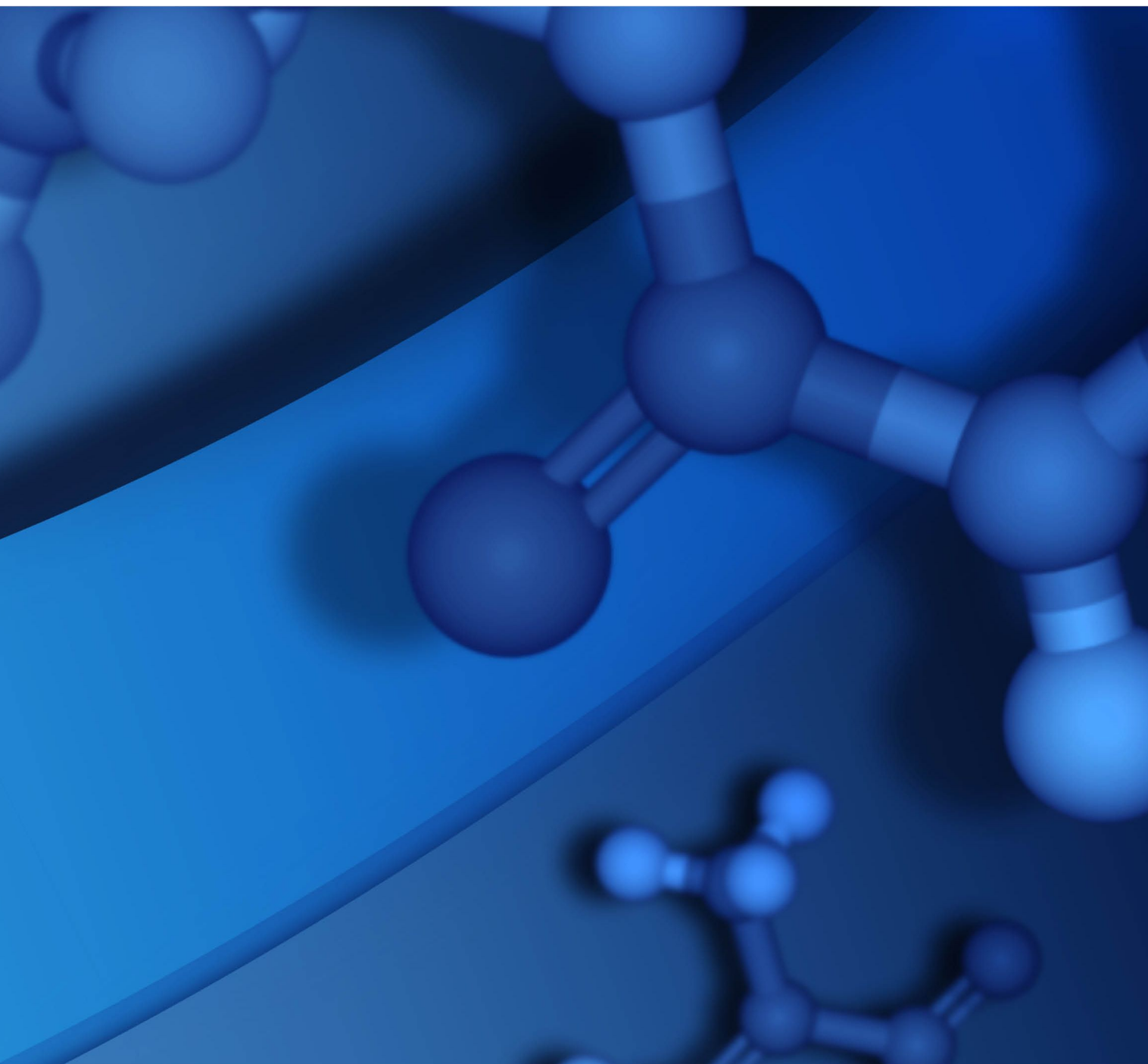


USER GUIDE

BIOVIA SAMPLE FOR ASSAY 2018



Copyright Notice

©2017 Dassault Systèmes. All rights reserved. 3DEXPERIENCE, the Compass icon and the 3DS logo, CATIA, SOLIDWORKS, ENOVIA, DELMIA, SIMULIA, GEOVIA, EXALEAD, 3D VIA, BIOVIA and NETVIBES are commercial trademarks or registered trademarks of Dassault Systèmes or its subsidiaries in the U.S. and/or other countries. All other trademarks are owned by their respective owners. Use of any Dassault Systèmes or its subsidiaries trademarks is subject to their express written approval.

Acknowledgments and References

To print photographs or files of computational results (figures and/or data) obtained using BIOVIA software, acknowledge the source in an appropriate format. For example:

"Computational results obtained using software programs from Dassault Systèmes BIOVIA. The *ab initio* calculations were performed with the DMol³ program, and graphical displays generated with BIOVIA Assay."

