches. So, if a quantity of 10 pre-packs or displays are ordered with each pre-pack containing 6 items, the total quantity of items is 10 – the number of pre-packs and NOT 60 (6 items in each pre-pack with 10 pre-packs ordered). Failure to understand this concept will create many inventory issues as well as chargebacks in the ASN receiving process as the quantities will be overstated.

In most orders for display or pre-pack goods, the PO401 value is used. This helps to understand the quantity of items as the PO401 value most frequently is one (1). That is, there may be several items that compose the pre-pack assortment but inside the carton on which the UCC128 label is placed, there will be only one (1) assortment.

To further expand the concept of display or pre-packed goods, let's assume that Shopko ordered ten (10) 'eaches' of an assortment and there are 6 pieces (1 small, 2 med, 1 large and 1 XL) inside each assortment. There is only one (1) assortment per carton that will have a label on the outside of the carton.

The PO data would look like this:

PO1**10*EA*50.00**CB*08252066~
PO4*1~

The breakdown of the data above is as follows:

- PO1**10*EA*50.00**CB*08252066~
Element PO102 = Quantity ordered of this item
Element PO103 = the unit of measure (EA or eaches) as Shopko considers a display or pre-packed assortment an 'each'
Element PO104 = the cost of the display or pre-packed assortment
Element PO106 = the qualifier indicating that an 8 digit SKU value will be sent in the PO107
Element PO107 = the 8 digit SKU value of 08252066
- PO4*1~
Element PO401 = 1 assortment or display inside the carton

The ASN 856 data would then look like this:

MAN*GM*00007124392105522067~
HL*4*3*I~
LIN**CB*08252066~
SN1**1*EA~
PO4*1~
HL*5*2*P~
MAN*GM*00007124392105522074~
HL*6*5*I~
LIN**CB*08252066~
SN1**1*EA~
PO4*1~
HL*7*2*P~
MAN*GM*00007124392105522081~
HL*8*7*I~
LIN**CB*08252066~
SN1**1*EA~
PO4*1~
HL*9*2*P~
MAN*GM*00007124392105522098~
HL*10*9*I~
LIN**CB*08252066~
SN1**1*EA~
PO4*1~
HL*11*2*P~
MAN*GM*00007124392105522104~
HL*12*11*I~
LIN**CB*08252066~
SN1**1*EA~
PO4*1~
HL*13*2*P~
MAN*GM*00007124392105522111~

HL*14*13*I~
LIN**CB*08252066~
SN1**1*EA~
PO4*1~
HL*15*2*P~
MAN*GM*00007124392105522128~
HL*16*15*I~
LIN**CB*08252066~
SN1**1*EA~
PO4*1~
HL*17*2*P~
MAN*GM*00007124392105522135~
HL*18*17*I~
LIN**CB*08252066~
SN1**1*EA~
PO4*1~
HL*19*2*P~
MAN*GM*00007124392105522142~
HL*20*19*I~
LIN**CB*08252066~
SN1**1*EA~
PO4*1~
HL*21*2*P~
MAN*GM*00007124392105522159~
HL*22*21*I~
LIN**CB*08252066~
SN1**1*EA~
PO4*1~

The breakdown of the data above is as follows:

- MAN*GM*00007124392105522067~
Element MAN01 = Qualifier 'GM'
Element MAN02 = the 20 digit UCC128 label value 000071243921055220676
for carton #1 containing 1 display or pre-packed assortment of the 8 digit SKU
08252066
- SN1**1*EA~
Element SN102 = number of display or pre-packs of the 8 digit SKU 08252066
shipped in this carton
- PO4*1~
Element PO401 = 1 display pre pack inside carton #1
- MAN*GM*00007124392105522074~
Element MAN01 = Qualifier 'GM'
Element MAN02 = the 20 digit UCC128 label value 00007124392105522074
for carton #2 containing 1 display or pre-packed assortment of the 8 digit SKU
08252066
- SN1**1*EA~

