

Send-Ahead Run

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Send-Ahead Run

Estimated time to read: 6 minutes

A Send-Ahead Run represents a scenario where a given Sub-Material from a specific Material undergoes certain defined processing Steps while the remaining lot becomes a Waiting Material that is held at a Wait Step.

This document will guide you through the required configurations and set up for the **Send-Ahead Run** functionality.

Overview

The **Send-Ahead Run** functionality is used with **Material** for tracking, connecting, and checking purposes. This is, from a certain material group, a small set of materials are sent ahead to check for equipment and process correctness, while the rest of the material group is put on hold until the results are available. When the processing of the materials that were sent ahead is checked successfully, the rest of the material group can proceed. However, if the send-ahead material processing fails, the send-ahead materials are scrapped or reworked and new send-ahead materials are used.

Note

You can also define a **Send-Ahead Run** via [Future Actions](#) or as part of an [Experiment](#).

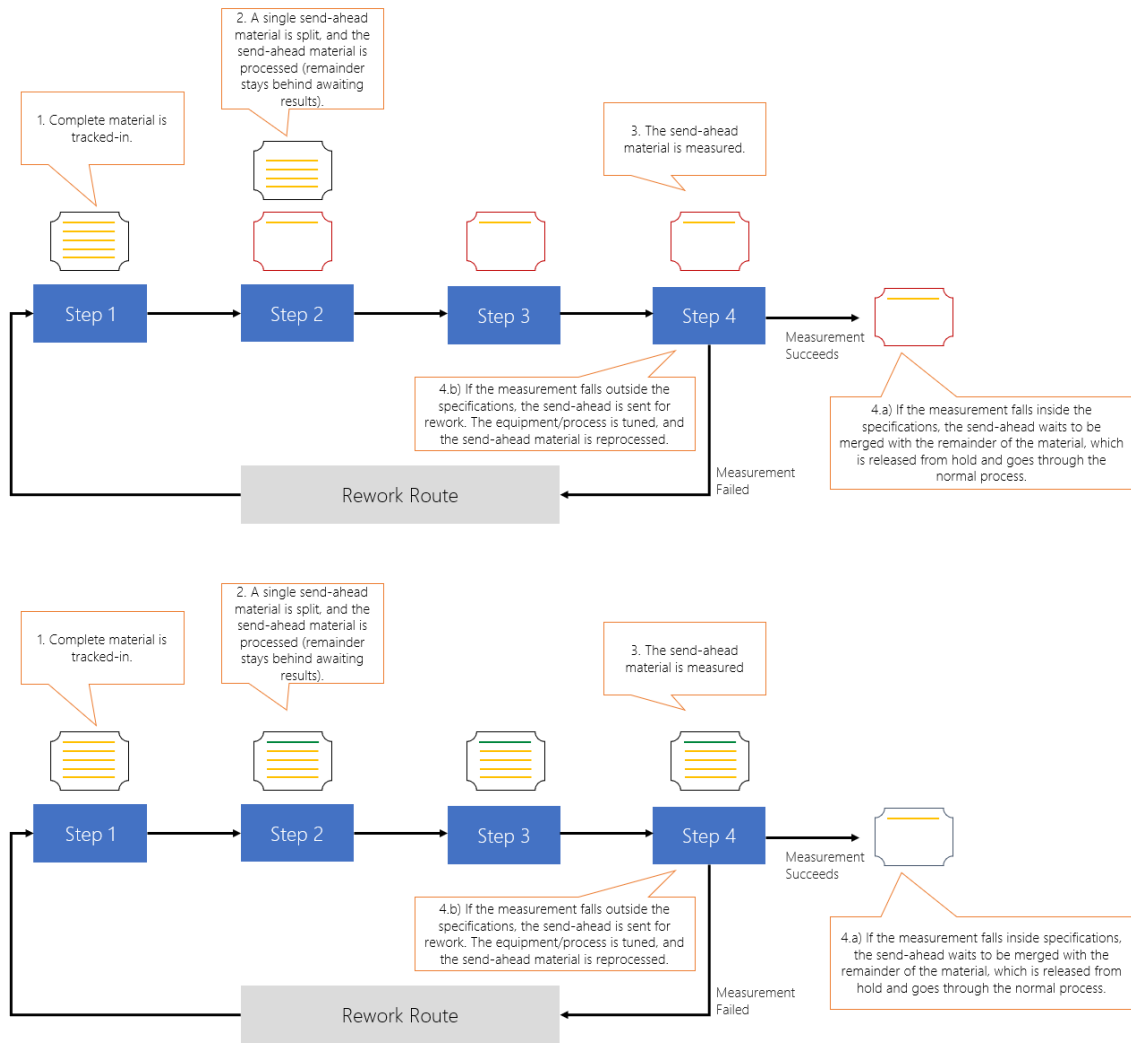
Setting up Send-Ahead Run

To have a functioning **Send-Ahead Run**, you have to set up other Critical Manufacturing MES entities as shown in the following table:

Step Number	Step	Description
1	Create a Flow	Create a Flow with Steps .
2	Create a Material	Create a Material .
3	Create a Reason	Create a Reason of type Hold and configure it.

Table: Steps to setup the Send-Ahead Run-related Entities

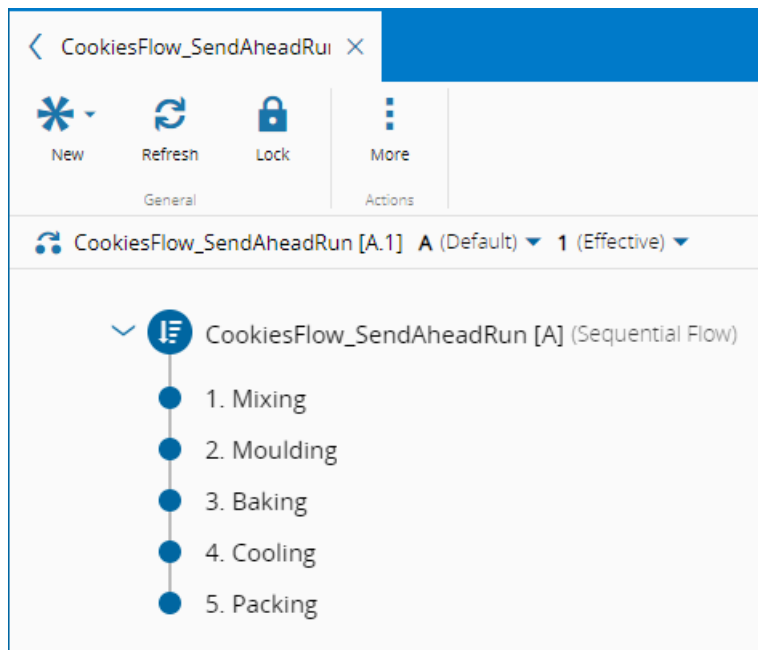
The [../images](#) below provide examples of basic **Send-Ahead Run** scenarios:



The next sub-sections will cover the required configuration steps in more detail.

Step 1: Create a Flow

1. Create a [Flow](#) accordingly and make sure that it has **Steps**. This tutorial will use three different **Steps** for the Wait, Evaluate, and Merge steps in the **Send-Ahead Run**:

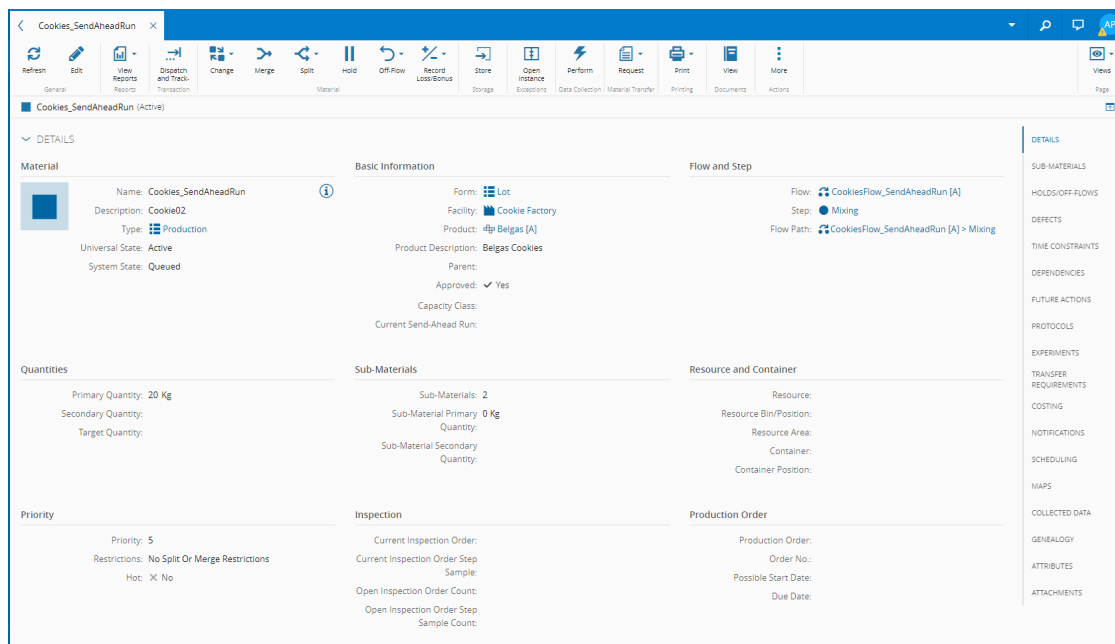


Note

It is not mandatory to have different **Steps**.

Step 2: Create a Material

1. Create a **Material** accordingly and make sure that it is configured to use the **Flow** you created. For this tutorial the **Material** is configured with **Sub-Materials**, one of which will be sent ahead:



Step 3: Create a Reason

1. Create a **Reason** accordingly, give it a Name, to use for configuration purposes, and select **Create**:

*** Create New Reason**

1 GENERAL DATA

General Data

Name:

Description:

Information

* Type:

Category:

Security Role:

Enable Concurrent Instances: ☐

Comments:

2. Configure the **Reason** by going to **Administration** followed by **Configuration**. Find and select the following key to be able to **Edit** it:

3. `/Cmf/System/Configuration/SendAheadRun/HoldReason/`

Configuration

Refresh Create Edit Remove

Configuration

CONFIGURATION ENTRIES

All Entries

ROOT

Root

Cmf

Entries (1) / All Items Selected

PATH	NAME	VALUE
<input checked="" type="checkbox"/> /Cmf/System/Configuration/SendAheadRun/HoldReason/	HoldReason	

☒ User Configs Display By: LATEST CHANGES Type: ALL

4. Select **Edit**, complete the **Value** field with the Name of your **Reason**, and select **Save**:

Edit Configuration Entry

General Data

Path: `/Cmf/System/Configuration/SendAheadRun/HoldReason/`

Name:

Type:

Value:

Comments:

Note

You can only edit a **Configuration** if it is selected. For more information, see [Configuration](#).