BIOVIA may grant permission to republish or reprint its copyrighted materials. Requests should be submitted to BIOVIA Support, either through electronic mail to biovia.support@3ds.com, or in writing to:

BIOVIA Support
5005 Wateridge Vista Drive, San Diego, CA 92121 USA

Contents

Introduction to BIOVIA Sample for Assay	1
Workflow Steps	1
Sample Features	2
Getting Help	2
Context Level Help	2
Additional Help	3
Required Form Settings	3
Interactive Reports	3
Search Bar	3
Column Headings Menu	3
Actions Menu	4
Reception Jobs	6
Register Batches	6
Vial Reception – From Batch	6
Transformation Jobs	7
Plate Creation from Vials	7
Plate Reformatting	7
Plate Replication	7
Plate Splitting	7
Vial Aliquoting	7
Vial Solid Splitting	7
Vial Solubilization	7
Generate Empty Containers	8
Update Containers	8
Utilities Jobs	9
Containers	9
Container Type Management	9
Container Format Management	9
Container Usage Management	9
Solvent Management	9
Plate Layout Management	9
Dilution Layout Management	9
Locations	9

Location Management.	9
Location Type Management	10
Location Mask (or Format) Management	10
Utilities Jobs	10
Container – Update Attributes	10
Administration	11
Sample Administration Features	11
Locations	11
Location Management.	11
Location Type Management	11
Location Mask (or Format) Management	11
Containers	12
Container Type Management	12
Container Format Management	12
Container Usage Management	12
Solvent Management	12
Plate Layout Management	12
Dilution Layout Management	12
Batches	12
Toolbox	12
Tutorials	13
Tutorial: Register Batches	13
Prerequisites	13
Registering Batches from a File	13
Tutorial: Receive Vials from Batches	14
Prerequisites	14
Workflow - Vial Reception from Batch	14
Job initialization	14
Requesting	14
Task Requesting	14
Storing	14
Pipe & Close	14
Tutorial: Create Plate from Vial	15
Dataset	15
Workflow - Replication	15

Job Initialization	15
Requesting	15
Task Requesting	16
Sourcing	16
Processing	16
Storing	16
Pipe and Close	17
Tutorial: Generate Empty Containers	18
Dataset	18
Workflow	18
Job Initialization	18
Requesting	18
Processing	18
Storing	18
Pipe and Close	18
Tutorial: Create Racks from Vials	19
Dataset	19
Workflow	19
Job Initialization	19
Requesting	19
Processing	19
Storing (Output)	20
Storing (Input)	20
Pipe and Close	20
Tutorial: Vial Aliquoting	21
Prerequisites	21
Workflow	21
Job Initialization	21
Requesting	21
Processing	21
Storing	21
Pipe and Close	21
Tutorial: Vial Solid Splitting	22
Dataset	22
Workflow	22

Job Initialization	22
Requesting	22
Task Requesting: Specify Value Attributes	22
Sourcing	23
Processing	23
Storing (Output)	23
Storing (Input)	23
Pipe and Close	23
Tutorial: Plate Splitting - Combine Replicate Option	24
Dataset	24
Workflow	24
Job Initialization	24
Requesting	24
Sourcing	25
Processing	25
Storing	25
Pipe and Close	25
Tutorial: Plate Reformatting – Combine Replicate Option	26
Dataset	26
Workflow	26
Job Initialization	26
Requesting	26
Sourcing	27
Processing	27
Storing	27
Pipe and Close	27
Tutorial: Plate Reformatting - Combined Source Option	28
Dataset	28
Workflow	28
Job Initialization	28
Requesting	29
Sourcing	29
Processing	29
Storing	29
Pipe and Close	29

Tutorial: Update Plate Containers	30
Dataset	30
Workflow	30
Job Initialization	30
Requesting	30
Task Requesting	30
Sourcing	31
Processing	31
Storing	31
Pipe and Close	31
Tutorial: Plate Replication	32
Dataset	32
Workflow	32
Job Initialization	32
Requesting	32
Task Requesting	32
Sourcing	33
Processing	33
Storing	33
Pipe and Close	33

Introduction to BIOVIA Sample for Assay

BIOVIA Sample for Assay is an application used to manage sample lifecycles.

Sample for Assay offers advanced solutions for biological and chemical sample management and tracking by exposing easy-to-use processing workflows for Chemists, Biologists and Sample Managers.

Integrated with robotic equipment, barcode printers and balances, Sample for Assay is used to address such aspects as:

- Compound management
- Screening operations
- Registration
- Ordering and shipping
- Biobanking
- Automated storage management

Workflow Steps

The following are common workflow steps:

Step	Description	Details
1	Job Initialization	Select a workflow, choose a name, assign the job to a specific user.
2	Requesting	Define the items that are going to be used for the workflow (Source). Define the expected output of the workflow (Target).
3	Task Requesting	Add tasks that will be processed on the Source to create the Target.
4	Sourcing	Checks the consistency between the tasks and the source such as sufficient quantity and source availability.
5	Processing	Main step of the workflow. A worklist is generated, the tasks are processed, the targets are created.
6	Storing (Output)	Assign a location to the newly created items.
7	Storing (Input)	Choose a location for the source items.
8	Pipe & Close	Display a summary for the job. Close the job, the user can choose to pipe it and start another workflow.

Sample Features

BIOVIA Sample for Assay features are organized into four sections:

■ Home

From **Home** you can:

- Receive containers from registration modules
- Apply transformation workflows to your containers
- Create locations and containers
- Update information for existing containers
- Access **Search**

■ Search

Use the **Search** to browse batches, containers and locations information. You can also create lists from the search results.

