Material Logistics

11.0

March 2026

DOCUMENT ACCESS

Public

Material Logistics

Estimated time to read: 53 minutes

The purpose of Material Logistics is to provide material requirements and analytical support to determine optimal manufacturing cycle times, safety stock inventory requirements, and any other parameters related to material planning and inventory management.

Material Logistics supports the business processes related with requesting materials, fulfilling those requests and moving material between locations. This ensures that the right materials are available in the right quantities, at the right time, and in the right location.

With Material Logistics you can also specify different material supply paths for different storage areas and production lines, as well as support product lifecycles for better all-round management.

> **Info**
>
> Material Logistics is a separately licensed module.

This document will guide you through the Material Logistics Module required configurations.

Overview

The Material Logistics module enables the management and control of raw material since it becomes available in the warehouse until it is consumed on the shop floor. The Critical Manufacturing MES Material Logistics concepts and functionalities will be described in more detail over the next sections.

Concepts

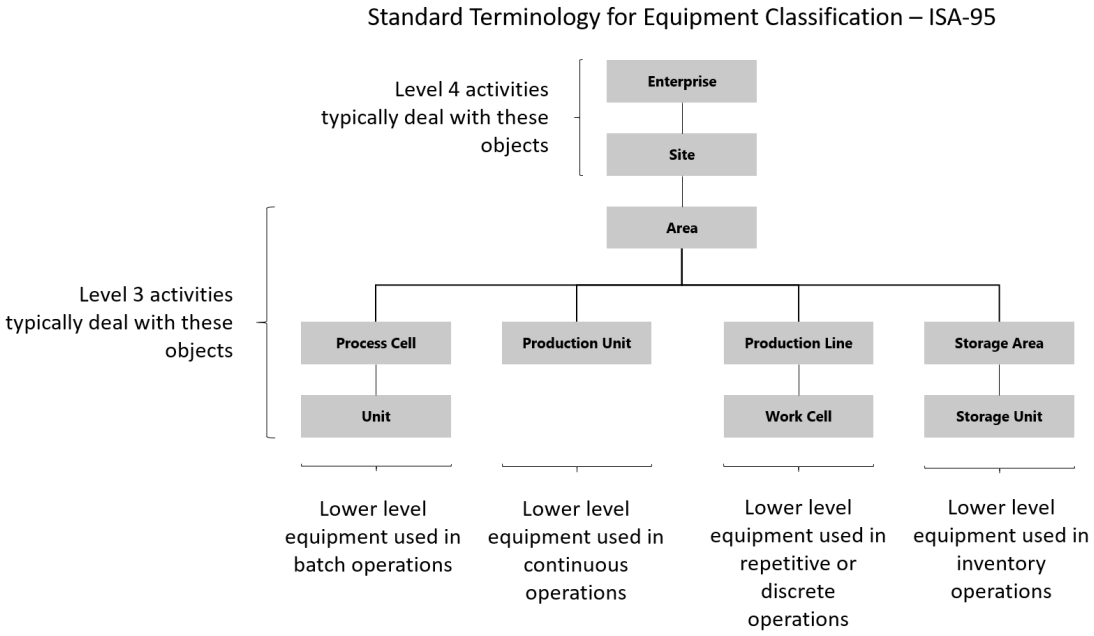
The Critical Manufacturing MES Material Logistics model is aligned with ISA-95 standard, as shown in the Table and Figure below. ISA-95 is the international standard for developing an automated interface between enterprise and control systems.

Critical Manufacturing MES implements Level 3 activities applicable to repetitive/discrete and inventory operations. The table below maps ISA-95 Object concepts into Critical Manufacturing MES concepts.

Isa-95 Object	Critical Manufacturing	Description
Enterprise	`Enterprise`	It is the root node that is given by every installation, it is the highest element in the hierarchy.
Site	`Site`	A Site models a logical concept. A Site typically has one single Facility. An Enterprise can have several Sites each with their Facility.
Facility	`Facility`	A Facility is typically a physical module. A Facility belongs to a single Site. A Facility can have several Areas.
Area	`Area`	An Area is a location within the Site/Facility. An Area can have sub-Areas, as well as Steps and Resources.

Isa-95 Object	Critical Manufacturing	Description
Production Line	`Sub-Area of type Production Line`	This is an Area that contains production equipment.
Storage Area	`Sub-Area of type Storage Area`	This is an Area that contains storage equipment.
Storage Unit	`Resource`	A Resource of Processing Type Storage that is intended to store Materials.
Work Cell	`Resource`	A Resource of Processing Type Line or Process that is intended to process Material.

Table: ISA-95 and Critical Manufacturing MES concepts



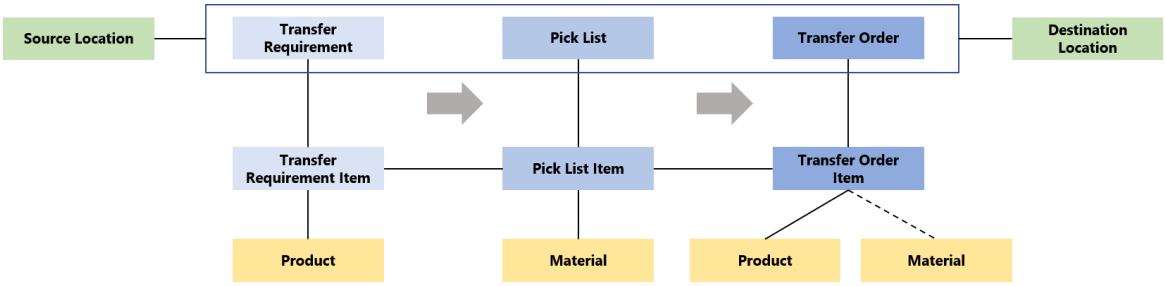
The table below describes the main concepts related to Material Logistics.

Concept	Description
Transfer Requirement	A list that specifies quantity demands for Products required by a storage area or production line.
Pick List	A list of Materials to be picked in order to meet the Transfer Requirement needs.
Transfer Order	A list that specifies, either a set of Materials or a set of Products and Quantities that have been picked and assigned to be transported from one location to another.
Storage Area	A set of storage resources (warehouses) logically grouped together.

Concept	Description
Production Line Area	A production zone with several production equipments.

Table: Material Logistics main concepts

The concepts presented above are linked in the MES object models displayed in the figure below.



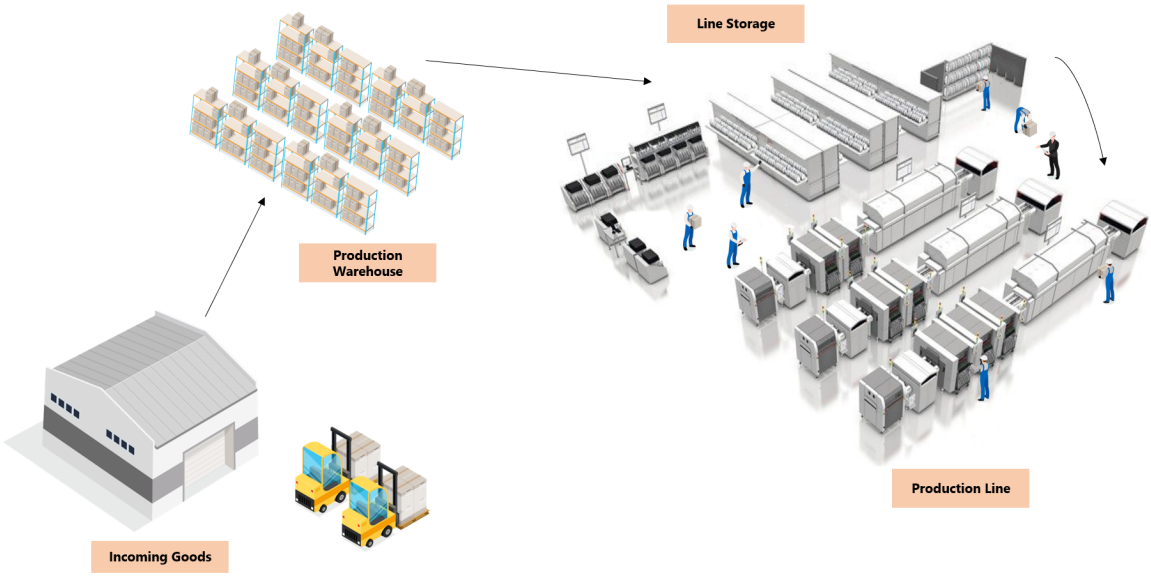
Moisture Sensitive Devices

Moisture Sensitive Devices (MSD) are electronic components encapsulated with plastic compounds and other organic materials. These devices have associated a Moisture Sensitivity Level (MSL), which can be assessed by the IPC/JEDEC J-STD-033C-1, Handling, Packing, Shipping, and Use of Moisture/Reflow Sensitive Surface Mount Devices standard. This standard defines the time that an MSD can be exposed to ambient room conditions and also defines how exposure time can be preserved and recovered.

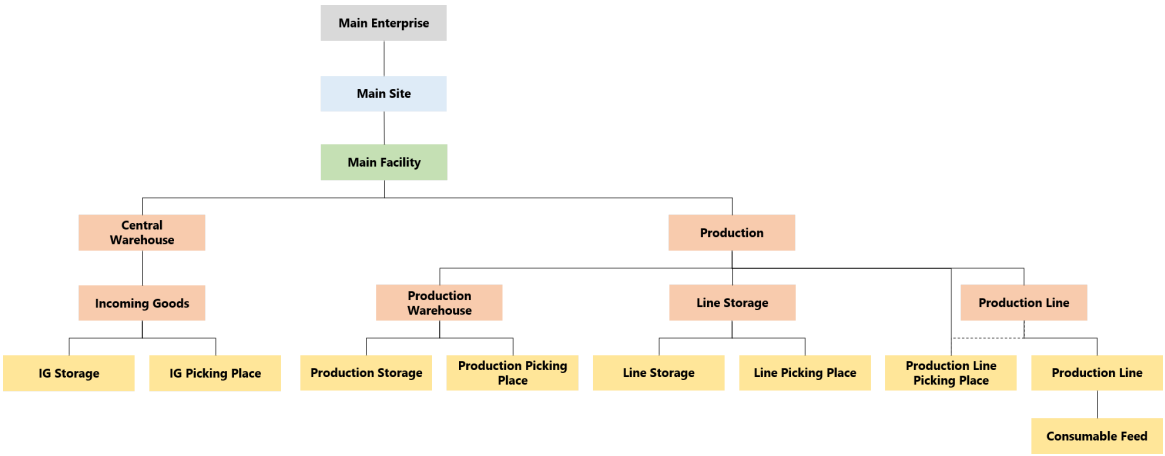
The control of an MSD is within the scope of the Material Logistics module and is explained in more detail in the *Moisture Sensitivity Level Handling* section.

Setting up a Material Logistics Flow

To enable the Material Logistics module functionalities, it is necessary to set up the Critical Manufacturing MES entities. An example, with the entities hierarchy, is displayed in the Figures below. On this example, the following structure can be observed: raw Materials are received on the Incoming Goods Area, within a Central Warehouse Area. After that, the Materials are stored in an intermediate location, on the Production Warehouse Area, within the Production Area. Then, Materials are transported to a location closer to the Production Line Area in order to be readily available for consumption, the Line Storage Area.



The entities hierarchy for the above-mentioned example is displayed in the figure below.



Caption:

In order to set up the Material Logistics-related Entities, it's necessary to follow the steps as described in the Table below.

Step Number	Step	Description
1	**Create the necessary Enterprise, Sites and Facilities**	Create the necessary Enterprise, Sites and Facilities for your scenario.

Step Number	Step	Description
2	**Create the necessary Areas**	Create the necessary Areas of Type Area, Storage, and Production Line. Define the Areas Hierarchy and Areas Supply Flows for the Areas of Type Storage and Production Line.
3	**Define the Area Transfer Requirement Types**	For each Area Supply Flow define the Area Transfer Requirement Types.
4	**Create the necessary Resources**	Create the necessary Resources: Picking Places, Storage Resources (with or without Storage Bins), and Transport Resources. If applicable, define the Resource Automatic Replenishment contexts.
4	**Create the necessary Products**	Create the necessary Products and ensure that the Material Logistics properties are configured. If applicable, define the Product Manufacturers.

Table: Steps to setup the Material Logistics related Entities

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

Enterprise, Site and Facility

An Enterprise is the topmost MES entity of the entities hierarchy, as displayed in the Figure above. An Enterprise can, optionally, be linked to one or more Sites.

To create a Site, the properties listed in the table below need to be defined.

Property	Description
Enterprise	Optionally, an Enterprise can be defined for the Site.
Remote	A Site can be Local or Remote. If set to True, for Shipping operations the properties Remote Export Address, Remote Export Plugin, Remote Export Tenant, and Remote Export Token can optionally be defined.

Table: Site properties

A Site can, optionally, be linked to one or more Facilities. To create a Facility, the properties listed in the table below need to be defined.

Property	Description
Calendar	Optionally, a Calendar can be defined for the Facility.
Site	Optionally, a Site can be defined for the Facility.
Remote	The Facility can be Local or Remote, depending on the selected Site.

Property	Description
Terminate on Ship to This Facility	If set to True, the Materials (and Containers) are terminated when shipped to this Facility. It is only possible to set it to True if the Facility is not Remote.

Table: Facility properties

After the creation of a Facility, it is possible to define to which Facilities it is possible to Ship to, by accessing the Manage Facilities to Ship to on the Facility Details.

Areas

To model a production site, it is required to define, in the first place, the Areas hierarchy and then, the Areas Supply Flows. The Area hierarchy is established by the defined Parent Areas.

The Areas Supply Flows define, for example, which Area will supply the required Materials to a particular destination Area and it is established by the Supply Areas defined for the destination Area. Please refer to the *Supply Areas* sub-section.

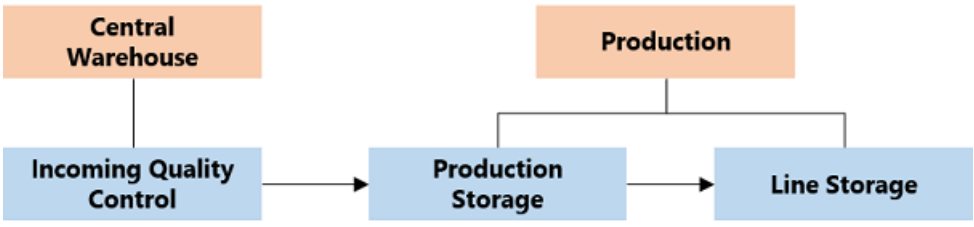
To create an Area, the properties listed in the table below need to be defined.

