

Da Vinci Smart Manufacturing

BRD S04.04 Master Data Products

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1. Products List Screen

This is designed to provide a comprehensive and user-friendly interface for managing Products, including both active and inactive materials. **This data is populated from an external system and are loaded initially in inactive state.** Users can filter, search, and sort materials based on various parameters like Material Type and Material Status.

Header Section

- **Title:** "MM : Products"
- **Stats Section:** Total count of Active | Inactive
- **Search Bar:** Tooltip text: Search by Material ID / Material Name
- **Filters:**
 - Material Type -
 - Multi-select Dropdown
 - All Material Types related to Products
 - Status -
 - Multiselect Dropdown:
 - Values: Active | Inactive
 - Clear Filter - This will clear all the applied filters
 - All Filter drop downs should be sorted alphabetically / numerically

Products List Section

Users can view the list of all Products , including both active and inactive materials. This data is populated from an external system and are loaded initially in inactive state. Users can filter, search, and sort materials based on various parameters like Material Type and Material Status. The table will have the following columns:

Table Default Sorting : Latest Modified first

- **Material ID:**
 - **Material ID**
 - Sorting: Yes
 - Frozen - Yes
- **Material Name:**
 - **Material Name corresponding to the Material ID**
 - Sorting: Yes
 - Frozen: No
- **Material Type:**
 - Material Type, the material ID belongs to
 - Sorting: Yes
 - Frozen: No
- **Material Group:**
 - Material group, the material ID belongs to
 - Sorting: Yes

- Frozen: No
- **Created At:** [CR-VD-5347](#)
 - Date and time Material was created as per ERP system**
 - Sorting: Yes
 - Frozen: No
- **Created By:** [CR-VD-5347](#)
 - Auto-populated as “System”
 - Sorting: Yes
 - Frozen: No
- **Modified At:** [CR-VD-5347](#)
 - Last record modified Date and time
 - Sorting: Yes
 - Frozen – No
- **Modified By:** [CR-VD-5347](#)
 - User ID | First Name Last Name of user who last modified the record
 - Sorting: Yes
 - Frozen – No
- **Status:** Indicates the status of the record
 - Active** –Products that are activated in the system.
 - Inactive** - Products imported from the ERP are initially marked as inactive or have been deactivated within the system.
 - Sorting: Yes
 - Frozen: No

Note: Horizontal scroll is required to be able to navigate through all columns and visualize all data but always respecting the frozen columns.

- **Action Buttons:** Depending on the status, allows users to edit or view the record. Only users with Create/Edit permissions on the module can activate, edit, or deactivate materials.
 - Active:**
 - View – Record details can be viewed in non-editable mode
 - Edit - Details can be edited in the Material Information and Specification tab.
 - Deactivate - [CR-VD-4481](#) Users can deactivate an active material, which moves it to an inactive state. Deactivate the material after a confirmation message
 - “Do you want to deactivate this material “MAT ID”?”

MM : Products Active 5 Inactive 35

Material ID	Material Name	Material Type	Material Group	Created At	Status
B111_148	PSSI 4503 B Alu	Quartz	Quartz	10/10/2024	Active
B111_146	PSSI BAS BORE	Quartz	Quartz	10/10/2024	Active
B111_4	PSSI2030	Quartz	Quartz	10/10/2024	Active
MB02_200	Charbon de bois	Quartz	Quartz	10/10/2024	Active
B1F1_280	PSSI Refusion BIF1	Quartz	Quartz	10/10/2024	Active
B111_309	PSSI 4503 B Alu	Quartz	Quartz	10/10/2024	Inactive
B111_302	PSSI4520DC	Quartz	Quartz	10/10/2024	Active
B111_306	PSO dopE P Piscine	Quartz	Quartz	10/10/2024	Active
B111_303	PSSI 4503 B Alu	Quartz	Quartz	10/10/2024	Inactive
B111_299	PSSI45015	Quartz	Quartz	10/10/2024	Active

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Rows Per Page: 10

- **Inactive: Material Information tab details have not been saved**
 - View – Record details can be viewed in non-editable mode
 - Add Details – Additional details can be included in the Material Information and Specification tab.
- **Inactive: Material Information tab details have been saved**
 - View – Record details can be viewed in non-editable mode
 - Edit - Details can be edited in the Material Information and Specification tab.
 - Activate - **CR-VD-4481** Users with the appropriate permissions can activate an inactive material by adding additional information and specifying the material's elemental specifications. Activate the material after a confirmation message
 - “Do you want to activate this material “MAT ID”?”

MM : Products Active 5 Inactive 35

Material ID	Material Name	Material Type	Material Group	Created At	Status
B111_148	PSSI 4503 B Alu	Quartz	Quartz	10/10/2024	Active
B111_146	PSSI BAS BORE	Quartz	Quartz	10/10/2024	Active
B111_4	PSSI2030	Quartz	Quartz	10/10/2024	Active
MB02_200	Charbon de bois	Quartz	Quartz	10/10/2024	Active
B1F1_280	PSSI Refusion BIF1	Quartz	Quartz	10/10/2024	Active
B111_309	PSSI 4503 B Alu	Quartz	Quartz	10/10/2024	Inactive
B111_302	PSSI4520DC	Quartz	Quartz	10/10/2024	Active
B111_306	PSO dopE P Piscine	Quartz	Quartz	10/10/2024	Active
B111_303	PSSI 4503 B Alu	Quartz	Quartz	10/10/2024	Inactive
B111_299	PSSI45015	Quartz	Quartz	10/10/2024	Active

Showing 10 of 80

Rows Per Page: 10

- **Pagination Controls:** Navigation buttons to browse through multiple pages of records, if applicable (for more than 10 records).

- Rows Per page : Default 10, Dropdown values: 10, 20, 30, 40, 50

Export Function: The export function must extract ALL the information including chemical results of the list of records shown based on the combined results of filter selection, sort and search criteria. as the following example:

CR-VD-5348

Material ID	Material Name	Material Type	Material Group	Created At	Created By	Modified At	Modified By	Status
B1F2_281	PSSI Refusion B1F2	Finished Product	Metallurgical Si	04/06/2025 06:27 AM	Saha na Saha na Badal	04/06/2025 06:34 AM	Saha na Saha na Badal	Active
B111_145	PSSI 8030 Ht Ph	Finished Product	SI	04/06/2025 06:27 AM	Saha na Saha na Badal	04/06/2025 06:34 AM	Saha na Saha na Badal	Inactive
B111_3	PSSI4520 DC	Finished Product	Chemical Si	04/06/2025 06:27 AM	Saha na Saha na Badal	04/06/2025 06:34 AM	Saha na Saha na Badal	Inactive
B111_306	PSO dopE P Piscine	Semi Finished Product	Metallurgical Si	04/06/2025 06:27 AM	Saha na Saha na Badal	04/06/2025 06:34 AM	Saha na Saha na Badal	Inactive
B111_1	PSSI2003	Semi Finished Product	Si	04/06/2025 06:27 AM	Saha na Saha na Badal	04/06/2025 06:34 AM	Saha na Saha na Badal	Active

Exported File Name: "Products_DD-MM-YYYY" CR-VD-4489

Customize Columns: Users can enable or disable all columns based on their preference. Only the enabled columns will be visible in the list. Columns marked as ‘frozen’ will be enabled by default and cannot be modified.