■ Lists

Use **Lists** to create lists of Batches, Vials, Plates, Platesets or Racks for use as Input Sources in workflows.

■ Administration

Administration regroups all pages to populate look-up tables of Sample for Assay, from designing new plate and dilution layouts to registering printers and robotic equipment.

Getting Help

Several types of help is available within the Sample application.

Context Level Help

■ Help for Pages

Page-based help is available at the bottom of the page to indicate its purpose and explain how to use it to perform tasks. For example, the following illustration shows the help for the step Sourcing of the Plate Replication workflow.


▼ Help

List the source containers that will be used:

Column	Description
Quantity / Unit	The greatest volume found into the container
Concentration / Unit	The greatest concentration found into the container
Keep	✓ The container validate all conditions to be used
	✗ The container cannot be used, change need to be made on requesting step. Mouse over the column to get more information

In plate set mode, use the "Alternative Sourcing Selection" utilities to find another matching plate.

■ Help for Program Items

Help for specific items is available by clicking the  button next to an item.

Additional Help

For complete documentation for BIOVIA Sample for Assay and additional help please contact us at:

- biovia.support@3ds.com (U.S. / UK / central Europe customers)
- biovia.jp.support@3ds.com (Japan)

Required Form Settings

Mandatory fields are indicated by bold formatting and a red asterisk.

Interactive Reports

Interactive reports display all entries of a concept (Workflow, Batch, Vial, Plate, Plateset, Location) and its associated information. You can alter the layout by selecting which columns to show, applying filters, and sorting.

To customize interactive reports, see Oracle's documentation [Customizing Interactive Reports](#).





Search Bar

Use the **Search Bar** to filter reports. Type a keyword and click **Go**.

You can narrow results further by clicking the magnifying glass and selecting a column.

Column Headings Menu

Click a column heading in an interactive report to expose the **Column Heading** menu:

Icon	Description
	Sort in ascending order
	Sort in descending order
	Hide the column
	Create a break group on the column

Use the text field to enter a search keyword.

Actions Menu

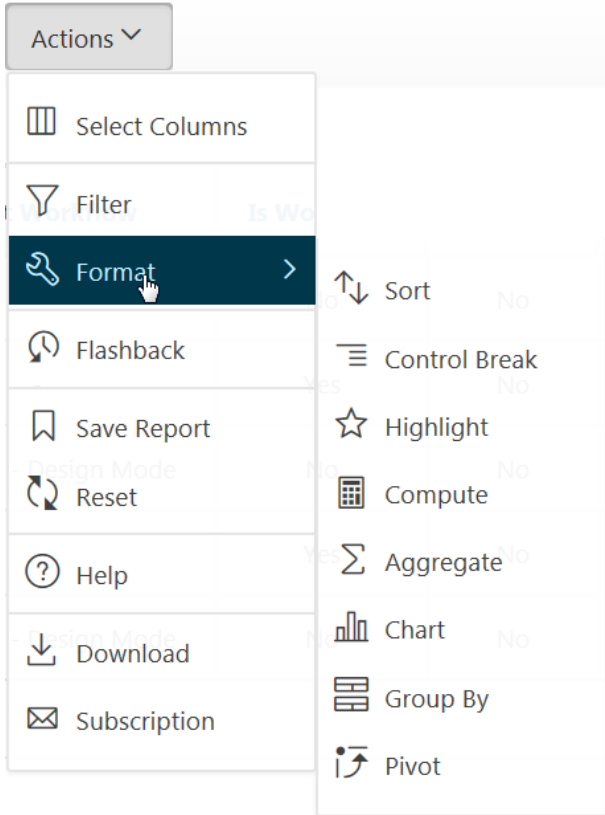
An Actions menu is available for accessing all advanced features of interactive reports. Use this menu to do the following:

- Select the columns to display
- Apply advanced filters
- Format the data
- Save the report
- Keep the report layout
- Obtain or download the report data

Actions Menu

An Actions menu is available for accessing all advanced features of interactive reports. Use this menu to do the following:

- Select the columns to display
- Apply advanced filters
- Format the data (highlight, group data, etc.)
- Save the report
- Keep the report layout
- Obtain or download the report data



Reception Jobs

Register Batches

Register Batches in Sample for Assay is the starting point for creating vials and/ or plates.

For more information, follow the [Register Batches Tutorial](#).

Vial Reception – From Batch

Vial Reception adds new vials into the system from an existing Batch.

For more information, follow the [Receive Vials from Batches](#).

Transformation Jobs

Plate Creation from Vials

This workflow allows Sample for Assay users to create plates from liquid vials. Users define target layouts where samples are placed.

For more information, see the [Plate Creation for Vials](#) tutorial.

Plate Reformatting

This workflow allows Sample for Assay users to change plate formats to increase the number of samples (wells) per plate, for example, 96-wells to 384-wells or 384-wells to 1536-wells. Two modes of plate reformatting are available in Sample for Assay:

- *Combine Source* option: Transfer content from different plates into a destination plate.
- *Combine Replicate* option: Transfer several copies of a plate (1 to 4) into a new plate. For more information, see the tutorial [Plate Reformatting – Combine Replicate Option](#).