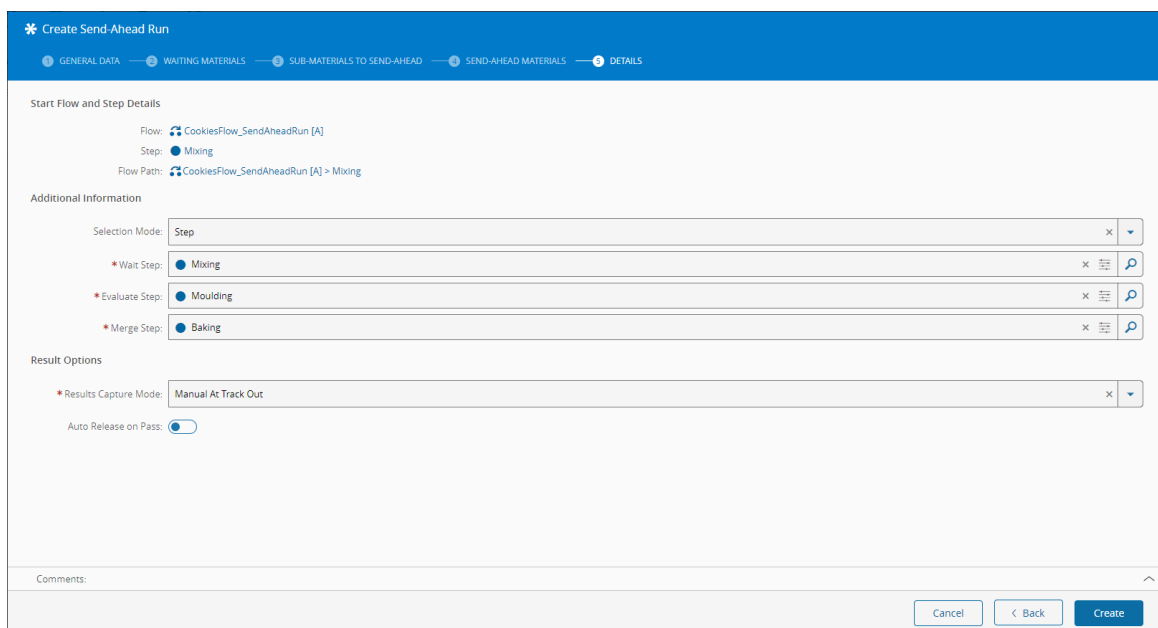
Using Send-Ahead Run

After setting up the required configurations mentioned above, you can create the **Send-Ahead Run** and use it to process your **Material**, as described in the next sections.

Create the Send-Ahead Run

Create the [Send-Ahead Run](#) and make sure that you defined a:

- Wait Step - where the main **Material** will be put on hold.
- Evaluate Step - where you will evaluate the **Material** that was sent ahead.
- Merge Step - where the main **Material** and the **Material** that was sent ahead will merge.
- Results Capture Mode - when results are recorded. For more information on the available options, see [Create Send-Ahead Run](#).