Material ID	Material Name	Material Type	Date Created	Status
B111_148	PSSI 4503 B Alu	Finished Product	10/10/2024	Active
B111_146	PSSI BAS BORE	Semi-Finished Product	10/10/2024	Active
B111_4	PSSI2030	Finished Product	10/10/2024	Active
MB02_200	Charbon de bois	Finished Product	10/10/2024	Active
BIFI_280	PSSI Refusion BIFI	Finished Product	10/10/2024	Active
B111_309	PSSI 5003 Ht Alu	Finished Product	10/10/2024	Inactive
B111_302	PSSI4520DC	Finished Product	10/10/2024	Active
B111_306	PSO dopE P Piscine	Finished Product	10/10/2024	Active
B111_303	PSSI 5003	Finished Product	10/10/2024	Inactive
B111_299	PSSI45015	Finished Product	10/10/2024	Active

Material ID	Material Name	Material Type	Date Created	Status
B111_148	PSSI 4503 B Alu	Finished Product	10/10/2024	Active
B111_146	PSSI BAS BORE	Semi-Finished Product	10/10/2024	Active
B111_4	PSSI2030	Finished Product	10/10/2024	Active
MB02_200	Charbon de bois	Finished Product	10/10/2024	Active
BIFI_280	PSSI Refusion BIFI	Finished Product	10/10/2024	Active
B111_309	PSSI 5003 Ht Alu	Finished Product	10/10/2024	Inactive
B111_302	PSSI4520DC	Finished Product	10/10/2024	Active
B111_306	PSO dopE P Piscine	Finished Product	10/10/2024	Active
B111_303	PSSI 5003	Finished Product	10/10/2024	Inactive
B111_299	PSSI45015	Finished Product	10/10/2024	Active

2. Add Material Details

This screen will allow users to input and manage records, organised into two Tabs: Material Information and Material Specification. Mandatory fields will be marked with an asterisk (*). Below is a detailed layout incorporating the requirements.

Header: Back Icon | **MB01_197** | **Bois Rondins** (Material ID | Material Name)

The screenshot shows a table titled "MM : Products" with the following columns: Material ID, Material Name, Material Type, Date Created, and Status. There are 5 Active items and 35 Inactive items. The table includes a search bar, filters, and export options. A sidebar on the left contains various icons. At the bottom right, there are navigation links (1-8), a rows per page dropdown set to 10, and an "Add Details" button.

MM : Products					
	Material ID	Material Name	Material Type	Date Created	Status
	B111_148	PSSI 4503 B Alu	Finished Product	10/10/2024	Active
	B111_146	PSSI BAS BORE	Semi-Finished Product	10/10/2024	Active
	B111_4	PSSI12030	Finished Product	10/10/2024	Active
	MB02_200	Charbon de bois	Finished Product	10/10/2024	Active
	BIFI_280	PSSI Refusion BIFI	Finished Product	10/10/2024	Active
	B111_309	PSSI 5003 Ht Alu	Finished Product	10/10/2024	Inactive
	B111_302	PSSI4520DC	Finished Product	10/10/2024	Active
	B111_306	PSO dopE P Piscine	Finished Product	10/10/2024	Active
	B111_303	PSSI 5003	Finished Product	10/10/2024	Inactive
	B111_299	PSSI45015	Finished Product	10/10/2024	Active

Material Information Tab

Basic Information (Read-only; fetched from external ERP system):

CR-VD-4658

Scenario 1: ERP ID exists, but no Ops ID

- Material ID = ERP Material ID
- Material Name
- Material Type
- Status
- Date Created
- Material Description

Scenario 2: ERP ID and Ops ID exist with a one-to-one mapping

- Material ID = ERP Material ID = OPS Material ID
- Material Name
- Material Type
- Status
- Date Created
- Material Description

Scenario 3: ERP ID and Ops ID exist and are different (i.e., no one-to-one mapping)

- Material ID = (Concatenation of ERP ID and Ops ID)
- Material Name
- ERP Commercial Material ID

- ERP Commercial Material Name
- Ops Technical Material ID
- Material Type
- Status
- Date Created
- Material Description

Additional Information - These details are to be captured here, they are the following

- **Effective Date***
 - User selects the date from a calendar selector. The system shall allow users to capture a set of values with an effective date, which can be in the past, present, or future.
 - Mandatory - Yes
 - Default value - Current date
 - Field Type - Calendar picker
 - Validation - No
- **Unit Weight***
 - User inputs the unit weight value
 - Mandatory - Yes
 - Default value - None
 - Field Type - User input
 - Validation - Numeric 2 decimal values. Max allowed 999,999.99
 - Units - Kg
- **Actual Cost***
 - User inputs the value
 - Mandatory - Yes
 - Default value - None
 - Field Type - User input
 - Validation - Numeric 2 decimal values. Max allowed 999,999.99
 - Units - USD (currency from Plant Config)
- **Density***
 - User inputs the value
 - Mandatory - Yes
 - Default value - None
 - Field Type - User input
 - Validation - Numeric 4 decimal values. Max allowed 999,999.9999
 - Units - Depending on Unit System setup on Plant config (g/l metric system or lbm/ft³)
- **Standard Cost***
 - User inputs the value
 - Mandatory - Yes
 - Default value - None
 - Field Type - User input
 - Validation - Numeric 2 decimal values. Max allowed 999,999.99
 - Units – USD (currency from Plant Config)

Action Buttons

- **Save & Continue:**
 - Upon saving the details, the user is redirected to the **Material Specification** tab.
 - On the **list screen**:
 - Since the first tab's details have been entered,
 - An **Edit** option will appear in the **action menu** for the corresponding item.
 - Since Material Specification has default 0 values, User can now activate the material.
- **Cancel:** Cancels the current operation and returns to the list screen

Material Information					Material Specification	
Basic Information						
Material ID B111_148	Material Name PSSI 4503 B Alu	ERP Commercial Material ID B111	ERP Commercial Material Name PS Sillicium mEtal brut CHI	Ops Technical Material ID 148		
Material Type Finished Product	Material Group Metallurgical Si	Status Active	Date Created 01/21/2025	Material Description PS Sillicium Dow Fe<0.45% Ca<0.032%		
Additional Information						
Effective Date* 18/08/2024	Unit Weight* Select t	Actual Cost* Enter Value USD	Density* Enter Value g/cm³	Standard Cost* Enter Value USD		
<input type="button" value="Cancel"/> <input type="button" value="Save & Continue"/>						

Material Specification Tab

Users can edit material specifications, including chemistry, physical and size specifications. Under this section “Low”, “Aim” and “High” values for various elements are captured. The elements are mapped to a particular material type.

The list of elements for Chemical and Physical can be seen in the design provided.