Plate Replication

This workflow allows Sample for Assay users to create copies of existing plates with source or target dilution step.

For more information, see the [Plate Replication](#) tutorial.

Plate Splitting

Plate Splitting enables a user to design a new plate layouts form an existing plate. For example, user can create four 96 384 well plates by taking the quadrants of a 384 well plate . For more information, see the [Plate Splitting](#) tutorial.

Vial Aliquoting

This workflow allows Sample for Assay users to prepare liquid aliquots (several vials) from a single liquid source vial.

For more information see the tutorial [Vial Aliquoting](#).

Vial Solid Splitting

This workflow allows Sample for Assay users to create new vials from a solid source, with or without a dilution step.

For more information see the tutorial [Tutorial: Vial Solid Splitting](#).

Vial Solubilization

Vial Solubilization is the workflow process for vials with a solid content. Users can add solvent to the vial to solubilize it.

Generate Empty Containers

This workflow allows Sample for Assay users to create empty plates or vials. For more information see the tutorial [Tutorial: Generate Empty Containers](#).

Update Containers

This workflow allows Sample for Assay users to update attributes of existing containers. For more information see the tutorial [Tutorial: Update Containers](#).

Utilities Jobs

Containers

Container Type Management

- Dedicated pages to create *Container Type* (specific Plate or Vial types -Greiner PP96V, Eppendorf1.5ml)
- Items Required:
 - Name
 - Type (Plate or Vial)
 - Container Format
 - Capacity
 - Death Volume

Container Format Management

- Dedicated pages to create *Container Formats* such as e.g. 96 [8*12].
- Items Required: Name / Number of Rows / Number of Columns

Container Usage Management

- Dedicated pages to create Container Usage such as Inventory, my specific usage
- Items required: Name.

Solvent Management

Plate Layout Management

A plate layout defines which wells of a plate can contain a sample, and which are for controls.

Dilution Layout Management

Dilution layouts are used for the *Serial Dilution* workflow.

Locations

Location Management.

- Dedicated pages to create *Location*, for example Cold Room, HTS lab, etc.
- Items required:
 - Location Name
 - Location Type
 - Location Mask
 - Is Sourcable
 - Is Selectable

Location Type Management

- Dedicated pages to create *Location Type*, such as Freezer, fridge, etc.
- Items required:
 - Name
 - Parent Location Type
 - Is Movable
 - Location Masks

Location Mask (or Format) Management

- Mainly used for Racks.
- Dedicated pages to create *Location Mask*, such as 96,384,12
- Items required
 - Name
 - Number of Rows
 - Number of Columns
 - Associated Location Type
 - Filling Type

Utilities Jobs

Container – Update Attributes

Use this job in order to update Container attributes such as Quantity, quantity_unit, solvent, etc.

Administration

The Administration allows you to administer application configuration and underlying Sample for Assay data. To populate the Sample for Assay database with example data sets used with the tutorials please contact support.

Sample Administration Features

- SAMPLE_ADMINISTRATOR: Role required to administer Sample for Assay concepts.
- CORE_ADMINISTRATOR: Role required to administer the Discngine Core and Security features.

For details about roles and associating users with specific roles, see the *BIOVIA Assay Sample Administration Guide*.

Locations

Location Management.

- Dedicated pages to create *Location*, for example Cold Room, HTS lab, etc.
- Items required:
 - Location Name
 - Location Type
 - Location Mask
 - Is Sourcable
 - Is Selectable

Location Type Management

- Dedicated pages to create *Location Type*, such as Freezer, fridge, etc.
- Items required:
 - Name
 - Parent Location Type
 - Is Movable
 - Location Masks

Location Mask (or Format) Management

- Mainly used for Racks.
- Dedicated pages to create *Location Mask*, such as 96,384,12
- Items required
 - Name
 - Number of Rows
 - Number of Columns
 - Associated Location Type
 - Filling Type

Containers

Container Type Management

- Dedicated pages to create *Container Type* (specific Plate or Vial types -Greiner PP96V, Eppendorf1.5ml)
- Items Required:
 - Name
 - Type (Plate or Vial)
 - Container Format
 - Capacity
 - Death Volume

Container Format Management

- Dedicated pages to create *Container Formats* such as e.g. 96 [8*12].
- Items Required: Name / Number of Rows / Number of Columns

Container Usage Management

- Dedicated pages to create Container Usage such as Inventory, my specific usage
- Items required: Name.

Solvent Management

Plate Layout Management

A plate layout defines which wells of a plate can contain a sample, and which are for controls.

Dilution Layout Management

Dilution layouts are used for the *Serial Dilution* workflow.

Batches

Batch management. Browse/Edit existing batches, create new ones.

Toolbox

Tutorials

Sample is deployed with a set of tutorials. To populate the Sample database with example data sets used with the tutorials please contact support.

Tutorial: Register Batches

Batches registration in BIOVIA Sample for Assay is the starting point for creating vials and/or plates used for screening. In this tutorial the user manually creates 10 batches containing two columns, BATCH_NAME, BATCH_ALIAS.

