Exercise 1: Create Approved Vendor List

In company **USP2** it has been determined that approved vendor control shall be placed on item M7001, with the approved vendor being US-113. Create the approved vendor list for the item and set the vendor check method to Warning Only.

1. Go to **Product information management > Products > Released products**.
2. Use the Quick Filter to filter on the Item number field with a value of 'M7001'.
3. Click the item number to get from the grid to the details page.
4. On the Action Pane, click **Purchase**.
5. Click **Setup**.
6. Click **Add**.
7. In the **Vendor** field, type 'US-113'.
8. Click **Save**.
9. Close the page.

Set Vendor Check Method to Warning Only

9. Click **Edit**.
10. In the **Approved vendor check method** field in the Purchase Fast Tab, select **Warning Only**.
11. Click **Save**.
12. Close the page.

Exercise 2: Create Co-Products and By-Products

Contoso Process Company (USPI) has purchased a small oil refinery and will start to manufacture gasoline from a stream of crude oil. In this process the co-products of Kerosene and Diesel fuel are also produced. A by-product of wastewater is also created. As the product designer you have been asked to create the following items in Finance and Operations:

- Product Number: P15000
  - Product Name: Gasoline
  - Production Type: Formula
- Product Number: P16000
  - Product Name: Kerosene
  - Production Type: Co-Product
- Product Number: P17000
  - Product Name: Diesel Fuel

- o   Production Type: Co-Product
- Product Number: B18000
    - o   Product Name: Waste Water
    - o   Production Type: By-Product
- Product Number: M12000
    - o   Product Name: Crude Oil
    - o   Production Type: None

Create new Formula product

1. Go to **Product information management>Products>Released products**.
2. Click **New**.
3. In the **Product number** field, type 'P15000'.
4. In the **Product name** field, type 'Gasoline'.
5. In the **Item model group** field, enter or select a value.
6. In the **Item group** field, enter or select a value.
7. In the **Storage dimension group** field, enter or select a value.
8. In the **Tracking dimension group** field, enter or select a value.
9. In the I**nventory unit** field, type 'gal'.
10. In the **Purchase unit** field, type 'gal'.
11. In the **Sales unit** field, type 'gal'.
12. In the **BOM unit** field, type 'gal'.
13. Click **OK**.
14. In the **Production type** field in the Engineer Fast Tab, select 'Formula'.
15. In the Shelf life period in days, in Manage inventory Fast Tab, enter 365.
16. Click **Save**.
17. Close the page.

Create the new Co-Products

17. Click **New**.
18. In the **Product number** field, type 'P16000'.
19. In the **Product name** field, type 'Kerosene'.
20. In the **Item model group** field, enter or select a value.
21. In the **Item group** field, enter or select a value.
22. In the **Storage dimension group** field, enter or select a value.
23. In the **Tracking dimension group** field, enter or select a value.
24. In the **Inventory unit** field, type 'gal'.
25. In the **Purchase unit** field, type 'gal'.
26. In the **Sales unit** field, type 'gal'.
27. In the **BOM unit** field, type 'gal'.
28. Click **OK**.
29. In the Shelf life period in days, in Manage inventory Fast Tab, enter 365.

30. In the **Production type** field in the Engineer Fast Tab, select 'Co-product'.
31. In the **Planning formula** field, enter P15000
32. Click **Save**.
33. Close the page.
34. Click **New**.
35. In the **Product number** field, type 'P17000'.
36. In the **Product name** field, type 'Diesel Fuel'.
37. In the **Item model group** field, enter or select a value.
38. In the **Item group** field, enter or select a value.
39. In the **Storage dimension group** field, enter or select a value.
40. In the **Tracking dimension group** field, enter or select a value.
41. In the **Inventory unit** field, type 'gal'.
42. In the **Purchase unit** field, type 'gal'.
43. In the **Sales unit** field, type 'gal'.
44. In the **BOM unit** field, type 'gal'.
45. Click **OK**.
46. In the **Production type** field in the Engineer Fast Tab, select 'Co-product'.
47. In the **Planning formula** field, enter P15000
48. Click **Save**.
49. Close the page.

