# Material Reservation Mode

## 11.2

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DOCUMENT ACCESS

Public

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# Material Reservation Mode

*Estimated time to read: 7 minutes*

When you are working with BOMs, and their Scope is Durables, Materials, Packing, or Weigh And Dispense, you will have to define whether the BOM Products include Material Reservations, and how Material Reservations are handled for the BOM Items.

Material Reservation is the process of allocating specific quantities of raw materials, components, or subassemblies from inventory to a specific production or work order. This ensures that those Materials are not consumed by other orders and are available when production begins.

The Material Reservation Mode property has three options to select from:

- Material Dependency
- None (default)
- Production Order

This tutorial will show you how to can use the Material Reservation Mode property in relation to the Material Dependency and Production Order options.

For both Material Dependency and Production Order you must ensure that you have your Critical Manufacturing MES structure configured which will allow you to set up these modes.

For the example scenario below, you will need to create:

- Steps
- Flows
- Products
- Materials
- BOMs
- Resources
- Services

For the purpose of this tutorial all new entities, including the ones above, were created and can be uploaded via the following Master Data files:

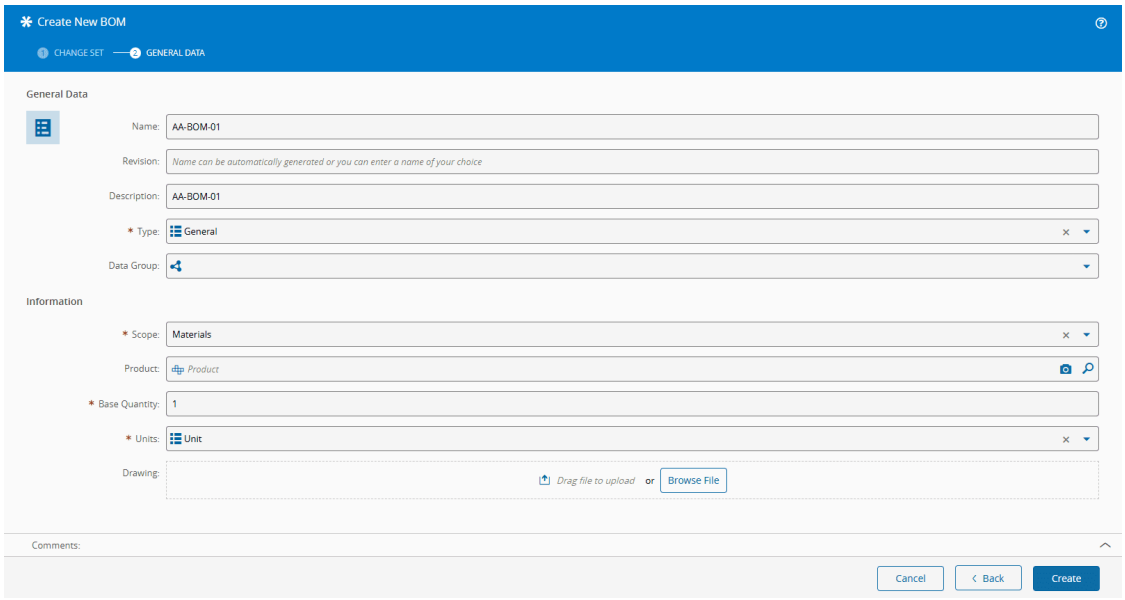
- Material Dependency
- Production Order

The provided Master Data files will allow you to undertake the paths and instructions provided below.

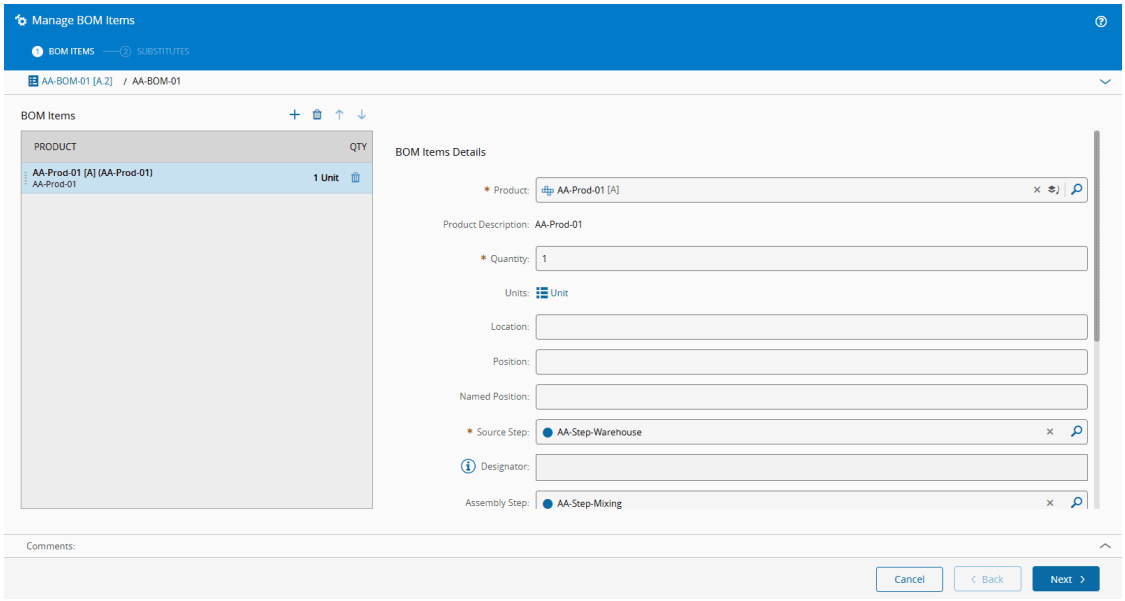
For more information, see Manage BOM Items.

## Material Dependency

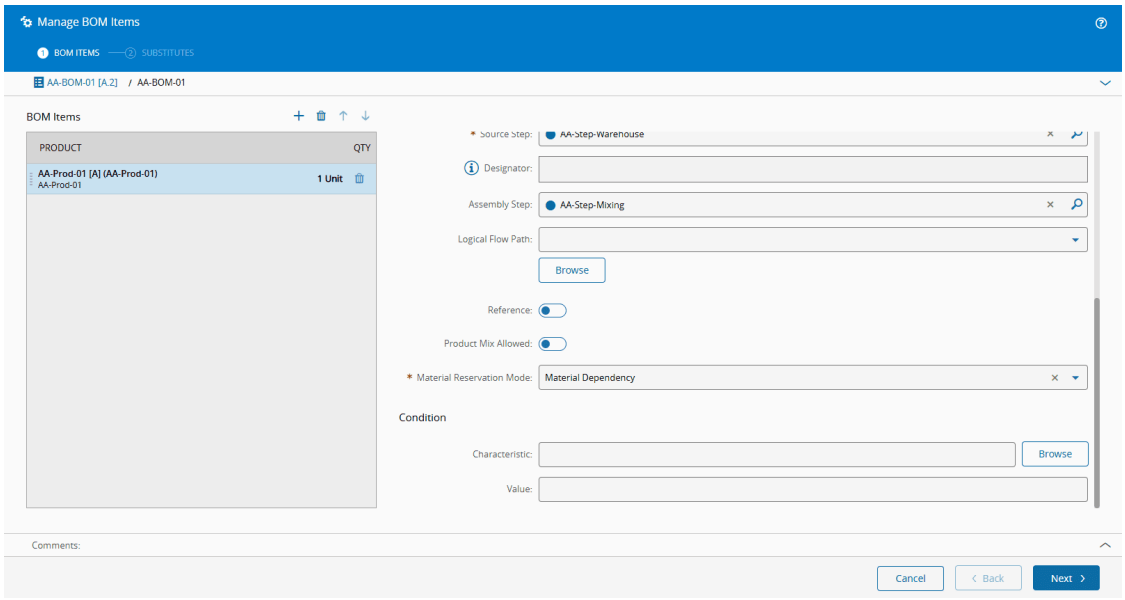
1. Create a **BOM** and set its Scope as Materials:



