



Critical
manufacturing
an ASM PT company

Material Reservation Mode

12.0.1

October 2026

DOCUMENT ACCESS

Public

DISCLAIMER

The contents of this document are under copyright of Critical Manufacturing S.A. it is released on condition that it shall not be copied in whole, in part or otherwise reproduced (whether by photographic, or any other method) and the contents therefore shall not be divulged to any person other than that of the addressee (save to other authorized offices of his organization having need to know such contents, for the purpose for which disclosure is made) without prior written consent of submitting company.

Material Reservation Mode

 Copy Page 

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:

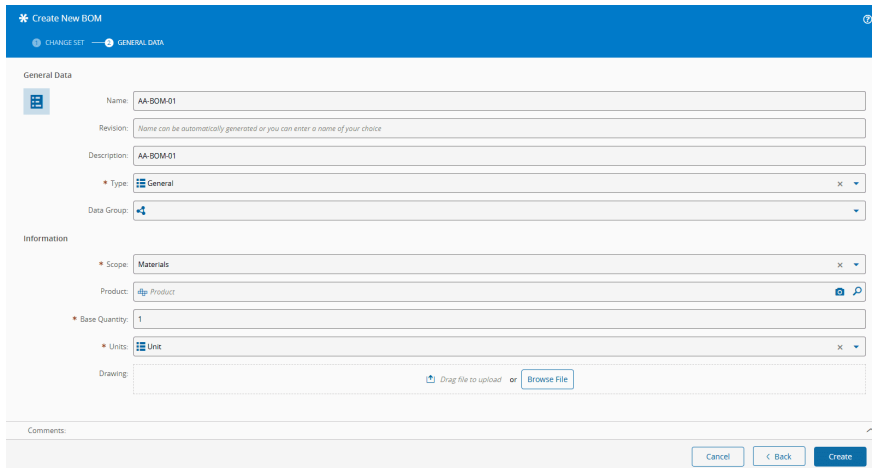
- Material Dependency
- Production Order

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

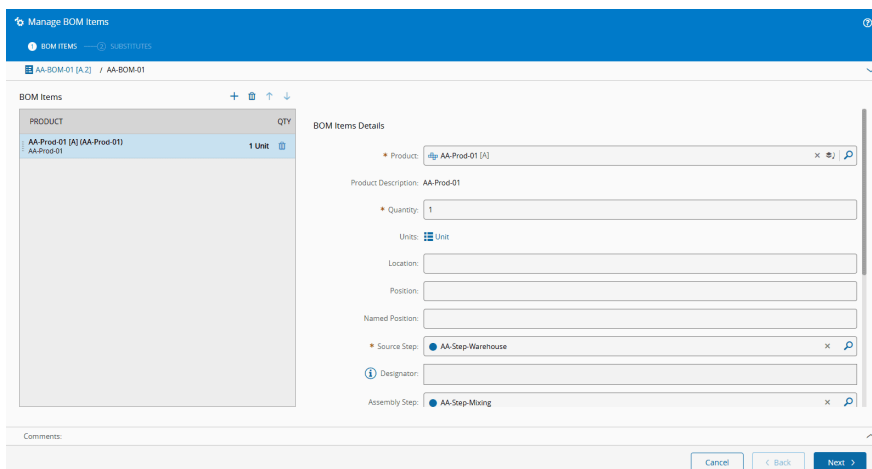
For more information, see [Manage BOM Items](#).

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:

Manage BOM Items

BOM ITEMS / Structures

AA-BOM-01 [A, Z] / AA-BOM-01

PRODUCT	QTY
AA-Prod 01 [A] (AA-Prod-01)	1 Unit
AA-Prod-01	

Source Step: AA-Step-Warehouse

Designation:

Assembly Step: AA-Step-Mixing

Logical Flow Path:

Browse

Reference:

Product Mix Allowed:

Material Reservation Mode: Material Dependency

Condition

Characteristic:

Value:

Comments:

Cancel Back Next

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

+ Add BOM Context Record(s)

BOMContext (Active)

Record(s)