Each Chemistry element will have the following

- **Low -**
 - User input
 - Mandatory - No
 - Default - 0 **CR-VD-4655**
 - Field Validation -
 - only integers, Max 100/ Min 0, 3 integers and Four places after decimal point
 - It has to be lower than Aim and High

- Aim
 - User input
 - Mandatory - No
 - Default - 0 **CR-VD-4655**
 - Field Validation -
 - only integers, Max 100/ Min 0, 3 integers and Four places after decimal point
 - The sum of all *Aim* values represents a percentage-based split of elements in the material. While it is **not required to total exactly 100%**, it **must not exceed 100%**. Total value will be shown next to section heading. A validation message that “Total value of elements should be less than 100%” will be displayed **CR-VD-3979**

Elements (in %)	Low	Aim	High	Warning Tolerance	Control
Al	0	0	0	0	<input checked="" type="checkbox"/>
As	0	3	6	0	<input checked="" type="checkbox"/>
Au	0	4	5	0	<input checked="" type="checkbox"/>
Be	0	0	0	0	<input checked="" type="checkbox"/>
B	0	0	0	0	<input checked="" type="checkbox"/>
Ca	0	0	0	0	<input checked="" type="checkbox"/>
Cd	0	0	0	0	<input checked="" type="checkbox"/>
Ce	0	0	0	0	<input checked="" type="checkbox"/>
-	-	-	-	-	-

- It has to be higher than Low and lower than High
- High
 - User input
 - Mandatory - No
 - Default - 0 **CR-VD-4655**
 - Field Validation -
 - only integers, Max 100/ Min 0, 3 integers and Four places after decimal point
 - It has to be higher than Low and Aim
- Warning Tolerance
 - System calculates using this formula.

$$\text{def calc_warning_tolerances(low, high, aim):}$$

$\text{cpk} = 1.33$

if low == 0:

- ```

if high > aim:
 return (high - aim) / cpk

else:
 return 0

else:
 if (high - aim) > (aim - low):
 return (aim - low) / cpk

 else:
 return 0

```
- This calculation is triggered automatically when **Low**, **Aim**, and **High** values are entered.
  - Each warning tolerance value can be manually edited by clicking the **edit icon** next to the respective field.
  - **If Warning Tolerance is 0 the edit icon will be disabled. Tooltip will read “Edit disabled for 0 Warning Tolerance”**
  - **Value Deviation Validation:** If the user-entered value **deviates by more than  $\pm 5\%$**  from the system-calculated value, the system shall **display a warning message** before accepting the value. “Entered value differs by more than 5% from the system-calculated value. Are you sure you want to proceed? Are you sure you want to proceed?”. Once confirmed user entered value can be saved.
  - Once a value is **overridden by the user**, it is highlighted with a background to indicate the change.
  - **Overridden values** will display a **reset icon**, allowing users to revert them back to the **system-calculated value**.
  - A **tooltip** appears on hover, explaining that the value has been **manually overridden**.
  - **Default - 0 CR-VD-4655**
  - only integers, Max 100/ Min 0, 3 integers and Four places after decimal point
  - **Control Elements** - Control elements determine which elements are mandatory for grading in the material specification.
    - Checkbox:
      - Can be **selected or deselected**.
      - **Default state:** Unselected.
    - **Element Restrictions:** Only the following elements can be checked/unchecked:
      - **Al, Ca, Fe, Ni, P, Ti, V**
      - All other elements will **not** have a checkbox option (i.e., selection is not permitted).

## Each Physical element will have the following

- Low -
  - User input
  - Mandatory - No
  - Default - 0 **CR-VD-4655**
  - Field Validation -
    - only integers, Max 100/ Min 0, 3 integers and Four places after decimal point
    - It has to be lower than Aim and High
- Aim
  - User input
  - Mandatory - No
  - Default - 0 **CR-VD-4655**
  - Field Validation -
    - only integers, Max 100/ Min 0, 3 integers and Four places after decimal point
    - The sum of all *Aim* values represents a percentage-based split of elements in the material. While it is **not required to total exactly 100%**, it **must not exceed 100%**. Total value will be shown next to section heading. A validation message that “Total value of elements should be less than 100%” will be displayed **CR-VD-3979**

The screenshot shows the DaVinci software interface for material specification. The main window title is "B111\_148 | PSSI 4503 B Alu". On the left, there is a vertical toolbar with icons for file operations, search, and other functions. The main area is divided into several sections:

- Material Information:** Shows tables for Y, Zn, and Zr with input fields for Low, Aim, and High values.
- Material Specification:** A header for the specification section.
- Physical Elements (Total Aim : 0%):** A warning message: "Total value of elements should be less than 100%". Below it are three tables for Ash, Moisture, and Volatiles, each with columns for Elements (in %), Low, Aim, and High.
- Size Specifications:** A table with columns for Low, Below Tolerance%, High, and Above Tolerance%. It includes dropdown menus for selecting values.
- Buttons:** At the bottom right are "Cancel" and "Save" buttons.

- It has to be higher than Low and lower than High
- High
  - User input
  - Mandatory - No
  - Default - 0 **CR-VD-4655**
  - Field Validation -

- only integers, Max 100/ Min 0, 3 integers and Four places after decimal point
- It has to be higher than Low and Aim

### For Size specifications - User captures [CR-VD-3361](#)

- **Low**
  - Single select dropdown
  - Values - PAN, 6.30mm, 9.50mm, 12.50mm, 16mm, 19mm, 25mm, 37.5mm, 50mm, 63mm, 80mm, 90mm, 100mm, 125mm. **PAN is considered the lowest value.**
  - Mandatory - No
  - Validation - No
- **Below Tolerance %**
  - User input
  - Mandatory - No
  - Validation - only integers, max value 100%
- **High**
  - Single select dropdown
  - Values - PAN, 6.30mm, 9.50mm, 12.50mm, 16mm, 19mm, 25mm, 37.5mm, 50mm, 63mm, 80mm, 90mm, 100mm, 125mm
  - Mandatory - No
  - Validation - **High must be more than Low.**
- **Above Tolerance**
  - User input
  - Mandatory - No
  - Validation - only integers, max value 100%

### Action Buttons

- **Save**
  - Upon saving the details, the user is redirected to the **List** page.
  - On the **list screen**:
    - Since both tab's details have been entered,
    - An **Edit** option will appear in the **action menu** for the corresponding item.
    - User can now activate the material
- **Cancel:** Cancels the current operation and returns to the list screen

| Elements (in %) | Low | Aim | High | Warning Tolerance | Control                                                                                                                                                                                                                                                                          |
|-----------------|-----|-----|------|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Al              | 0   | 0   | 0    | 0                 | cpk = 1.33<br>if low == 0:<br>if high > aim:<br>warning_tolerances = (high - aim) / cpk<br>return warning_tolerances<br>else:<br>return 0<br>else:<br>if (high - aim) > (aim - low):<br>warning_tolerances = (aim - low) / cpk<br>return warning_tolerances<br>else:<br>return 0 |
| As              | 0   | 3   | 6    | 0                 |                                                                                                                                                                                                                                                                                  |
| Au              | 0   | 4   | 5    | 0                 |                                                                                                                                                                                                                                                                                  |
| Be              | 0   | 0   | 0    | 0                 |                                                                                                                                                                                                                                                                                  |
| B               | 0   | 0   | 0    | 0                 |                                                                                                                                                                                                                                                                                  |
| Ca              | 0   | 0   | 0    | 0                 |                                                                                                                                                                                                                                                                                  |
| Cd              | 0   | 0   | 0    | 0                 |                                                                                                                                                                                                                                                                                  |
| Ce              | 0   | 0   | 0    | 0                 |                                                                                                                                                                                                                                                                                  |
| Co              | 0   | 0   | 0    | 0                 |                                                                                                                                                                                                                                                                                  |