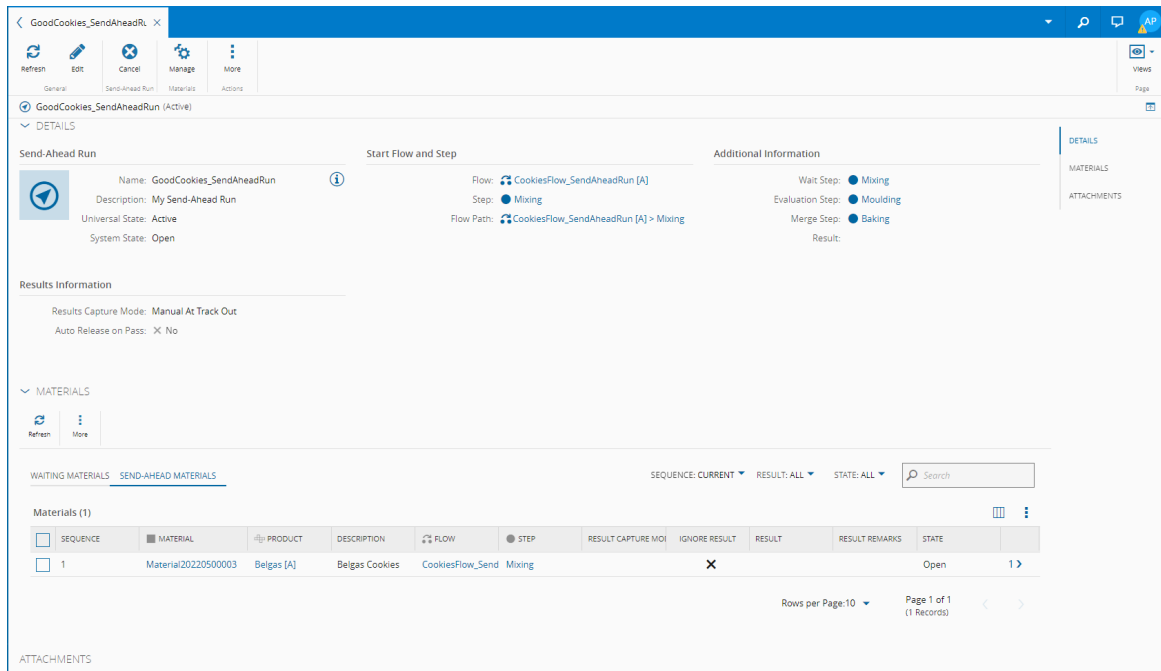
Note

The default of the **Results Capture Mode** is Manual. For this tutorial it is Manual at Track-Out so you can see how it works.

Note

The default of the **Auto Release on Pass** is `true`. For this tutorial it is `false` so you can see the manual release workflow.

When created, the **Send-Ahead Run** page contains all your configurations including details on the **Send-Ahead Materials**:

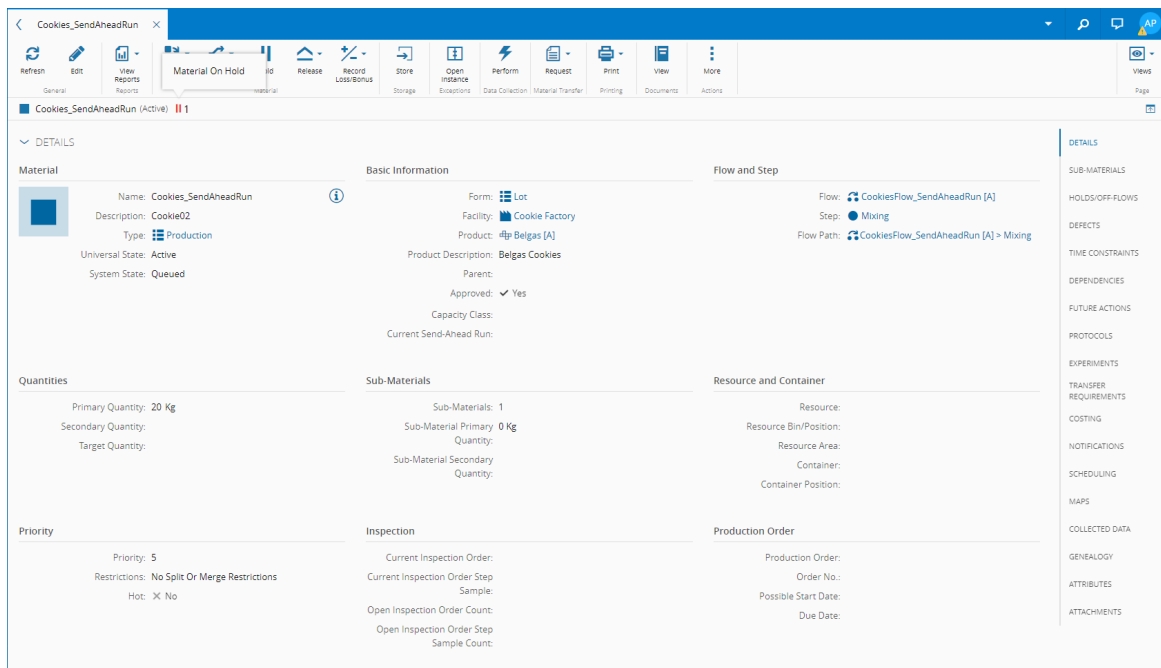


The screenshot shows the 'GoodCookies_SendAheadRun' details page. The 'DETAILS' section includes 'Send-Ahead Run' information (Name: GoodCookies_SendAheadRun, Description: My Send-Ahead Run, Universal State: Active, System State: Open), 'Start Flow and Step' (Flow: CookiesFlow_SendAheadRun [A], Step: Mixing, Flow Path: CookiesFlow_SendAheadRun [A] > Mixing), and 'Additional Information' (Wait Step: Mixing, Evaluation Step: Moulding, Merge Step: Baking, Result:). The 'Results Information' section shows 'Results Capture Mode: Manual At Track Out' and 'Auto Release on Pass: X No'. The 'MATERIALS' section has a table with one record:

SEQUENCE	MATERIAL	PRODUCT	DESCRIPTION	FLOW	STEP	RESULT CAPTURE MOI	IGNORE RESULT	RESULT	RESULT REMARKS	STATE
1	Material20220500003	Belgas [A]	Belgas Cookies	CookiesFlow_Send	Mixing		X			Open

The table shows 1 row per page, page 1 of 1 (1 Records).

And notice how, as defined in the Wait Step of the **Send-Ahead Run**, the main **Material** is on hold at the Mixing step:



The screenshot shows the 'Cookies_SendAheadRun' details page. The 'DETAILS' section includes 'Material' information (Name: Cookies_SendAheadRun, Description: Cookie02, Type: Production, Universal State: Active, System State: Queued), 'Basic Information' (Form: Lot, Facility: Cookie Factory, Product: Belgas [A], Product Description: Belgas Cookies, Parent: Approved: Yes, Capacity Class: Current Send-Ahead Run), 'Flow and Step' (Flow: CookiesFlow_SendAheadRun [A], Step: Mixing, Flow Path: CookiesFlow_SendAheadRun [A] > Mixing), 'Quantities' (Primary Quantity: 20 Kg, Secondary Quantity: Target Quantity:), 'Sub-Materials' (Sub-Materials: 1, Sub-Material Primary: 0 Kg, Sub-Material Secondary: Quantity:), 'Resource and Container' (Resource: Resource Bin/Position: Resource Area: Container: Container Position:), 'Priority' (Priority: 5, Restrictions: No Split Or Merge Restrictions, Hot: X No), 'Inspection' (Current Inspection Order: Current Inspection Order Step Sample: Open Inspection Order Count: Open Inspection Order Step Sample Count:), and 'Production Order' (Production Order: Order No.: Possible Start Date: Due Date:).

Process the Material

1. From the **Material** to be sent ahead, select **Dispatch and Track-In**.
2. Select an available resource and **Track-In**:

Dispatch and Track-In Material

RESOURCE

Material20220500003 (Queued) / Belgas [A] (Belgas Cookies) / Mixing / 0 Kg

Available Resources

- Mixer-02
Mixer-02 Resource
- Mixer-03
Mixer-03 Resource
- Mixer-04
Mixer-04 Resource
- Mixer-05
Mixer-05 Resource
- Mixer-01
Mixer-01 Resource

Resource Details

Name: Mixer-02
Description: Mixer-02 Resource
Area: Cookie Manufacturing
Priority: 2
Material(s) Dispatched: 0
Material(s) In Process: 0
Running Mode:
Service: Mixing
State: Standby

Resource State

New State:

Comments:

3. Select **Track-Out** and perform the necessary steps in the **Track-Out Material** wizard to **Track-Out**.
4. Select **Move-Next** on the top ribbon and then again in the **Move Material to Next Step** wizard to move the **Material** to the **Evaluate Step**. In this case, Moulding:

Move Material to Next Step

NEXT STEP

Material20220500003 (Processed) / Belgas [A] (Belgas Cookies) / Mixing / 0 Kg

Flow Path: CookiesFlow_SendAheadRun [A] > Moulding

CookiesFlow_SendAheadRun [A] (Sequential Flow)