Record #1
Step: AA-Step-Mixing | BOM: AA-BOM-01 | AssemblyType: AutomaticAtTrackOut | TrackInCheckMode: None | Trac

BOM Context

Step: AA-Step-Mixing

Logical Flow Path:

Browse

Product:

Product Group:

Flow:

Material:

Production Order:

BOM: AA-BOM-01

Assembly Type: Automatic At Track Out

Track-In Check Mode: None

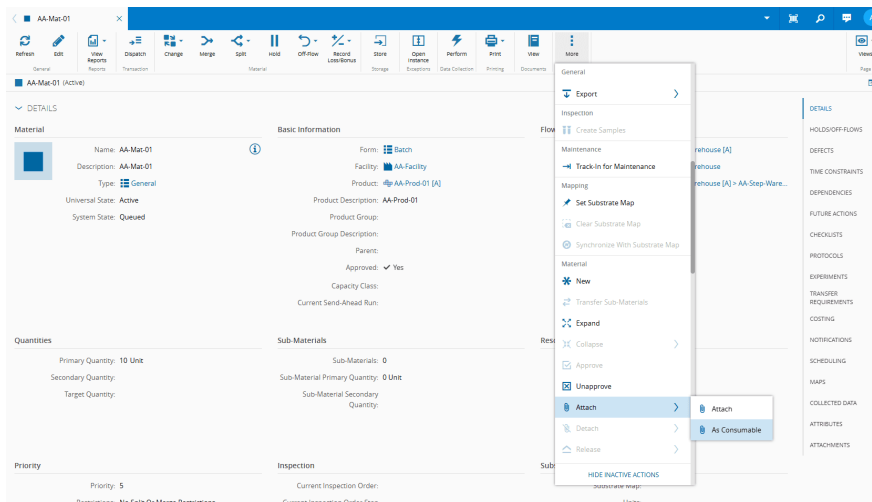
Track-Out Losses Mode: Before Assembly

Weigh And Dispense Mode:

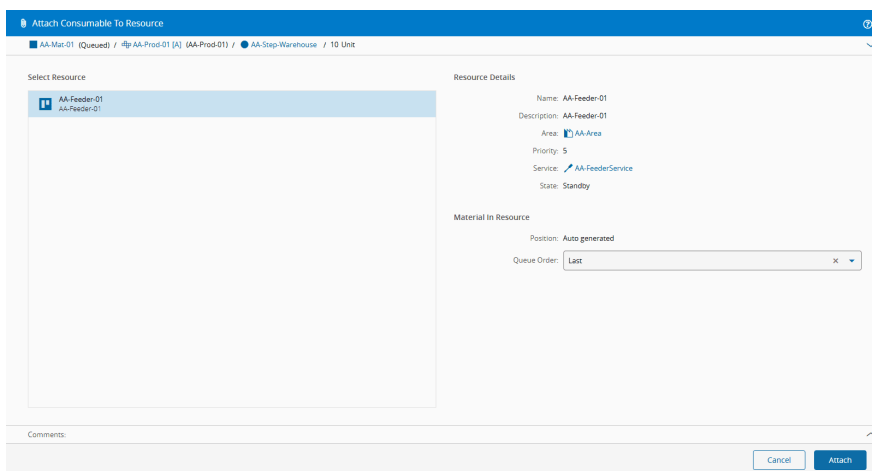
Comments:

Cancel Add

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



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



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

Manage Material Dependencies

FROM TO

AA-Mat-02 (Queued) / AA-Prod-02 [A] / AA-Prod-02 / AA-Step-Mixing / 10 Unit

Dependencies

AA-Mat-01

Material Dependency Details

From Material

AA-Mat-01

From Step

AA-Step-Mixing

From Row Path

AA-Flow-Production [A]

AA-Step-Mixing

Flow Path

AA-Flow-Production [A] > AA-Step-Mixing

To Material

AA-Mat-02

To Step

AA-Step-Mixing

To Row Path

AA-Flow-Production [A]

