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MRP Simulation Cockpit

Content

- 1 MRP Simulation Cockpit 3**
- 2 Selection Screen. 4**
 - 2.1 Material Selection Tab. 4
 - 2.2 Advanced Options Tab. 7
 - Long-Term Planning Area. 7
 - Pushbuttons Area. 8
 - MRP Control Parameters Area. 8
 - Key Figures Area. 9
 - 2.3 Result Tab. 10
 - 2.4 Variants. 11
- 3 Result Screen. 12**
- 4 Policy Table and Material Master Update after Simulation 14**

1 MRP Simulation Cockpit

Simulate and evaluate all MRP-relevant master data changes. The **MRP simulation cockpit** supports your strategic decisions by simulating future periods and aggregated analysis options.

The **MRP simulation cockpit** is an ERP Add-On. It contains functionalities that are not part of the SAP standard. You can use the **MRP simulation cockpit** to perform planning runs for different scenarios and materials in a plant and calculate defined stock KPIs for a date in the future. The results of the MRP run will then be output in tabular format as an ALV list.

MRP simulation is called from transaction [/N/SAPL0M/MSI](#).

The main functions of the **MRP simulation cockpit** include:

- Simulation of alternative master data and requirement scenarios (for example, price and sales situation) based on a classification
- Value assignment of key figures relevant to MRP for alternative master data scenarios for key dates in the future

In the event of error messages, please create a customer message under the component `XX-PROJ-CON-MSI`.

SAP Note: [1911251](#)

Link to additional content: [Materialien](#)

Related Information

[Documentation on the comprehensive functions](#)

[Overview of SCM Consulting Solutions](#)

2 Selection Screen

The selection screen of the **MRP simulation cockpit** is divided into three tabs in which you can select different input parameters.

2.1 Material Selection Tab

MRP Simulation Cockpit

Material selection | Advanced options | Result

Analysis scope

Material	<input type="text"/>	to	<input type="text"/>	
Material Type	<input type="text"/>	to	<input type="text"/>	
Plant	<input type="text"/>	to	<input type="text"/>	
MRP Area	<input type="text"/>	to	<input type="text"/>	
Material Group	<input type="text"/>	to	<input type="text"/>	
Purchasing Group	<input type="text"/>	to	<input type="text"/>	
X-plant matl status	<input type="text"/>	to	<input type="text"/>	
Plant-sp.matl status	<input type="text"/>	to	<input type="text"/>	
MRP group	<input type="text"/>	to	<input type="text"/>	
MRP Controller	<input type="text"/>	to	<input type="text"/>	

Additional material parameters













































Material Selection Tab

In the *Selection* area, you can define the following input parameters:

- *Material*
- *Material Type*
- *Plant*
- *MRP Area*
- *Material Group*
- *Purchasing Group*
- *X-plant matl status*
- *Plant-sp.matl status*
- *MRP group*
- *MRP Controller*

In the *Other Material Parameters* area, you can filter by specific classification indicators.


Click  to filter by SCM classification fields:

Additional material parameters			
Classification			
ABC(D) indicator	<input type="checkbox"/>	to	<input type="checkbox"/> 
XYZ(N) indicator	<input type="checkbox"/>	to	<input type="checkbox"/> 
LMN(O) indicator	<input type="checkbox"/>	to	<input type="checkbox"/> 
EFG(N) indicator	<input type="checkbox"/>	to	<input type="checkbox"/> 
UVW(N) indicator	<input type="checkbox"/>	to	<input type="checkbox"/> 
PQR indicator	<input type="checkbox"/>	to	<input type="checkbox"/> 
HIJ(K) indicator	<input type="checkbox"/>	to	<input type="checkbox"/> 
KSTX(N) indicator	<input type="checkbox"/>	to	<input type="checkbox"/> 
Lifecycle/Storage			
Make to order	<input type="checkbox"/>	to	<input type="checkbox"/> 
Life cycle indicator	<input type="checkbox"/>	to	<input type="checkbox"/> 
Stocking/Destocking	<input type="checkbox"/>	to	<input type="checkbox"/> 
Deletion flag	<input type="checkbox"/>	to	<input type="checkbox"/> 
New material	<input type="checkbox"/>	to	<input type="checkbox"/> 
Seasonal material	<input type="checkbox"/>	to	<input type="checkbox"/> 
No consumption	<input type="checkbox"/>	to	<input type="checkbox"/> 
Negative consumption	<input type="checkbox"/>	to	<input type="checkbox"/> 
Forecast this material	<input type="checkbox"/>	to	<input type="checkbox"/> 
Strategic material	<input type="checkbox"/>	to	<input type="checkbox"/> 
Gating machine	<input type="checkbox"/>	to	<input type="checkbox"/> 
Prod/Purch principle	<input type="checkbox"/>	to	<input type="checkbox"/> 
Provisioning acc. BOM char.	<input type="checkbox"/>	to	<input type="checkbox"/> 
Provisioning acc. to capa.	<input type="checkbox"/>	to	<input type="checkbox"/> 
Provisioning acc.requirem.	<input type="checkbox"/>	to	<input type="checkbox"/> 
Provisioning acc. rule set	<input type="checkbox"/>	to	<input type="checkbox"/> 
Manual provisioning	<input type="checkbox"/>	to	<input type="checkbox"/> 
Exception indicators			
Exception indicator 1	<input type="checkbox"/>	to	<input type="checkbox"/> 
Exception indicator 2	<input type="checkbox"/>	to	<input type="checkbox"/> 
Exception indicator 3	<input type="checkbox"/>	to	<input type="checkbox"/> 
Exception indicator 4	<input type="checkbox"/>	to	<input type="checkbox"/> 
Exception indicator 5	<input type="checkbox"/>	to	<input type="checkbox"/> 
Exception indicator 6	<input type="checkbox"/>	to	<input type="checkbox"/> 
Exception indicator 7	<input type="checkbox"/>	to	<input type="checkbox"/> 
Exception indicator 8	<input type="checkbox"/>	to	<input type="checkbox"/> 
Exception indicator 9	<input type="checkbox"/>	to	<input type="checkbox"/> 
Exception indicator 10	<input type="checkbox"/>	to	<input type="checkbox"/> 
Exception indicator 11	<input type="checkbox"/>	to	<input type="checkbox"/> 
Exception indicator 12	<input type="checkbox"/>	to	<input type="checkbox"/> 
Exception indicator 13	<input type="checkbox"/>	to	<input type="checkbox"/> 
Exception indicator 14	<input type="checkbox"/>	to	<input type="checkbox"/> 
Exception indicator 15	<input type="checkbox"/>	to	<input type="checkbox"/> 
Exception indicator 16	<input type="checkbox"/>	to	<input type="checkbox"/> 
Exception indicator 17	<input type="checkbox"/>	to	<input type="checkbox"/> 
Exception indicator 18	<input type="checkbox"/>	to	<input type="checkbox"/> 
Exception indicator 19	<input type="checkbox"/>	to	<input type="checkbox"/> 

2.2 Advanced Options Tab

Material selection | Advanced options | Result

Long-Term Planning

Planning Scenario to 

Calculation of figures:

for Key Date

for periods

Valuation date

MRP Control Parameters

Processing key	NETCH
Create MRP list	1
Planning mode	3
Scheduling	2
Include firm planned orders	1

Process Control Parameters

Also plan unchanged components

Key Figures

- Available quantity
- Value of available quantity
- Total of planned receipts
- Total of planned issues
- Actual Days' Supply
- Safety stock
- Value of safety stock
- Dead stock
- Dead stock (value)
- Minimum of available quantity
- Slow mover date

Advanced Options Tab

The individual areas of the *Advanced options* tab are described in detail in the following sections.

2.2.1 Long-Term Planning Area

In the *Long-Term Planning* area, you can specify the planning scenarios and the method for determining the key figures: for a key date or per period. You have the option of comparing multiple scenarios. See also [Key Figures Area \[page 9\]](#)

If you have selected the option *For Key Date*, specify the key date for the simulation. By default, this is set to the last day of the current year. The Key Figures area is visible below and the stock key figures selected there are calculated for the key date entered.