Create the new By-Products

49. Click New.
50. In the **Product number** field, type 'B18000'.
51. In the **Product name** field, type 'Waste Water'.
52. In the **Item model** group field, enter or select a value.
53. In the **Item group** field, enter or select a value.
54. In the **Storage dimension group** field, enter or select a value.
55. In the **Tracking dimension group** field, enter or select a value.
56. In the **Inventory unit** field, type 'gal'.
57. In the **Purchase unit** field, type 'gal'.
58. In the **Sales unit** field, type 'gal'.
59. In the **BOM unit** field, type 'gal'.
60. Click **OK**.
61. In the Shelf life period in days, in Manage inventory Fast Tab, enter 365.
62. In the **Production type** field, select 'By-product'.
63. Click **Save**.
64. Close the page.

Create the new raw material

65. Click **New**.

66. In the **Product number** field, type 'M12000'.
67. In the **Product name** field, type 'Crude Oil'.
68. In the **Item model group** field, enter or select a value.
69. In the **Item group** field, enter or select a value.
70. In the **Storage dimension group** field, enter or select a value.
71. In the **Tracking dimension group** field, enter or select a value.
72. In the **Inventory unit** field, type 'gal'.
73. In the **Purchase unit** field, type 'gal'.
74. In the **Sales unit** field, type 'gal'.
75. In the **BOM unit** field, type 'gal'.
76. Click **OK**.
77. In the **Production type** field, select 'None'.
78. Click **Save**.
79. Close all pages.

Exercise 3: Create a Formula with Co-Products and By-Products

The engineering department has finished the review of the data in the new refinery and determined the formula should be as specified below. As the product definition employee, create the formula, along with assigning the co-products and by-products to the formula and cost allocation.

- Product Number: P15000
- Product Name: Gasoline
- Formula Size: 500 gal
- Formula Line: M12000 (Crude Oil), QTY 1000 gal
- Formula Line: M2001 (DI Water), QTY 600 gal
- Co-Product Line: P16000 (Kerosene), QTY 50 gal 10% cost allocation
- Co-Product Line: P17000 (Diesel Fuel), QTY 350 gal 32% cost allocation
- By-Product Line: B18000 (Waste Water), QTY 600 gal, 5% cost allocation
- Approved by: Glen John

Create a formula for part P15000

1. Go to **Product information management>Products>Released products**.
2. Use the Quick Filter to find records. For example, filter on the Item number field with a value of 'p15000'. Note the lowercase – it is not case sensitive.
3. Click the ellipsis, if needed, to get to the Engineer tab on the action pane.
4. Click **Formula versions**.
5. Click **New**.

6. Click **Formula and formula version**.
7. In the **Formula number** field, type 'GAS001'.
8. In the **Name** field, type 'Gasoline'.
9. In the **Site** field, enter or select 1.
10. Click **OK**.
11. In the **Lines** or **header** field, select Header
12. In the version, set **Formula size** to '500'.
13. Click **Save**.

Add Formula Lines to Formula

12. In the **Lines** or **header** field, select Lines
13. Click **New**.
14. In the **Item number** field, type 'M12000'.
15. In the **Warehouse** field, enter or select a value.
16. Set **Quantity** to '1000'.
17. Click **New**.
18. In the **Item number** field, type 'M2001'.
19. Set **Quantity** to '600'.
20. Click **Save**.
21. Close the page.

Add Co-Products and By-Products with Cost Allocation

22. Click **Co-products**.
23. Click **New**.
24. In the **Item number** field, type 'P16000'.
25. In the **Warehouse** field, enter or select a value.
26. Set **Quantity** to '50'.
27. In the **Co-product cost allocation** field, select 'Manual'.
28. Set **Cost allocation percent** to '10'.
29. Click **Save**.
30. Click **New**.
31. In the **Item number** field, type 'P17000'.
32. In the **Warehouse** field, type a 11.
33. Set **Quantity** to '350'.
34. In the **By-product cost allocation** field, select 'Percent'   .
35. ~~Set **Cost allocation percent** to '32'.~~
36. Click **Save**.
37. ~~Click **New**.~~
38. ~~In the **Item number** field, type 'B18000'.~~
39. ~~In the **Warehouse** field, type a value.~~
40. ~~Set **Quantity** to '600'.~~

41. In the **By-product cost allocation** field, select 'Percent'.
42. Set **By-product burden amount** to '5'.
43. Click **Save**.
44. Close the page.