Property	Description
Facility	The Facility of the Area. An Area can only have a single Facility defined.
Area Type	There are three Area Types: - Area: Areas of this Type can be defined as topmost Areas and can have sub-Areas. Only this Area Type can have a Calendar defined and its sub-Areas are assumed to use the same Calendar as the topmost Area. - Production Line: this Area Type cannot be a topmost Area and can only contain Resources of Processing Type Process Line. - StorageArea: this Area type cannot be a topmost Area and can only contain Resources of processing type Storage.
Parent Area	For the definition of the Areas hierarchy, a Parent Area can be defined. An Area Type Production Line and Storage Area must have a parent Area of Type Area. In any case, it is only possible to select a parent Area of the same Facility.
Calendar	The Calendar of the Area. It must be defined for topmost Areas.
Default Transfer Order Destination Location	A default Destination Location is pre-filled automatically when creating a Transfer Order for this Area (Source Area), but it can be overridden.
External Storage Area	If set to True, when creating a Transfer Requirement, the option 'Request Existing Material' is set to False and it is possible to specify as a free text a Material on the 'Request External Material'. If set to False, the User can specify a Material hint from that Product, available on the non-external source location.

Property	Description
Flow Path	The default Flow Path where Materials will be received or created. It must be defined for Area Types Production Line and Storage Area. The Flow Path Step, if defined, must include one Area that is the topmost of the current Area.
Area Sets Materials Flow Path	If set to True, when completing the Transfer Order movement, the Materials being received in the Storage Area or Production Line will have their Flow Path set to the Area Flow Path. If set to False and if the Source Facility is the same as the Destination Facility, the Material keeps the current Flow Path. If set to False and if the Source Facility is different from the Destination Facility, if the Material Last State is *Not Processed* or *Aborted* and the Material Step exists in the new Facility, then the Material current Flow Path is the new Flow Path. If the next Step in the Material Flow exists in the Destination Facility, that Flow Path is set. Otherwise, the Area Flow Path is used.
Incoming Picking Place	A Resource to be used as an incoming staging area. It must have the same topmost Area as the current Area and the property IsPickingPlace set to true. The same Picking Place can be used as Incoming and Outgoing Picking place and it can be shared among Storage Areas and Production Lines.
Outgoing Picking Place	A Resource, similar to the Incoming Picking Place, to be used as an outgoing staging area.
Picking Strategy	A Sort Rule Set that defines which Materials to pick, having off-the-shelf the following options: FIFO (First-In, First-Out), LIFO (Last-In, First-Out), and FEFO (First-Expiring, First-Out). If the User wishes to define a Picking Strategy it should be defined in the Source Location.
Picking Sequence	A Sort Rule Set that defines the picking sequence for a list of Materials. If the User wishes to define a Picking Sequence it should be defined in the Source Location.

Table: Area properties

Taking the above-mentioned example, raw Materials are received and stored in the Incoming Quality Control Step, on the Central Warehouse Area. When required, Materials will be transported to the Production Storage Step and, then, will be transported to the Line Storage Step in order to be consumed, as displayed in the figure below.

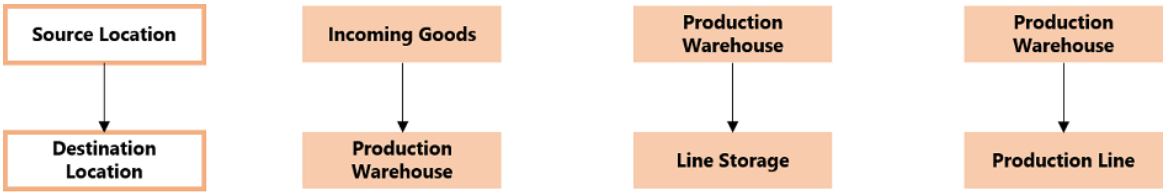


Caption:

Supply Areas

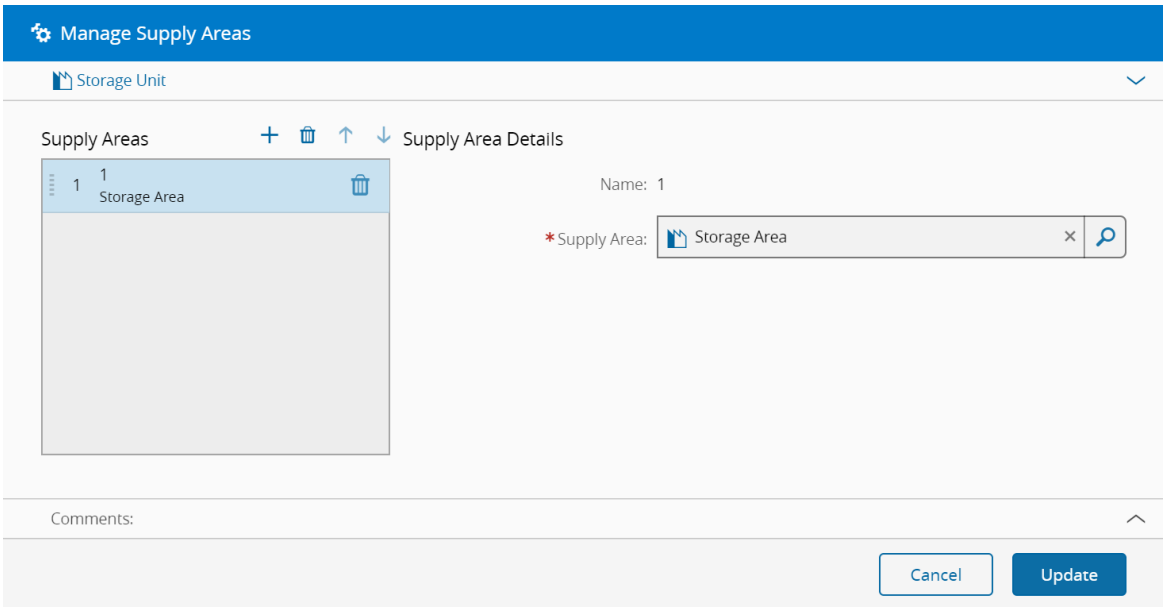
Supply Areas define the Areas supply flows and can only be defined for Areas of type Production Line or Storage Area. Taking the above-mentioned example, the Areas supply flows to be defined are shown in the

Figure below.



The Supply Areas are defined through the Manage Supply Areas wizard, as shown in the figure below.

> **Info**
>
> Only Areas of type Storage Area are available for selection.



Transfer Requirement Types

Area Transfer Requirement Types define the different Transfer Requirements scenarios supported by the Destination Location Area and can only be defined for Areas of type Production Line or Storage Area.

To configure a Transfer Requirement Type, it is necessary to access, from the Area object, the Manage Transfer Requirement Types wizard and it consists of the properties listed in the table below.

Property	Description
Transfer Requirement Type	The possible values are defined in the lookup table Transfer Requirement Type.
Source Location	The Source Area of the Materials. Only Areas defined in the Supply Areas are available for selection.
Destination Location	The Destination Storage Area of the Materials, if the Area Type is Production Line. As it is optional, if not filled, the Destination Location will be considered the Production Line itself. Only Areas defined in the Supply Areas are available for selection.

Property	Description
Automatic Approval	The Transfer Requirement will be automatically approved if set to True.
Enable Partial Release	Only possible to set to True if the Automatic Release option is set to False. If set to True, it is possible to perform partial releases.
Automatic Release	The Transfer Requirement will be automatically released if set to True.
Create Separate List for Floor Life Material	If set to True, two Pick Lists will be created: one for the Floor Life Materials and another for the Non-Floor Life Materials.
Skip Picking	If set to false, a Pick List will automatically be created for every released quantity.
Automatic Picking	Only possible to set to True if the Skip Picking option is set to False. If set to True, picking will be automatically performed.
Enable Partial Delivery	Only possible to set to True if the Automatic Delivery option is set to False. If set to True, it is possible to perform partial deliveries.
Automatic Delivery	The Transfer Requirement will be automatically delivered, if set to True. This property cannot be set to True if a Transport Resource is required.
Automatic Confirmation	The Transfer Requirement will be automatically confirmed if set to True.

Table: Transfer Requirement Types properties

Resource

A Material, to be stored, transferred or picked, requires Resources with specific configurations, as will be described in more detail in this section.

The following Resources should be created for the Material Logistics functionalities usage:

- **Picking Place** - the Resource where the Materials are placed to exit and enter Storage Areas and Production Line locations. The same Picking Place can be used as incoming and outgoing and it can be shared for multiple Areas and Production Lines (the property Picking Place must be set as True)
- **Storage Resource** - the Resource where the Materials need to be stored in order to be picked (the property Picking Place must be set as False)
- **Transport Resource** - the Resource which will perform the Material transport. It is only required if a Transport Service is configured for the Picking Place

To create a Resource for Material Logistics, the properties listed in the table below need to be defined.

Property	Description

Property	Description
Processing Type	There are two Processing Types for Material Logistics Resources: - Storage - Transport
Area	The Area of the Resource. Only topmost Resources having Processing Type Storage may have an Area defined of type Storage Area. Only topmost Resources having Processing Type Process or Line may have an Area defined of type Production Line.
Position Unit Type	Defines the type of objects that are stored and retrieved from the Resource. There are two Position Unit Types: - Material - Container Only to be defined for Storage Resources.
Has Storage Bins	Defines whether a Storage Resource uses named positions or Storage Bins. Storage Bins are storage locations/positions within a Resource and always have a position unit type Material.
Picking Place	Defines whether the Resource is a Picking Place or not. It can only be set to True if the Processing Type is Storage and if Has Storage Bins is set to False.
Transport Service	Defines the Transport Service required by the Picking Place. It can only be set to True if Picking Place is set to True.
Floor Life Safe	If set to True, when storing a Floor Life Material, the Floor Life counter is paused. It can only be set to True if the Processing Type is Storage.
Start Floor Life Counter On Retrieve	If set to True, when retrieving a Floor Life Material from the Resource, its Floor Life counter is started. It can only be set to True if the Floor Life Safe is set to True.
Enable Automatic Replenishment	Please check sub-section *Resource Automatic Replenishments* for more information. It can only be set to True if the Processing Type is Storage and Picking Place is set as False.
Automatic Replenishment Transfer Requirement Type	It defines the Transfer Requirement Type to be used for Automatic Replenishment requests. It must be defined if the Enable Automatic Replenishment is set to True and it can only be defined for Areas of type Storage Area or Production Line.

Table: Resource properties

For the above-mentioned example, the required Storage Resources are the following: Incoming Goods Storage, Production Storage, and Line Storage.

Storage Bin

Storage Bins are storage locations within Storage Resources.

A Storage Resource provides a Service of Processing Type Storage, which will be required by the Queued/Processed Storage Service of the Step.

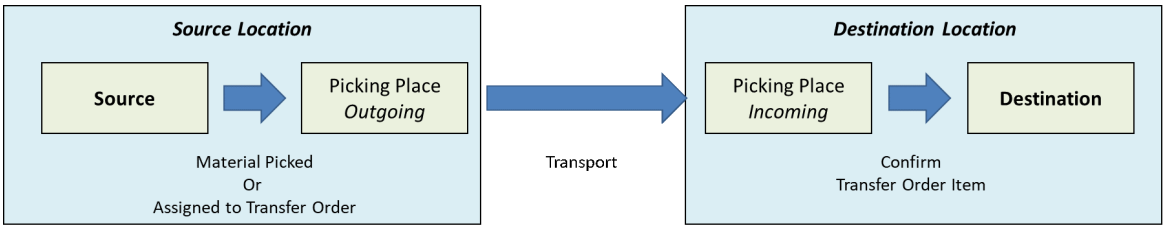
To configure a Storage Bin within a Storage Resource, the properties listed in the table below need to be defined.

Property	Description
Name	The Name of the Storage Bin, which must be unique within the Resource.
Product	If a Product is defined, the Bin can only be used to store Materials of this Product.
Product Group	If a Product Group is defined, the Bin can only be used to store Materials of this Product Group.
Preferred Storage Location	If set to True, this Bin is the preferred storage location for the Product or Product Group.
Floor Life Safe	If set to True, when storing a Floor Life Material in the Storage Bin, its Floor Life counter is paused.
Limited Positions	If set to True, the Storage Bin has limited capacity.
Total Positions	If Limited Positions property is set to True, the number of available positions in the Storage Bin.
Is Enabled	If set to True, the Storage Bin is enabled for storage.
Capacity Class	If a Capacity Class is defined, only Materials of this Capacity Class may be stored.

Table: Storage Bin Resource properties

Picking Place

A Picking Place is a virtual storage location that represents a staging area for Material in-between transports, as illustrated in the Figure below.



Info

A Picking Place is considered to have unlimited capacity and no Storage Bins. Also, Materials in a Picking Place location are not considered for picking.

For the above-mentioned example, the required Picking Place Resources are the following: Incoming Goods Picking Place (defined as the Outgoing Picking Place of the Incoming Goods Area), Production Picking Place (defined as the Incoming and Outgoing Picking Place of the Production Warehouse Area), Line Picking Place (defined as the Incoming Picking Place of the Line Storage Area) and the Production Line Picking Place (defined as the Incoming Picking Place of the Production Line Area).

Transport Resource

A Transfer Order will require a Transport Resource if the Source Location Picking Place defines a Transport Service.

A Transport Resource provides Services of Processing Type Transport.

Resource Automatic Replenishments

To ensure certain Resource inventory levels, it is possible to configure automatic replenishments. This means that a Transfer Requirement will be automatically created if the Resource's inventory level drops below a defined target inventory.

> **Info**
>
> Automatic Replenishments can only be defined for Resources of Processing Type Storage (that are not Picking Places), Process or Line that have the property Enable Automatic Replenishment set to True.

To use Automatic Replenishments, it is necessary either to configure the Replenishment Context, which can be accessed via the Resource Contexts View or via the Resource Inventory section on the Resource Details View and it consists of the properties listed in the table below. If the User configures the Resource Replenishment Context, then a more broad context can be defined and when storing or attaching a material to the Resource, a specific row will be added to the Resource inventory for the Material's Product.

Property	Description
Product	Each Resource Inventory Quantity is considered per Product. For the Transfer Requirement to be created, the Product needs to have the property 'Enabled for Material Logistics' set to True.
Target Inventory	The Target Inventory must be defined if the Reorder Mode is defined as Automatic. The Target Inventory value must be greater or equal to the Reorder Point.
Reorder Mode	There are two Reorder Modes: - Automatic: a Transfer Requirement is created if the Resource Inventory Quantity plus the Requested Quantity is below the Reorder Point - None: no automatic reorder is performed
Reorder Point	If the Resource Quantity plus the Requested Quantity is below the Reorder Point, a Transfer Requirement is created.
Reorder Quantity	When making an automatic replenishment request, the request will always be made in multiples of the Reorder Quantity.
Units	The Units in which the previous values are expressed. Units defaults to the Product default Units and, if not defined to the Product Group default Units if defined.