If you have selected the *Per Period* option, specify the period indicator (days, months, or weeks) for the simulation and the number of periods. Note that in the case of days, the number of periods is limited to 120, and in the case of weeks, to 106.

The following warehouse key figures are determined for all selected periods: available quantity, value of available quantity, planned receipts, planned issues, actual range of coverage, safety stock, safety stock value, dead stock (value), days without consumption.

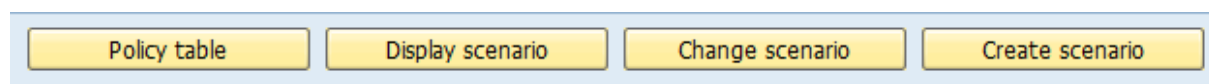
For determining key figures: planned issues and receipts, actual range of coverage, and dead stock. For days without consumption, a horizon of 3 months is used. If the consumption is missing in the analyzed horizon, the key figure **Days without consumption** is set to -999.

Related Information

[Advanced Options Tab \[page 7\]](#)

[Key Figures Area \[page 9\]](#)

2.2.2 Pushbuttons Area



Pushbuttons

You can use these pushbuttons to navigate to other transactions:

- Select the *Policy table* button to open transaction *Maintenance of the policy table* (*/SAPL0M/XMM_RULE*).
- Select *Display scenario* to navigate to transaction *MS33* where you can review all the control parameters defined for a specific scenario.
- Select *Change scenario* to change the control parameters for a scenario before running the simulation for each scenario.
- Select *Create scenario* to go to transaction *MS31*.

Related Information

[Advanced Options Tab \[page 7\]](#)

2.2.3 MRP Control Parameters Area

In this area, you define the control parameters for material requirements planning and its process flow.

These are:

- *Processing key*: defines the type of planning run. Options are net change planning (*NETCH*), regenerative planning (*NEUPL*), net change planning in planning horizon (*NETPL*).
- *Create MRP list*

- *Planning mode*: adjust or create planned orders.
- *Scheduling*
- *Include firm planned orders*: with this parameter you can copy firm planned orders from operative planning to long-term planning.

The *Process Control Parameters* area only contains the checkbox *Also plan unchanged components*. If this box is checked, all components within the bill of material are planned even though they might have no planning-relevant changes.

Related Information

[Advanced Options Tab \[page 7\]](#)

2.2.4 Key Figures Area

Note that this area is only visible if key figures are determined for the key date.

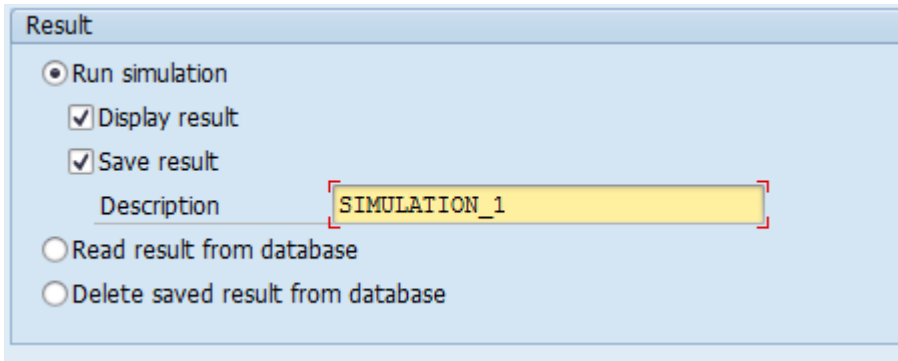
In this area, you can select the stock KPIs for the calculation:

- *Available quantity*: defines the amount that will be available in the plant at the selected valuation date.
- *Value of available quantity*: Is calculated by multiplying the available quantity of the relevant material and its unit price.
- *Total of planned receipts* (until the valuation date)
- *Total of planned issues* (until the valuation date)
- *Actual coverage*
- *Safety stock*
- *Value of safety stock*
- *Dead stock*
- *Dead stock (value)*
- *Minimum of available quantity* (until the valuation date)
- *Slow mover date*: Date of the last usage (requirement) of a material within the relevant planning period. If this box is checked, the difference between the valuation date and slow mover date will be calculated and displayed in an additional column in the result screen.