Prerequisites

User Role: SAMPLE_ADMINISTRATOR

Registering Batches from a File

To log onto BIOVIA Sample for Assay Administration:

1. Select the **Apps** icon from the menu bar.
The system updates to show Assay Sample and Warehouse home application icons available for selection.
2. Select **Sample Application** icon.
The **Sample Administration** and **Security** sections are available.
3. In *Sample Administration* select **Batches**.
4. Click **Create**.
5. In the *Batch Description* window, enter:
 - Batch Name: (ex. **BIOVIA-001**)
 - Type: **Compound**
 - Alias: (ex. **SPB 07552**)
6. Click **Create**.
7. Repeat steps 5 and 6 to create 10 batches for use in subsequent tutorials.
8. In *Administration > Batches*, use the search or filter on the *Name* column to find the BIOVIA

Tutorial: Receive Vials from Batches

Prerequisites

User Role: SAMPLE_RECEPTION

Workflow - Vial Reception from Batch

Job initialization

1. Log on to Sample for Assay and follow the *Reception* link.
2. Click **Create**.
3. Select **Vial Reception - from Batch** as workflow.
 - Specify the job name. Its first part is automatically generated, the last part is user defined.
4. Click on **Next**.

Requesting

1. Select the target **Batch Type: Compound**
2. Select the **Request From: Selection**
3. Click **Search Batches** to select batches.
4. Use the term 'BIOVIA' in the search field to identify requested batches. Click **Go**.
5. Tick the checkbox to select batches containing the term 'BIOVIA' and click **Receipt 10 batches**.
6. Selected batches are added to the current job. Click **Next**.

Task Requesting

1. Set **Source: All Batches**
2. Fill required fields:
 - **Target Vials Usage: Inventory**
 - **Target Vials Type: 1DRAM**
 - **Number of Vials for each Batch: 1**
 - **Volume: 100 uL**
 - **Concentration: 10 mM**
 - **Solvent: DMSO**
3. Click **Add container**.
4. When all tasks are defined, click **Next**.

Storing

The vials have been created. The Storing pages allow the user to assign a location to the vials.

1. Click **Assign Location**.
2. Pick the desired location Sample for Assay then click **Select** to confirm your choice.
3. A location is assigned for all containers. Click **Next**.

Pipe & Close

The Pipe & Close page is a summary page.

Click **Close & Quit** to finish this tutorial and make created containers available for another workflow.

Tutorial: Create Plate from Vial

Plate creation is a fundamental processing step used in a screening campaign. Single plate creation might be useful for small primary screens while plates with a higher concentration of substance might serve as master plates for generating daughter plates. A separate tutorial details the process designed to create multiple plates from a single plate. Increasing the number of plates is the best way to statistically analyze test results.

In this tutorial, we will make one 384-well plate (100 uL).

Dataset

- Plate Type: **Greiner PP96V**
- Container Usage: **Inventory**
- Location: **Paris**
- User Role: **SAMPLE_PROCESSING**
- Vials VTEST011 to VTEST014 installed from example data sets.

Workflow - Replication

Job Initialization

1. Log onto BIOVIA Sample for Assay and click **Transformation**. The Transformation page shows a summary of the existing processes, in progress or already closed. Follow **Plate Creation from Vial** on the *Create Workflow* right panel:
2. Set *Workflow* to **Plate Creation from Vials**.
3. Specify the job name suffix. The prefix is generated automatically, the suffix is user defined.
4. Set *Job Status* to **Creation**.
5. Set *Assigned To* (defaults to current user).
6. Click **Next**.

Requesting

1. Set the following parameters:
 - Source Type: **Vial**
 - Target Plate Barcode: **Generate New Barcode**
 - Target Plate Type: **Greiner PP384V**
 - Target Plate Layout: **MIN(1,2) - MAX(23,24) - 384**
 - Target Plate Filling: **Column**
 - Request From: **Text**
 - Paste Specific Vial barcodes in the *Source* area:
VTEST011
VTEST012
VTEST013
VTEST014

Tip: Vial names can be separated by colons or line breaks.

2. Click **Add IDs**.
3. Click **Next**.

Task Requesting

1. Choose the task to be applied to the selected plate on *Job Initialization > Requesting > Task Requesting*:
 - Source: **All Source**
 - Target Usage: **Inventory**
 - Number of Copy: **20**
 - Dilution Mode: **Dilution Factor**
 - Target Volume: **30 µL**
 - Target Factor: **10**
 - Solvent: **DMSO**
2. Click **Add this Task**. The system updates to show the scheduled task.
3. Click **Next**.

Sourcing

The *Sourcing* page confirms that the requested operations are compatible with the source plates:

Job Initialization / Requesting / Task Requesting / Sourcing

6 - Plate Creation from Vials - CPPV_2017/02/02_001_TMNI

Barcode	Label	Location	Usage	Quantity	Quantity Unit	Concentration	Concentration Unit	Solvent	Sourced
V00012	IN	Paris	Inventory	1.00E+02	µL	1.00E+01	mM	DMSO	✓
V00013	IN	Paris	Inventory	1.00E+02	µL	1.00E+01	mM	DMSO	✓
V00014	IN	Paris	Inventory	1.00E+02	µL	1.00E+01	mM	DMSO	✓
V00015	IN	Paris	Inventory	1.00E+02	µL	1.00E+01	mM	DMSO	✓
V00016	IN	Paris	Inventory	1.00E+02	µL	1.00E+01	mM	DMSO	✓
V00017	IN	Paris	Inventory	1.00E+02	µL	1.00E+01	mM	DMSO	✓
V00018	IN	Paris	Inventory	1.00E+02	µL	1.00E+01	mM	DMSO	✓
V00019	IN	Paris	Inventory	1.00E+02	µL	1.00E+01	mM	DMSO	✓
V00020	IN	Paris	Inventory	1.00E+02	µL	1.00E+01	mM	DMSO	✓
V00021	IN	Paris	Inventory	1.00E+02	µL	1.00E+01	mM	DMSO	✓
V00022	IN	Paris	Inventory	1.00E+02	µL	1.00E+01	mM	DMSO	✓

Click **Next**.