Table: Resource Replenishment Context properties

Since a Replenishment context can be defined for Resources with Processing Type Storage and Process, different operations can be performed to maintain the Resource inventory, as listed in the table below.

Operation	Storage Resource	Process Resource	Test Reorder Point and Reorder if Below?

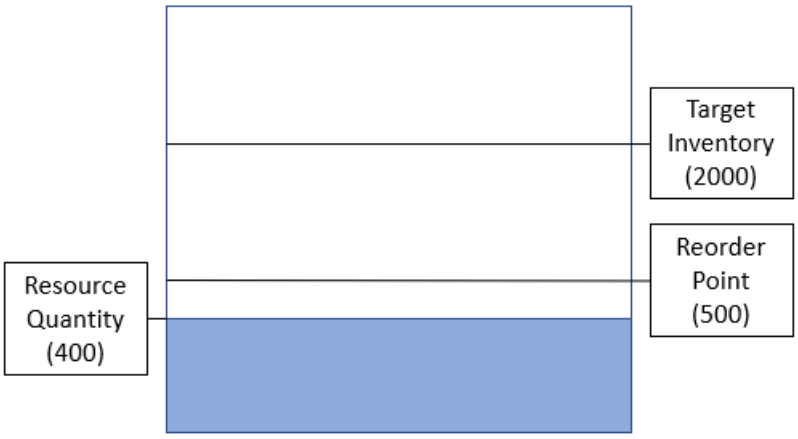
Operation	Storage Resource	Process Resource	Test Reorder Point and Reorder if Below?
Store	Increase inventory	Not applicable	No
Retrieve	Decrease inventory	Not applicable	Yes
Attach Consumable	Not applicable	Increase inventory	No
Detach Consumable	Not applicable	Decrease inventory	No
Consume	Not applicable	Decrease inventory	Yes
Negative Quantity Change (Record Loss, ...)	Decrease inventory	Decrease inventory	Yes
Positive Quantity Change (Record Bonus, ...)	Increase inventory	Increase inventory	No

Table: Resource inventory management handling for Storage and Process resources

Info

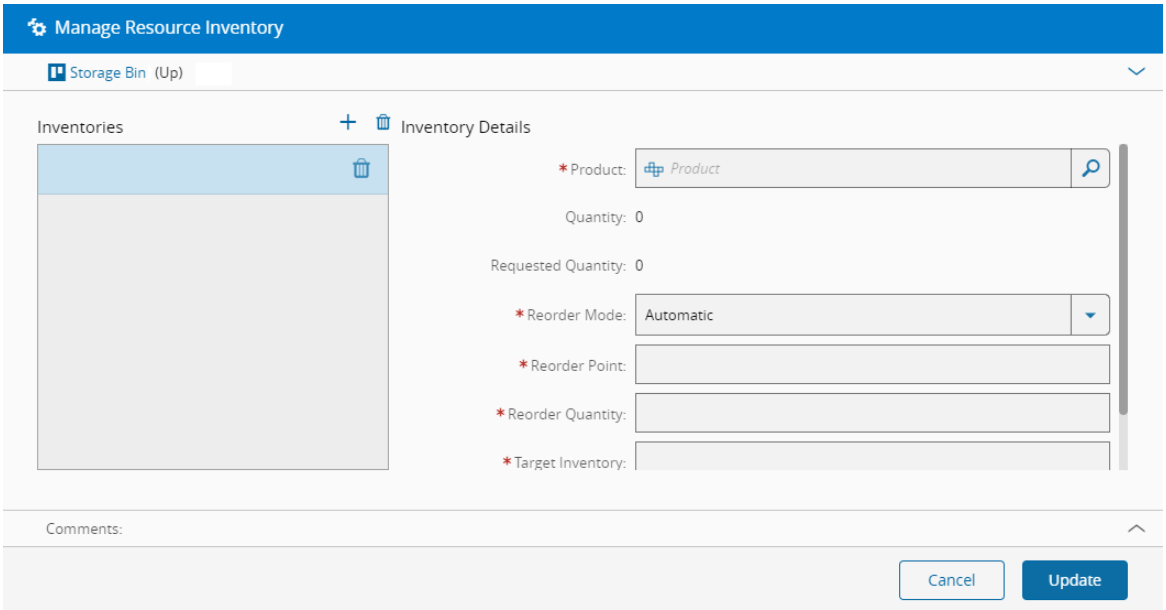
To store a Material in a Resource having automatic replenishment, the Product of the Material must exist in the Resource Replenishment Context.

Take a look at the following example, a Retrieve was performed in a Storage Resource of a Product with Reorder Mode defined as Automatic. Since the Target Inventory minus the Resource Quantity and the Requested Quantity equals 1600 and that the Reorder Quantity is 1000, the Requested Quantity equals 2000, as illustrated in the Figure below.




```
                    Requested Quantity =
Reorder Quantity (1000) * [Ceiling ( (Target Inventory Quantity (2000) –
Quantity (400) – Requested Quantity (0) ) / Reorder Quantity (1000) ) ) ]
                                = 2000
```

The Resource Inventory can be accessed and managed from the Resource Details, as illustrated in the Figure below.



Product

For the Material Logistics module, there are additional properties available for configuration on the Product, as listed in the table below.

Property	Description

Property	Description
Product Type	There are five Product Types that are relevant for Material Logistics: - Finished Good: represents a finished product - Raw Material: represents a product used as a raw material. - Semi-Finished Good: represents a semi-finished product - Part: represents a part requested for a Maintenance Activity Order - Durable: represents a tool used in the manufacturing of other Materials Default Units must be defined for all the Product Types in order to be possible to enable it for Material Logistics.
Moisture Sensitivity Level	The Moisture Sensitivity Level of the Product.
Floor Life	The Floor Life of the Moisture Sensitivity Level, as defined in the Generic Table Moisture Sensitivity Level.
Floor Life Unit Of Time	The Floor Life Unit Of Time of the Moisture Sensitivity Level, as defined in the Generic Table Moisture Sensitivity Level.
Requires Approval	For Products having the Product Type defined as RawMaterial, it is possible to define if the Materials of this Product require approval or not.

Table: Product Material Logistics properties

The Generic Table Moisture Sensitivity Levels has available out-of-the-box the entries listed in the Table below.

Level	Floor Life Time	Floor Life Condition
1	Unlimited	≤30 °C/85% RH
2	1 year	≤30 °C/60% RH
2a	4 weeks	≤30 °C/60% RH
3	168 hours	≤30 °C/60% RH
4	72 hours	≤30 °C/60% RH
5	48 hours	≤30 °C/60% RH
5a	24 hours	≤30 °C/60% RH
6	Time on Label (TOL)	≤30 °C/60% RH

Table: Out-of-the-box Moisture Sensitivity Levels

Info

You can add new Moisture Sensitivity Levels to reflect your situation that could be different from out-of-the-box standard industry levels. For more information, see MoistureSensitivityLevel.

Product Manufacturers

For Products with Product Type defined as Raw Material, Part, or Durable, it is possible to manage a list of Product Manufacturers.

To configure the Product Manufacturers, it is necessary to access the Manage Product Manufacturers wizard and, for each Product Manufacturer, the properties listed in the table below need to be defined.

Property	Description
Manufacturer	The manufacturer of a particular Product that is a Business Partner, having the property Manufacturer set as True.
Part Number	The manufacturer Product Part Number.
Moisture Sensitivity Level	The manufacturer's Product Moisture Sensitivity Level and, if defined, supersedes any Product level definition, for this manufacturer.
Floor Life	The manufacturer Floor Life of the Moisture Sensitivity Level, as defined in the Generic Table Moisture Sensitivity Level.
Floor Life Unit Of Time	The manufacturer Floor Life Unit of Time of the Moisture Sensitivity Level, as defined in the Generic Table Moisture Sensitivity Level.
Capacity Class	The manufacturer's Product Capacity Class and, if defined, supersedes the Product Capacity Class.
Standard Quantity	The manufacturer Product standard package quantity, expressed in the default Units.

Table: Product Manufacturer properties

Note

For information regarding the registration of Materials, please see Register Materials in the User Guide.

Material Logistics Information

If the Product has Default Units defined, the Material Logistics Information can be defined, as listed in the table below.

Property	Description
Enabled for Material Logistics	Whether the Product Materials are enabled for Material Logistics. If set to True, the below-listed options can be defined.
Split For Picking	If set to True, the Materials of this Product can be used in more than one Pick List.

Property	Description
Material Logistics Default Request Quantity	The default Quantity to be requested for the Product on a Transfer Request.
Consumption Scrap	The default Quantity to be requested will be increased on the percentage of the Consumption Scrap, for the Product on a Transfer Request.
Additional Consumption Quantity	The default Quantity to be requested will be increased on the Additional Consumption Quantity, for the Product on a Transfer Request.

Table: Material Logistics properties

Using Material Logistics

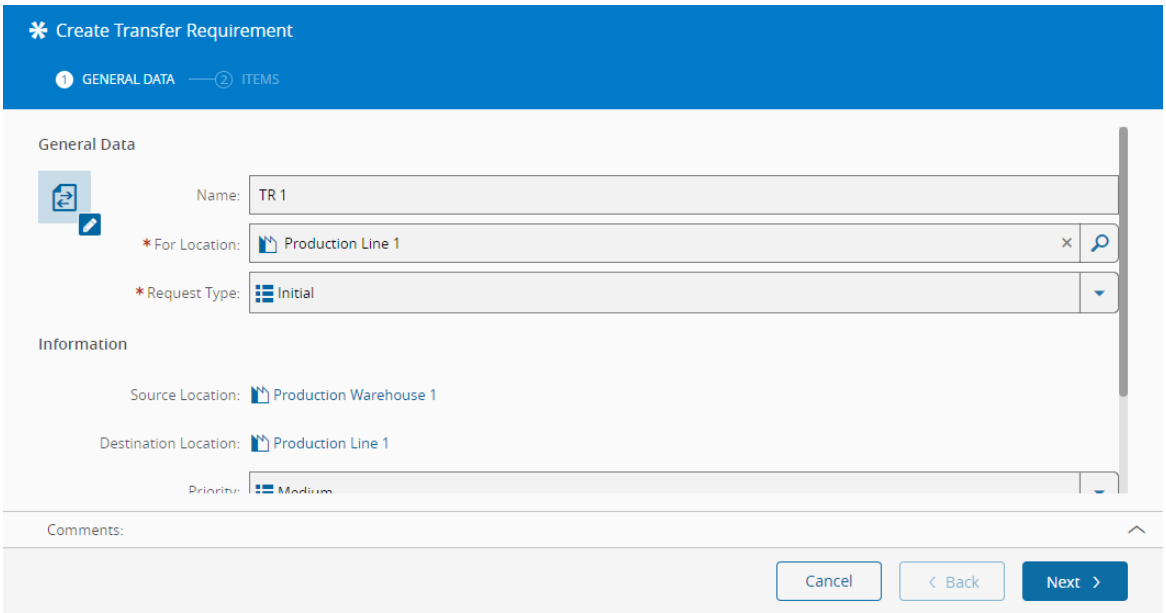
After setting up the required configurations mentioned in the above sections, the Material Logistics functionalities can be used, as described over the next sections.

Transfer Requirement

A Transfer Requirement contains information regarding the Material (Product and Quantity) needs in a destination location and which source location will fulfill those needs.

Create Transfer Requirement

The creation of a Transfer Requirement can be performed manually through the Create Transfer Requirement wizard, as displayed in the Figure below.



In a Transfer Requirement creation, it is necessary to define the properties listed in the Table below.

Property	Description

Property	Description
For Location	The destination Area, having Type Storage or Production Line, of the Transfer Requirement. The Source Location must have an Outgoing Picking Place and the Destination Location must have an Incoming Picking Place defined.
Request Type	The available Request Types are the Transfer Requirement Types defined in the selected For Location.
Additional Information	It is possible to refer, optionally, a Resource, Material, Step, Production Order, or Maintenance Activity Order for the Transfer Requirement.

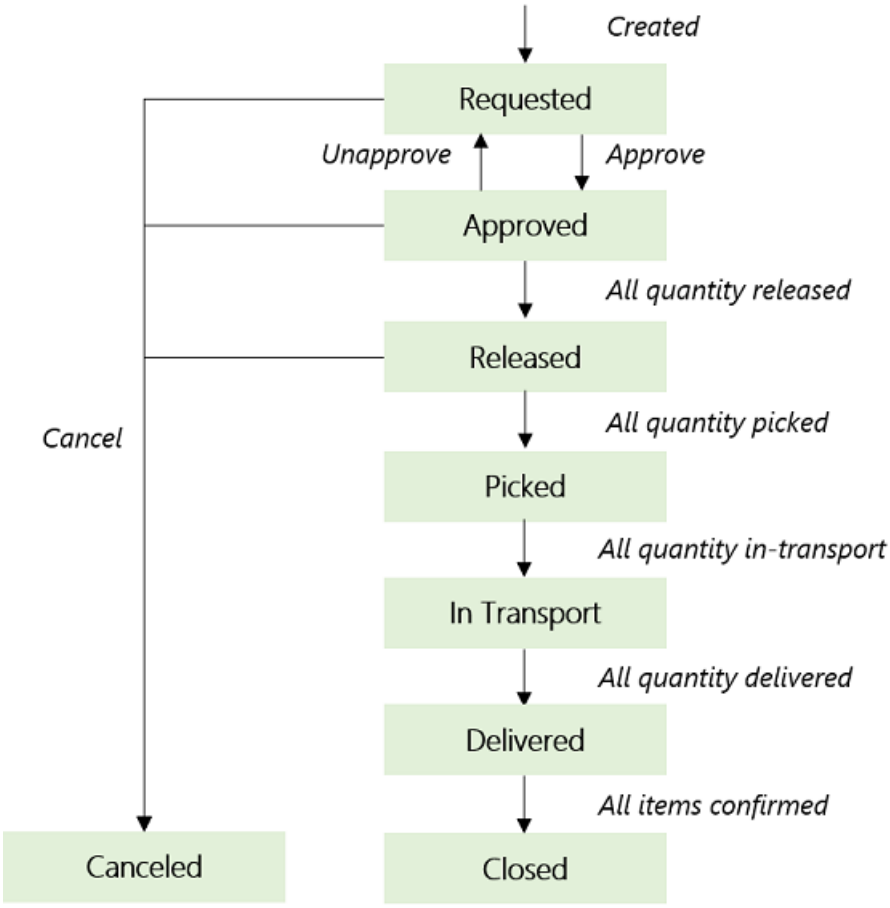
Table: Transfer Requirement creation

For each Transfer Requirement, there must be at least one Transfer Requirement Item and it is necessary to define the properties listed in the Table below.