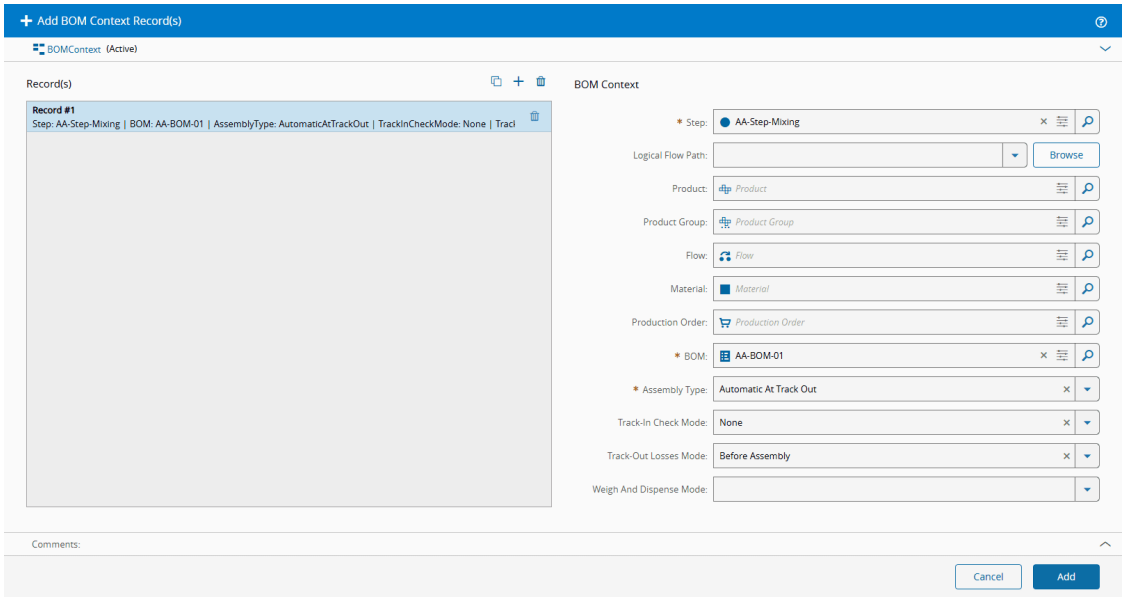

2. Select the section **BOM Items** and then select **Manage**:



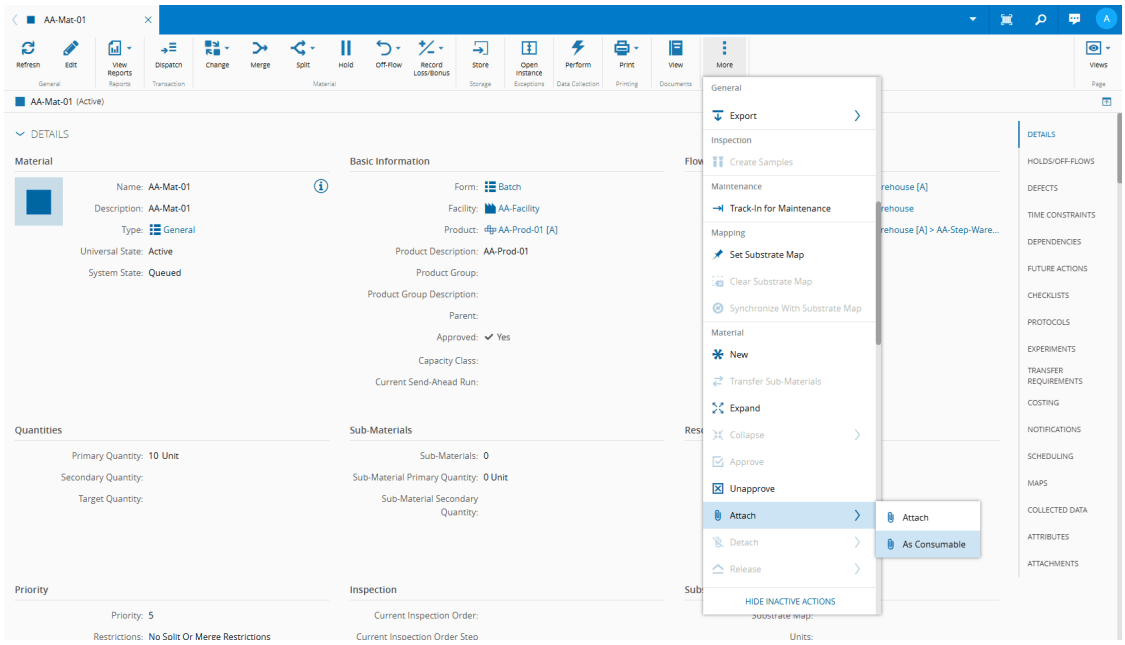

3. Be sure to enter the necessary information, and set the Material Reservation Mode property to Material Dependency:



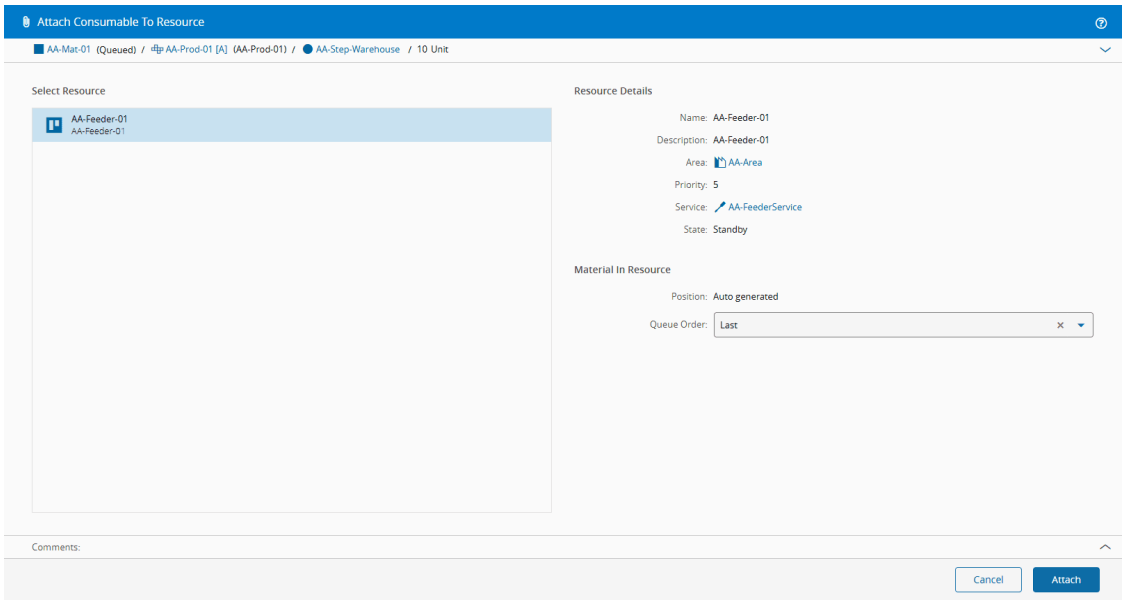

4. Define the BOMContext Smart Table by adding the **Step** when the **BOM** will be used, and the other necessary information:



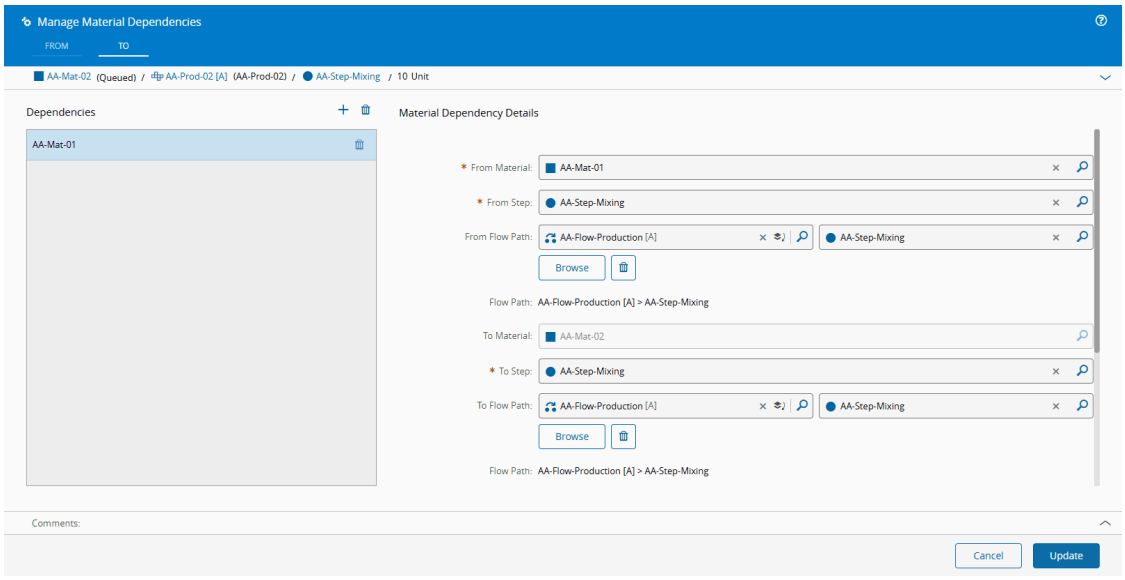

5. Attach your consumable **Material** as shown below:



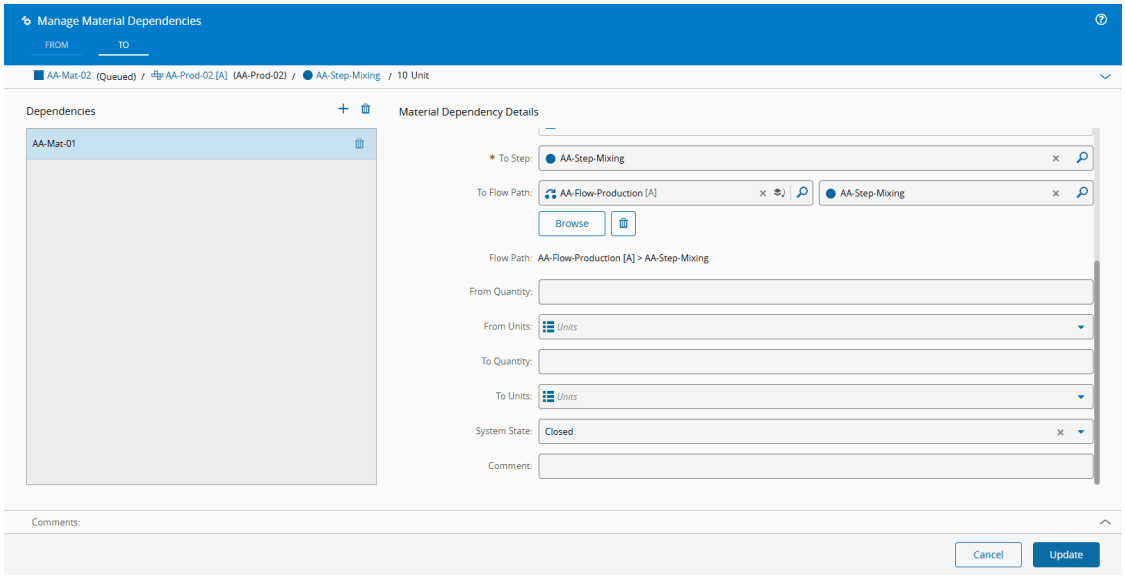

6. Confirm the information and select **Attach**:




7. Go to the **Dependencies** section, select **Manage**, and select the **To** tab if you are creating the dependency from the main **Material** point of view:

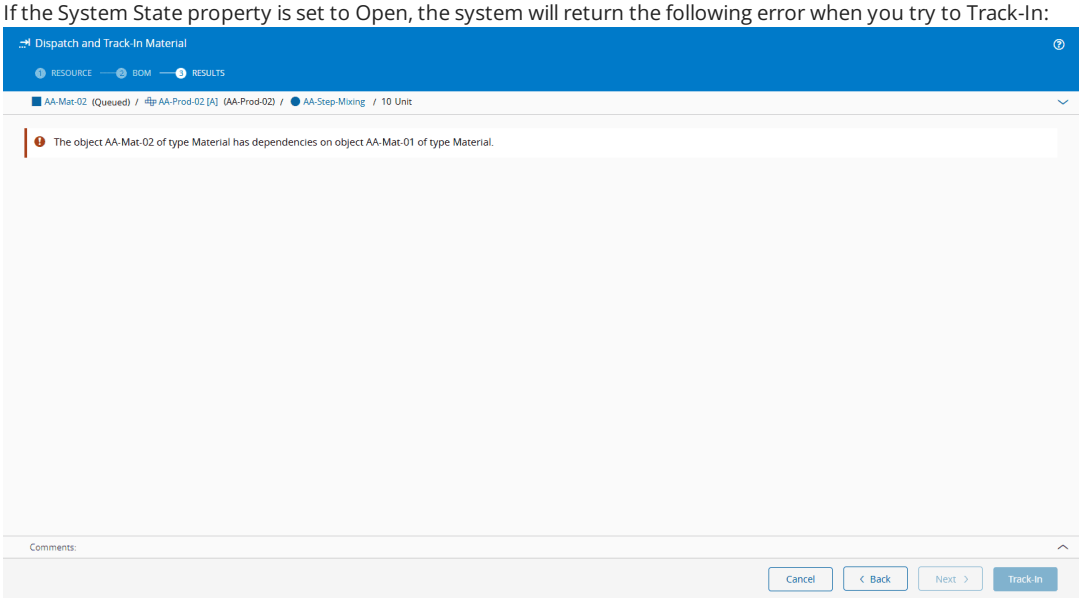



8. Complete the necessary information and make sure the System State property is set to Closed:

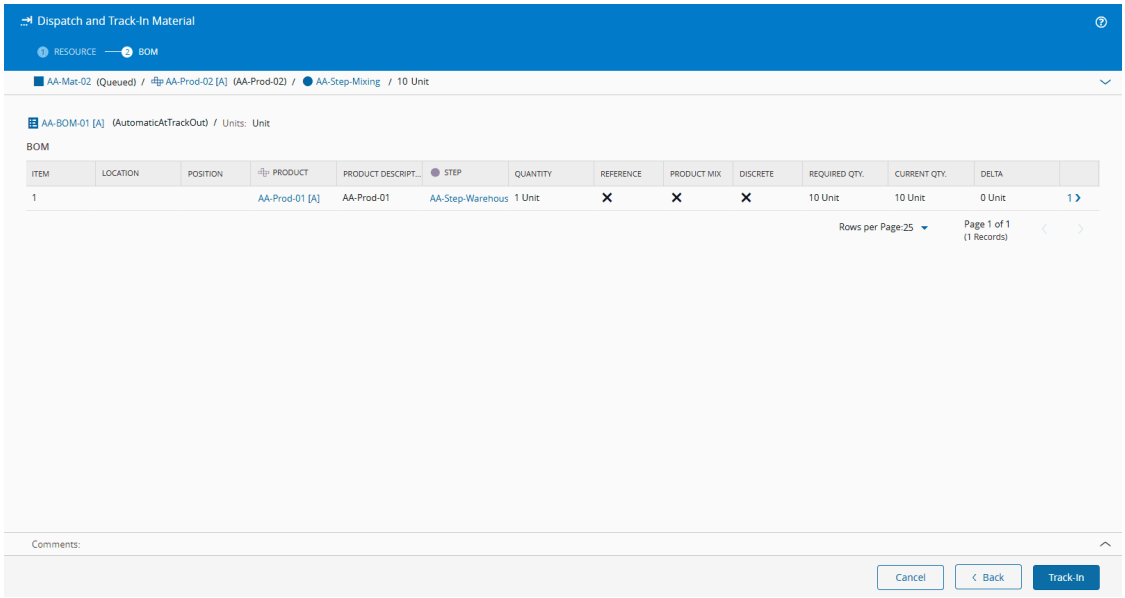


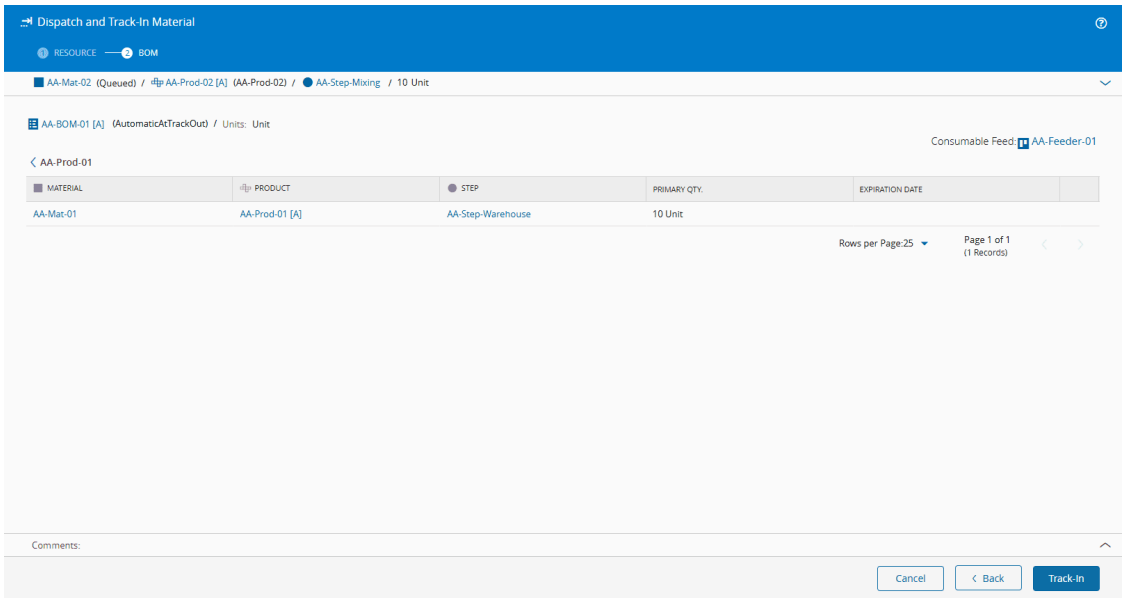
**Note**

If the System State property is set to Open, the system will return the following error when you try to Track-In:

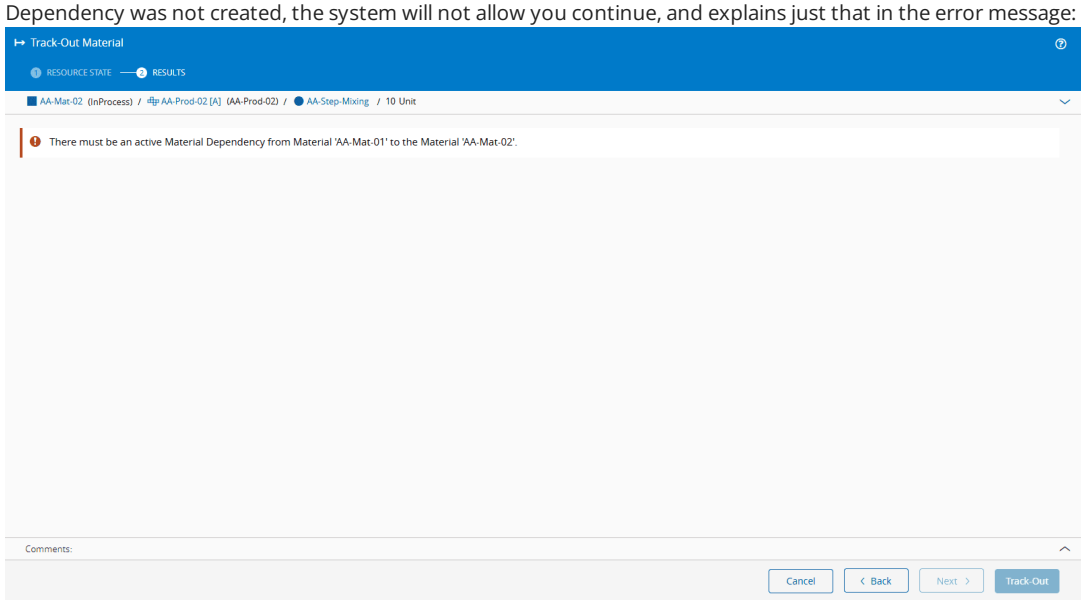



9. You can now Dispatch and Track-In your main **Material** and verify the **BOM** information:



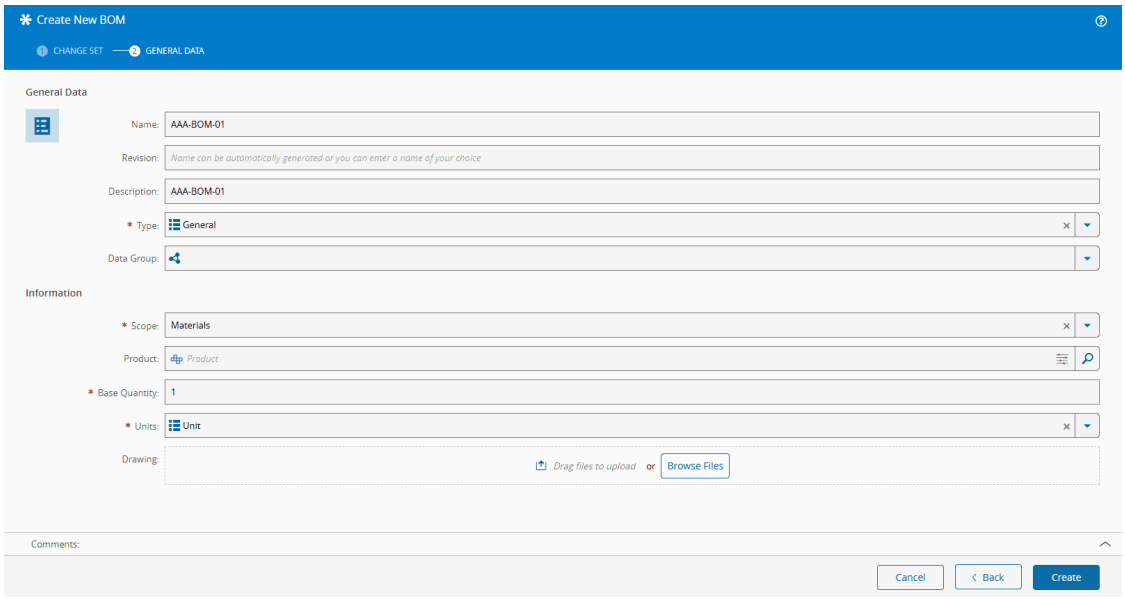



10. Select **Track-In**.
11. When you then select **Track-Out**, the whole **Material** will be consumed.

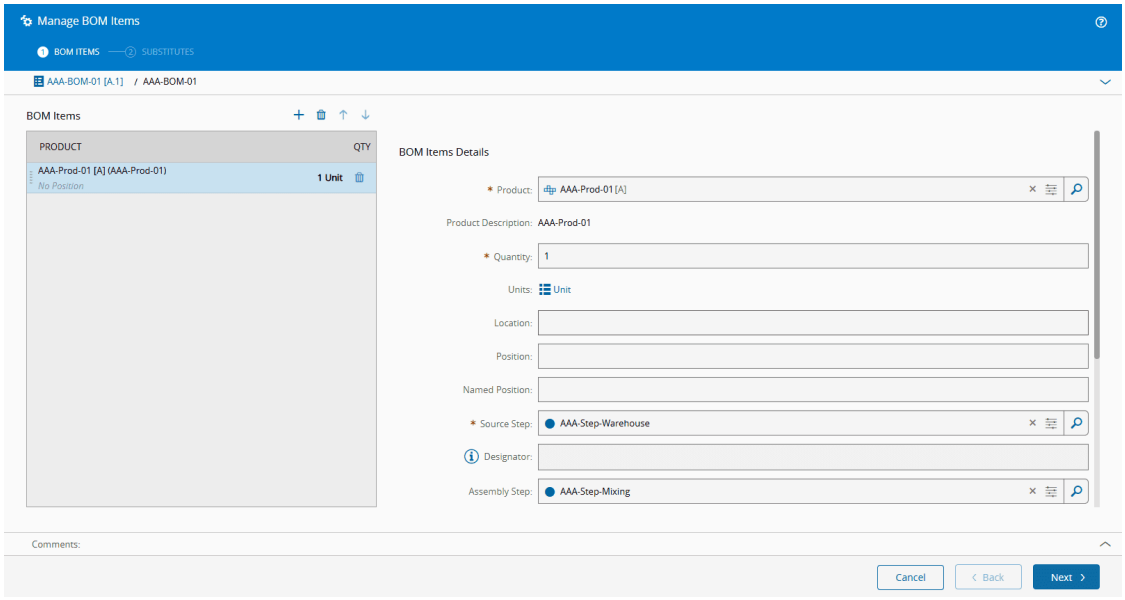
> **Warning**
>
> If you select Material Dependency for the Material Reservation Mode, but do not create a Dependency for the Material you want to produce, the system will return an error. In the example below, the AA-Mat-02 is the Material that is being produced, and it depends on AA-Mat-01 to provide it with its raw materials. As this Dependency was not created, the system will not allow you continue, and explains just that in the error message:
>
> 
> 