- 1. Mixing
- 2. Moulding
- 3. Baking
- 4. Cooling
- 5. Packing

Comments:

5. The **Material** is now in Moulding, the configured **Evaluate Step**, and you need to repeat the **Dispatch and Track-In** and **Track-Out** process.
6. Since you selected Manual at Track-Out as the **Results Capture Mode**, the last step of the **Track-Out Material** wizard is when you manually record the **Send-Ahead Run Materials Result**. The available options are **Pass** or **Fail**, and you can include **Remarks**:

Track-Out Material

RESOURCE STATE | NOTE | RECORD LOSS/BONUS | RECORD SEND-AHEAD RUN RESULTS

Material2022050003 (InProcess) / rlp Belgas [A] (Belgas Cookies) / Moulding / 0 Kg / 0 Cookies

Send-Ahead Run Materials (1)

ITEM	RESULT
1 Material2022050003 Cookie02	Pass

Send-Ahead Run Materials Result

Result: ✓ Pass

Fail

Remarks: Material is as specified. Approved.

Comments:

Cancel < Back Track-Out

7. Select **Track-Out** and your **Material** is tracked out successfully.
8. Return to the **Send-Ahead Run** and select **Release** on the top ribbon and again in the **Release Waiting Material** wizard:

GoodCookies_SendAheadRun

Refresh Edit Cancel Extend Release More

General Send-Ahead Run Actions

GoodCookies_SendAheadRun (Active)

DETAILS

Send-Ahead Run

Name: GoodCookies_SendAheadRun

Description: My Send-Ahead Run

Universal State: Active

System State: Open

Start Flow and Step

Flow: CookiesFlow_SendAheadRun [A]

Step: Mixing

Flow Path: CookiesFlow_SendAheadRun [A] > Mixing

Additional Information

Wait Step: Mixing

Evaluation Step: Moulding

Merge Step: Baking

Result: Pass

Results Information

Results Capture Mode: Manual At Track Out

Auto Release on Pass: X No

MATERIALS

Refresh More

WAITING MATERIALS SEND-AHEAD MATERIALS

SEQUENCE: CURRENT RESULT: ALL STATE: ALL Search

SEQUENCE	MATERIAL	PRODUCT	DESCRIPTION	FLOW	STEP	RESULT CAPTURE MOD	IGNORE RESULT	RESULT	RESULT REMARKS	STATE
1	Material2022050003	Belgas [A]	Belgas Cookies	CookiesFlow_Send	Moulding	Manual At Track ...	X	Pass		Closed

Rows per Page: 10 Page 1 of 1 (1 Records)

ATTACHMENTS

Note

Information regarding the **Send-Ahead Materials** is updated.

Note

This operation is not needed if the **Auto Release on Pass** is set to `true` when creating the **Send-Ahead Run**.

9. Now you need to perform **Dispatch and Track-In**, **Track-Out**, and **Move-Next** to your main **Material** (no longer on hold) until it reaches the **Merge Step** (Baking), at which point it will be waiting for merge:

Waiting for 1 Material(s) to proceed with the merge:

Material20220500003

General: Refresh, Edit, Perform, Store, Open Instance, Perform, Request, Print, View, More

Storage: Open Instance, Perform, Request, Print, View, More

Details: Cookies_SendAheadRun (Active) 8 1

Material: Name: Cookies_SendAheadRun, Description: Cookie02, Type: Production, Universal State: Active, System State: Queued

Basic Information: Form: Lot, Facility: Cookie Factory, Product: Belgas [A], Product Description: Belgas Cookies, Parent: , Approved: Yes, Capacity Class: , Current Send-Ahead Run:

Flow and Step: Flow: CookiesFlow_SendAheadRun [A], Step: Baking, Flow Path: CookiesFlow_SendAheadRun [A] > Baking

Quantities: Primary Quantity: 4,000 Cookies, Secondary Quantity: , Target Quantity:

Sub-Materials: Sub-Materials: 1, Sub-Material Primary Quantity: 0 Cookies, Sub-Material Secondary Quantity:

Resource and Container: Resource: , Resource Bin/Position: , Resource Area: , Container: , Container Position:

Priority: Priority: 5, Restrictions: Merges Not Allowed, Hot: X No

Inspection: Current Inspection Order: , Current Inspection Order Step: , Sample: , Open Inspection Order Count: , Open Inspection Order Step: , Sample Count:

Production Order: Production Order: , Order No.: , Possible Start Date: , Due Date:

Details: SUB-MATERIALS, HOLDS/OFF-FLOWS, DEFECTS, TIME CONSTRAINTS, DEPENDENCIES, FUTURE ACTIONS, PROTOCOLS, EXPERIMENTS, TRANSFER REQUIREMENTS, COSTING, NOTIFICATIONS, SCHEDULING, MAPS, COLLECTED DATA, GENEALOGY, ATTRIBUTES, ATTACHMENTS

10. Go to the **Material** that was sent ahead, **Move-Next** and the **Materials** will be merged:

Move Material to Next Step

1 RESULTS

Material20220500003 (Processed) / Belgas [A] (Belgas Cookies) / Moulding / 0 Kg / 0 Cookies

Material(s) was/were moved to next Step successfully.
Material(s) was/were merged successfully.

Main material:
Cookies_SendAheadRun

Material(s) merged to main material:
Material20220500003

11. The **Material** that was sent ahead is now Terminated:

Material20220500003

Refresh, Untermi..., View Reports, Print, More

General, Reports, Printing, Actions

Material20220500003 (Terminated)

12. The **Sub-Material** that was used for the **Send-Ahead Run** process has returned to the main **Material**:

Cookies_SendAheadRun

Refresh Edit View Reports Dispatch and Track Transaction Change Merge Split Hold Off Flow Record Loss/Bonus Store Open Instance Perform Request Print View More

General

Sub-Materials (2)

MATERIAL	FORM	TYPE	PRODUCT	PRODUCT DESCRIPTION	FLOW	STEP	PRIMARY QTY	PRIMARY UNITS	CONTAINER	CONTAINER POSITION	STATE
Material20220500001	Cookie	Production	Belgas [A]	Belgas Cookies	CookiesFlow_Send	Baking	0	Cookies			Queued
Material20220500002	Cookie	Production	Belgas [A]	Belgas Cookies	CookiesFlow_Send	Baking	0	Cookies			Queued

Rows per Page: 10 Page 1 of 1 (2 Records)

DETAILS
SUB-MATERIALS
HOLDS/OFF-FLOWS
DEFECTS
TIME CONSTRAINTS
DEPENDENCIES
FUTURE ACTIONS
PROTOCOLS

13. The **Send-Ahead Run** is Terminated and Closed:

GoodCookies_SendAheadRun

Refresh More

General Actions

GoodCookies_SendAheadRun (Terminated)

DETAILS

Send-Ahead Run	Start Flow and Step	Additional Information
<p>Name: GoodCookies_SendAheadRun</p> <p>Description: My Send-Ahead Run</p> <p>Universal State: Terminated</p> <p>System State: Closed</p>	<p>Flow: CookiesFlow_SendAheadRun [A]</p> <p>Step: Mixing</p> <p>Flow Path: CookiesFlow_SendAheadRun [A] > Mixing</p>	<p>Wait Step: Mixing</p> <p>Evaluation Step: Moulding</p> <p>Merge Step: Baking</p> <p>Result: Pass</p>

Results Information

Results Capture Mode: Manual At Track Out

Auto Release on Pass: X: No

DETAILS
MATERIALS
ATTACHMENTS

Info

When the result of the **Send-Ahead Run** is a **Pass**, you can **Extend Send-Ahead Run**. For more information, see [Extend Send-Ahead Run](#).



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