AA-Step-Mixing

Flow Path

AA-Flow-Production [A] > AA-Step-Mixing

Comments

Cancel Update

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

Manage Material Dependencies

FROM TO

AA-Mat-02 (Queued) / AA-Prod-02 [A] / AA-Prod-02 / AA-Step-Mixing / 10 Unit

Dependencies

AA-Mat-01

Material Dependency Details

To Step

AA-Step-Mixing

To Row Path

AA-Flow-Production [A]

AA-Step-Mixing

Flow Path

AA-Flow-Production [A] > AA-Step-Mixing

From Quantity

From Units

Units

To Quantity

To Units

Units

System State

Closed

Comment

Comments

Cancel Update


Note

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

Dispatch and Track-In Material

RESOURCE

BOM

RESULTS

AA-Mat-02 (Queued) / AA-Prod-02 [A] / AA-Prod-02 / AA-Step-Mixing / 10 Unit

 The object AA-Mat-02 of type Material has dependencies on object AA-Mat-01 of type Material.

Comments

Cancel < Back Next > Track-In

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

Dispatch and Track-In Material

RESOURCE

BOM

RESULTS

AA-Mat-02 (Queued) / AA-Prod-02 [A] / AA-Prod-02 / AA-Step-Mixing / 10 Unit

AA-BOM-01 [A] (AutomaticTrackOut) / Units: Unit

ITEM	LOCATION	POSITION	PRODUCT	PRODUCT DESCRIPTION	STEP	QUANTITY	REFERENCE	PRODUCT MIX	DISCRETE	REQUIRED QTY.	CURRENT QTY.	DELTA	
1			AA-Prod-01 [A]	AA-Prod-01	AA-Step-Warehouse	1 Unit	X	X	X	10 Unit	10 Unit	0 Unit	1 >

Rows per Page: 25
Page 1 of 1 (1 Records)

Comments

Cancel < Back Track-In

Dispatch and Track-In Material

RESOURCE —> RCM

AA-Mat-02 (Queued) / AA-Prod-02 [A] / AA-Prod-02 / AA-Step-Mixing / 10 Unit

AA-BOM-01 [A] (AutomaticAtTrackOut) / Units: Unit

Consumable Feed AA-Feeder-01

AA-Prod-01

MATERIAL	PRODUCT	STEP	PRIMARY QTY	EXPIRATION DATE
AA-Mat-01	AA-Prod-01 [A]	AA-Step-Warehouse	10 Unit	

Rows per Page: 25 Page 1 of 1 (1 Records)

Comments:

Cancel

< Back

Track-In

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:

Track-Out Material

RESOURCE STATE —> RESULTS

AA-Mat-02 (InProcess) / AA-Prod-02 [A] / AA-Prod-02 / AA-Step-Mixing / 10 Unit

There must be an active Material Dependency from Material 'AA-Mat-01' to the Material 'AA-Mat-02'.

Comments:

Cancel

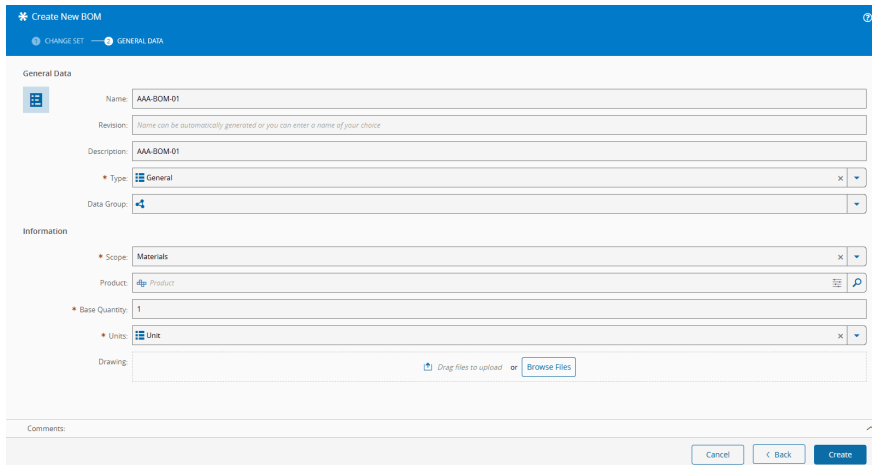
< Back

Next >

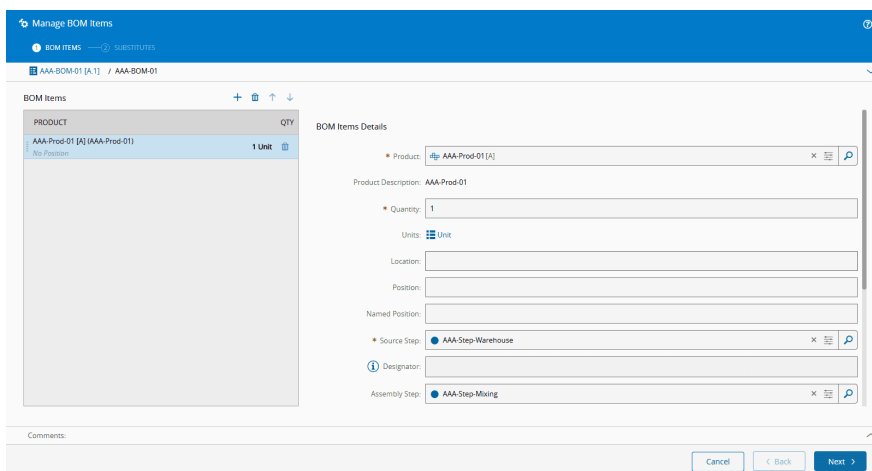
Track-Out

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:

Manage BOM Items

BOM ITEMS / Structures

AAA-BOM-01 (A-1) / AAA-BOM-01

PRODUCT	QTY
AAA-Prod-01 (A) (AAA-Prod-01)	1 Unit

No Position

Named Position:

* Source Step: AAA-Step-Warehouse

Designation:

Assembly Step: AAA-Step-Mixing

Logical Flow Path:

Reference:

Product Mix Allowed:

* Material Reservation Mode: Production Order

Condition:

Characteristic:

Value:

Comments:

Cancel Back Next

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

+ Add BOM Context Record(s)

BOMContext (Active)

Record(s)

Record #1
Step: AAA-Step-Mixing | BOM: AAA-BOM-01 | AssemblyType: AutomaticAtTrackOut | TrackInCheckMode: None | Tr

BOM Context

* Step: AAA-Step-Mixing

Logical Flow Path:

Product:

Product Group:

Flow:

Material:

Production Order:

* BOM: AAA-BOM-01

* Assembly Type: Automatic At Track Out

Track-In Check Mode: None

Track-Out Losses Mode: Before Assembly

Weigh And Dispense Mode:

Comments:

Cancel Add

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

Create Production Order

GENERAL DATA

General Data

Name: AAA-ProductionOrder

Description: AAA-ProductionOrder

Type: General

System State: Created

Data Group:

System State: Created

Information

Order Number: 1

Order Line:

Owner Role:

Customer: Business Partner

Facility:

Product: AAA-Prod.02(A)

Comments:

Cancel Create

Create Production Order

GENERAL DATA

Product: AAA-Prod.02(A)