Cancel Save

### 3. Edit Material Details

- This screen will allow users to input and manage records, organised into two Tabs: Material Information and Material Specification. Mandatory fields will be marked with an asterisk (\*). Below is a detailed layout incorporating the requirements.
- Header:** Back Icon | **MB01\_197 | Bois Rondins** (Material ID | Material Name)

| Material ID | Material Name      | Material Type         | Date Created | Status   | Action |
|-------------|--------------------|-----------------------|--------------|----------|--------|
| B111_148    | PSSI 4503 B Alu    | Finished Product      | 10/10/2024   | Active   |        |
| B111_146    | PSSI BAS BORE      | Semi-Finished Product | 10/10/2024   | Active   |        |
| B111_4      | PSSII2030          | Finished Product      | 10/10/2024   | Active   |        |
| MB02_200    | Charbon de bois    | Finished Product      | 10/10/2024   | Active   |        |
| BIF1_280    | PSSI Refusion BIF1 | Finished Product      | 10/10/2024   | Active   |        |
| B111_309    | PSSI 5003 Ht Alu   | Finished Product      | 10/10/2024   | Inactive |        |
| B111_302    | PSSI4520DC         | Finished Product      | 10/10/2024   | Active   |        |
| B111_306    | PSO dopE P Piscine | Finished Product      | 10/10/2024   | Active   |        |
| B111_303    | PSSI 5003          | Finished Product      | 10/10/2024   | Inactive |        |
| B111_299    | PSSI45015          | Finished Product      | 10/10/2024   | Active   |        |

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### Material Information Tab

Basic Information (Read-only; fetched from external ERP system):

**CR-VD-4658**

**Scenario 1: ERP ID exists, but no Ops ID**

- Material ID = ERP Material ID
- Material Name
- Material Type
- Status
- Date Created
- Material Description

### **Scenario 2: ERP ID and Ops ID exist with a one-to-one mapping**

- Material ID = ERP Material ID = OPS Material ID
- Material Name
- Material Type
- Status
- Date Created
- Material Description

### **Scenario 3: ERP ID and Ops ID exist and are different (i.e., no one-to-one mapping)**

- Material ID = (Concatenation of ERP ID and Ops ID)
- Material Name
- ERP Commercial Material ID
- ERP Commercial Material Name
- Ops Technical Material ID
- Material Type
- Status
- Date Created
- Material Description

### **Additional Information -**

- When viewed in edit mode, only the current values of fields (based on effective date) will be displayed. If a recently updated value is older than the current value, it will be saved. However, these values will not be displayed in edit mode but can be viewed by downloading the Excel history.
- Only one value can exist for a given effective date. In Edit mode, if a record with the same effective date already exists in the system, the user will receive a warning and be asked if they want to proceed and overwrite the existing details.
- Historical and future data can be viewed by downloading the Excel file using the download option in View mode.

### **CR-VD-4654**

- **Effective Date\*:**
  - Editable and pre-populated with the existing value.
  - Default value - Current date
  - Mandatory: Yes
- **Unit Weight\***

- Editable and pre-populated with the existing value.
- Default value - None
- Mandatory: Yes
- **Actual Cost\***
  - Editable and pre-populated with the existing value.
  - Default value - None
  - Mandatory: Yes
- **Density\***
  - Editable and pre-populated with the existing value.
  - Default value - None
  - Mandatory: Yes
- **Standard Cost\***
  - Editable and pre-populated with the existing value.
  - Default value - None
  - Mandatory: Yes
- **Action Buttons**
  - **Save & Continue:**
    - Upon saving the details, the user is redirected to the **Material Specification** tab.
    - On the **list screen**:
      - An **Edit** option will appear in the **action menu** for the corresponding item.
      - Since Material Specification has default 0 values, User can now activate the material.
  - **Cancel:** Cancels the current operation and returns to the list screen

| Basic Information                 |                                  | Material Specification             |                                                            |                                                            |
|-----------------------------------|----------------------------------|------------------------------------|------------------------------------------------------------|------------------------------------------------------------|
| Material ID<br>B111_148           | Material Name<br>PSSI 4503 B Alu | ERP Commercial Material ID<br>B111 | ERP Commercial Material Name<br>PS Silicium mEtal brut CHI | Ops Technical Material ID<br>148                           |
| Material Type<br>Finished Product | Status<br>Active                 | Material Group<br>Metallurgical Si | Date Created<br>01/21/2025                                 | Material Description<br>PS Silicium Dow Fe<0.45% Ca<0.032% |

| Additional Information        |                          |                          |                        |                            |
|-------------------------------|--------------------------|--------------------------|------------------------|----------------------------|
| Effective Date*<br>18/08/2024 | Unit Weight*<br>234512 t | Actual Cost*<br>2500 USD | Density*<br>5.00 g/cm³ | Standard Cost*<br>2700 USD |

## Material Specification Tab

- Users can edit material specifications, including chemistry, physical and size specifications.
- Under this section “Low”, “Aim” and “High” values for various elements are captured. The elements are mapped to a particular material type.

- In Edit mode update of element values inserts a new set of records with the date.
- For any given date only one set can exist, the older values will be overwritten for an existing date. Thus, storing historical data will help generate reports with appropriate data for all dates.
- Historical data can be viewed by downloading the Excel file using the download option in View mode
- The list of elements for Chemical and Physical can be seen in the design provided.
- **Each Chemistry element will have the following**
  - Low -
    - Editable and pre-populated with the existing value.
    - Default value - 0
    - Mandatory: No
    - Field Validation -
      - only integers, Max 100/ Min 0, 3 integers and Four places after decimal point
      - It has to be lower than Aim and High
  - Aim
    - Editable and pre-populated with the existing value.
    - Default value - 0
    - Mandatory: No
    - Field Validation -
      - only integers, Max 100/ Min 0, 3 integers and Four places after decimal point
      - The sum of all *Aim* values represents a percentage-based split of elements in the material. While it is **not required to total exactly 100%**, it **must not exceed 100%**. Total Aim value will be shown next to section heading. A validation message that “Total value of elements should be less than 100%” will be displayed **CR-VD-3979**
      - It has to be higher than Low and lower than High
  - High
    - Editable and pre-populated with the existing value.
    - Default value - 0
    - Mandatory: No
    - Field Validation -
      - only integers, Max 100/ Min 0, 3 integers and Four places after decimal point
      - It has to be higher than Low and Aim
  - Warning Tolerance
    - System calculates using this formula.  