Approve and activate the formula

45. Click **Approve**.
46. In the **Approved by** field, enter or select **000528** for Glen John.
47. Select the Do you also want to approve the formula? check box.
48. Click **OK**.
49. Click **Activate**.
50. Close the page.

Exercise 4: Create a New Formula with a Version from the Released Products Form

The marketing department at Contoso Orange Juice factory has determined the need for production of a new product for Frozen Apple Juice Concentrate. As the product designer you are asked to create a formula version with the following details.

- Product Number: P7100
- Product Name: Frozen Apple Juice Concentrate
- Formula Size: 1000 gal
- Formula Line: M9103 (Apples), QTY 800
- Formula Line: M8001 (Asorbic Acid), QTY 660
- Formula Line: M8003 (Vitamin A), QTY 40
- Formula Line: M8004 (Vitamin C), QTY 18
- Formula Line: M7003 (Sucrose), QTY 33
- Formula Line: M8008 (Can), QTY 2400
- Approved by: Glen John

Create new product

1. In the **USP2** company go to **Product information management>Products>Released products**
2. Click **New**.
3. In the **Product number** field, type 'P7100'.
4. In the **Product name** field, type 'Frozen Apple Juice Concentrate'.
5. In the **Search name** field, type 'FrozenAppleJuice'.

6. In the **Item model group** field, enter or select a value.
7. In the **Item group** field, enter or select a value.
8. In the **Storage dimension group** field, enter or select a value.
9. In the **Tracking dimension group** field, enter or select a value.
10. In the **Inventory unit** field, enter 'lb'.
11. In the **Purchase unit** field, type 'lb'.
12. In the **Sales unit** field, type 'lb'.
13. In the **BOM unit** field, type 'lb'.
14. Click **OK**.
15. In the **Production type** field in the Engineer Fast Tab, select 'Formula'.
16. In the Shelf life period in days field in the Manage inventory Fast Tab, type 180.
17. Click **Save**.

Create a formula with description 'For making Frozen Apple Juice Concentrate'

18. Click **Formula versions** in the Engineer tab in the action pane.
19. Click **New**.
20. Click **Formula and formula version**.
21. In the **Formula** number field, type 'FOR-7100'.
22. In the **Name** field, type ''For making Frozen Apple Juice Concentrate'.
23. In the **Site** field, enter or select 1.
24. Click **OK**.

Create formula lines to enter the ingredients with quantities and relevant unit of measurement

25. In the **Lines** or **header** field, select 'Header'.
26. Set **Formula size** to '1000'.
27. Set **From formula size** in the Formula versions Fast Tab to '1000'.
28. In the **Lines** or **header** field, select 'Lines'.
29. In the Formula lines fast tab, click **New**.
30. In the **Item number** field, type 'M9103'.
31. Set **Quantity** to '800'.
32. Click **New**.
33. In the **Item number** field, type 'M8001'.
34. Set **Quantity** to '660'.
35. Click **New**.
36. In the **Item number** field, type 'M8003'.
37. Set **Quantity** to '40'.
38. Click **New**.
39. In the **Item number** field, type 'M8004'.
40. Set **Quantity** to '18'.
41. Click **New**.

42. In the **Item number** field, type 'M7003'.
43. Set **Quantity** to '33'.
44. Click **New**.
45. In the **Item number** field, type 'M8008'.
46. Set **Quantity** to '2400'.
47. Click **Save**.

Approve and activate the formula

47. Click **Approve formula**.
48. In the **Approved by** field, enter or select 000528 for Glen John.
49. Click **OK**.
50. In the **Lines** or **header** field, select 'Header'.
51. Click **Approve** in the versions section.
52. In the **Approved b**y field, enter or select a value.
53. Click **OK**.
54. Click **Activate**.
55. Close the page.

Exercise 5: Copy and Modify Formula Versions

Analysis of the production orders for P8000 in company USP2 have shown that the scrap factors and consumption amount of part P6000 need to be updated. The formula is to be revised, updated and approved/activated with an effective date of 12/15/2016.