Flow Path: AAA-Flow-Production [A] AAA-Step-Mixing

Flow Path: AAA-Flow-Production [A] > AAA-Step-Mixing

Quantity: 10

Units: Unit

Under Delivery Tolerance (%): 0 Minimum Quantity: 10

Over Delivery Tolerance (%): 0 Maximum Quantity: 10

Product Yield (%): 100

Yield Adjusted Quantity: 10

Scheduling

Due Date: 06/30/2025 04:31 PM

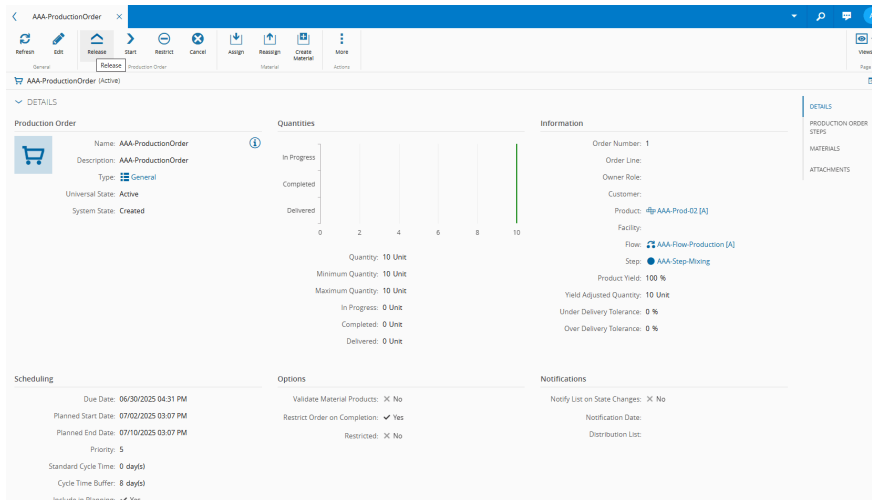
Priority: 5

Planned Start Date: MM/DD/YYYY HH:mm PP

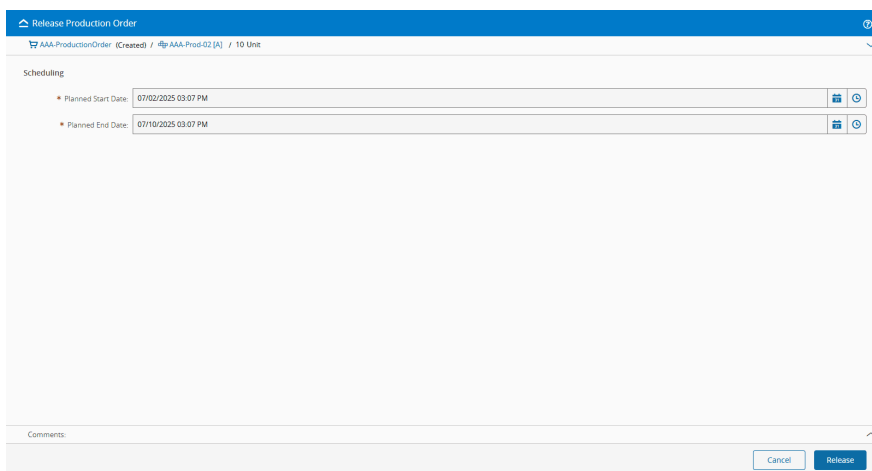
Comments:

Cancel Create

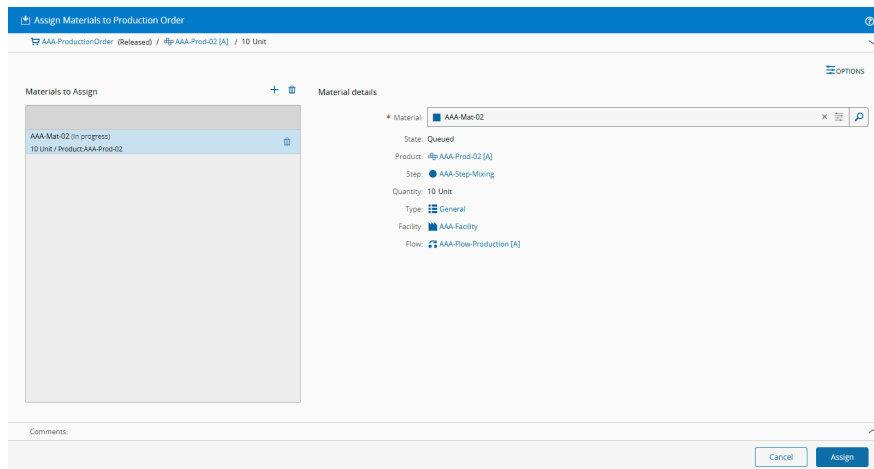
6. On the top ribbon of your **Production Order**, select **Release**:



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



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



Assign Materials to Production Order

AAA-ProductionOrder (Released) / AAA-Prod-02 [A] / 10 Unit

Materials to Assign

- AAA-Mat-02 (in progress)
- 10 Unit / Product AAA-Prod-02

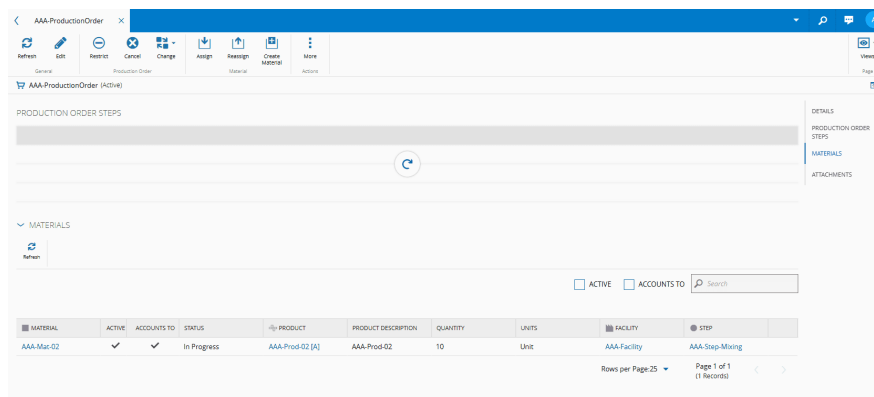
Material details

- Material: AAA-Mat-02
- State: Queued
- Product: AAA-Prod-02 [A]
- Step: AAA-Step-Mining
- Quantity: 10 Unit
- Type: General
- Facility: AAA-Facility
- Flow: AAA-Flow-Production [A]

Comments:

Cancel Assign

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



AAA-ProductionOrder

Refresh Edit Reprint Cancel Change Assign Reassign Create MRP's More

Production Order

PRODUCTION ORDER STEPS

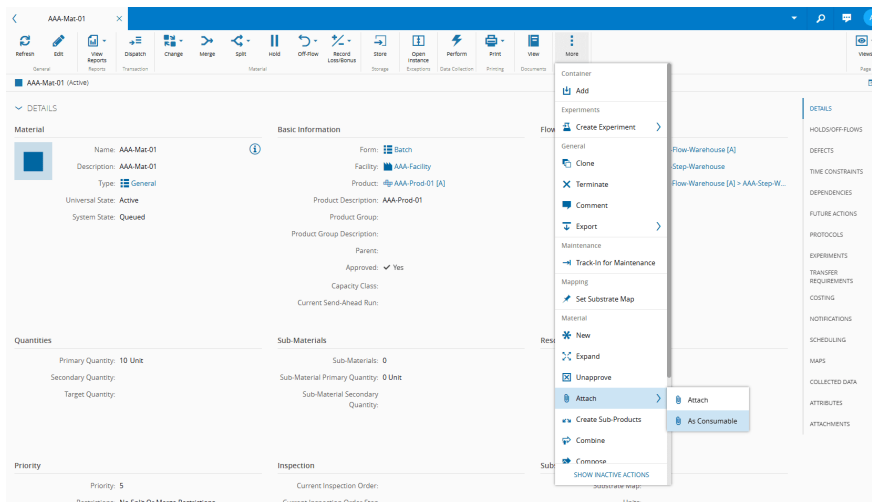
MATERIALS

ACTIVE ACCOUNTS TO Search

MATERIAL	ACTIVE	ACCOUNTS TO	STATUS	PRODUCT	PRODUCT DESCRIPTION	QUANTITY	UNITS	FACILITY	STEP
AAA-Mat-02	✓		In Progress	AAA-Prod-02 [A]	AAA-Prod-02	10	Unit	AAA-Facility	AAA-Step-Mining

Rows per Page: 25 Page 1 of 1 (1 Records)