$$\text{def calc_warning_tolerances}(\text{low}, \text{high}, \text{aim}):$$

cpk = 1.33

if low == 0:

if high > aim:

return (high - aim) / cpk

else:

return 0

else:

if (high - aim) > (aim - low):

return (aim - low) / cpk

else:

return 0

- This calculation is triggered automatically when **Low**, **Aim**, and **High** values are entered. **CR-VD-4656**
- Each warning tolerance value can be manually edited by clicking the **edit icon** next to the respective field. **CR-VD-4657**
- **If Warning Tolerance is 0 the edit icon will be disabled.** Tooltip will read “Edit disabled for 0 Warning Tolerance”
- **Value Deviation Validation:** If the user-entered value **deviates by more than ±5%** from the system-calculated value, the system shall **display a warning message** before accepting the value. “Entered value differs by more than 5% from the system-calculated value. Are you sure you want to proceed? Are you sure you want to proceed?”. Once confirmed user entered value can be saved.
- Once a value is **overridden by the user**, it is highlighted with a background to indicate the change.
- **Overridden values** will display a **reset icon**, allowing users to revert them back to the **system-calculated value**.
- A **tooltip** appears on hover, explaining that the value has been **manually overridden**.
- **Default - 0 CR-VD-4655**
- only integers, Max 100/ Min 0, 3 integers and Four places after decimal point
- Control Elements - Same as WIP. (Al, Ca, Fe, Ni, P, Ti, V)
  - Checkbox:
    - Editable and pre-populated with the existing value.
    - Default value - Unselected
    - Mandatory: No
  - **Element Restrictions:** Only the following elements can be checked/unchecked:
    - Al, Ca, Fe, Ni, P, Ti, V

- All other elements will **not** have a checkbox option (i.e., selection is not permitted).
- **Each Physical element will have the following**
  - Low -
    - Editable and pre-populated with the existing value.
    - Mandatory - No
    - Default - 0 **CR-VD-4655**
    - Field Validation -
      - only integers, Max 100/ Min 0, 3 integers and Four places after decimal point
      - It has to be lower than Aim and High
  - Aim
    - Editable and pre-populated with the existing value.
    - Mandatory - No
    - Default - 0 **CR-VD-4655**
    - Field Validation -
      - only integers, Max 100/ Min 0, 3 integers and Four places after decimal point
      - The sum of all *Aim* values represents a percentage-based split of elements in the material. While it is **not required to total exactly 100%**, it **must not exceed 100%**. Total Aim value will be shown next to section heading. A validation message that “Total value of elements should be less than 100%” will be displayed **CR-VD-3979**
      - It has to be higher than Low and lower than High
  - High
    - Editable and pre-populated with the existing value.
    - Mandatory - No
    - Default - 0 **CR-VD-4655**
    - Field Validation -
      - only integers, Max 100/ Min 0, 3 integers and Four places after decimal point
      - It has to be higher than Low and Aim
- **For Size specifications - User captures**
  - **Low**
    - Editable and pre-populated with the existing value.
    - Mandatory - No
    - Validation - No
  - **Below Tolerance %**
    - Editable and pre-populated with the existing value.
    - Mandatory - No
    - Validation - only integers, max value 100%
  - **High**
    - Editable and pre-populated with the existing value.
    - Mandatory - No

- Validation - High has to be more than Low. PAN is considered the lowest value.
- **Above Tolerance**
  - Editable and pre-populated with the existing value.
  - Mandatory - No
  - Validation - only integers, max value 100%
- **Action Buttons**
  - **Save**
    - Upon saving the details, the user is redirected to the **List** page.
    - On the **list screen**:
      - Since both tab's details have been entered,
      - An **Edit** option will appear in the **action menu** for the corresponding item.
      - User can now activate the material
  - **Cancel**: Cancels the current operation and returns to the list screen

| Elements (in %) | Low | Aim | High | Warning Tolerance   | Control                  |
|-----------------|-----|-----|------|---------------------|--------------------------|
| Al              | 0   | 0   | 0    | 0                   | <input type="checkbox"/> |
| As              | 0   | 3   | 6    | 1.22                | <input type="checkbox"/> |
| Au              | 0   | 4   | 5    | User-modified value | <input type="checkbox"/> |
| Be              | 0   | 0   | 0    | 0                   | <input type="checkbox"/> |
| B               | 0   | 0   | 0    | 0                   | <input type="checkbox"/> |
| Ca              | 0   | 0   | 0    | 0                   | <input type="checkbox"/> |
| Cd              | 0   | 0   | 0    | 0                   | <input type="checkbox"/> |
| Ce              | 0   | 0   | 0    | 0                   | <input type="checkbox"/> |
| Co              | 0   | 0   | 0    | 0                   | <input type="checkbox"/> |
| Cr              | 0   | 0   | 0    | 0                   | <input type="checkbox"/> |
| Cu              | 0   | 0   | 0    | 0                   | <input type="checkbox"/> |

  

| Elements (in %) | Low | Aim | High | Warning Tolerance | Control                  |
|-----------------|-----|-----|------|-------------------|--------------------------|
| Al              | 0   | 0   | 0    | 0                 | <input type="checkbox"/> |
| As              | 0   | 3   | 6    | 1.22              | <input type="checkbox"/> |
| Au              | 0   | 4   | 5    | 1.44              | <input type="checkbox"/> |
| Be              | 0   | 0   | 0    | 0                 | <input type="checkbox"/> |
| B               | 0   | 0   | 0    | 0                 | <input type="checkbox"/> |
| Ca              | 0   | 0   | 0    | 0                 | <input type="checkbox"/> |
| Cd              | 0   | 0   | 0    | 0                 | <input type="checkbox"/> |
| Ce              | 0   | 0   | 0    | 0                 | <input type="checkbox"/> |
| Co              | 0   | 0   | 0    | 0                 | <input type="checkbox"/> |
| Cr              | 0   | 0   | 0    | 0                 | <input type="checkbox"/> |
| Cu              | 0   | 0   | 0    | 0                 | <input type="checkbox"/> |

## 4. View Material

This screen will allow users to input and manage records, organised into two Tabs: Material Information and Material Specification. Mandatory fields will be marked with an asterisk (\*). Below is a detailed layout incorporating the requirements.

**Header:** Back Icon | **MB01\_197 | Bois Rondins** (Material ID | Material Name) | **Edit Icon:** Allows users to switch from view mode to edit mode to update the record.