## Production Order

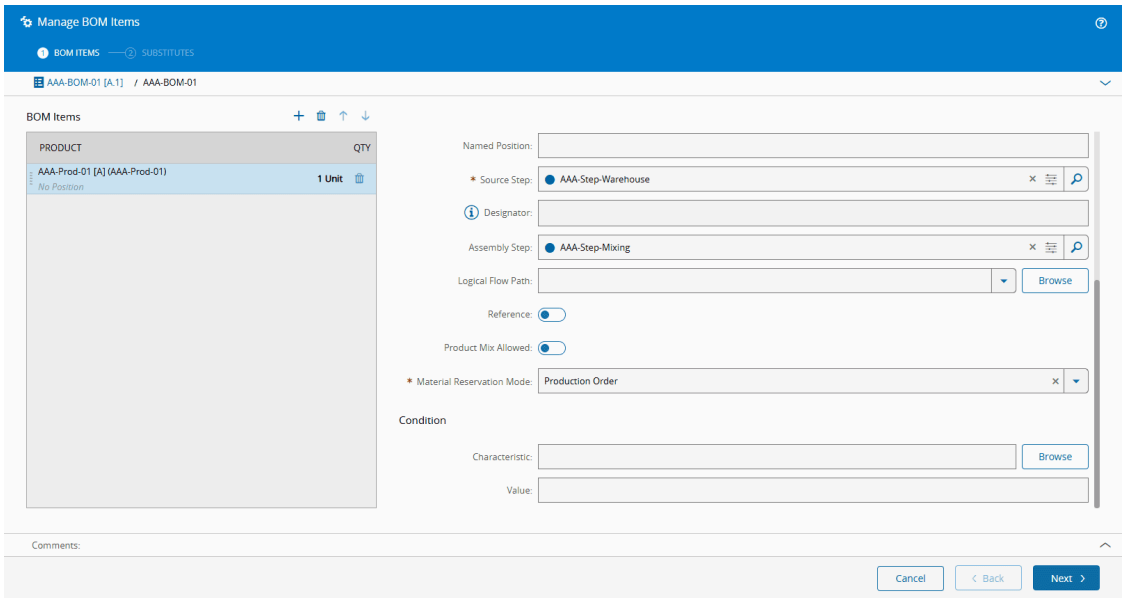
1. Create a **BOM** and set its Scope as Materials:



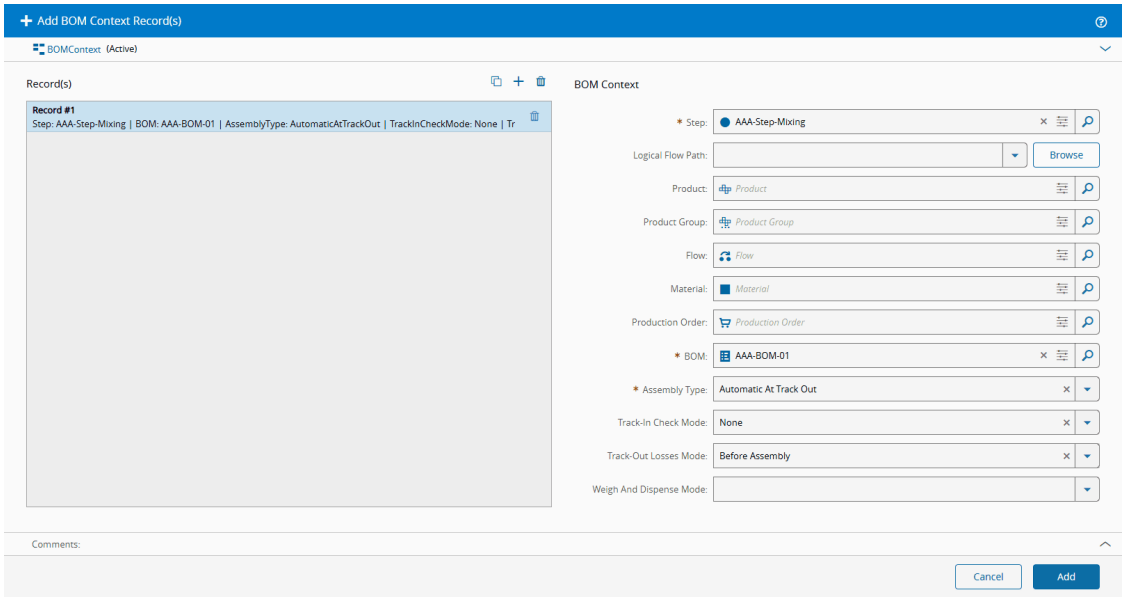

2. Select the section **BOM Items** and then select **Manage**:



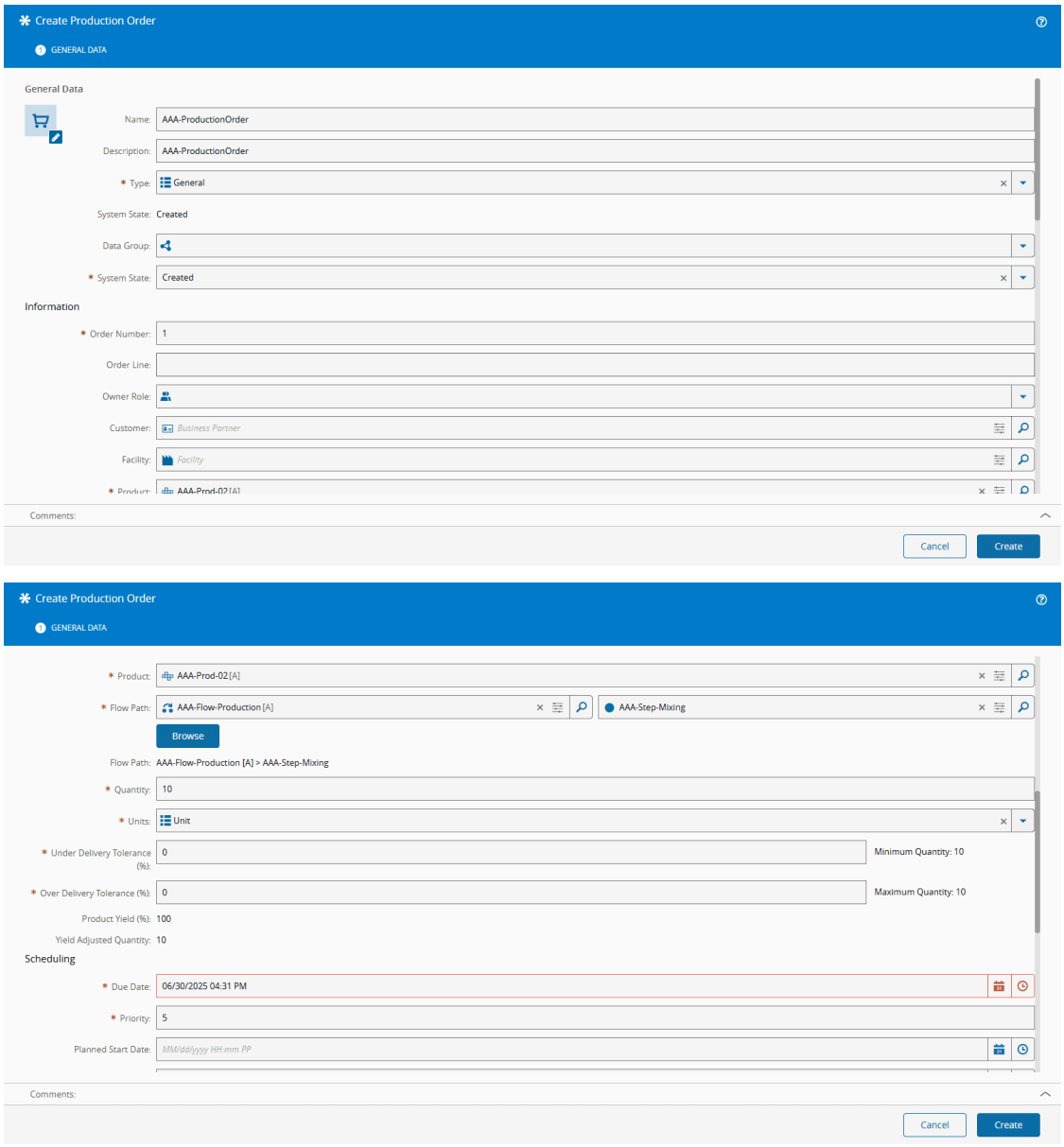

3. Be sure to enter the necessary information, and set the Material Reservation Mode property to Production Order:



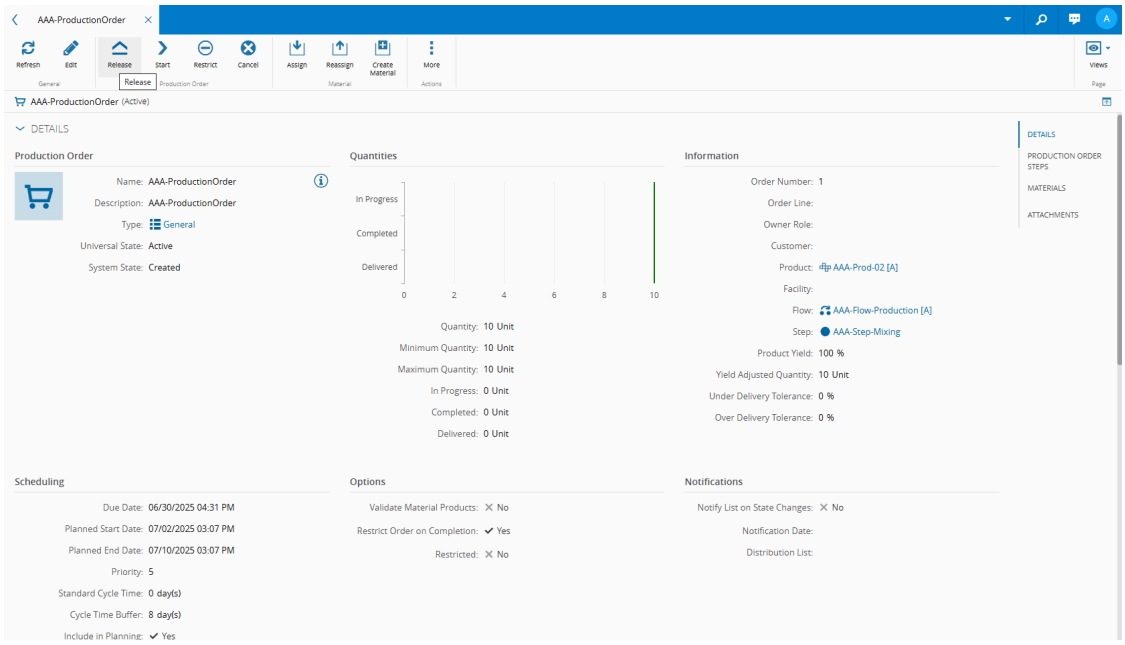

4. Define the BOMContext Smart Table by adding the **Step** when the **BOM** will be used, and the other necessary information:



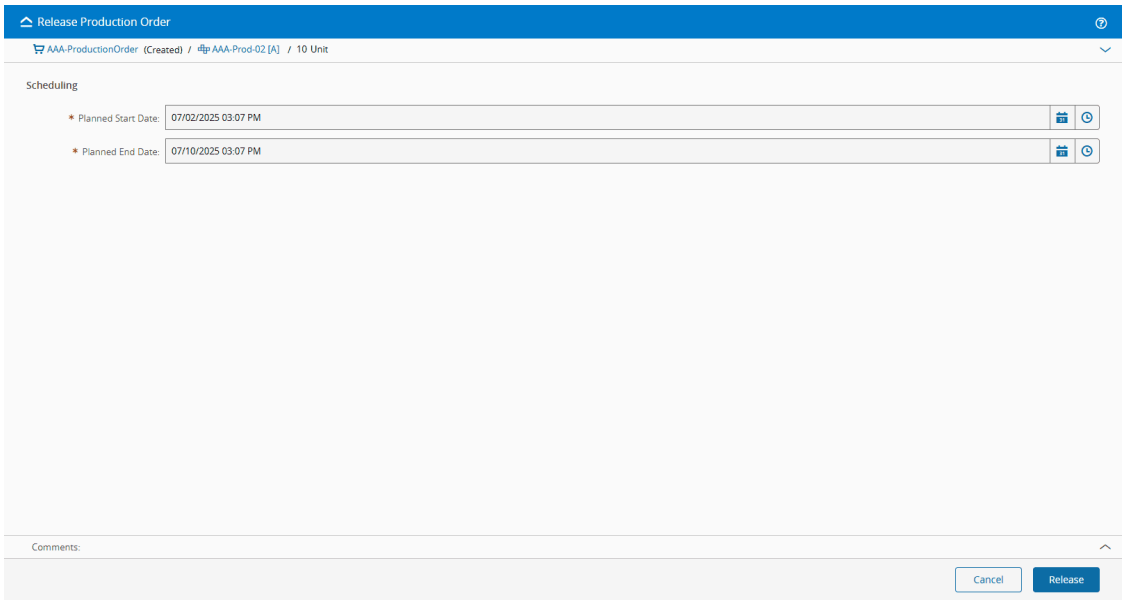

5. Create a **Production Order** with the **Product** to be produced and all the other necessary information:



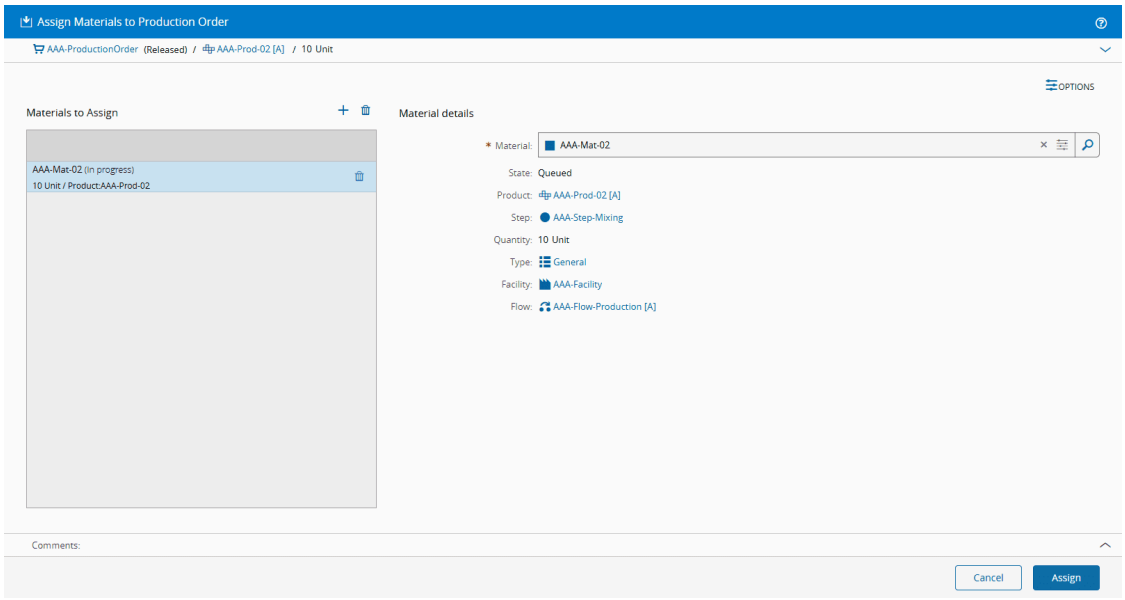

6. On the top ribbon of your **Production Order**, select **Release**:



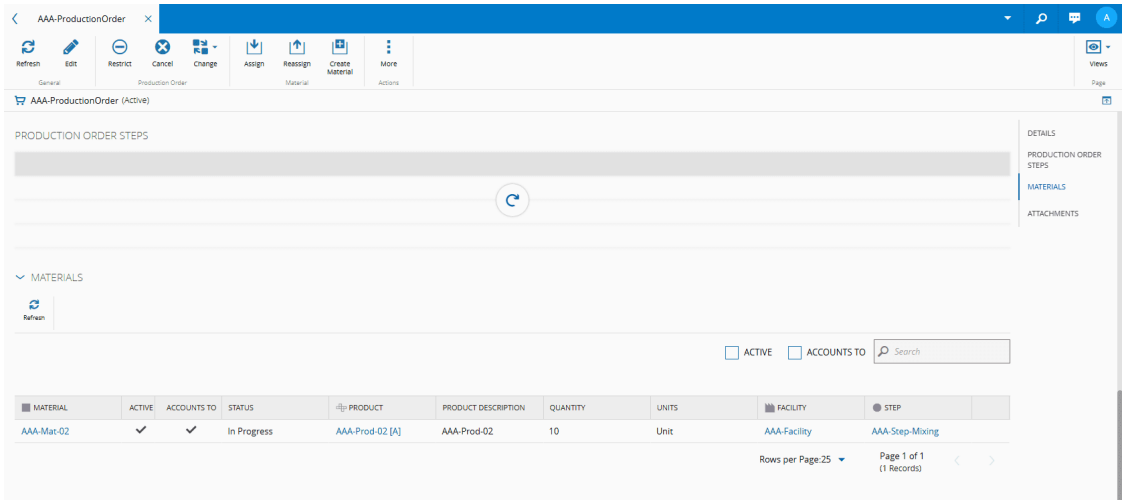

7. Enter the needed dates and select **Release**:



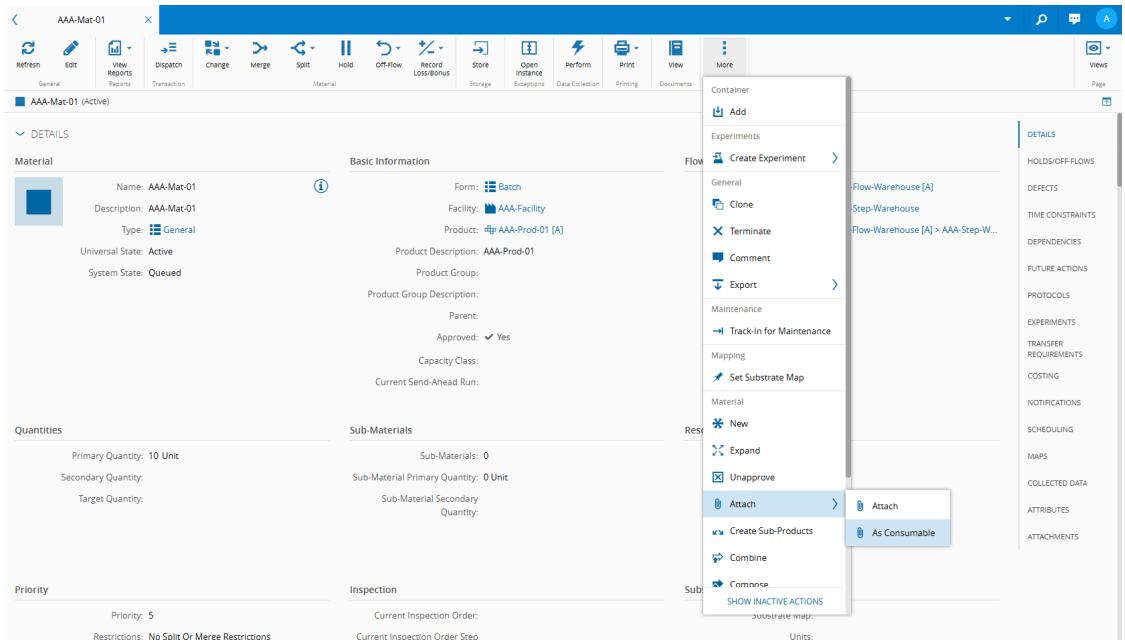

8. In the **Production Order**, select the **Materials** section followed but the **Assign** button on the top ribbon to assign your main **Material**:




9. Select **Assign** and your **Production Order** will have the main **Material** assigned to it:

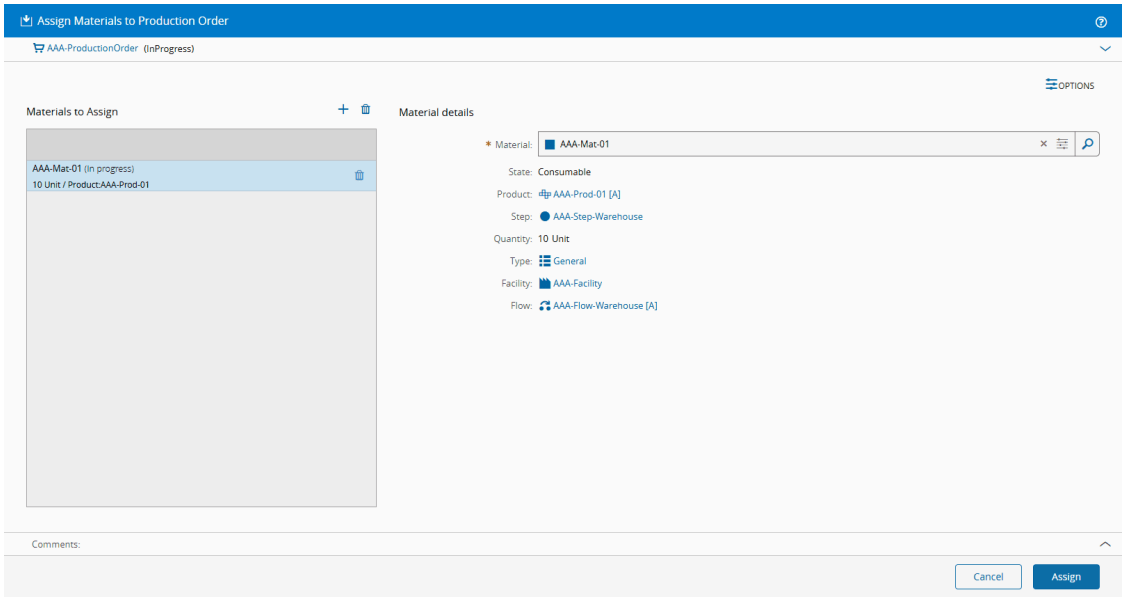



10. Now, attach your consumable **Material** as shown below:

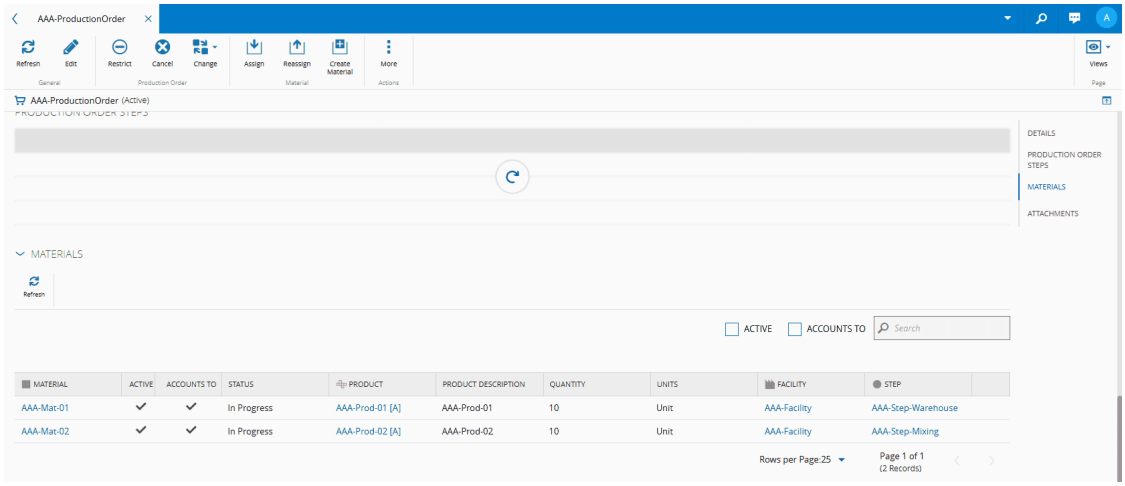


> **Note**
>
> This step is only needed because in this example we set the assembly Type of the BOM as Automatic at Track Out.