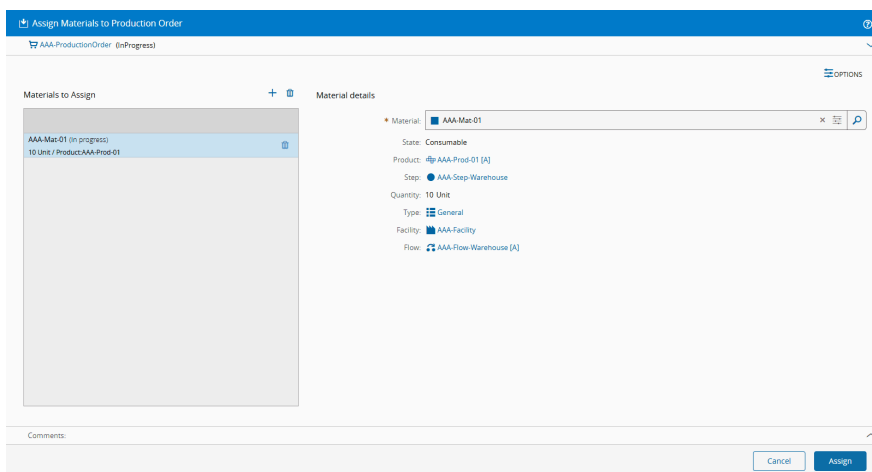
10. Now, attach your consumable **Material** as shown below:



Note

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

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



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

AAA-ProductionOrder

Refresh Edit Reassign Cancel Change Assign Reassign Create Material More

General Production Order Material Actions

AAA-ProductionOrder (Active)
PRODUCTION ORDER STEPS

DETAILS
PRODUCTION ORDER STEPS
MATERIALS
ATTACHMENTS

MATERIALS

Return

☐ ACTIVE ☐ ACCOUNTS TO

MATERIAL	ACTIVE	ACCOUNTS TO	STATUS	PRODUCT	PRODUCT DESCRIPTION	QUANTITY	UNITS	FACILITY	STEP
AAA-Mat-01	✓	✓	In Progress	AAA-Prod-01 [A]	AAA-Prod-01	10	Unit	AAA-Facility	AAA-Step-Warehouse
AAA-Mat-02	✓	✓	In Progress	AAA-Prod-02 [A]	AAA-Prod-02	10	Unit	AAA-Facility	AAA-Step-Mixing

Rows per Page: 25 Page 1 of 1 (2 Records)

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

Dispatch and Track In Material

RESOURCE BOM

AAA-Mat-02 (Queued) / AAA-Prod-02 [A] (AAA-Prod-02) / AAA-Step-Mixing / 10 Unit

AAA-BOM-01 [A] (AutomaticAtTrackOut) / Units: Unit

BOM

ITEM	LOCATION	POSITION	PRODUCT	PRODUCT DESCRIPTION	STEP	QUANTITY	REFERENCE	PRODUCT MIX	DISCRETE	REQUIRED QTY.	CURRENT QTY.	DELTA
1			AAA-Prod-01 [A]	AAA-Prod-01	AAA-Step-Warehouse	1 Unit	X	X	X	10 Unit	10 Unit	0 Unit

Rows per Page: 25 Page 1 of 1 (1 Records)

Comments

Cancel Back Track-In

Dispatch and Track In Material

RESOURCE BOM

AAA-Mat-02 (Queued) / AAA-Prod-02 [A] (AAA-Prod-02) / AAA-Step-Mixing / 10 Unit

AAA-BOM-01 [A] (AutomaticAtTrackOut) / Units: Unit

Consumable Feed AAA-Feeder-01

AAA-Prod-01

MATERIAL	PRODUCT	STEP	PRIMARY QTY.	EXPIRATION DATE
AAA-Mat-01	AAA-Prod-01 [A]	AAA-Step-Warehouse	10 Unit	

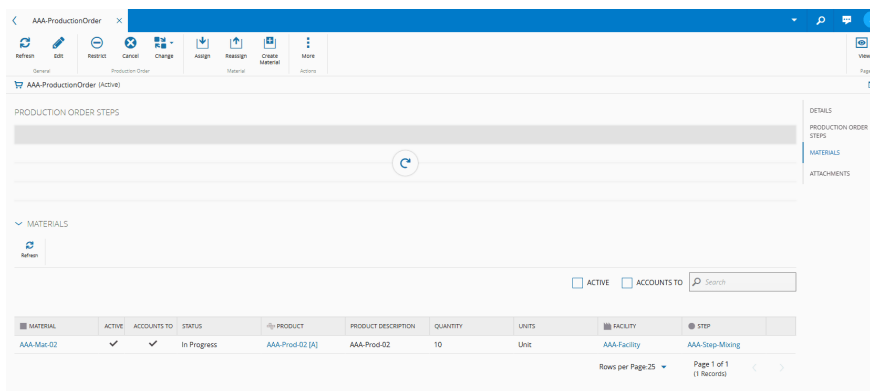
Rows per Page: 25 Page 1 of 1 (1 Records)