Property	Description
Product	The Product to be requested. The Products available for selection must be enabled for Material Logistics.
Requested Quantity	The Quantity to be requested of the specified Product. The Required Quantity is filled with the Product property Material Logistics Default Request Quantity if defined.
Required Quantity	The Required Quantity is the Requested Quantity x (1 + Product Consumption Scrap) + Product Additional Consumption Quantity.
Units	The Product Units that default to the Product default Units, if defined. If not defined, and a Product Group is defined, defaults to the Product Group default Units.
Request Existing Material	This option, if set to True, the User can specify a Material hint from that Product, available on the non-external source location. If set to False, the User can specify as a free text a Material available on an external source location. It is not guaranteed that this Material will be used to fulfill this request.
Requested Material	If Request Existing Material is set to True, a search box is available with Materials of the selected Product and, if set to False, a free text box is available.

Table: Transfer Requirement Items definition

When creating a Transfer Requirement, its settings are inherited from the selected Transfer Requirement Type definitions. The Transfer Requirement and the Transfer Requirement Items System State are set as *Requested*. The Transfer Requirement State Model is illustrated in the Figure below.



After creating the Transfer Requirement, it needs to be approved. If Automatic Approval is set to True, the Transfer Requirement is automatically approved. Otherwise, the Transfer Requirement must be approved manually by using the Approve Transfer Requirement wizard, available on the Transfer Requirement. Once approved, the System State of the Transfer Requirement is set to *Approved*, and the Transfer Requirement Items System State is kept as *Requested*.

After approving the Transfer Requirement, it is possible to perform its Release. If Automatic Release is set to True, the Transfer Requirement System State is automatically released. Otherwise, the Transfer Requirement must be manually released by using the Release Transfer Requirement wizard. If the Transfer Requirement has the property Enable Partial Release set to True, it is possible to specify only part of the Required Quantity to be released, as displayed in the Figure below. On Release, the Transfer Requirement Item Released Quantity is increased to the defined Released Quantity.

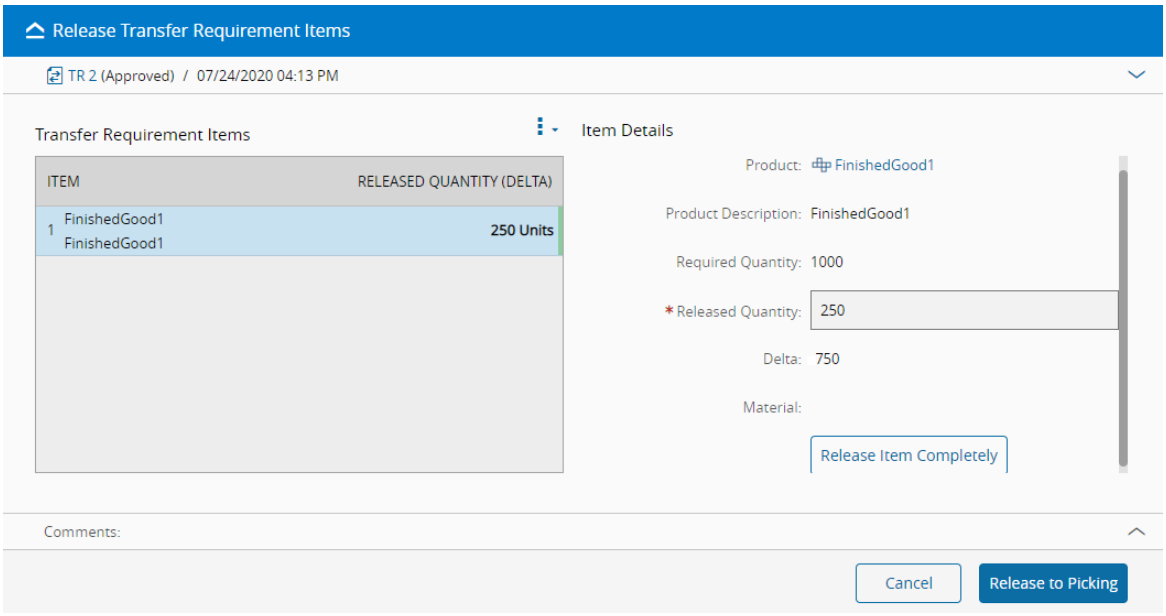
Info

On Release, if the Transfer Requirement Property Skip Picking is set to False, Materials that match the Transfer Requirement Items' Product and Units need to be stored in Storage Resources of the specified Source Location for the creation of the Pick List that is created automatically for each release. The Storage Resources must have the property Is Picking Place set to False.

Info

Please check the *Create Pick List For Transfer Requirements* section. Also, if Automatic Picking is set to True, on Release, the Transfer Requirement Item Picked Quantity will be increased.

When the Released Quantity matches the Required Quantity, the Transfer Requirement Item System State is set as *Released*. When all Transfer Requirement Items System State are set as *Released*, the Transfer Requirement System State is set as *Released* as well.



Create a Transfer Requirement for Material

A Material may be assembled when it is processed in a Step if a BOM context is defined. The User can create a Transfer Requirement in order to ensure that the Source Materials to be assembled are available on the Source Step.

To create a Transfer Requirement for a Material, the User must access the Create Transfer Requirement for Material wizard on the Material Details.

The Material must be in a Step with an applicable BOM and the BOM Source Products available for selection for the Transfer Requirement have the property Enabled For Material Logistics set to True.

> **Info**
>
> The Requested Quantity is calculated based on the Material Quantity times the BOM Item Quantity.

There is also the option of Special Create Transfer Requirement for Material. This option allows the selection of the Flow/Step for the Material for which the Transfer Request will be created, and the selected Step must have an applicable BOM Context for the Material.

Create a Transfer Requirement for Maintenance Activity Order (MAO)

When performing an MAO, a Bill-Of-Parts (a BOM with Scope Parts) may be defined in the Maintenance Plan Activity. The User can create a Transfer Requirement in order to ensure that the required Parts are available on the Source Step.

To create a Transfer Requirement for an MAO, the User must access the Create Transfer Requirement for Maintenance Activity Order wizard on the MAO Details.

The BOM Item Product must have the property Enabled For Material Logistics set to True.

Info

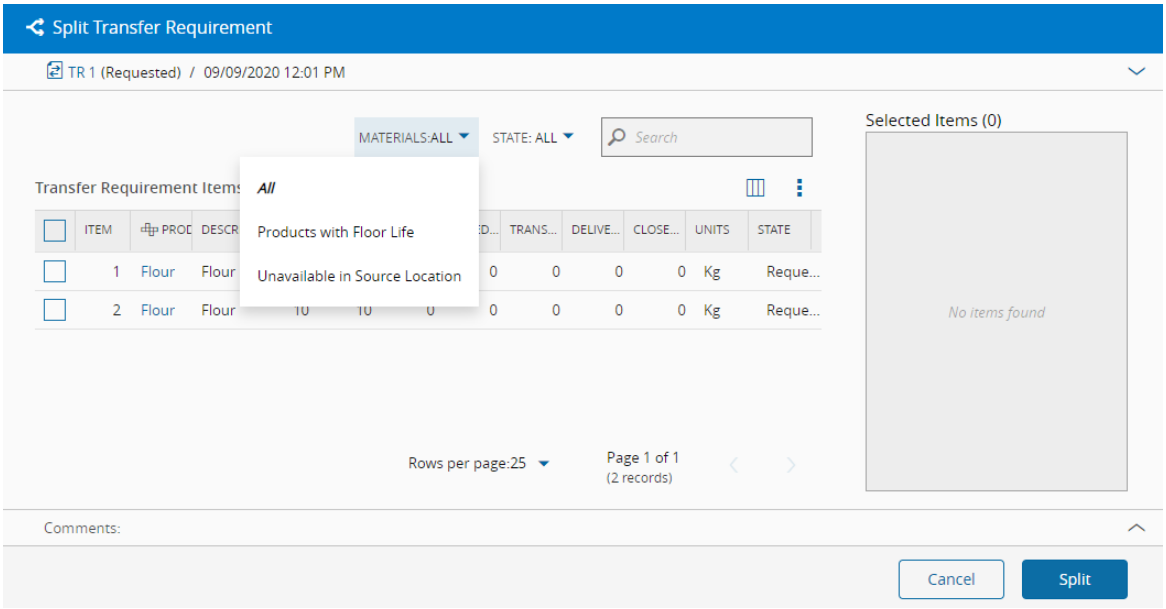
The Requested Quantity is calculated based on the BOM Item Quantity.

Split Transfer Requirement

After the creation of a Transfer Requirement, there may be the need to split it since:

- A Material may not be available
- Due to a Material's Floor Life, it may be picked separately

To split a Transfer Requirement, the User must access the Split Transfer Requirement wizard available on the Transfer Requirement Details or from the Transfer Requirement page on Planning and Logistics. Then, the User must select the Transfer Requirement Items he/she wishes to move to a separate Transfer Requirement. It is possible to filter the Items by Products with Floor Life or by Materials Unavailable in Source Location, as displayed in the Figure below.

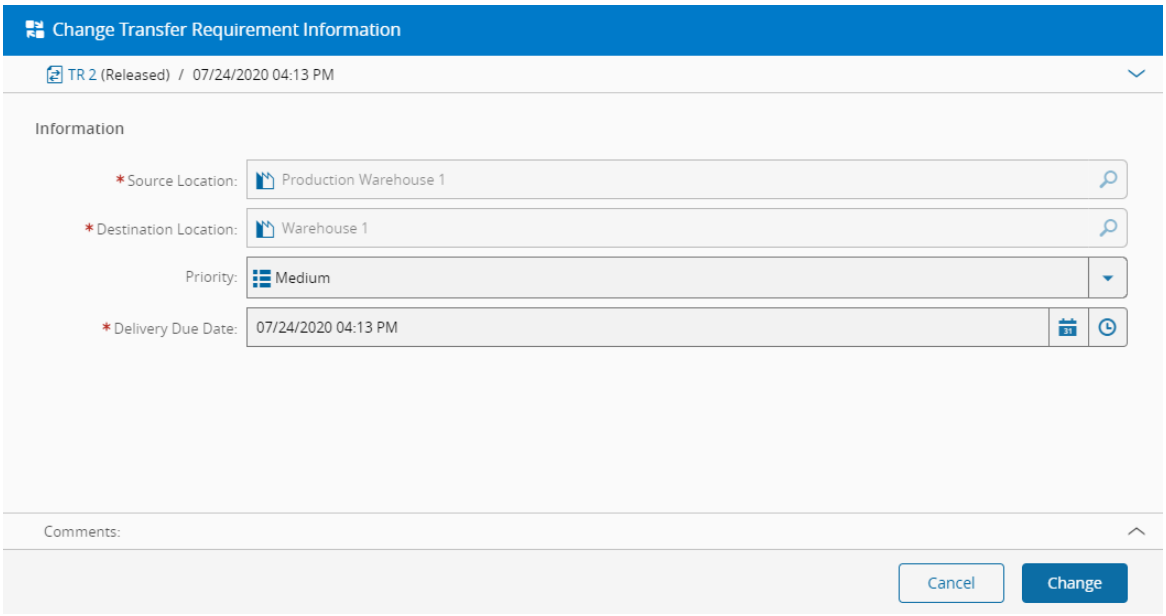


Change Transfer Requirement Information

It is possible to change the following Transfer Requirement information: Source Location, Destination Location, Priority, and Delivery Due Date, by accessing the Change Transfer Requirement Information wizard, as displayed in the Figure below.

Info

The Source Location and Destination Location can only be changed if the Transfer Requirement System State is Requested or Approved.



View Transfer Requirement Report

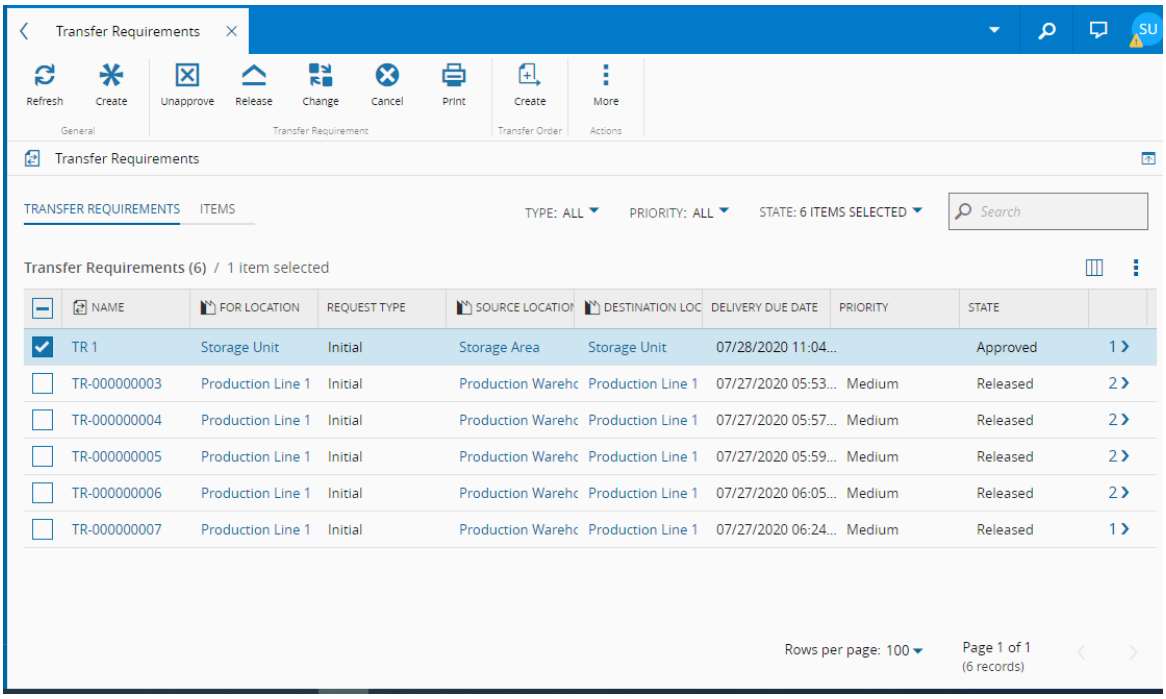
The User can view a report with the Transfer Requirement information by selecting the View Report button, available on the Transfer Requirement Details, or from the Transfer Requirement page on Planning and Logistics.

Planning and Logistics - Transfer Requirements

The existing Transfer Requirements can be accessed on the Planning and Logistics section, as displayed in the Figure below.

There are two tabs: Transfer Requirements and Items (Transfer Requirements Items). On each tab it is possible to select a row and perform the following operations:

- Create a Transfer Requirement
- Approve
- Unapprove
- Release
- Change Transfer Requirement Information
- Cancel
- View Report
- Create Transfer Order for Transfer Requirement



Pick List

A Pick List defines specific Materials to be picked in order to fulfill one or more Transfer Requirements. It enables the tracking of Material needs of Transfer Requirements, by specifying which Materials should be picked and in which sequence the picking should be performed.