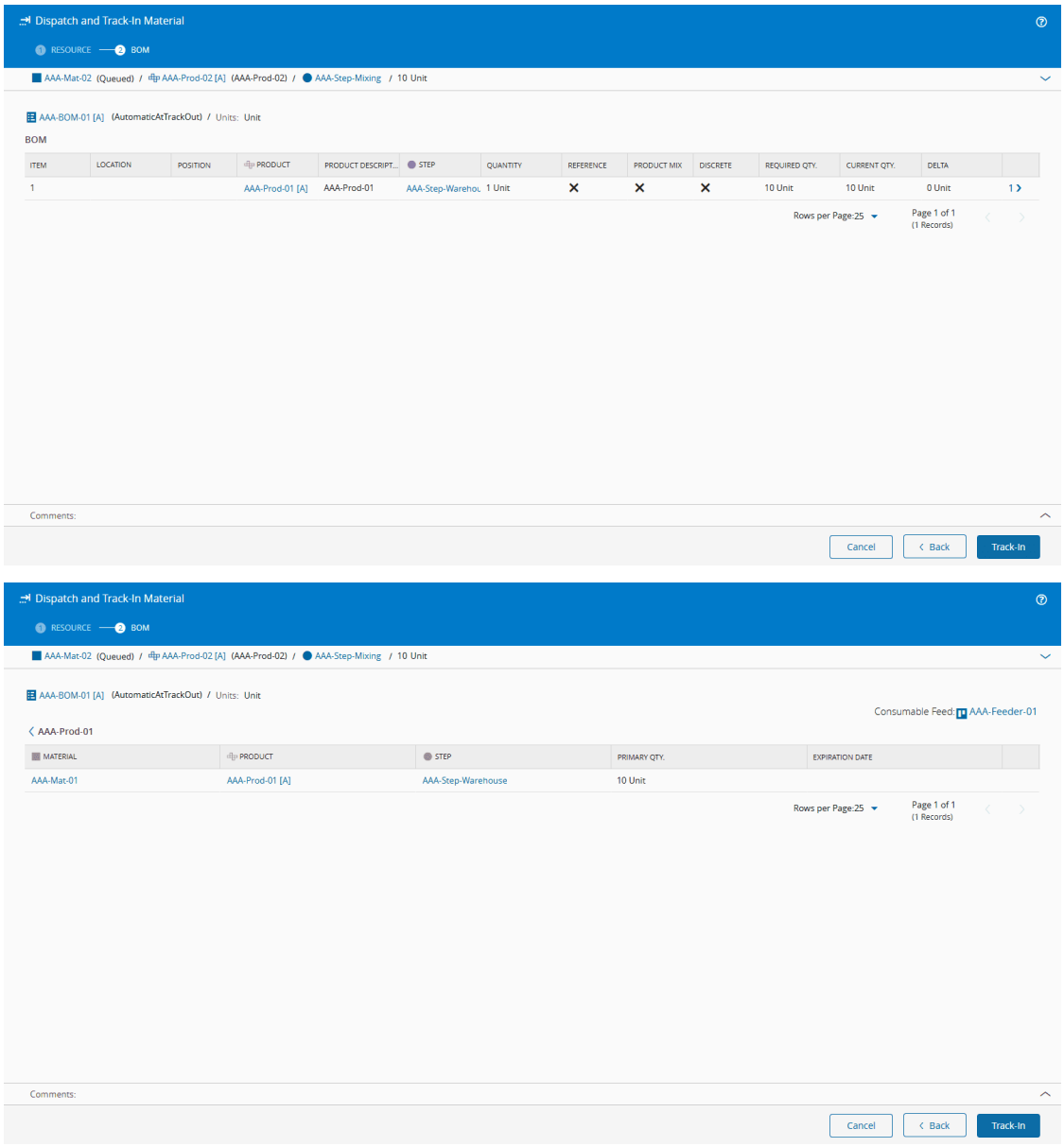
11. Next, in the **Production Order**, you will need to assign the consumption **Material** and then select **Assign**:



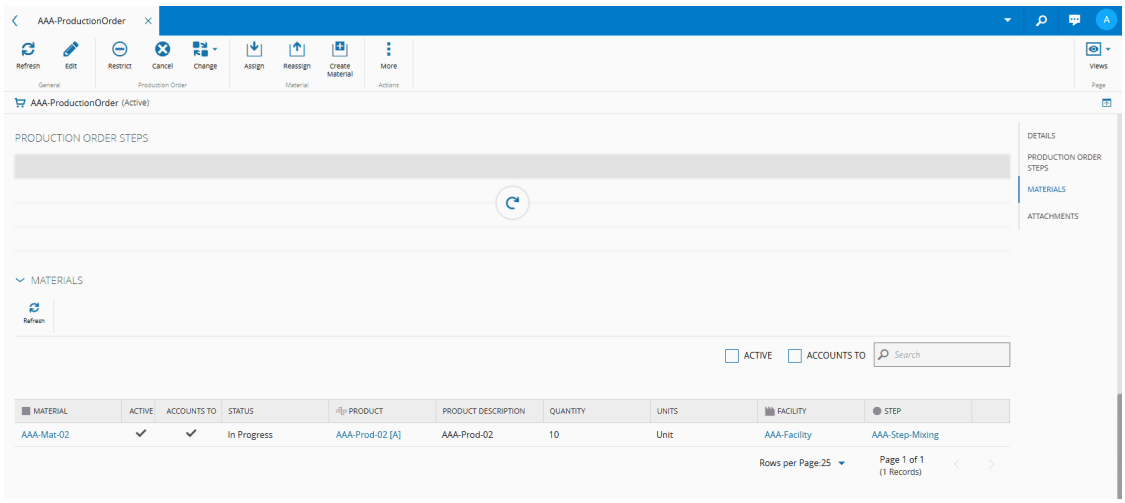

12. At this point, you can see your consumption **Material** and production information in the **Materials** section of your **Production Order**:




13. You can now Dispatch and Track-In your main **Material** and verify the **BOM** information:

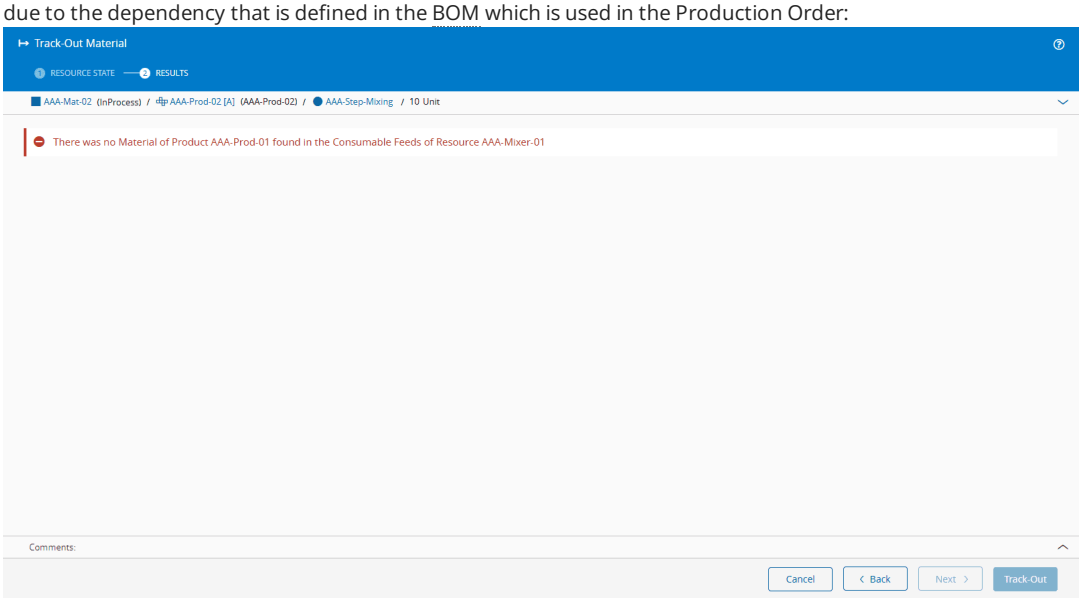



14. Select **Track-In**.
15. When you then select **Track-Out**, the whole **Material** will be consumed, as can be seen in the **Production Order**:



**Warning**

If the consumable Material is not assigned to the Production Order, the system will return an error. This error is due to the dependency that is defined in the BOM which is used in the Production Order:



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