Comments

Cancel Back Track-In

14. Select **Track-In**.

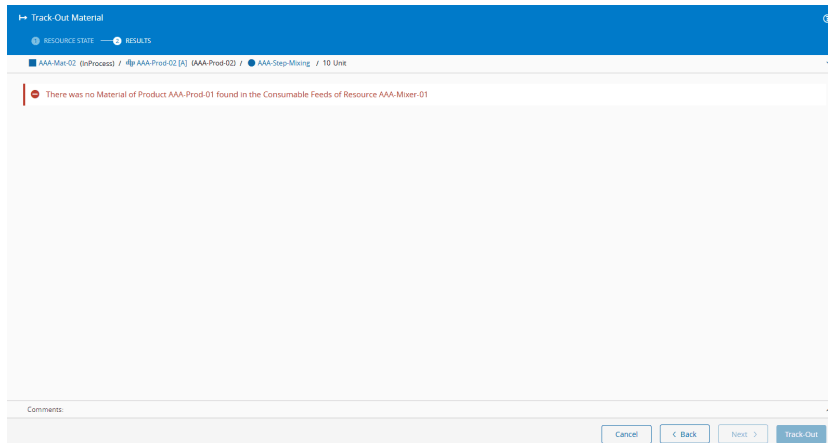
15. When you then select **Track-Out**, the whole **Material** will be consumed, as can be seen in the **Production Order**:



MATERIAL	ACTIVE	ACCOUNTS TO	STATUS	PRODUCT	PRODUCT DESCRIPTION	QUANTITY	UNITS	FACILITY	STEP
AAA-Mat-02	✓	✓	In Progress	AAA-Prod-02 [A]	AAA-Prod-02	10	Unit	AAA-Facility	AAA-Step-Mixing

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:



Track-Out Material

RESOURCES STATE RESULTS

AAA-Mat-02 (InProcess) / AAA-Prod-02 [A] (AAA-Prod-02) / AAA-Step-Mixing / 10 Unit

There was no Material of Product AAA-Prod-01 found in the Consumable Feeds of Resource AAA-Mixer-01

Comments

Cancel < Back Next > Track-Out



Legal Information

Disclaimer

The information contained in this document represents the current view of Critical Manufacturing on the issues discussed as of the date of publication. Because Critical Manufacturing must respond to changing market conditions, it should not be interpreted to be a commitment on the part of Critical Manufacturing, and Critical Manufacturing cannot guarantee the accuracy of any information presented after the date of publication. This document is for informational purposes only.

Critical Manufacturing makes no warranties, express, implied or statutory, as to the information herein contained.

Confidentiality Notice

All materials and information included herein are being provided by Critical Manufacturing to its Customer solely for Customer internal use for its business purposes. Critical Manufacturing retains all rights, titles, interests in and copyrights to the materials and information herein. The materials and information contained herein constitute confidential information of Critical Manufacturing and the Customer must not disclose or transfer by any means any of these materials or information, whether total or partial, to any third party without the prior explicit consent by Critical Manufacturing.

Copyright Information

All title and copyrights in and to the Software (including but not limited to any source code, binaries, designs, specifications, models, documents, layouts, images, photographs, animations, video, audio, music, text incorporated into the Software), the accompanying printed materials, and any copies of the Software, and any trademarks or service marks of Critical Manufacturing are owned by Critical Manufacturing unless explicitly stated otherwise. All title and intellectual property rights in and to the content that may be accessed through use of the Software is the property of the respective content owner and is protected by applicable copyright or other intellectual property laws and treaties.

Trademark Information

Critical Manufacturing is a registered trademark of Critical Manufacturing.

All other trademarks are property of their respective owners.