> **Info**
>
> A Pick List cannot be directly created, it is created automatically only through the release (partial or in full) of a Transfer Requirement.

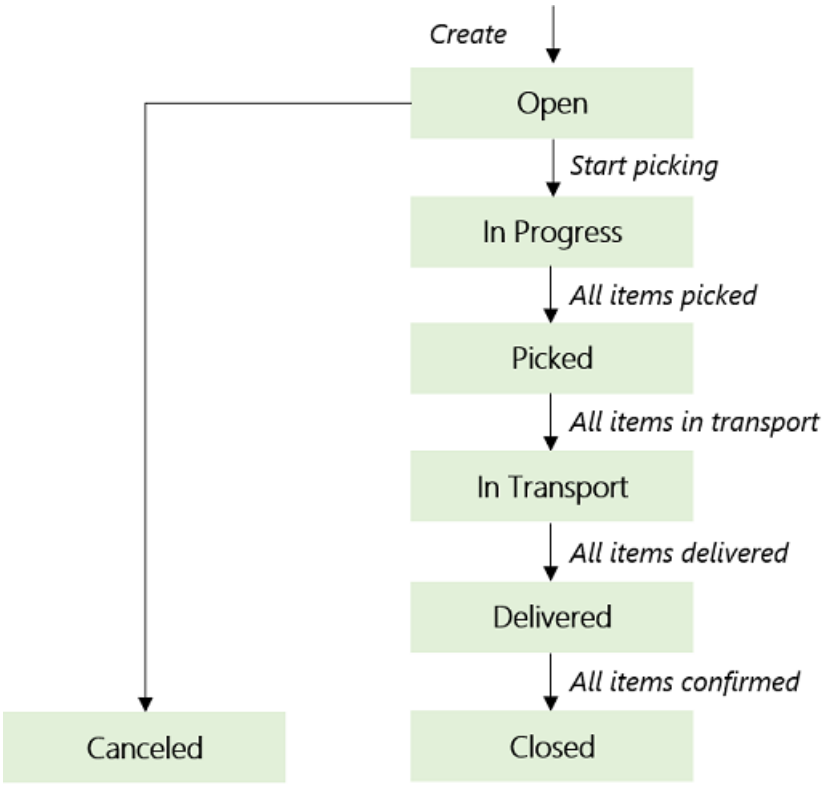
Create Pick List For Transfer Requirements

When Releasing a Transfer Requirement Item, a Pick List is created if the Transfer Requirement property Skip Picking is set to False.

A Release can encompass Transfer Requirement Items from different Transfer Requirements.

> **Info**
>
> In a Pick List, all Transfer Requirements must have the same Source Location, Target Location, Automatic Delivery, Automatic Confirmation.

The Pick List State Model is illustrated in the Figure below.



A Material, to be considered for picking, must meet the following conditions:

- Needs to be a topmost Material
- Must not be on Hold
- Must be In Store, if the Source Location is a Storage Area
- If the Product property Split for Picking is set to False, then the Material must not be referenced in a Pick List
- Must not be referenced in a Transfer Order Item

Info

If the Product property Split for Picking is set to True, then the available Material Quantity to be picked is set to the Material Primary Quantity plus the Sub-Materials Primary Quantity, excluding Material quantity that has been allocated already to other Pick Lists.

Only Materials which meet the conditions above will be available for Picking. If a Picking Strategy is defined, the defined Sort Rule Set will be used to sort the Materials that are available for selection for the Pick List.

Info

A Material can be used to fulfill more than one Transfer Requirement Item if the Product property Split for Picking is set to True.

If a Picking Sequence is defined and Automatic Picking is set to False, after the selection of the Materials to be Picked, the Pick List Item Sequence is defined.

Info

If the Destination Area Property Create Separate List for Floor Life Material is set to True, there will be a separate Pick List that will be created for Floor Life Materials.

If the property Automatic Picking of all Transfer Requirement Items is set to True, then the selected Materials will be automatically picked.

Manage Pick List Items

After the creation of a Pick List, there may be the need to manage the Pick List Items since:

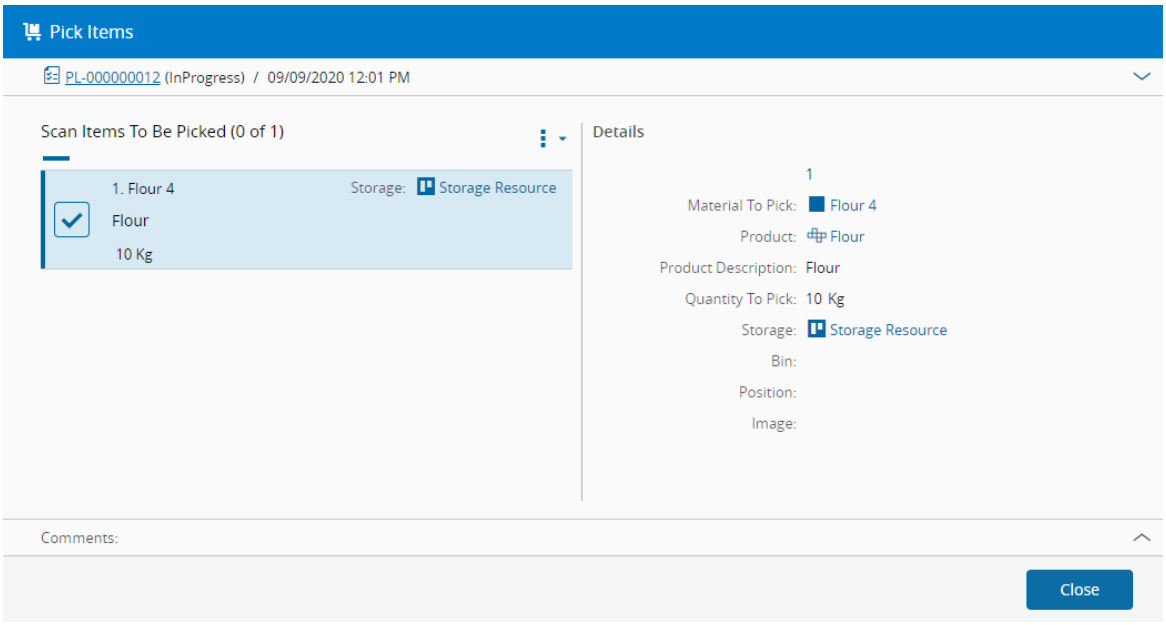
- A Material may not be available
- The Material has meanwhile expired
- The user wants to select a particular Material

To Manage Pick List Items, the Pick List System State must be *Open* or *InProgress* and the Pick List Item State must be *Open*.

A Material, to be considered for picking, must meet the above-mentioned conditions.

Pick Pick List

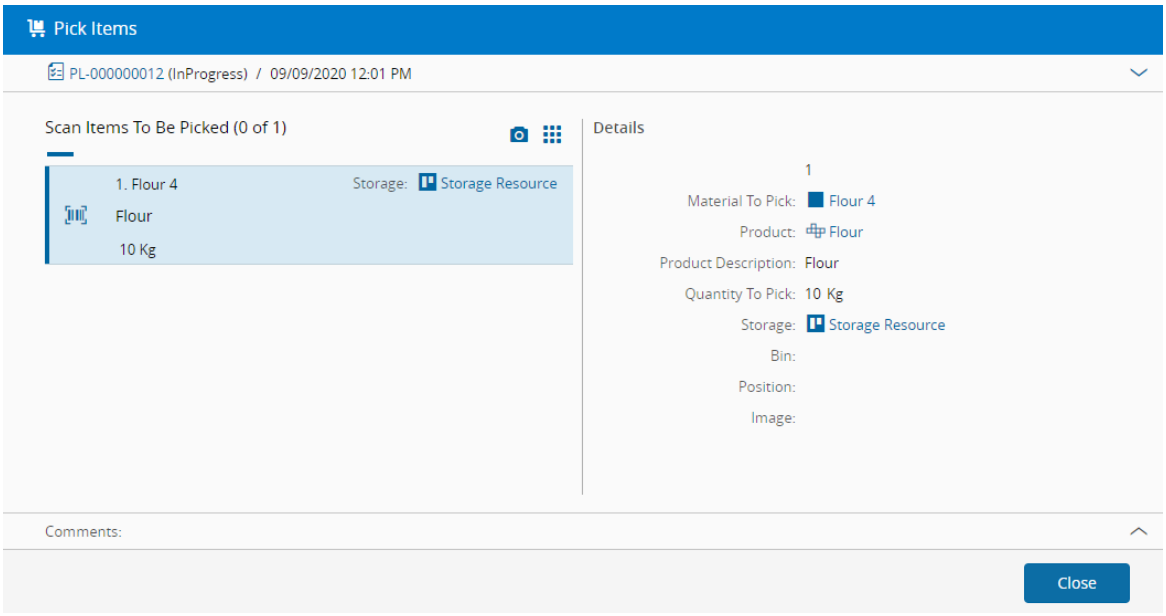
After the creation of a Pick List, the Materials of the Pick List Items need to be picked, as displayed in the Figure below. Since it can be a long-running operation, items can be picked separately.



To Pick a Pick List, its System State must be Open or In Progress.

Info

The Pick Pick List User interface is mobile and barcode scanner ready in order to ease its usage, as displayed in the Figure below. These options are available if the feature PickList.PickBySelection is not assigned to the User's Role.



If a Picking Sequence is defined, the items must be picked by that order.

If the Product property Split for Picking is set to True and the Primary Quantity of the Material to be Picked is higher than the Released Quantity, then the Material is split. Also, if the Material has Sub-Materials, the Primary Quantity of the Sub-Materials is considered as available quantity and the Parent Material is split, taking the required Sub-Materials.

The Material is retrieved from the Storage Resource and stored in the Outgoing Picking Place of the Source Location when picking is performed.

If the User wishes to Unpick a Material, it is retrieved from the Outgoing Picking Place and stored in the Storage Resource where it was initially stored.

Take Pick List Ownership

A User can become responsible for picking a Pick List. In order to do so, the User must access the Pick List Details or the Pick List page on Planning and Logistics and select the Take Ownership button.

> **Info**
>
> If an Owner is defined, the Employee picking the Pick List must be the Owner.

View Pick List Report

The User can view a report with the Pick List information by selecting the View Report button, available on the Pick List Details or from the Pick List page on Planning and Logistics.

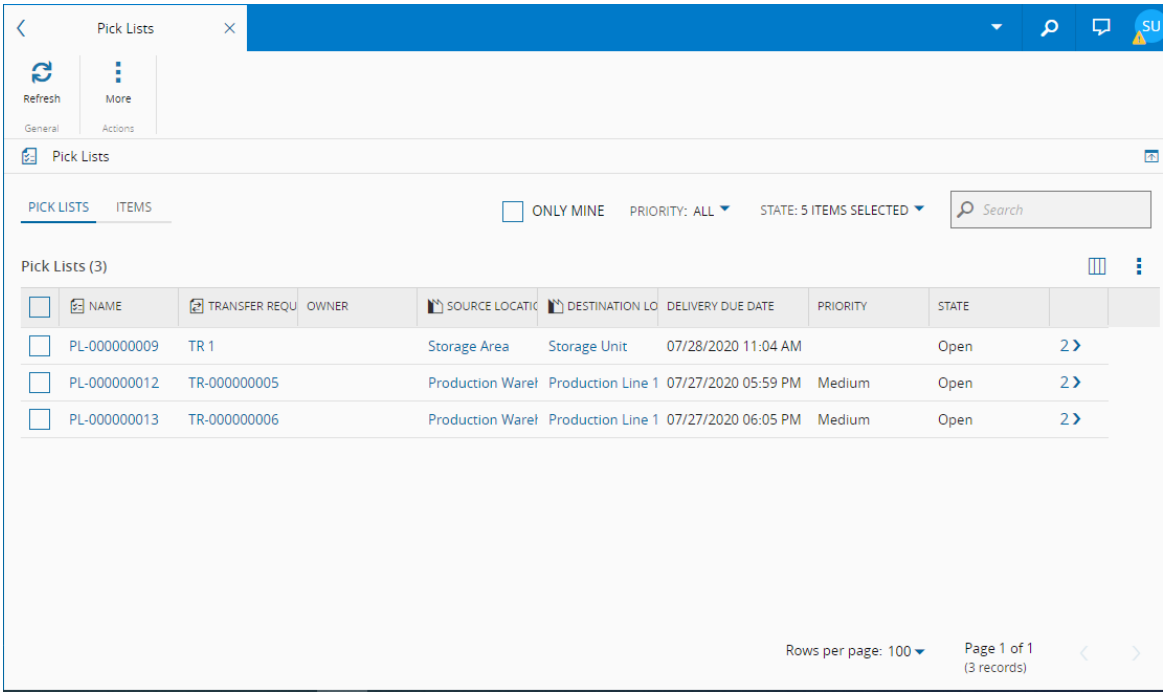
Planning and Logistics - Pick List

The existing Pick Lists can be accessed on the Planning and Logistics section, as displayed in the Figure below.

There are two tabs: Pick Lists and Items (Pick List Items). It is possible to select a row and perform the following operations:

- Pick, only on the Pick List tab
- Unpick, only on the Pick List tab
- Take Ownership, only on the Pick List tab

- View Report, only on the Pick List tab
- Create Transfer Order

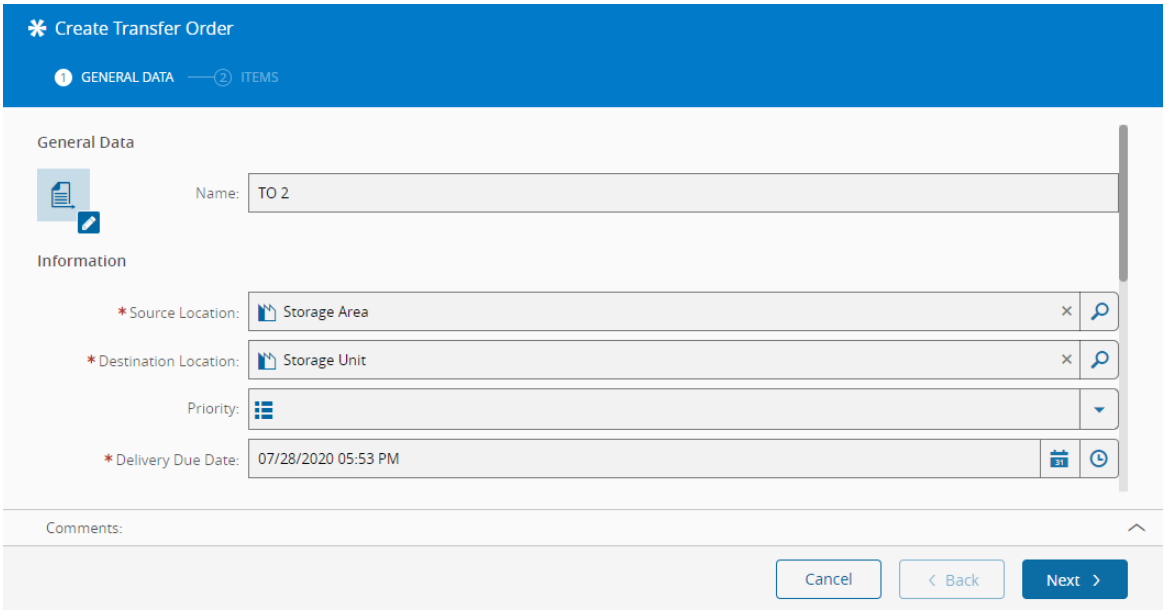


Transfer Order

A Transfer Order is used to move a Material from one location to another. It can be created from one or more Transfer Requirements or Pick Lists and it can also be created Ad-hoc.