Processing

Processing is divided into two tasks:

1. Fill in information on the page *Job Initialization > Requesting > Task Requesting > Sourcing > Processing* to format the worklist as a CSV file using ";" delimiter. Click **Next**.
2. To load a custom worklist instead of the automatically generated list, map the custom headers to the expected ones. For the purposes of this tutorial, skip this step. We are using the generated CSV file.

Storing

The *Storing* pages allow the user to assign the plates to different locations:

1. Click **Assign Location**.
2. Select target location: **Paris**.
3. Click **Select**. The system updates the page to show locations.
4. Click **Next** to continue onto the assignment of the input plates' location.

5. Click **Next**. The input plate is placed in the previous location by default.
6. Select **Yes** you want to increment the *Thawing Cycle* of the input plates.

Pipe and Close

Pipe and Close is a summary page. View the source plates with updated volume.

Click **Close and Quit** to exit.

Tutorial: Generate Empty Containers

Empty Container Creation is a processing used to create empty plates or vials. The barcode for the containers can be generated automatically or imported from a file.

In this tutorial, we will create 10 empty plates with an automatically generated barcode.

Dataset

The following data parameters must exist:

- Plate type: **Greiner PP384V**
- Container usage: **Inventory**
- Location: **Paris**
- User role: **SAMPLE_PROCESSING**

Workflow

Job Initialization

1. Log onto BIOVIA Sample for Assay and click **Utilities**.
2. Click **Container – Empty Container Creation**.
3. On the **Job Initialization** page specify the job name suffix. The prefix is generated automatically, the suffix is user defined. Click **Next**.

Requesting

1. Set the following parameters:
 - Request Type: **Plate**
 - Request From: **Automatic Generation**
 - Number of Container: **10**
 - Target Container Type: **Greiner PP384V**
 - Target Container Usage: **Inventory**
2. Click **Next**.

Processing

The plates are created during processing.

Storing

1. After the plate barcodes are generated, click **Assign Location**.
2. Select target location: **Paris**.
3. Click **Next**.

Pipe and Close

Pipe and Close is a summary page. Click **Close and Quit** to exit.

Tutorial: Create Racks from Vials

Rack Creation from Vials (CRFV: Create Rack from Vials) is a process used to create racks containing vials. Vials are filled with a quantity of batch from a selection of source vials. The workflow requires a worklist indicating the transfer tasks between the source vials and the target vials in the racks.

The user can either ask to generate new racks and vials based on the worklist, or to use existing empty racks and vials.

In this tutorial, we will create a new rack (96-vials format) and 16 vials.

Dataset

The following data parameters must exist:

- Container type: **Vial**
- Location Type: **Rack**
- Location Format: **96**
- Location: **Freezer**
- User role: **SAMPLE_PROCESSING**

The following vials are generated automatically:

- VTEST011
- VTEST012
- VTEST013
- VTEST014

Download the following .txt file:

- CRFV_worklist.txt

Workflow

Job Initialization

1. Log onto BIOVIA Sample for Assay and click **Transformation**.
2. Click **Rack Creation from Vials**.
3. On the **Job Initialization** page specify the job name suffix. The prefix is generated automatically, the suffix is user defined. Click **Next**.

Requesting

1. Set the following parameters:
 - Target Vial Barcode: **Use External Barcode**
 - Target Rack Barcode: **Use External Barcode**
 - Target Rack Format: **96**
 - Source Vials: **VTEST011, VTEST012, VTEST013, VTEST014**
2. Click **Next**.

Processing

1. Load CRFV_worklist.txt.
2. Select **Semi-Colon** as file delimiter.
3. Click **Upload File** and **Next**.

Storing (Output)

1. After the plate barcodes are generated, click **Assign Location**.
2. Select target location: **Freezer**.
3. Click **Next**.

Storing (Input)

1. To store the source vials, click **Assign Location**.
2. Select target location: **Freezer**.
3. Click **Next**.
4. Increment the **Thawing Cycle**.

Pipe and Close

Pipe and Close is a summary page. Click **Close and Quit** to exit.

Tutorial: Vial Aliquoting

Prerequisites

Run the following Tutorials prior **Vial Aliquoting**.

- Vial Solid Registration
- Vial Solubilization

Workflow

Job Initialization

1. Log onto BIOVIA Sample for Assay and click **Transformation**.
2. Click **Vial Aliquoting**.
3. Click **Next**.

Requesting

1. Set the following parameters:
 - Request Type: **Plate**
 - Request From: **Automatic Generation**
 - Number of Container: **10**
 - Target Container Type: **Greiner PP384V**
 - Target Container Usage: **Inventory**
2. Click **Next**.