The screenshot shows a table titled "MM : Products" with 5 Active and 35 Inactive items. The columns are: Material ID, Material Name, Material Type, Date Created, Status, and actions (View, Edit, Delete). The data includes various product entries like PSSI 4503 B Alu, PSSI BAS BORE, etc.

| MM : Products |             |                    |                       |              |          |
|---------------|-------------|--------------------|-----------------------|--------------|----------|
|               | Material ID | Material Name      | Material Type         | Date Created | Status   |
|               | B111_148    | PSSI 4503 B Alu    | Finished Product      | 10/10/2024   | Active   |
|               | B111_146    | PSSI BAS BORE      | Semi-Finished Product | 10/10/2024   | Active   |
|               | B111_4      | PSSI2030           | Finished Product      | 10/10/2024   | Active   |
|               | MB02_200    | Charbon de bois    | Finished Product      | 10/10/2024   | Active   |
|               | B1F1_280    | PSSI Refusion BIFI | Finished Product      | 10/10/2024   | Active   |
|               | B111_309    | PSSI 5003 Ht Alu   | Finished Product      | 10/10/2024   | Inactive |
|               | B111_302    | PSSI4520DC         | Finished Product      | 10/10/2024   | Active   |
|               | B111_306    | PSO dopE P Piscine | Finished Product      | 10/10/2024   | Active   |
|               | B111_303    | PSSI 5003          | Finished Product      | 10/10/2024   | Inactive |
|               | B111_299    | PSSI45015          | Finished Product      | 10/10/2024   | Active   |

## Material Information Tab

### CR-VD-4658

**Basic Information (Read-only; fetched from external ERP system):**

#### Scenario 1: ERP ID exists, but no Ops ID

- Material ID = ERP Material ID
- Material Name
- Material Type
- Status
- Date Created
- Material Description

#### Scenario 2: ERP ID and Ops ID exist with a one-to-one mapping

- Material ID = ERP Material ID = OPS Material ID
- Material Name
- Material Type
- Status
- Date Created
- Material Description

#### Scenario 3: ERP ID and Ops ID exist and are different (i.e., no one-to-one mapping)

- Material ID = (Concatenation of ERP ID and Ops ID)
- Material Name
- ERP Commercial Material ID
- ERP Commercial Material Name
- Ops Technical Material ID

- Material Type
- Status
- Date Created
- Material Description

**Additional Information** - These details are to be captured here, they are the following

• **Effective Date:**

○ **Export Icon:**

- Historical and future data can be viewed by downloading the CSV file using the download option.
- The tooltip should read “Download CSV”. **CR-VD-4482**
- Downloads the record in CSV format.
- The file must include the following headers and display the values as the following example: **CR-VD-5348**
- Exported File Name: “**Products\_Additional\_Information\_DD-MM-YYYY**” **CR-VD-4489**

| Effective Date | Material ID | Material Name | Material Type    | Unit Weight (unit ) | Actual Cost (unit ) | Density (unit ) | Standard Cost | Created By              | Modified By             | Created At            | Modified At           |
|----------------|-------------|---------------|------------------|---------------------|---------------------|-----------------|---------------|-------------------------|-------------------------|-----------------------|-----------------------|
| 04/06/2025     | B111_303    | PSSI 5003     | Finished Product | 230.21              | 230.21              | 1.4567          | 250           | sbadal   Saha na Bad al | sbada l   Sahan a Badal | 19/06/2025   07:38 AM | 19/06/2025   07:39 AM |

**CR-VD-4654**

- **Unit Weight**
- **Actual Cost**
- **Density**
- **Standard Cost**

The screenshot shows the DaVinci software interface with the 'Material Information' tab selected. The page header includes the VIRTUES logo and the DaVinci logo with the name 'Nora James'. On the left is a vertical toolbar with various icons. The main content area has two tabs: 'Material Information' (selected) and 'Material Specification'. Under 'Material Information', there are two sections: 'Basic Information' and 'Additional Information'. 'Basic Information' contains fields like Material ID (B111\_148), Material Name (PSSI 4503 B Alu), ERP Commercial Material ID (B111), ERP Commercial Material Name (PS Silicium mEtal brut CHI), ERP ACC Material ID (B111), ERP Acc Material Name (PS Silicium mEtal brut), Ops Technical Material ID (148), Material Type (Finished Product), Status (Active), Date Created (01/21/2025), and Material Description (PS Silicium Dow Fe<0.45% Ca<0.032%). 'Additional Information' contains fields like Effective Date (18.08.24), Unit Weight (234512 t), Actual Cost (2500 USD), Density (5.00 g/cm³), and Standard Cost (2700 USD). A 'Download CSV' button is located in the 'Additional Information' section.

## Material Specification Tab

Chemistry, Physical and size specification of various elements will be available in read only mode.

### Each Chemistry element will have the following

- Low
- Aim
- High
- Warning Tolerance - Once a value is **overridden by the user**, it is highlighted with a background to indicate the change.
- Control Elements checkbox

### Each Physical element will have the following

Low

- Aim
- High

### For Size specifications

- Low
- Below Tolerance %
- High
- Above Tolerance

### Export Specification

- Historical data can be viewed by downloading the Excel file using the download option.

- The tooltip should read “Download CSV”. **CR-VD-4482**
- Downloads the record in CSV format.
- The file must include the following headers and display the values as the following example: **CR-VD-5348**
- Exported File Name: “**Products\_MaterialSpecification\_DD-MM-YYYY**” **CR-VD-4489**

| Element Group (in %) | Element Group | L | A | H | W | Warnin | C | o | n        | r      | t     | Created At | Created By | Plant Material ID | P | l | a | n             | Modified At   | Modifi ed By |
|----------------------|---------------|---|---|---|---|--------|---|---|----------|--------|-------|------------|------------|-------------------|---|---|---|---------------|---------------|--------------|
|                      |               | L | A | H | W | Warnin | C | o | n        | r      | t     | Created At | Created By | Plant Material ID | P | l | a | n             | Modified At   | Modifi ed By |
| Al                   | CHE           | 0 | 8 | 5 | 9 | 2      | T | R | 05/06/20 | devara | 6V_B1 | 05/06/20   | devara     | 6                 | V | l | a | 25   07:24 AM | 25   07:24 AM | Dev   Devara |
| As                   | CHE           | 0 | 0 | 0 | 9 | 7      | F | A | 05/06/20 | devara | 6V_B1 | 05/06/20   | devara     | 6                 | V | l | a | 25   07:24 AM | 25   07:24 AM | Dev   Devara |
| Au                   | CHE           | 0 | 0 | 0 | 9 | 7      | S | E | 05/06/20 | devara | 6V_B1 | 05/06/20   | devara     | 6                 | V | l | a | 25   07:24 AM | 25   07:24 AM | Dev   Devara |
| Be                   | CHE           | 0 | 0 | 0 | 9 | 7      | F | A | 05/06/20 | devara | 6V_B1 | 05/06/20   | devara     | 6                 | V | l | a | 25   07:24 AM | 25   07:24 AM | Dev   Devara |
| B                    | CHE           | 0 | 0 | 0 | 9 | 7      | F | A | 05/06/20 | devara | 6V_B1 | 05/06/20   | devara     | 6                 | V | l | a | 25   07:24 AM | 25   07:24 AM | Dev   Devara |
| Ca                   | CHE           | 1 | 2 | 3 | 9 | 7      | T | R | 05/06/20 | devara | 6V_B1 | 05/06/20   | devara     | 6                 | V | l | a | 25   07:24 AM | 25   07:24 AM | Dev   Devara |