Related Information

[Advanced Options Tab \[page 7\]](#)

2.3 Result Tab



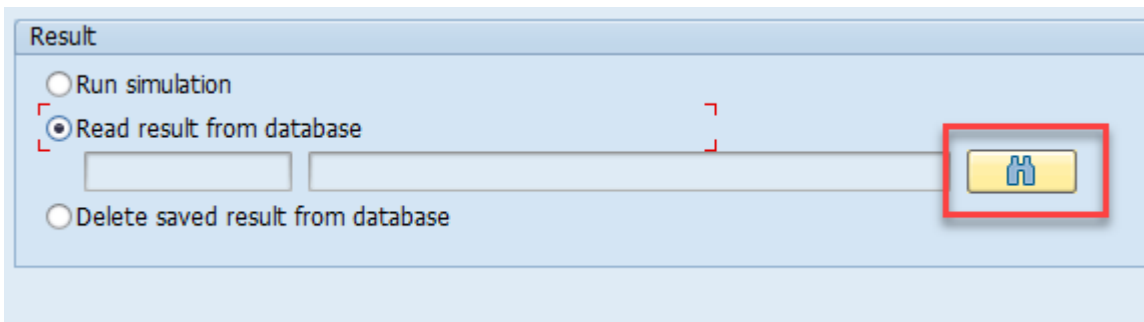
The screenshot shows a 'Result' tab with the following options:

- Run simulation
 - Display result
 - Save result
 - Description: SIMULATION_1
- Read result from database
- Delete saved result from database

Result area

In the *Result* area, you can choose whether to run a new simulation or read an existing simulation result from the database. If you select the *Run simulation* option, you can choose to *Display result* or *Save result*. If you choose to save the result, the result will be saved to the database with a unique, system-assigned key and a custom description. At least one of the above checkboxes must be selected.

By pressing the search icon, you can select previously saved results from a list.



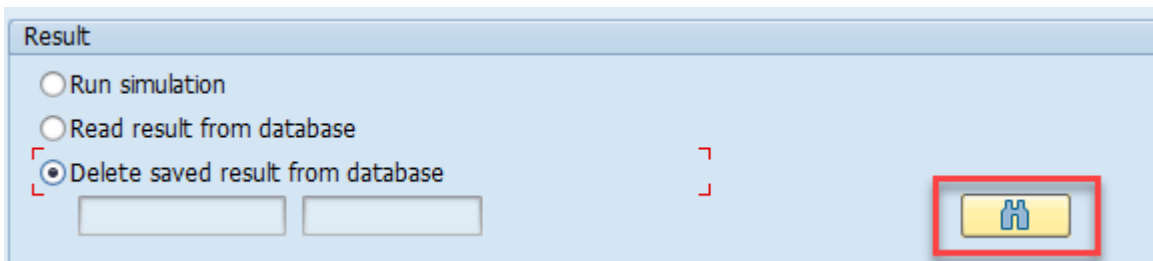
The screenshot shows the 'Result' tab with the following options:

- Run simulation
- Read result from database
- Delete saved result from database

Two empty input fields are visible below the 'Read result from database' option. A search icon (magnifying glass) is highlighted with a red box on the right side of the interface.