Copy the existing formula for P8000

1. Go to **Product information management>Products>Released products**.
2. Use the Quick Filter to filter on the Item number field with a value of 'P8000'.
3. In the list, click the link in the selected row.
4. Click **Formula versions** in the Engineer tab on the action pane.
5. Click **New**.
6. Click **Formula and formula version**.
7. In the **Formula number** field, type F01.
8. In the **Name** field, type V01.
9. Set the **Copy** to Yes
10. In the **Site** field, enter or select 1.
11. Click **OK**.
12. In the **Formula version** field, select the previous formula version For-00002.

13. Click **OK**.

Update line for P6000

14. In the list, find and select the record for **P6000**.
15. Set **Quantity** to '0.35'.
16. Click the **Setup** tab.
17. In the **Variable scrap** field, enter a number.
18. Click **Save**.
19. Close the page.

Date out the old version and date in the new version

20. In the list, find and select the original formula version For-00002.
21. In the **To date** field, set the date to '12/14/2016'.
22. Click **Save**.
23. In the list, find and select the new formula version F01.
24. In the **From date** field, set the date to '12/15/2016'.
25. Click **Save**.

Approve and activate the formula

26. Click Formulas > Formula.
27. Click **Approve formula**.
28. In the **Approved by** field, enter or select a value.
29. Close the screen to go back to the Formula versions screen.
30. Click Formula version > Approve.
31. In the **Approved by** field, enter or select a value.
32. Click **OK**.
33. Click **Activate**.
34. Close the page.

Exercise 6: Create and Update Scalable Formula

Your manufacturing plant has obtained a new mixer that is 1.5 times the size of the current mixer used to make part P9500 in company USP2. Engineering has determined that the vitamin compounds do not need to increase in quantity but the other ingredients do. Create a new formula for the larger size based on the existing formula for the part.

Copy the existing formula for P9500

1. Go to **Product information management>Products>Released products**.
2. Use the Quick Filter to filter on the Item number field with a value of 'P9500'.
3. In the list, click the link in the selected row.
4. Click **Formula versions** in the Engineer tab in the action pane.
5. Click **New**.
6. Click **Formula and formula version**.
7. In the **Formula number** field, type **P9500V0**.
8. In the **Name** field, type a V0.
9. Select the **Copy** option.
10. In the **Site** field, enter or select 1.
11. Click **OK**.
12. In the **Formula version** field, select the current version
13. Click **OK**.

Verify the lines are flagged as scalable for P9500 except for the vitamin compounds

14. In the lines, find the vitamin compounds.
15. Select or clear the **Scalable** check boxes.
16. Click **Save**.

Update the formula size and from formula size in the new formula

17. In the Lines or header field, select **header**.
18. Set **Formula size** to '1500'.
19. Set **From formula size** to '1500'.
20. Click **Save**.

Approve and activate the formula

21. In the Lines or header field, select **lines**.
22. Click **Save**.
23. Click **Approve formula**.
24. In the **Approved by** field, enter or select a value.
25. Click **OK**.
26. In the Lines or header field, select **header**.
27. Click **Approve** in the Versions grid.
28. In the **Approved by** field, enter or select a value.
29. Click **OK**.
30. Click **Activate**.
31. Close the page.

Exercise 7: Create A Percentage Based Formula

Company USP2 has been contracted to make a new orange juice with the following volume percentages for the final mixture. The mixture should also have Vitamin C and Vitamin A added per the mixing instructions below. The volume batch size is to be 1500 gallons.

Ingredient	Recipe percent / quantity
P9500	5%
M9001	92%
M7004	3%
M8004	1.33 lb/1500 gal.
M8003	1.1 LB/1500 gal.