Processing

The plates are created during processing.

Storing

1. After the plate barcodes are generated, click **Assign Location**.
2. Select target location: **Paris**.
3. Click **Next**.

Pipe and Close

Pipe and Close is a summary page. Click **Close and Quit** to exit.

Tutorial: Vial Solid Splitting

Dataset

The following data parameters must exist:

- Vial Type: **1 Dram Vial**
- Container Usage: **Inventory**
- Location: **Paris**
- **Automation Vials**: automatically created if the configuration file sets `example_dataset` to `true`.
- Vials:
 - 5 Vials in *Solid* state: 10 mg batches with a molweight
 - 1 Vial in *Solid* state: 10 mg batches with a molweight
 - 1 Vial in *Liquid* state: 100 µL, 10 mM
- User role: **SAMPLE_PROCESSING**

Workflow

Job Initialization

1. Log onto BIOVIA Sample for Assay and click **Transformation**.
2. Click **Vial Solid Splitting**.
3. Specify the job name and click **Next**.

Requesting

1. Scan Vials barcode (Copy / Paste in Source):
 - **VTEST004: VTEST005:VTEST006**
 - Source Type: **Vial**
 - Request from: **Text**
 - Source: **VTEST001:VTEST002:VTEST003:VTEST004:VTEST011**
2. Click **Add IDs**.
3. Click **OK** to respond to warning.

Task Requesting: Specify Value Attributes

1. Set the following parameters:
 - Source Vial: **From Selection**
 - Select VTEST001 and VTEST002
 - Target Type: **1 Dram Vial**
 - Target Usage: **Inventory**
 - Nb Copy: **1**
 - Target State: **Dry**
 - Target Amount: **1mg**
2. Click **Add this task**.
3. From the same page add the following parameters:
 - Source Vial: **From Selection**
 - Select **VTEST003** (move to the right column)
 - Select **VTEST004**

- Target Type: **1 Dram Vial**
 - Nb Copy: **1**
 - Target State: **Solution**
 - Target Concentration: **1 mg/mL**
 - Solvent: **DMSO**
4. Click **Add this Task**.
 5. Click **Next**.

Sourcing

The system checks the availability for each container. All the 3 vials are available for the processing step.
Click **Next**.

Processing

1. For each request, scan the source container and destination container.
 - Enter the first *Source Name* (VTEST001) from the table into the Source bar.
Press **Return**. This processing step is usually done with connected instrument integration.
 - Type ".98 mg" into the *Request Quantity* bar.
Press **Return**. This processing step is usually done with connected instrument integration.
 - Enter the corresponding **Target Name** from the table into the Target bar.
2. Repeat the steps above for each of the *Source Names* in the table.
 1. Click **Next** when all rows are processed.

Storing (Output)

3 new containers are listed.

1. Click **Assign Location**.
2. Assign location: **Paris**.
3. Click **Select**.
4. Click **Next**.

Storing (Input)

1. Increment the **Thawing Cycle**.
2. Click **Next**.

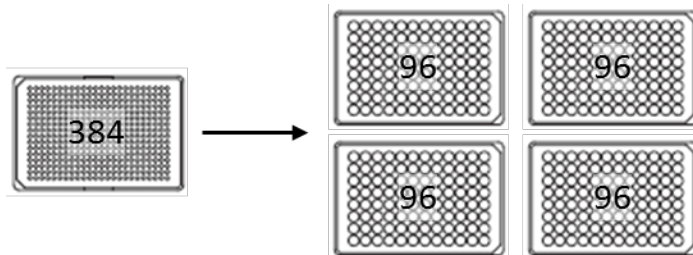
Pipe and Close

Pipe and Close is a summary page.

Pipe containers to a new job or close the current Job. Click **Close and Quit** to exit.

Tutorial: Plate Splitting - Combine Replicate Option

Splitting is a plate process used to create multiple plates from a single plate. Increasing the number of plates is the best way to statistically analyze test results.



Dataset

The following data parameters must exist:

- Plate type: **Greiner PP96V**
- Container usage: **Inventory**
- Solvent: **DMSO**
- Worklist Generator and Parser: **TECAN (Container)**
- User role: **SAMPLE_PROCESSING**
- 2 plates 384 (100 uL – 10 mM). Layout with columns 1 and 24 empty.

Workflow

Job Initialization


1. Log onto BIOVIA Sample for Assay and click **Transformation**.
2. Click **Plate Splitting**.
3. On the **Job Initialization** page specify the job name suffix. The prefix is generated automatically, the suffix is user defined. Click **Next**.

Requesting

1. Set the following parameters:
 - Source Type: **Plate**
 - Target Plate Barcode: **Generate New Barcode**
 - Target Plate Type: **Greiner PP96V**
 - Request From: **Text**
 - Source: **PTEST007:PTEST008**
2. Click **Add IDs**.
3. Click **Next**.
4. Define Transfer tasks:
 - Source Selection mode: **All Sources**
 - Source Quadrant: **1**
 - Target Usage: **Inventory**
 - Dilute: **Target**
 - Dilution Mode: **Dilution Factor**
 - Target Volume: **30 µL**

- Dilution Factor: **10**
- Solvent: **DMSO**

The *Combine Replicate* option creates replicates for each sample of the source plate(s). Here, the process starts from the first well of PTEST001 and creates 4 replicates in the corresponding quadrants of the target 384-well plate.