Create a Transfer Order

The creation of a Transfer Order can be manually performed (Ad-hoc creation) through the Create Transfer Order wizard, as displayed in the Figure below.



When creating a Transfer Order, it is necessary to define the properties listed in the Table below.

Property	Description
Source Location	The Area, having Type Storage or Production Line, where Materials must be retrieved from.
Destination Location	The Area, having Type Storage or Production Line, where Materials must be delivered to. The available Destination Locations depend on the selected Source Location.
Priority	The User can specify a Priority. If a default Priority is defined in the Transfer Order Priority Generic Table, it will be set as default.
Delivery Due Date	The user can specify a Delivery Due Date. If a Priority Default Delivery Time is defined in the Transfer Order Priority Generic Table, it will be set as default, by adding the Priority Default Delivery Time to the current date-time.
Additional Information	It is possible to add additional context: a Resource, Material, Step, Production Order, or Maintenance Activity Order for the Transfer Order. Also, if the option Automatic Delivery is set to True, the Transfer Order is automatically delivered. It is also possible to define if it is to be confirmed automatically, by setting the option Automatic Confirmation to True. If the option Automatic Delivery is set to False, it is possible to define an Owner.

Table: Transfer Order creation

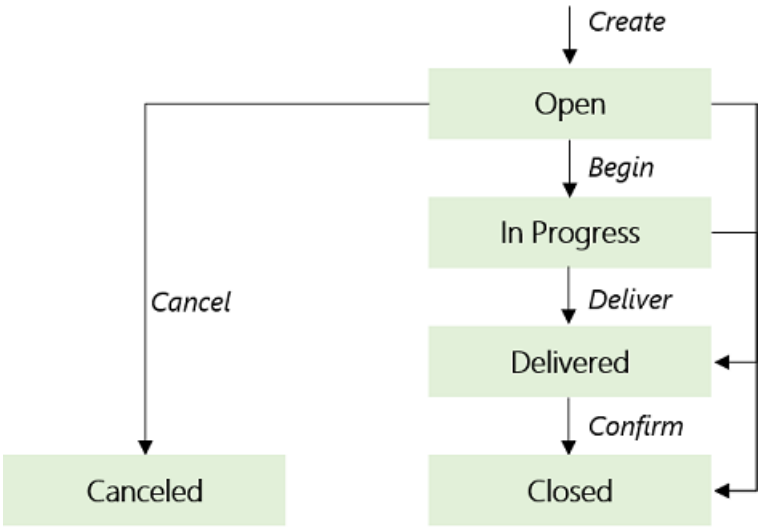
When creating a Transfer Order, it is necessary to specify the Transfer Order Items properties, as listed in the Table below.

Property	Description
Type	There are two Types: - Material - Product Quantity
Material	If the selected Type is Material, it is available the selection of a Material. The Material must be In Store in a Resource of the Source Location if the Source Location is a Storage Area. Or, if the Source Location is a Production Line, In Store at the Production Line Outgoing Picking Place. The Material must match the Transfer Order Item Product.
Product	If the selected Type is Product Quantity, it is necessary to specify a Product that is enabled for Material Logistics. Also, when confirming the Transfer Order, it will be created Materials matching the Product and Quantity Transfer Order Item.
Primary Qty	If the selected Type is: - Material: it is filled with the selected Material Primary Quantity - Product Quantity: the Primary Quantity can be defined by the User
Primary Units	If the selected Type is: - Material: it is filled with the selected Material Primary Units - Product Quantity: the Primary Units are the Product default Units if defined, and, if not defined and a Product Group is defined, defaults to the Product Group default Units

Property	Description
Secondary Qty	If the selected Type is: - Material: it is filled with the selected Material Secondary Quantity - Product Quantity: currently, this option is not supported
Secondary Units	If the selected Type is: - Material: it is filled with the selected Material Secondary Units - Product Quantity: currently, this option is not supported
Additional Information	It is possible to add additional information, such as the Purchase Order Number, Manufacturer, Manufacturer Part Number, Manufacturer Lot Number, Manufacturer Data Groups Code, Supplier, Expiration Date, RoHS Compliant (Restriction of Hazardous Substances), Moisture Sensitivity Level, Floor Life, and Floor Life Units.
Destination Storage	The User can define a Destination Resource and a Storage Bin or Position. The Destination Storage Resource is of type Storage, can have Storage Bins, and belongs to the Destination Location.

Table: Transfer Order Item creation

On the Transfer Order creation, the Transfer Order and the Transfer Order Items System State are set as *Open*. The Transfer Order State Model is illustrated in the Figure below.



Manage Transfer Order Items

After the creation of a Transfer Order, there may be the need to manage the Transfer Order Items since:

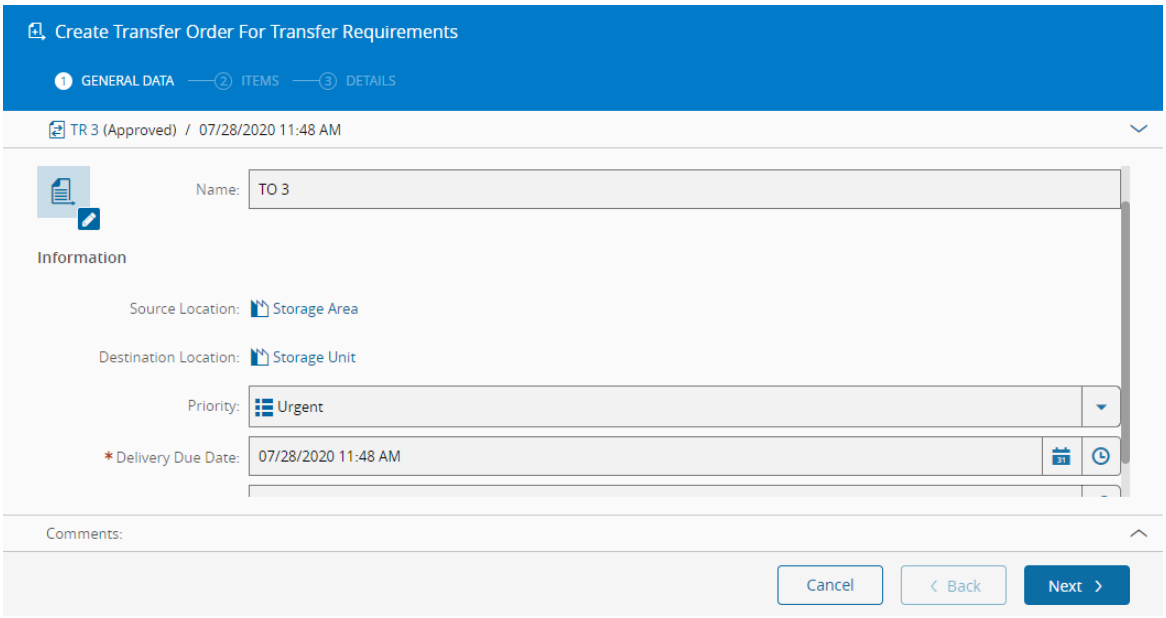
- A Material may not be available
- The Material has meanwhile expired
- The user wants to select a particular Material

To Manage Transfer Order Items, the creation mode must have been Ad-hoc, the Transfer Order System State must be *Open* and the Transfer Order Item State must be *Open*.

A Material, to be considered for the Transfer Order, must meet the conditions mentioned in the Create a Transfer Order section.

Create a Transfer Order For Transfer Requirements

The creation of a Transfer Order can be performed through the Create Transfer Order For Transfer Requirements wizard, as displayed in the Figure below. This wizard can be accessed from the Transfer Requirement Details or from the Transfer Requirement page on Planning and Logistics.



In order to be possible to create a Transfer Order For Transfer Requirements, the following conditions need to be met:

- Transfer Requirements property Skip Picking must be set to True
- All Transfer Requirements have System State *Approved* or *Released*
- All Transfer Order Requirements Automatic Delivery and Automatic Confirmation must be the same
- All Transfer Requirements must have the same Source and Destination Locations

The following properties will be inherited from the Transfer Requirements: Source Location, Destination Location, Priority, Delivery Due Date, and Automatic Delivery. The Priority and Delivery Due Date are the lowest of all the selected Transfer Requirements.

The Transfer Requirement Items available for selection have System State *Requested* or *Released*.

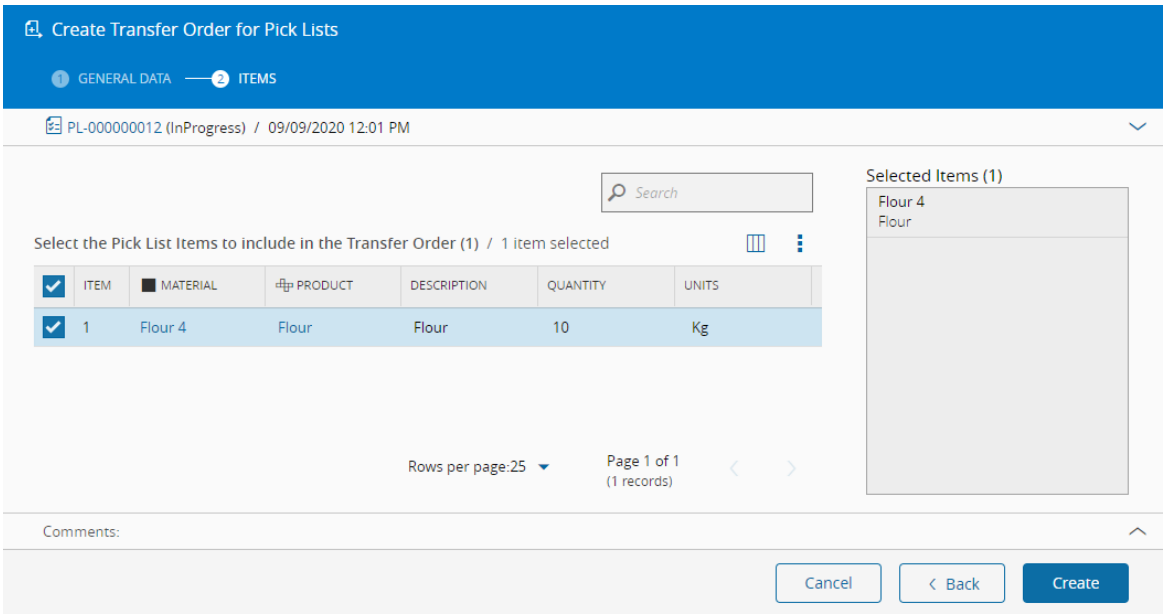
When creating a Transfer Order, the Transfer Order and the Transfer Order Items System State are set as *Open* and the following properties are inherited from the Transfer Requirement: For Resource, For Step, For MAO, For Production Order, Transfer Requirement, Source Location, Destination Location, and Automatic Delivery.

The Transfer Order Items are linked with the Transfer Requirement Item. Also, on the Transfer Requirement, the property In Transfer Order Quantity of the Transfer Requirement Item is increased by the Transfer Order Item Primary Quantity.

If the option Automatic Delivery is set to True, the Transfer Order is automatically begun and delivered, having its System State set as Delivered. Also, if the option Automatic Confirmation is set to True, the Transfer Order is automatically confirmed, having its System State set as Closed.

Create a Transfer Order For Pick List

The creation of a Transfer Order can be performed through the Create Transfer Order For Pick Lists wizard, as displayed in the Figure below. This wizard can be accessed from the Pick List Details or from the Pick List page on Planning and Logistics.



In order to be possible to create a Transfer Order For Pick Lists, the following conditions need to be met:

- All the Pick Lists System State must be In Progress or Picked
- All the Pick Lists Automatic Delivery and Automatic Confirmation must be the same

The following properties will be inherited from the Pick Lists: Source Location, Destination Location, Priority, and Delivery Due Date. The Priority and Delivery Due Date are the lowest of all the selected Transfer Requirements.

On the Pick List, the properties Automatic Delivery and Automatic Confirmation are set to True if the respective property is set to True for all the Transfer Requirements, of all the Pick List Item Transfer Requirement Items.

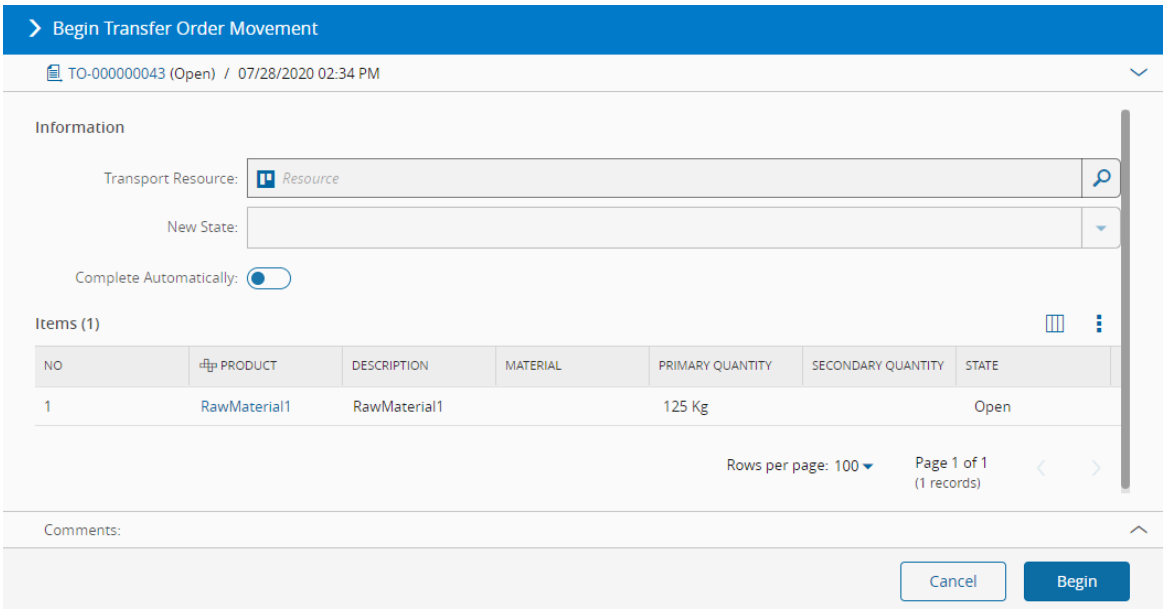
The Pick Lists Items available for selection have System State Picked.