Create new released product

1. In the **USP2** company go to **Product information management>Products>Released products**
2. Click **New**.
3. In the **Product number** field, type 'P6100'.
4. In the **Product name** field, type 'Orange Juice'.
5. In the **Search name** field, type 'Orange Juice'.
6. In the **Search name** field, type 'Orange Juice'.
7. In the **Item model group** field, enter or select a value.
8. In the **Item group field**, enter or select a value.
9. In the **Storage dimension group** field, enter or select a value.
10. In the **Tracking dimension group** field, enter or select a value.
11. In the **Inventory unit** field, enter gal
12. In the **Purchase unit** field, type gal.
13. In the **Sales unit** field, type gal.
14. In the **BOM unit** field, type gal.
15. Click **OK**.
16. In the **Production type** field in the Engineer Fast Tab, select **'Formula'**.
17. In the Shelf life period in days field in the Manage inventory Fast Tab, enter 180.
18. Click **Save**.

Copy the existing formula for P9500

18. Go to **Product information management>Products>Released products**.
19. Use the Quick Filter to filter on the Item number field with a value of 'P9500'.
20. In the list, click the link in the selected row.
21. Click **Formula versions** in the Engineer tab in the action pane.
22. Click **New**.
23. Click **Formula and formula version**.
24. In the **Formula number** field, type a value.
25. In the **Name** field, type a value.
26. Select the **Copy** option.
27. In the **Site** field, enter or select 1.
28. Click **OK**.
29. In the **Formula version** field, select the current version
30. Click **OK**.

Verify the lines are flagged as scalable for P9500 except for the vitamin compounds

31. In the lines, find the vitamin **compounds**.
32. Select or clear the **Scalable** check boxes.
33. Click **Save**.

Update the formula size and from formula size in the new formula

34. In the Lines or header field, select **header**.
35. Set the version's **Formula size** to '1500'.
36. Set the version's **From formula size** to '1500'.
37. Click **Save**.

Approve and activate the formula

38. In the Lines or header field, select **lines**.
39. Click **Save**.
40. Click **Approve formula**.
41. In the **Approved by** field, enter or select a value.
42. Click **OK**.
43. In the Lines or header field, select **header**.
44. Click **Approve** in the Versions grid.
45. In the **Approved by** field, enter or select a value.
46. Click **OK**.
47. Click **Activate**.
48. Close all pages.

Exercise 8: Create a Step Consumption Formula

The formula for product **P9500** in company **USP2** is to be updated to change Formula Line **M9003** from a linear consumption to a step-wise consumption. The consumption on the line shall be:

- 0-1400: 5.5
- 1400-2400: 10.6
- 2400+: 15.8

Copy the existing formula for **P9500**

1. Go to **Product information management>Products>Released products**.
2. Use the Quick Filter to filter on the **Item number** field with a value of **'P9500'**.
3. In the list, click the link in the selected row for **P9500**.
4. Click Engineer > Formula > **Formula versions**.
5. Click **New**.
6. Click **Formula and formula version**.
7. In the **Formula number** field, type **P9500V1**.
8. In the Name field, type **V1**.
9. Select the **Copy** option
10. In the **Site** field, enter or select 1.
11. Click **OK**.
12. In the **Formula version** field, select the current version
13. Click **OK**.

Set the line for **M9003** in the new formula to step-wise consumption and set the step levels

14. In the lines, find the line for **M9003**.
15. Click the **Setup** tab in line details
16. In the **Formula** field, select **'Step'**.
17. Click the **Step consumption** tab.
18. Set **Quantity** to '5.5'.
19. Click **New**.
20. Set **From series** to '1400'.
21. Set **Quantity** to '10.6'.
22. Click **New**.
23. Set **From series** to '2400'.

24. Set **Quantity** to '15.8'.
25. Click **Save**.
26. Close all pages.

Date out the old formula and date in the new one

27. Go to **Product information management>Products>Released products**.
28. Use the Quick Filter to filter on the **Item number** field with a value of **'P9500'**.
29. In the list, click the link in the selected row for **P9500**.
30. Click Engineer > Formula > **Formula versions**.
31. In the list, find and select the old formula.
32. Click **Edit**.
33. In the **To date** field, set the date to '12/27/2016'.
34. Click **Save**.
35. In the list, find and select the new formula.
36. In the **From date** field, set the date to '12/28/2016'.
37. Click **Save**.

Approve and activate the formula

33. Click **Approve**.
34. In the **Approved by** field, enter or select an employee.
35. Select the **Do you also want to approve the formula?** option.
36. Click **OK**.
37. Click **Activate**.