Read result from database

To delete an entry from the database, click *Delete saved result from database*, choose the result to be removed and click *Execute* (F8)



The screenshot shows the 'Result' tab with the following options:

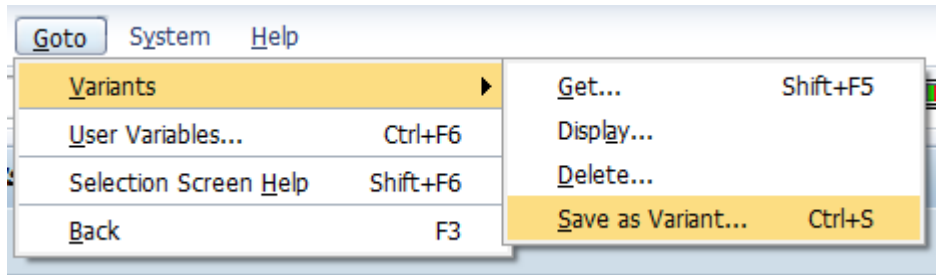
- Run simulation
- Read result from database
- Delete saved result from database

Two empty input fields are visible below the 'Delete saved result from database' option. A search icon (magnifying glass) is highlighted with a red box on the right side of the interface.


Delete saved result

2.4 Variants


To save input parameters in the selection screen, you can define a variant. After entering all the parameters, click ► *Goto* ► *Variants* ► *Save as Variant...* ► and enter a description.

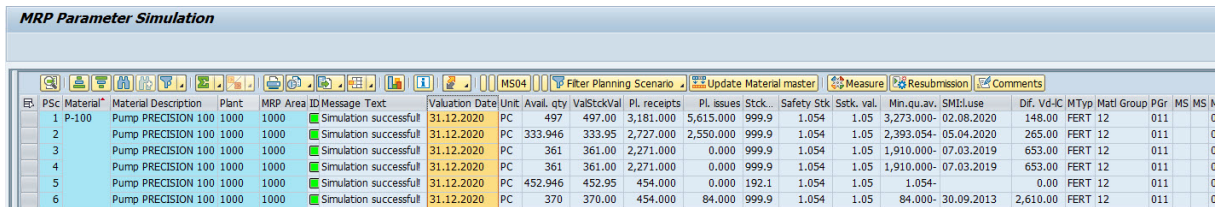


Saving a Variant

To load saved variants, click the  in the selection screen. There you can choose your custom variant from the list.

3 Result Screen

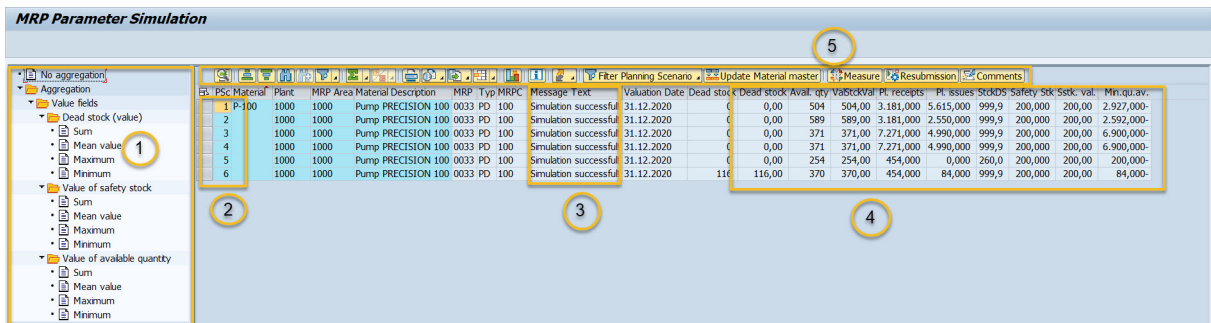
After executing the program with  or pressing F8, you will see the result screen.