On the Transfer Order creation, the Transfer Order and the Transfer Order Items System State are set as Open and the following properties are inherited from the Transfer Requirement: For Resource, For Step, For MAO, For Production Order, Pick List, Source Location, Destination Location, and Automatic Delivery. The Transfer Order Items are linked with the respective Pick List Item.

Begin Transfer Order Movement

In order to start the transport of a Transfer Order, the User must perform the Begin Movement of the Transfer Order. The Transfer Order System State must be *Open*.

The begin of the Transfer Order can be performed through the Begin Transfer Order Movement wizard, as displayed in the Figure below. This wizard can be accessed from the Transfer Order Details or from the Transfer Order page on Planning and Logistics.



If the Outgoing Picking Place for the Source Location has a Transport Service defined, a Transport Resource must be provided. It must have the same Facility as the Source Location or if the Transport Resource is in another Facility, the Resource must not be associated with any active Transfer Order.

If the Source Location is a Storage Area, the Materials referenced in Transfer Order Items must be In Store in the Source location or In Store at Outgoing Picking Place.

The Material is retrieved from the Storage Resource and stored in the Outgoing Picking Place of the Source Location, if not already when the Begin Transfer Order Movement is performed.

If the Transfer Order Item has a linked Pick List Item, the Pick List Item State is set to In Transport.

The Transported Quantity of the Transfer Requirement Item linked to the Transfer Order Item is increased by the Transfer Order Item Primary Quantity.

When performing the Begin of the Transfer Order, its System State is set to In Progress.

The Material is retrieved from the Outgoing Picking Place of the Source Location when the Begin Transfer Order is performed. If the Transport Resource is in a different Area from the Transfer Order Source Location Outgoing Picking Place, the Area of the Resource is changed to the Source Location Outgoing Picking Place Area.

Complete Transfer Order Movement

In order to complete the transport of a Transfer Order, the User must perform the Complete Movement of the Transfer Order. The Transfer Order System State must be *InProgress*.

If a Transport Resource is associated with a Transfer Order, all Transfer Orders where the Resource is associated as well will be processed in bulk.

If the Transfer Order Item has a linked Pick List Item, the Pick List Item State is set to Delivered.

The Delivered Quantity of the Transfer Requirement Item linked to the Transfer Order Item is increased by the Transfer Order Item Primary Quantity. The Transfer Requirement Item State is set to Delivered if the Delivered Quantity is greater or equal to the Transported Quantity.

When performing the Complete of the Transfer Order, its System State is set to Delivered.

The Material is stored in the Incoming Picking Place of the Destination Location when the Complete Transfer Order is performed.

If the option Automatic Confirmation is set to True, the Transfer Order is automatically confirmed, having its System State set as Closed.

Confirm Transfer Order Items

In order to confirm the transportation of a Transfer Order, the User must perform the Confirm of the Transfer Order. The Transfer Order System State must be *Delivered*.

When confirming a Transfer Order, depending on the Transfer Order Item Type, two different actions are performed:

- New Materials are created and then stored in a Storage Resource of the Destination Location, if the Transfer Order Item Type is Product Quantity
- The Materials can be stored in a Storage Resource of the Destination Location, if the Transfer Order Item Type is Material

If the Destination Location is a Production Line, the Materials are stored in the Incoming Picking Place associated with the Production Line. If the Destination Location is a Storage Area, the Materials are stored in a Storage Resource and Storage Bin.

If the Transfer Order Item has a linked Pick List Item, the Pick List Item State is set to Closed.

The Closed Quantity of the Transfer Requirement Item linked to the Transfer Order Item is increased by the Transfer Order Item Primary Quantity. The Transfer Requirement Item State is set to Closed if the Closed Quantity is greater or equal to the Delivered Quantity.

The Transfer Order Item State is set to Confirmed.

Take Transfer Order Ownership

A User can become responsible for processing a Transfer Order. In order to do so, the User must access the Transfer Order Details or the Transfer Order page on Planning and Logistics and select the Take Ownership button.

Info

If an Owner is defined, the Employee must be the Owner for:

- Begin the Transfer Order Movement
- Complete the Transfer Order Movement

If a Transport Resource is associated with the Transfer Order, all In Progress Transfer Orders where the Resource is associated as well will have the same Owner.

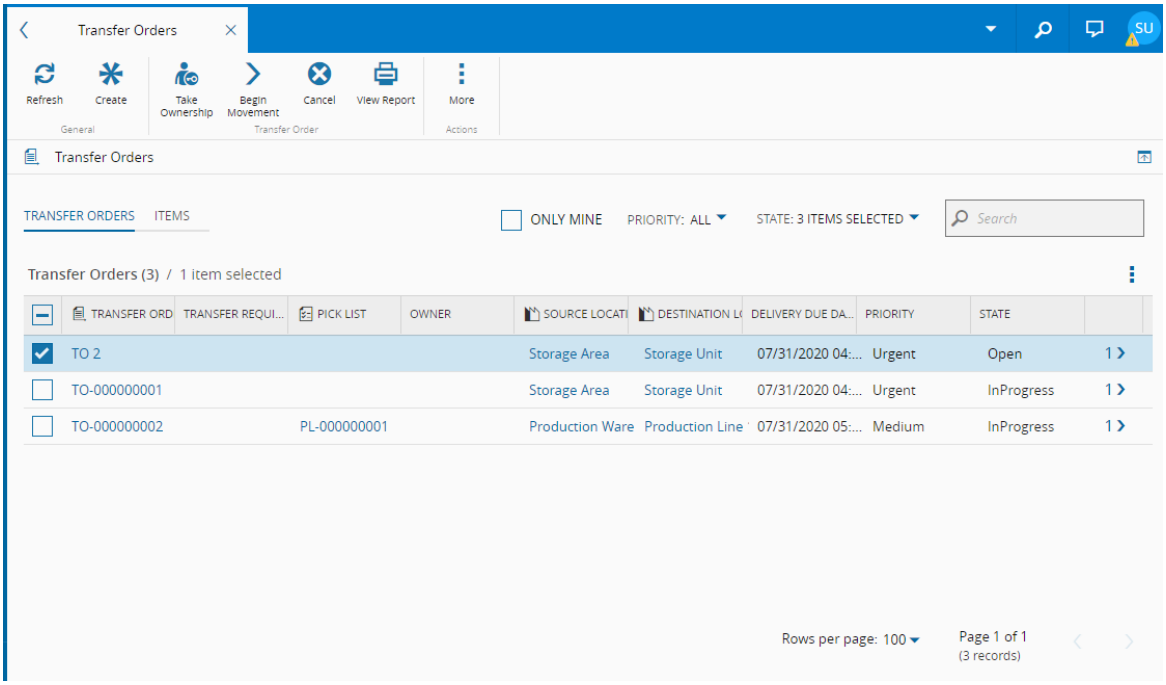
Planning and Logistics - Transfer Order

The existing Transfer Orders are available to be consulted on the Planning and Logistics section, as displayed in the Figure below.

There are two tabs: Transfer Orders and Items (Transfer Orders Items). On the Transfer Orders tab is possible to select a row and perform the following operations:

- Create Transfer Order
- Take Ownership
- Begin Movement
- Complete Movement
- Confirm

- Cancel
- View Report



Practical Example

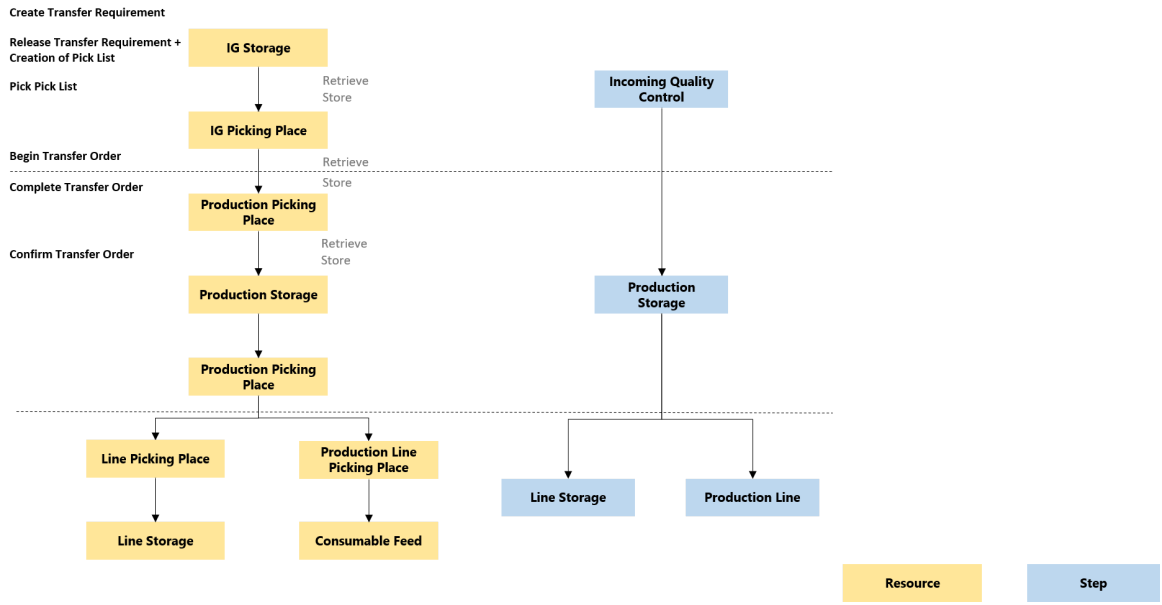
Taking the above-mentioned example, the raw Materials which are considered for Material Logistics are in the Incoming Goods Area and stored on the Incoming Goods Storage Resource.

When a Transfer Requirement is created for a Product, the Materials that will fulfill it are the ones stored in the Incoming Goods Storage Resource.

On the approval and release of the Transfer Requirement Item, a Pick List is created, if the Transfer Requirement property 'Skip Picking' is set to false. When the Materials of the Pick List Item are picked, those are retrieved from the Incoming Good Storage Resource and stored in the Incoming Goods Picking Place.

Having picked Materials, it is possible to create a Transfer Order. Since no Transport Service is required on the Picking Place, it is optional to select a Transport Resource. When the Begin Transfer Order Movement is performed, i.e., the Materials will leave the Incoming Goods Area, those are retrieved from the Incoming Goods Picking Place. On completion of the Transfer Order, i.e., the Materials will arrive at the Production Storage Area, those are stored in the Production Picking Place. On confirmation of the Transfer Order, the Materials are retrieved from the Production Picking Place and stored in the Production Storage Resource.

Then, the Materials to be consumed can either be transported to the Line Storage or to the Production Line Areas. Before leaving the Production Storage Area, Materials are stored in the Production Picking Place. If the Materials are to be transported to the Line Storage Area, the Materials are stored in the Line Picking Place and then stored in a Line Storage Resource. If the Materials are to be transported to the Production Line Storage Area, Materials are stored in the Production Line Picking Place, as shown in the figure below.



Caption:

Periodic Inventory Handling

The Periodic Inventory is performed in order to assess the Materials available on Storage Resources.

Create Periodic Inventory

To create a Periodic Inventory, it is necessary to define the properties listed in the Table below.

Property	Description
Owner	The Employee who will be responsible for beginning, performing, and completing the Periodic Inventory.
Begin Periodic Inventory	If set to True, the Periodic Inventory will begin right away.
Resources	The Storage Resources for which the Periodic Inventory will be performed. The User can filter by the Facility, Area, and Resource Name.

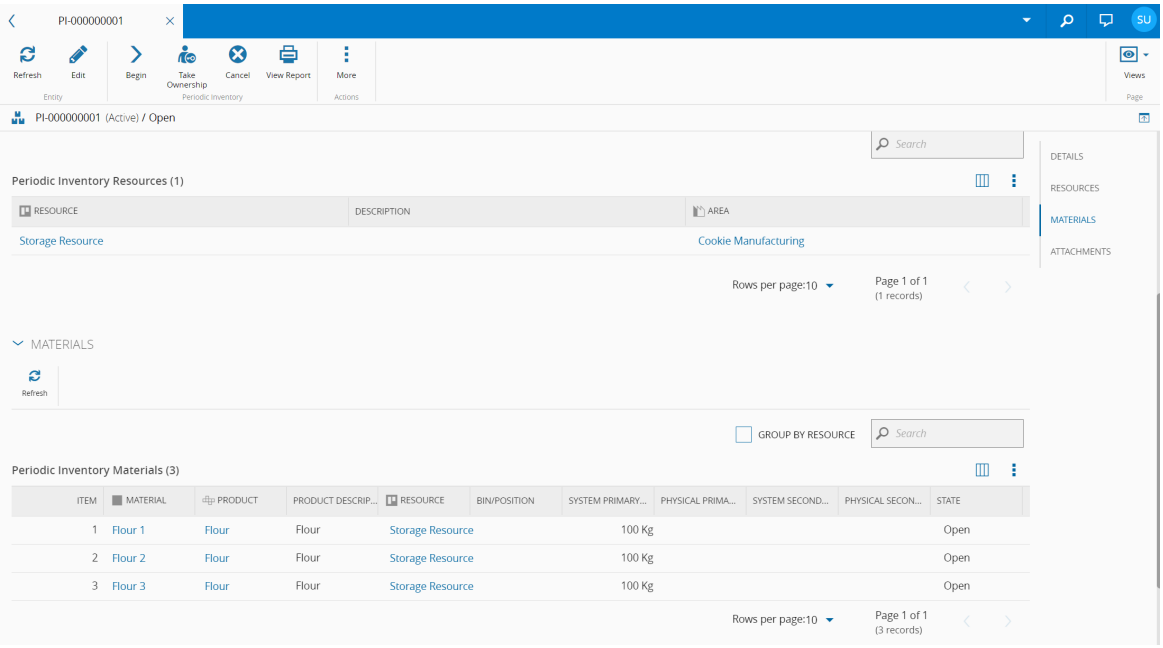
Table: Periodic Inventory properties

When creating a Periodic Inventory, its System State is set to *Open* and the selected Resources will have the property Periodic Inventory Locked set to True. Also, on the created Periodic Inventory are displayed the lists of Periodic Inventory Resources and Materials, as displayed in the Figure below. The listed Materials are topmost and the Current Resource is included in the list of Periodic Inventory Resources.