|    |     |   |   |   |   |                       |                              |                        |                     |        |                              |                        |
|----|-----|---|---|---|---|-----------------------|------------------------------|------------------------|---------------------|--------|------------------------------|------------------------|
| Cd | CHE | 0 | 0 | 0 | 0 | F<br>A<br>L<br>S<br>E | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara | 6V_B1<br>F2_28<br>1 | 6<br>V | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara |
| Ce | CHE | 0 | 0 | 0 | 0 | F<br>A<br>L<br>S<br>E | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara | 6V_B1<br>F2_28<br>1 | 6<br>V | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara |
| Co | CHE | 0 | 0 | 0 | 0 | F<br>A<br>L<br>S<br>E | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara | 6V_B1<br>F2_28<br>1 | 6<br>V | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara |
| Cr | CHE | 0 | 0 | 0 | 0 | F<br>A<br>L<br>S<br>E | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara | 6V_B1<br>F2_28<br>1 | 6<br>V | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara |
| Cu | CHE | 0 | 0 | 0 | 0 | F<br>A<br>L<br>S<br>E | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara | 6V_B1<br>F2_28<br>1 | 6<br>V | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara |
| C  | CHE | 0 | 0 | 0 | 0 | F<br>A<br>L<br>S<br>E | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara | 6V_B1<br>F2_28<br>1 | 6<br>V | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara |
| Dy | CHE | 0 | 0 | 0 | 0 | F<br>A<br>L<br>S<br>E | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara | 6V_B1<br>F2_28<br>1 | 6<br>V | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara |
| Er | CHE | 0 | 0 | 0 | 0 | F<br>A<br>L<br>S<br>E | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara | 6V_B1<br>F2_28<br>1 | 6<br>V | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara |
| Fe | CHE | 0 | 0 | 0 | 0 | F<br>A<br>L<br>S<br>E | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara | 6V_B1<br>F2_28<br>1 | 6<br>V | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara |

|    |     |   |   |   |   |                       |                              |                        |                     |        |                              |                        |
|----|-----|---|---|---|---|-----------------------|------------------------------|------------------------|---------------------|--------|------------------------------|------------------------|
| Ga | CHE | 0 | 0 | 0 | 0 | F<br>A<br>L<br>S<br>E | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara | 6V_B1<br>F2_28<br>1 | 6<br>V | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara |
| Gd | CHE | 0 | 0 | 0 | 0 | F<br>A<br>L<br>S<br>E | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara | 6V_B1<br>F2_28<br>1 | 6<br>V | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara |
| Ge | CHE | 0 | 0 | 0 | 0 | F<br>A<br>L<br>S<br>E | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara | 6V_B1<br>F2_28<br>1 | 6<br>V | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara |
| Hf | CHE | 0 | 0 | 0 | 0 | F<br>A<br>L<br>S<br>E | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara | 6V_B1<br>F2_28<br>1 | 6<br>V | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara |
| Hg | CHE | 0 | 0 | 0 | 0 | F<br>A<br>L<br>S<br>E | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara | 6V_B1<br>F2_28<br>1 | 6<br>V | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara |
| In | CHE | 0 | 0 | 0 | 0 | F<br>A<br>L<br>S<br>E | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara | 6V_B1<br>F2_28<br>1 | 6<br>V | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara |
| K  | CHE | 0 | 0 | 0 | 0 | F<br>A<br>L<br>S<br>E | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara | 6V_B1<br>F2_28<br>1 | 6<br>V | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara |
| La | CHE | 0 | 0 | 0 | 0 | F<br>A<br>L<br>S<br>E | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara | 6V_B1<br>F2_28<br>1 | 6<br>V | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara |
| Li | CHE | 0 | 0 | 0 | 0 | F<br>A<br>L<br>S<br>E | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara | 6V_B1<br>F2_28<br>1 | 6<br>V | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara |

|    |     |   |   |   |   |                       |                              |                        |                     |        |                              |                        |
|----|-----|---|---|---|---|-----------------------|------------------------------|------------------------|---------------------|--------|------------------------------|------------------------|
| Mg | CHE | 0 | 0 | 0 | 0 | F<br>A<br>L<br>S<br>E | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara | 6V_B1<br>F2_28<br>1 | 6<br>V | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara |
| Mn | CHE | 0 | 0 | 0 | 0 | F<br>A<br>L<br>S<br>E | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara | 6V_B1<br>F2_28<br>1 | 6<br>V | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara |
| Mo | CHE | 0 | 0 | 0 | 0 | F<br>A<br>L<br>S<br>E | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara | 6V_B1<br>F2_28<br>1 | 6<br>V | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara |
| Na | CHE | 0 | 0 | 0 | 0 | F<br>A<br>L<br>S<br>E | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara | 6V_B1<br>F2_28<br>1 | 6<br>V | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara |
| Nb | CHE | 0 | 0 | 0 | 0 | F<br>A<br>L<br>S<br>E | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara | 6V_B1<br>F2_28<br>1 | 6<br>V | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara |
| Nd | CHE | 0 | 0 | 0 | 0 | F<br>A<br>L<br>S<br>E | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara | 6V_B1<br>F2_28<br>1 | 6<br>V | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara |
| Ni | CHE | 0 | 0 | 0 | 0 | F<br>A<br>L<br>S<br>E | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara | 6V_B1<br>F2_28<br>1 | 6<br>V | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara |
| Pb | CHE | 0 | 0 | 0 | 0 | F<br>A<br>L<br>S<br>E | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara | 6V_B1<br>F2_28<br>1 | 6<br>V | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara |
| Pr | CHE | 0 | 0 | 0 | 0 | F<br>A<br>L<br>S<br>E | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara | 6V_B1<br>F2_28<br>1 | 6<br>V | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara |

|    |     |   |   |   |   |                       |                              |                        |                     |        |                              |                        |
|----|-----|---|---|---|---|-----------------------|------------------------------|------------------------|---------------------|--------|------------------------------|------------------------|
| Pt | CHE | 0 | 0 | 0 | 0 | F<br>A<br>L<br>S<br>E | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara | 6V_B1<br>F2_28<br>1 | 6<br>V | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara |
| P  | CHE | 0 | 0 | 0 | 0 | F<br>A<br>L<br>S<br>E | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara | 6V_B1<br>F2_28<br>1 | 6<br>V | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara |
| Re | CHE | 0 | 0 | 0 | 0 | F<br>A<br>L<br>S<br>E | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara | 6V_B1<br>F2_28<br>1 | 6<br>V | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara |
| Sb | CHE | 0 | 0 | 0 | 0 | F<br>A<br>L<br>S<br>E | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara | 6V_B1<br>F2_28<br>1 | 6<br>V | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara |
| Sc | CHE | 0 | 0 | 0 | 0 | F<br>A<br>L<br>S<br>E | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara | 6V_B1<br>F2_28<br>1 | 6<br>V | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara |
| Se | CHE | 0 | 0 | 0 | 0 | F<br>A<br>L<br>S<br>E | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara | 6V_B1<br>F2_28<br>1 | 6<br>V | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara |
| Si | CHE | 0 | 0 | 0 | 0 | F<br>A<br>L<br>S<br>E | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara | 6V_B1<br>F2_28<br>1 | 6<br>V | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara |
| Sm | CHE | 0 | 0 | 0 | 0 | F<br>A<br>L<br>S<br>E | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara | 6V_B1<br>F2_28<br>1 | 6<br>V | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara |
| Sn | CHE | 0 | 0 | 0 | 0 | F<br>A<br>L<br>S<br>E | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara | 6V_B1<br>F2_28<br>1 | 6<br>V | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara |

|    |     |   |   |   |   |                       |                              |                        |                     |        |                              |                        |
|----|-----|---|---|---|---|-----------------------|------------------------------|------------------------|---------------------|--------|------------------------------|------------------------|
| Sr | CHE | 0 | 0 | 0 | 0 | F<br>A<br>L<br>S<br>E | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara | 6V_B1<br>F2_28<br>1 | 6<br>V | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara |
| S  | CHE | 0 | 0 | 0 | 0 | F<br>A<br>L<br>S<br>E | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara | 6V_B1<br>F2_28<br>1 | 6<br>V | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara |
| Ta | CHE | 0 | 0 | 0 | 0 | F<br>A<br>L<br>S<br>E | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara | 6V_B1<br>F2_28<br>1 | 6<br>V | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara |
| Te | CHE | 0 | 0 | 0 | 0 | F<br>A<br>L<br>S<br>E | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara | 6V_B1<br>F2_28<br>1 | 6<br>V | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara |
| Ti | CHE | 0 | 0 | 0 | 0 | F<br>A<br>L<br>S<br>E | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara | 6V_B1<br>F2_28<br>1 | 6<br>V | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara |
| V  | CHE | 0 | 0 | 0 | 0 | F<br>A<br>L<br>S<br>E | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara | 6V_B1<br>F2_28<br>1 | 6<br>V | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara |
| W  | CHE | 0 | 0 | 0 | 0 | F<br>A<br>L<br>S<br>E | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara | 6V_B1<br>F2_28<br>1 | 6<br>V | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara |
| Y  | CHE | 0 | 0 | 0 | 0 | F<br>A<br>L<br>S<br>E | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara | 6V_B1<br>F2_28<br>1 | 6<br>V | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara |
| Zn | CHE | 0 | 0 | 0 | 0 | F<br>A<br>L<br>S<br>E | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara | 6V_B1<br>F2_28<br>1 | 6<br>V | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara |

|           |     |   |   |   |   |                       |                              |                        |                     |        |                              |                        |
|-----------|-----|---|---|---|---|-----------------------|------------------------------|------------------------|---------------------|--------|------------------------------|------------------------|
| Zr        | CHE | 0 | 0 | 0 | 0 | F<br>A<br>L<br>S<br>E | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara | 6V_B1<br>F2_28<br>1 | 6<br>V | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara |
| Ash       | PHY | 0 | 0 | 0 | 0 | F<br>A<br>L<br>S<br>E | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara | 6V_B1<br>F2_28<br>1 | 6<br>V | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara |
| Moisture  | PHY | 0 | 0 | 0 | 0 | F<br>A<br>L<br>S<br>E | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara | 6V_B1<br>F2_28<br>1 | 6<br>V | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara |
| Volatiles | PHY | 0 | 0 | 0 | 0 | F<br>A<br>L<br>S<br>E | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara | 6V_B1<br>F2_28<br>1 | 6<br>V | 05/06/20<br>25  <br>07:24 AM | devara<br>  Dev<br>ara |

B111\_148 | PSSI 4503 B Alu

Nora James

Material Information

Material Specification

View Change History

| Elements (in %) | Low | Aim | High | Warning Tolerance | Control |
|-----------------|-----|-----|------|-------------------|---------|
| Al              | 0   | 0   | 2.06 | 0                 | ☒       |
| As              | 0   | 0   | 0    | 1.22              | —       |
| O               | 0   | 0   | 0    | 0                 | —       |
| Be              | 0   | 0   | 0    | 0                 | —       |
| B               | 0   | 0   | 0    | 0                 | —       |
| O               | 0   | 0   | 2.06 | 0                 | ☒       |
| Cd              | 0   | 0   | 0    | 0                 | —       |
| Ce              | 0   | 0   | 0    | 0                 | —       |
| Co              | 0   | 0   | 0    | 0                 | —       |
| Cr              | 0   | 0   | 0    | 0                 | —       |

### View Change History

This button opens a modal or section showing a chronological list of all changes made to the record, including:

- Timestamp of change
- Field(s) modified
- Previous and updated values

- Name of the user who made the change
- **Export Icon - Downloads the records in CSV format, the tooltip should read “Download CSV”. CR-VD-4482**
- Export Filename - “Products\_ChangeHistory\_DD-MM-YYYY” **CR-VD-4489**

SPECIFICATION CHANGE HISTORY

|                        |                                |          |        |        | Old    |         |        | New    |        |         |
|------------------------|--------------------------------|----------|--------|--------|--------|---------|--------|--------|--------|---------|
| Date                   | Username                       | Element  | Low    | Aim    | High   | Control | Low    | Aim    | High   | Control |
| 05/01/2025<br>09:00 AM | JSmithOperator  <br>John Smith | Al       | 0.0000 | 0.0000 | 0.0000 |         | 1.9000 | 2.0000 | 2.4500 |         |
| 04/01/2025<br>09:00 AM | superadmin  <br>Jacob Wills    | B        | 0.0000 | 0.0000 | 0.0000 |         | 1.9000 | 2.0000 | 2.4500 |         |
|                        |                                | Ca       | 0.0000 | 0.0000 | 0.0000 |         | 0.0000 | 1.0000 | 0.0000 |         |
|                        |                                | Al       | 0.0000 | 0.0000 | 0.0000 |         | 0.0000 | 0.0000 | 0.0000 |         |
| 02/01/2025<br>07:00 AM | superadmin  <br>Jacob Wills    | Moisture | 0.0000 | 0.0000 | 0.0000 | —       | 0.0000 | 0.0000 | 2.4500 | —       |
| 01/01/2025<br>09:00 AM | superadmin  <br>Jacob Wills    | B        | 0.0000 | 0.0000 | 0.0000 |         | 1.9000 | 2.0000 | 2.4500 |         |
|                        |                                | Ca       | 0.0000 | 0.0000 | 0.0000 |         | 0.0000 | 1.0000 | 0.0000 |         |

Chemistry Elements

| Elements (in %) | Low | Aim | High |
|-----------------|-----|-----|------|
| Al              | 0   | 0   | 0    |
| As              | 0   | 0   | 0    |
| O               | 0   | 0   | 0    |
| Be              | 0   | 0   | 0    |
| B               | 0   | 0   | 0    |
| O               | 0   | 0   | 0    |
| Cd              | 0   | 0   | 0    |
| Ce              | 0   | 0   | 0    |
| Co              | 0   | 0   | 0    |
| Cr              | 0   | 0   | 0    |