Psc	Material	Material Description	Plant	MRP Area	ID	Message Text	Valuation Date	Unit	Avail. qty	ValStck/Val	Pl. receipts	Pl. issues	Stck.	Safety Stck	Sstk. val.	Min.qu.av.	SMEI.use	Dif. Vd-IC	MTyp	Mati Group	PGr	MS	MS
1	P-100	Pump PRECISION 100	1000	1000		Simulation successful	31.12.2020	PC	497	497.00	3,181.000	5,615.000	999.9	1.054	1.05	3,273.000-	02.08.2020	148.00	FERT	12	011		
2	Pump PRECISION 100	1000	1000			Simulation successful	31.12.2020	PC	333.946	333.95	2,727.000	2,550.000	999.9	1.054	1.05	2,393.054-	05.04.2020	265.00	FERT	12	011		
3	Pump PRECISION 100	1000	1000			Simulation successful	31.12.2020	PC	361	361.00	2,271.000	0.000	999.9	1.054	1.05	1,910.000-	07.03.2019	653.00	FERT	12	011		
4	Pump PRECISION 100	1000	1000			Simulation successful	31.12.2020	PC	361	361.00	2,271.000	0.000	999.9	1.054	1.05	1,910.000-	07.03.2019	653.00	FERT	12	011		
5	Pump PRECISION 100	1000	1000			Simulation successful	31.12.2020	PC	452.946	452.95	454.000	0.000	192.1	1.054	1.05	1.054-		0.00	FERT	12	011		
6	Pump PRECISION 100	1000	1000			Simulation successful	31.12.2020	PC	370	370.00	454.000	84.000	999.9	1.054	1.05	84.000-	30.09.2013	2,610.00	FERT	12	011		

Result Screen

If you have selected the option *For Key Date* on the selection screen (*Advanced Options* tab) for determining key figures, the result screen appears as follows:



Psc	Material	Plant	MRP Area	Material Description	MRP Typ	MRPC	Message Text	Valuation Date	Dead stock	Dead stock	Avail. qty	ValStck/Val	Pl. receipts	Pl. issues	Stck.	Safety Stck	Sstk. val.	Min.qu.av.	
1	P-100	1000	1000	Pump PRECISION 100 0033 PD	100	100	Simulation successful	31.12.2020	0,00	504	504,00	3,181,000	5,615,000	999,9	200,000	200,00	2,927,000-		
2	1000	1000	1000	Pump PRECISION 100 0033 PD	100	100	Simulation successful	31.12.2020	0,00	589	589,00	3,181,000	2,550,000	999,9	200,000	200,00	2,592,000-		
3	1000	1000	1000	Pump PRECISION 100 0033 PD	100	100	Simulation successful	31.12.2020	0,00	371	371,00	2,271,000	4,990,000	999,9	200,000	200,00	6,900,000-		
4	1000	1000	1000	Pump PRECISION 100 0033 PD	100	100	Simulation successful	31.12.2020	0,00	371	371,00	2,271,000	4,990,000	999,9	200,000	200,00	6,900,000-		
5	1000	1000	1000	Pump PRECISION 100 0033 PD	100	100	Simulation successful	31.12.2020	0,00	254	254,00	454,000	0,000	260,0	200,000	200,00	200,000-		
6	1000	1000	1000	Pump PRECISION 100 0033 PD	100	100	Simulation successful	31.12.2020	116,000	116,000	370	370,00	454,000	84,000	999,9	200,000	200,00	84,000-	

Result Screen for Determining Key Figures for a Key Date

On the left side of the result screen (area 1), you can find a tree for performing aggregations. Aggregation is possible by all value fields. In addition to *sum* and *mean value*, the *maximum* and *minimum* of every value field of each material can be displayed for all scenarios.

In area 2, all selected scenarios for all defined materials are shown.

The traffic light with information text (area 3) indicates the simulation status. If the simulation was a success, the system will display a green light, and a red light if any errors occur. Errors can occur if, for example, a material in a plant is marked for deletion, the material status does not allow for long-term planning, or if the material is not planned automatically.

The remaining columns in area 4 represent the KPIs that were selected on the selection screen.

You use the toolbox (area 5) to perform various actions to change the appearance of the result table. For example, you can sort individual columns in ascending or descending order, search for specific materials, set filters, and sum up numeric columns. You can also save the created layout and display it directly when re-executing the program. You also have the option of exporting the generated table into a local file. In addition, the selected scenarios can be filtered using the button *Filter Planning Scenario*. You can use the *Update Material Master* button to update the material master with the parameters used in the simulation.