-
- Element SN102 = number of display or pre-packs of the 8 digit SKU 08252066 shipped in this carton
 - PO4*1~
 - Element PO401 = 1 display pre pack inside carton #2
 - MAN*GM*00007124392105522081~
 - Element MAN01 = Qualifier 'GM'
 - Element MAN02 = the 20 digit UCC128 label value 00007124392105522081 for carton #3 containing 1 display or pre-packed assortment of the 8 digit SKU 08252066
 - SN1**1*EA~
 - Element SN102 = number of display or pre-packs of the 8 digit SKU 08252066 shipped in this carton
 - PO4*1~
 - Element PO401 = 1 display pre pack inside carton #3
 - MAN*GM*00007124392105522098~
 - Element MAN01 = Qualifier 'GM'
 - Element MAN02 = the 20 digit UCC128 label value 00007124392105522098 for carton #4 containing 1 display or pre-packed assortment of the 8 digit SKU 08252066
 - SN1**1*EA~
 - Element SN102 = number of display or pre-packs of the 8 digit SKU 08252066 shipped in this carton
 - PO4*1~
 - Element PO401 = 1 display pre pack inside carton #4
 - MAN*GM*00007124392105522104~
 - Element MAN01 = Qualifier 'GM'
 - Element MAN02 = the 20 digit UCC128 label value 00007124392105522104 for carton #5 containing 1 display or pre-packed assortment of the 8 digit SKU 08252066
 - SN1**1*EA~
 - Element SN102 = number of display or pre-packs of the 8 digit SKU 08252066 shipped in this carton
 - PO4*1~
 - Element PO401 = 1 display pre pack inside carton #5
 - MAN*GM*00007124392105522111~
 - Element MAN01 = Qualifier 'GM'
 - Element MAN02 = the 20 digit UCC128 label value 00007124392105522111 for carton #6 containing 1 display or pre-packed assortment of the 8 digit SKU 08252066
 - SN1**1*EA~
 - Element SN102 = number of display or pre-packs of the 8 digit SKU 08252066 shipped in this carton
 - PO4*1~
 - Element PO401 = 1 display pre pack inside carton #6
 - MAN*GM*00007124392105522128~

- Element MAN01 = Qualifier 'GM'
- Element MAN02 = the 20 digit UCC128 label value 00007124392105522128 for carton #7 containing 1 display or pre-packed assortment of the 8 digit SKU 08252066
- SN1**1*EA~
 - Element SN102 = number of display or pre-packs of the 8 digit SKU 08252066 shipped in this carton
- PO4*1~
 - Element PO401 = 1 display pre pack inside carton #7
- MAN*GM*00007124392105522135~
 - Element MAN01 = Qualifier 'GM'
 - Element MAN02 = the 20 digit UCC128 label value 00007124392105522135 for carton #8 containing 1 display or pre-packed assortment of the 8 digit SKU 08252066
- SN1**1*EA~
 - Element SN102 = number of display or pre-packs of the 8 digit SKU 08252066 shipped in this carton
- PO4*1~
 - Element PO401 = 1 display pre pack inside carton #8
- MAN*GM*00007124392105522142~
 - Element MAN01 = Qualifier 'GM'
 - Element MAN02 = the 20 digit UCC128 label value 00007124392105522142 for carton #9 containing 1 display or pre-packed assortment of the 8 digit SKU 08252066
- SN1**1*EA~
 - Element SN102 = number of display or pre-packs of the 8 digit SKU 08252066 shipped in this carton
- PO4*1~
 - Element PO401 = 1 display pre pack inside carton #9
- MAN*GM*00007124392105522159~
 - Element MAN01 = Qualifier 'GM'
 - Element MAN02 = the 20 digit UCC128 label value 00007124392105522159 for carton #10 containing 1 display or pre-packed assortment of the 8 digit SKU 08252066
- SN1**1*EA~
 - Element SN102 = number of display or pre-packs of the 8 digit SKU 08252066 shipped in this carton
- PO4*1~
 - Element PO401 = 1 display pre pack inside carton #10

Summary:

Through the use of the 850 PO transactions and the 856 ASN transactions, the Shopko system can better understand the number of items being ordered as well as received. This data becomes an integral part of our supply chain management and allows for our stores to remain in stock. The PO4 data provides an understanding of “what is inside the box” and as well as how the items are packed inside the box or carton on which the UCC128 label is placed. Should there be any questions about how to send the PO4 data, the 850 PO transactions will always provide the information that is required back in the 856 ASN. When in doubt, we ask that the vendor stop and actually look at the product and how their company is packing the items within a carton for a clear understanding. Then, it simply becomes a matter of ‘plugging in’ the appropriate values in the transmissions to Shopko.