If the Storage Resource has the property Periodic Inventory Locked set to True, it is not possible to Store or Retrieve Materials and, for the Stored Materials the following operations can not be performed:

- Split
- Merge
- Split Material By Product

- Change Material Product
- Change Material Quantity. for the topmost Material
- Record Material Losses
- Record Sub-Material Losses



Begin Periodic Inventory

In order to Begin a Periodic Inventory, the User must access the Begin Periodic Inventory wizard available on the Periodic Inventory Details or from the Periodic Inventory page on Planning and Logistics. The Periodic Inventory System State must be *Open*.

When beginning a Periodic Inventory, its System State is set to *InProgress*.

Perform Periodic Inventory

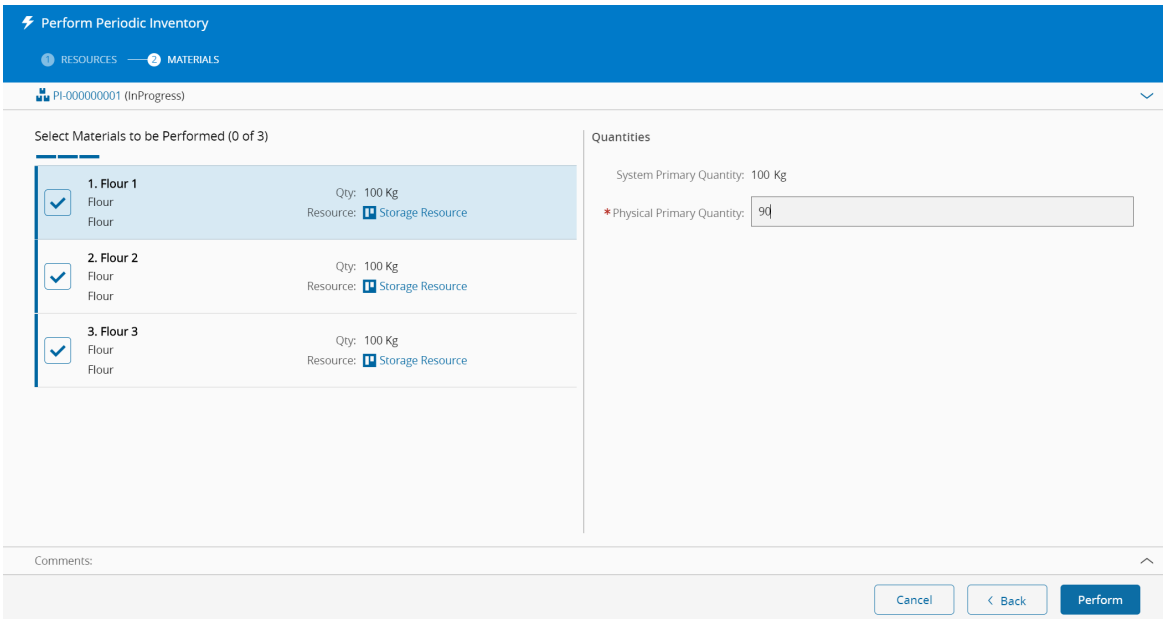
In order to Perform a Periodic Inventory, the User must access the Perform Periodic Inventory wizard available on the Periodic Inventory Details or from the Periodic Inventory page on Planning and Logistics. The Periodic Inventory System State must be *InProgress*.

For every Material included in the list of Periodic Inventory Materials, the User must confirm if the System Primary Quantity matches the Physical Primary Quantity, as displayed in the Figure below. If the Physical Primary Quantity is different than the System Primary Quantity, the Material Primary Quantity is changed. If the Material Physical Primary Quantity is set to zero, the Material is terminated.

If the Material has Sub-Materials, the User manually must correct the Materials and Sub-Materials before being able to provide the inventory Material Physical Primary Quantity, through the Change Quantity operation.

Info

The Perform Periodic Inventory User interface is mobile and barcode scanner ready in order to ease its usage. These options are available if the feature PeriodicInventory.PerformBySelection is not assigned to the User's Role.



When beginning a Periodic Inventory, its System State is set to *InProgress*. To each Periodic Inventory Material Item for which the Physical Quantity is provided, its State is set to *Closed*.

Complete Periodic Inventory

In order to Complete a Periodic Inventory, the User must access the Complete Periodic Inventory wizard available on the Periodic Inventory Details or from the Periodic Inventory page on Planning and Logistics. The Periodic Inventory System State must be *InProgress*. All Periodic Inventory Material Items must have their State set to *Closed*.

When completing a Periodic Inventory, its System State is set to *Closed* and the Resources will have the property Periodic Inventory Locked set to False and the property Last Periodic Inventory Date is set to now.

Take Periodic Inventory Ownership

A User can become responsible for performing a Periodic Inventory. In order to do so, the User must access the Periodic Inventory Details or the Periodic Inventory page on Planning and Logistics and select the Take Ownership button.

Info

If an Owner is defined, the Employee must be the Owner for the following Periodic Inventory operations:

- Begin
- Perform
- Complete

Planning and Logistics - Periodic Inventory

The existing Periodic Inventories are available to be consulted in the Planning and Logistics section.

It is possible to perform the following operations:

- Create Periodic Inventory
- Take Ownership
- Begin
- Perform

- Complete
- Cancel
- View Report

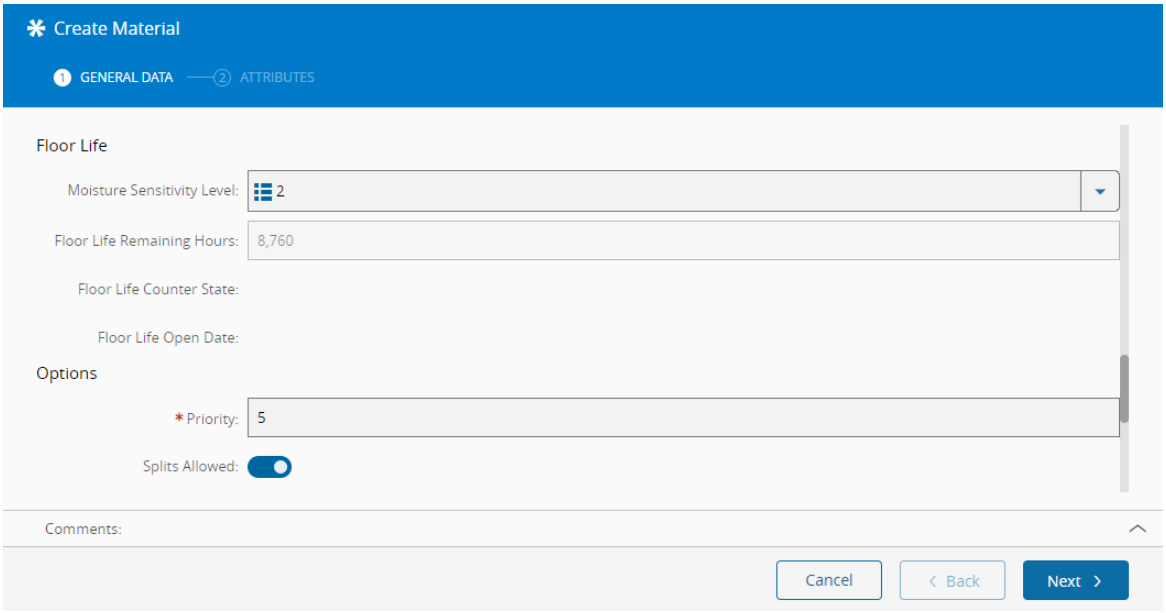
Packages

For information on **Packages**, see Packing.

Moisture Sensitivity Level Handling

When creating a Material, if the respective Product has a Moisture Sensitive Level defined, the Floor Life information defaults to the Product properties, as displayed in the Figure below. Nonetheless, the Moisture Sensitive Level can be altered.

> **Info**
>
> The Material Floor Life Counter State is set as Stopped if a Remaining Floor Life is defined.



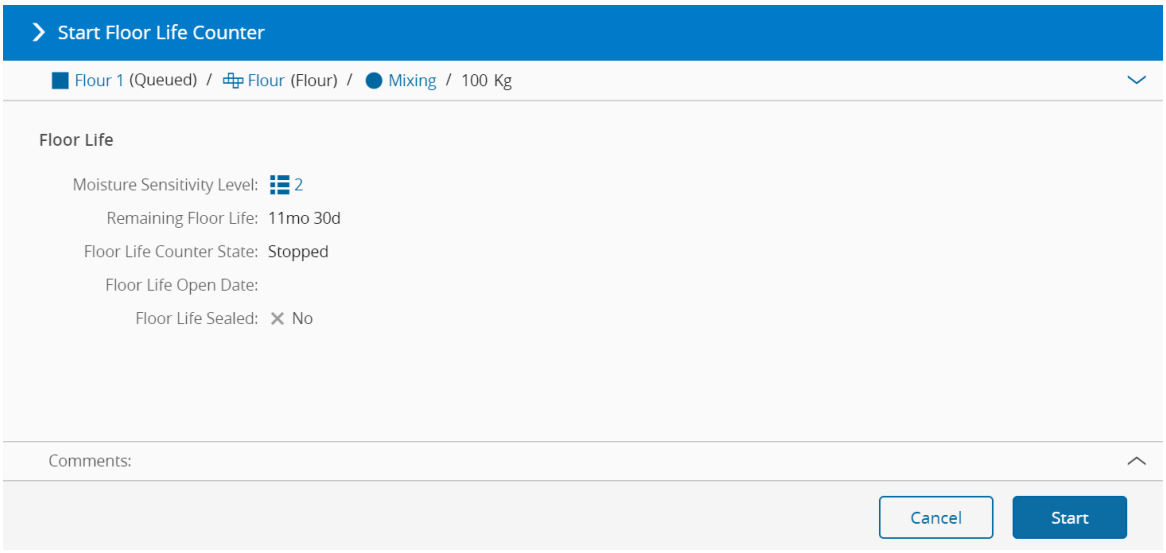
Start Floor Life Counter

To start a Material Floor Life counter, it is necessary to access the Start Floor Life Counter wizard, as displayed in the Figure below.

The Material must have defined the Remaining Floor Life to start the counter.

If the Material has sub-Materials with the Remaining Floor Life defined, the counter will also be started for the sub-Materials.

> **Info**
>
> The Material Floor Life Counter State is set to Running.



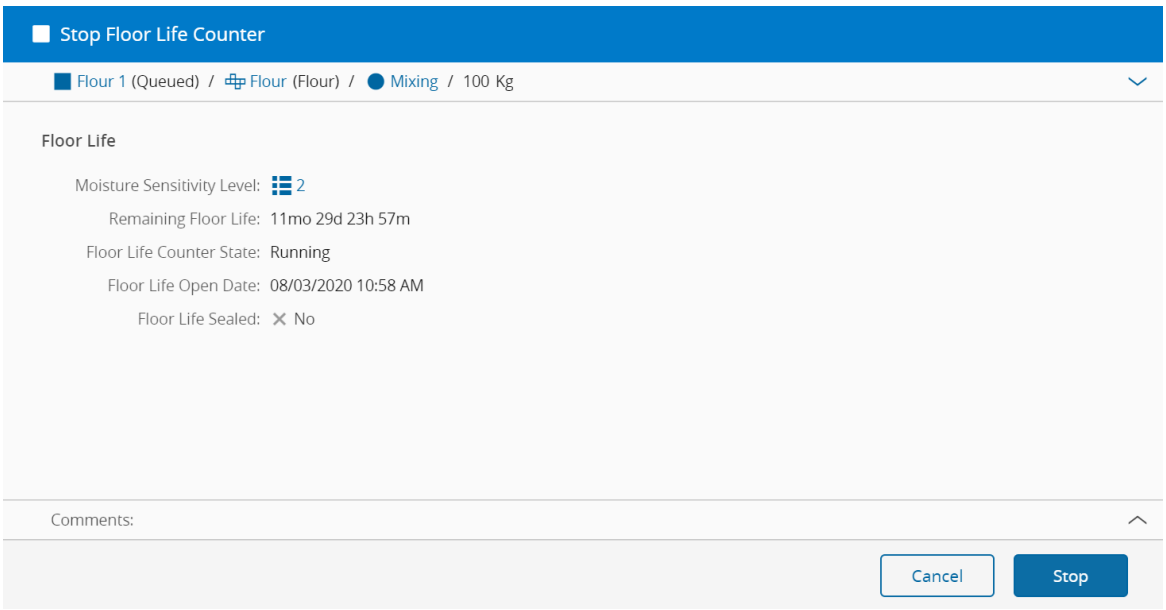
Stop Floor Life Counter

To stop a Material Floor Life counter, it is necessary to access the Stop Floor Life Counter wizard, as displayed in the Figure below.

If the Material has sub-Materials with the Remaining Floor Life defined, the counter will also be stopped for the sub-Materials.

Info

The Material Floor Life Counter State is set to Stopped.



Seal Material

To seal a Material, it is necessary to access the Seal Material wizard.

If the Material has sub-Materials with the Remaining Floor Life defined, the Floor Life Sealed property will also be set to True for the sub-Materials.

> **Info**
>
> The Material property Floor Life Sealed is set to True.

If the Material is stored in a Storage Resource having the properties Floor Life Safe and Start Floor Life Counter On Retrieve set to True when retrieving the Material the counter will not be started.

To unseal the Material, it is necessary to start the Floor Life counter.

Reset Floor Life Counter

To reset a Material Floor Life counter, it is necessary to access the Reset Material Floor Life wizard.

To reset the counter, the Material must have defined the Remaining Floor Life and the Material Floor Life Counter State must be set as Stopped.

If the Material has sub-Materials with the Remaining Floor Life defined, the Remaining Floor Life is reset for the sub-Materials.

When performing the Reset Floor Life Counter of the Material, if the Material has an MSL defined:

- If the Material MSL is unlimited, then the Reset cannot be performed since the Remaining Floor Life is unlimited
- If the Floor Life is not defined, the User must define the Remaining Floor Life
- If the Floor Life is defined, the Remaining Floor Life is set with the defined MSL Floor Life

When performing the Reset Floor Life Counter of the Material, if the Material does not have an MSL defined and the Material Product Manufacturer has defined an MSL:

- If the Material Product Manufacturer MSL is unlimited, then the Reset cannot be performed
- If the Floor Life is not defined, the User must define the Remaining Floor Life
- If the Floor Life is defined, the Remaining Floor Life is set with the Material Product Manufacturer defined MSL Floor Life

When performing the Reset Floor Life Counter of the Material, if the Material does not have an MSL defined and the Material Product does not have defined an MSL and the Material Product as an MSL defined:

- If the Material Product MSL is unlimited, then the Reset cannot be performed
- If the Floor Life is not defined, the User must define the Remaining Floor Life
- If the Floor Life is defined, the Remaining Floor Life is set with the Material Product defined MSL Floor Life

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