If you have selected the option *Per Period* on the selection screen (*Extended Options* tab page) for the determination of key figures, the result screen appears as follows:

MRP Area	Material Description	Matern.	Psc. Plant	St.	Strat.mat.	Message Text	UVW	ValPrice	XYZ	Key Figure	Current Period	M 03/2020	M 04/2020	M 05/2020	M 06/2020	M 07/2020	M 08/2020	M 09/2020	M 11/2020	M 03/2021	M 05/2021	
1000	Pump PRECISION 100	P-100	6 1000	X		Simulation successful	V	1,00	X	Value of Safety	200		200									
1000	Pump PRECISION 100		6 1000	X		Simulation successful	V	1,00	X	Dead Stock	200											
1000	Pump PRECISION 100		6 1000	X		Simulation successful	V	1,00	X	Dead stock value	200											
1000	Pump PRECISION 100		6 1000	X		Simulation successful	V	1,00	X	Days without us.	999											
1000	Pump PRECISION 100		1 1000	X		Simulation successful	V	1,00	X	Available Quantity	1.851-	297-	177-	164-	836	3.994	269	403	504	505		
1000	Pump PRECISION 100		1 1000	X		Simulation successful	V	1,00	X	Value of availabl.	1.851-	297-	177-	164-	836	3.994	269	403	504			
1000	Pump PRECISION 100		1 1000	X		Simulation successful	V	1,00	X	Planned Receipts				4.017	4.017	4.017						
1000	Pump PRECISION 100		1 1000	X		Simulation successful	V	1,00	X	Planned Issues	70.833-	255-	255-	255-	255-	170-	85-					
1000	Pump PRECISION 100		1 1000	X		Simulation successful	V	1,00	X	Actual Range of.	174-	64-	44-	23-	23,200		999,900	999,900	999,900	999,900		
1000	Pump PRECISION 100		1 1000	X		Simulation successful	V	1,00	X	Safety Stock (St.	200	200	200	200	200	200	200	200	200	200	200	
1000	Pump PRECISION 100		1 1000	X		Simulation successful	V	1,00	X	Value of Safety	200	200	200	200	200	200	200	200	200	200	200	
1000	Pump PRECISION 100		1 1000	X		Simulation successful	V	1,00	X	Dead Stock				25	115	115	115	115	478	704		
1000	Pump PRECISION 100		1 1000	X		Simulation successful	V	1,00	X	Dead stock value				25	115	115	115	478	704			
1000	Pump PRECISION 100		1 1000	X		Simulation successful	V	1,00	X	Days without us.	26	999-	999-				88	999-	999-			
1000	Pump PRECISION 100		2 1000	X		Simulation successful	V	1,00	X	Available Quantity						2.102						
1000	Pump PRECISION 100		2 1000	X		Simulation successful	V	1,00	X	Value of availabl.						2.102						
1000	Pump PRECISION 100		2 1000	X		Simulation successful	V	1,00	X	Planned Receipts						2.138-						

Result Screen for Determining Key Figures for Each Period

In the columns on the far right (area 1), you see the periodic key figures in each period. You can use the *Filter by Key Figures* filter (area 2) to determine which key figures you want to have displayed and in which order.

4 Policy Table and Material Master Update after Simulation

You define the simulation rules in transaction `/SAPL0M/XMM_RULE` , which you can also call from the **MRP simulation cockpit** (*Advanced options* tab page).

When the **MRP simulation cockpit** is run, the values maintained in the corresponding rule will be used and not the values from the material master.

❁ Example

You create the following rule for planning scenario 002:

- Material: P-104
- Plant: 1000
- Plant: 1000
- Lot size: EX
- Safety stock: 10000

The material master contains the following values however:

- Lot size: FX
- Safety stock: 0

For the simulation, the **MRP simulation cockpit** will use the parameter values that you maintained in the policy table; in other words:

- Lot size: EX
- Safety stock: 10000



After running the **MRP simulation cockpit**, you can transfer the values from the rule to the material master by selecting the *Update material master* pushbutton.

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