

Using the Experiment Management Module

11.3

September 2026

DOCUMENT ACCESS

Public

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Using the Experiment Management Module

Estimated time to read: 4 minutes

Create Experiment

To validate the hypothesis of an Experiment Definition, associate it with a Material. There are two ways to create an Experiment:

1. Select an Experiment Definition and then a Material.
2. Select a Material and then an Experiment Definition.

A Material selected for an **Experiment Definition** must have the following properties defined:

- Product or Product Group
- Flow
- Material Type
- Material Form (if defined in the Experiment Definition)
- The sub-material form and number of required sub-materials, if the selected Mode is Sub-Materials

After selecting a Material and an Experiment Definition, if the Mode is Sub-Materials, you need to define the sub-materials to be assigned to each Sub-Material Number of the Experiment Definition, as shown in the image below. The system allows automatic assignment of the sub-materials to each Sub-Material Number, as shown in the image below, with the following options:

- **Sorted by Sub-Material Name** - the first experiment number is assigned to the first sub-material, sorted by name in ascending order.
- **Sorted by Container and Position** - the first experiment number is assigned to the first sub-material, sorted by Container and Position in ascending order.
- **Random** - positions are randomly assigned.

If the Maximum Number of Materials is defined, then the number of experiments must not exceed this number.

Info

A Material can only be assigned to a single Experiment at a time.

Create Experiment

MATERIAL SUB-MATERIALS

Experiment A.1

Assign Sub-Materials To Sub-Material Numbers

NUMBER AND MATERIAL GROUPS

1 Process 1

2 Process 2

SUB-MATERIAL AND CONTAINER

Material20191100003

Material20191100004

Sub-Material

* Sub-Material: Material20191100004

State: Queued

Product: Belgas

Step: Mixing

Primary Quantity: 5 Kg

Type: Production

Facility: Cookie Factory

Flow: CookiesFlow

Comments:

Cancel

< Back

Create

Create Experiment

MATERIAL SUB-MATERIALS

Experiment A.2

Assign Sub-Materials To Sub-Material Numbers

NUMBER AND MATERIAL GROUPS

1 Process A

2 Process B

SUB-MATERIAL AND CONTAINER

No Sub-Mate

No Sub-Mate

Sub-Material

Assign by Sub-Material Name

Assign by Container and Position

Assign Remaining Randomly

Clear

Comments:

Cancel

< Back

Create

Close Experiment

When the Material or its Sub-Materials reach the last Step of the Experiment and all the Actions have been performed, the Experiment transitions to the Completed state.

If **Close Experiment Automatically** is set to `true`, the Experiment closes automatically and can be edited before it is closed. Otherwise, the **Close** action is enabled on the Experiment page. Optionally, a Result and a Conclusion can be associated with the Experiment, as shown in the image below:

Close Experiment

Experiment A-000000001 (Completed)

Execution

Result:

Conclusions:

Success

Failure

Inconclusive

Comments:

Cancel

Close

Experiment Page

The Experiment page allows you to check its details, actions to be performed, and associated sub-materials when the Experiment Definition uses Sub-Materials. There are two available views: Details and Matrix.

In the Details view, you can see the Experiment configurations and the associated Material and Sub-Materials, as shown in the image below:

Refresh
Edit
Clone
Close
Terminate
Views

Experiment LOT AC-031 (In Progress)

EXPERIMENT

General data

Name: Experiment LOT AC-031

Description: AC lots internal improvements

System State: In Progress

Universal State: Effective

Experiment definition: Experiment LOT AC-031

Information

Material: LOT-WFR,1090

Start Date:

End Date:

First Step: Tape Application

Last Step:

SUB MATERIALS

NUMBER	MATERIAL	CONTAINER	MATERIAL GROUPS
1	Material-0123	CNT-A1 (1)	EXP Process
2	Material-0125	CNT-A1 (3)	EXP Process
3	Material-0200	CNT-A1 (5)	AI & Polyimide
4	Material-0220	CNT-A1 (6)	AI & Polyimide
5	Material-0300	CNT-B30 (8)	EXP Process
6	Material-0250	CNT-A1 (7)	EXP Process
7	Material-0330	CNT-B30 (16)	Poly etch process
8	Material-0225	CNT-A1 (12)	New design REV

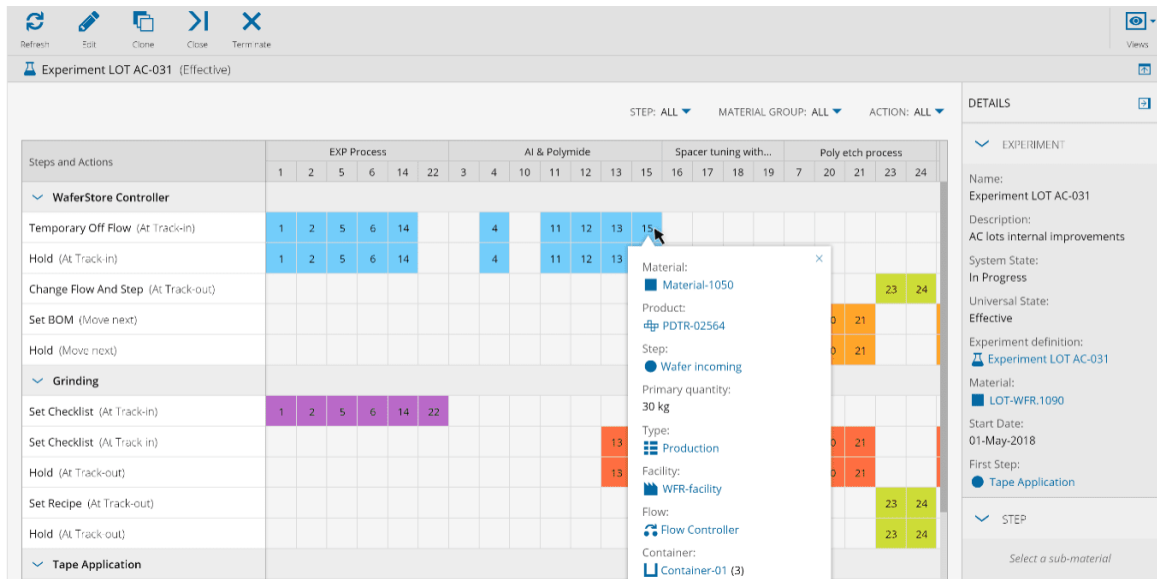
EXPERIMENT

SUB-MATERIALS

ATTACHMENTS

HISTORY

A Matrix view is also available, and it displays the defined actions for each Sub-Material per Step and Material Group, as shown in the image below. By selecting a Sub-Material and expanding the side Details tab, you can view additional information about the Experiment, Step, Action, and Sub-Material.



Executing an Experiment

The Experiment Management module automatically executes and controls all actions defined in an **Experiment Definition**. This ensures that experiment-related operations, such as material splits, merges, containment actions, and process deviations, are performed consistently and according to the configured experiment rules.

The module is particularly valuable in complex manufacturing environments, where experiment materials may coexist with production materials and require independent execution paths while maintaining full traceability and process control.

This section explains how to create and execute an **Experiment Instance** from start to finish.

Simple Scenario: Coating Recipe Test Exploring Containment Actions

The following video demonstrates how to create an Experiment Instance for the scenario described in the [Introduction](#). It also covers the complete execution flow, ensuring that all actions defined in the **Experiment Definition** are performed as expected.

Advanced Scenario: Developer Recipe Test Exploring Mixed Control Groups

The following video demonstrates the execution of the scenario described in the [Introduction](#), covering the complete lifecycle of the experiment, from material assignment through automatic experiment closure.



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