5. Click **Add this Task**.  Repeat those steps for Quadrant 2, 3 and 4. Four tasks are created.
6. Click **Next**.

Sourcing

Plates are sourced if the requested tasks are compatible, for example, sufficient volume is present in the source plates. Click **Next**.

Processing

The worklist is created during processing. Set the following parameters:

Equipment: **TECAN (Container)**

Click **Generate worklist**.

Click **Next**.

Storing

The target plate is created. Auto-generated barcodes differ depending on how many containers have previously been created when this tutorial is executed.

1. Click **Assign Location**.
2. Type "Paris" in the Search bar and press **Return**.
3. Select target location: **Paris**.
4. Click **Select**.
5. Click **Next**.

Pipe and Close

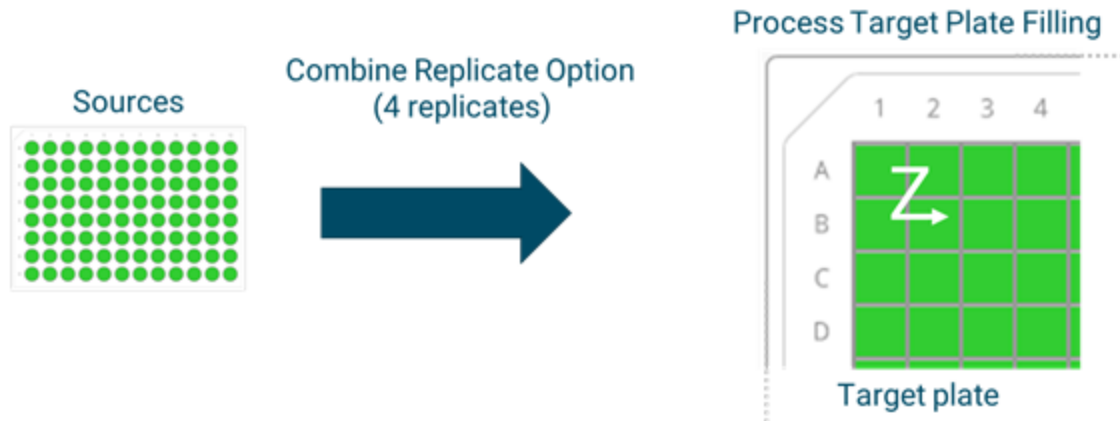
Pipe and Close is a summary page. View the source plates with updated volume.

Click **Close and Quit** to exit.

Tutorial: Plate Reformatting – Combine Replicate Option

Plate reformatting is the process of moving samples from one or several 96-well plates to a 384-well plate or other related formats, such as 384 to 1536.

In this tutorial, we will replicate the content of a single 96-well plate into a 384-well plate according to the following illustration.



Consolidate samples by using the Reformatting workflow with the *Combine Replicate* option: same replicate of a 96-well plates in a 384-well plate – same for 384 and 1536-well plates.

Dataset

The following data parameters must exist:

- Plate type: **Greiner PP96V**
- Container usage: **Inventory**
- Location: **Paris**
- User role: **SAMPLE_PROCESSING**
- 96-well plates **PTEST001** must be registered in the system.

Workflow

Job Initialization

1. Log onto BIOVIA Sample for Assay and click **Transformation**.
2. Click **Plate Reformatting**.
3. On the **Job Initialization** page specify the job name suffix. The prefix is generated automatically, the suffix is user defined. Click **Next**.

Requesting

1. Set the following parameters:
 - Source Type: **Plate**
 - Target Plate Barcode: **Generate New Barcode**
 - Target Plate Type: **Greiner PP384V**
 - Request From: **Text**
 - Source: **PTEST001**
2. Click **Add IDs**.

3. Click **Next**.
4. Define Transfer tasks:
 - Reformatting mode: **Combine Replicate**
 - Target Replicate Count: **4**
 - Target Usage: **Inventory**
 - Number of Copy: **1**
 - Dilute: **Target**
 - Dilution Mode: **Dilution Factor**
 - Target Volume: **30 µL**
 - Dilution Factor: **10**
 - Solvent: **DMSO**

The *Combine Replicate* option creates replicates for each sample of the source plate(s). Here, the process starts from the first well of PTEST001 and creates 4 replicates in the corresponding quadrants of the target 384-well plate.

5. Click **Add this Task**.
6. Click **Next**.

Sourcing

Plates are sourced if the requested tasks are compatible, for example, sufficient volume is present in the source plates. Click **Next**.

Processing

Set the following parameters:

- Equipment: TECAN (Container)

1. Click **Generate Worklist**.

The worklist is created during processing.

2. Click **Next**.

Storing

The target plate is created. Auto-generated barcodes differ depending on how many containers have previously been created when this tutorial is executed.

1. Click **Assign Location**.
2. Select target location: **Paris**.

Note: Click on text, not the icon.

3. Click **Select**.
4. Select **Yes** for *Thawing*.
5. Click **Next**.

Pipe and Close

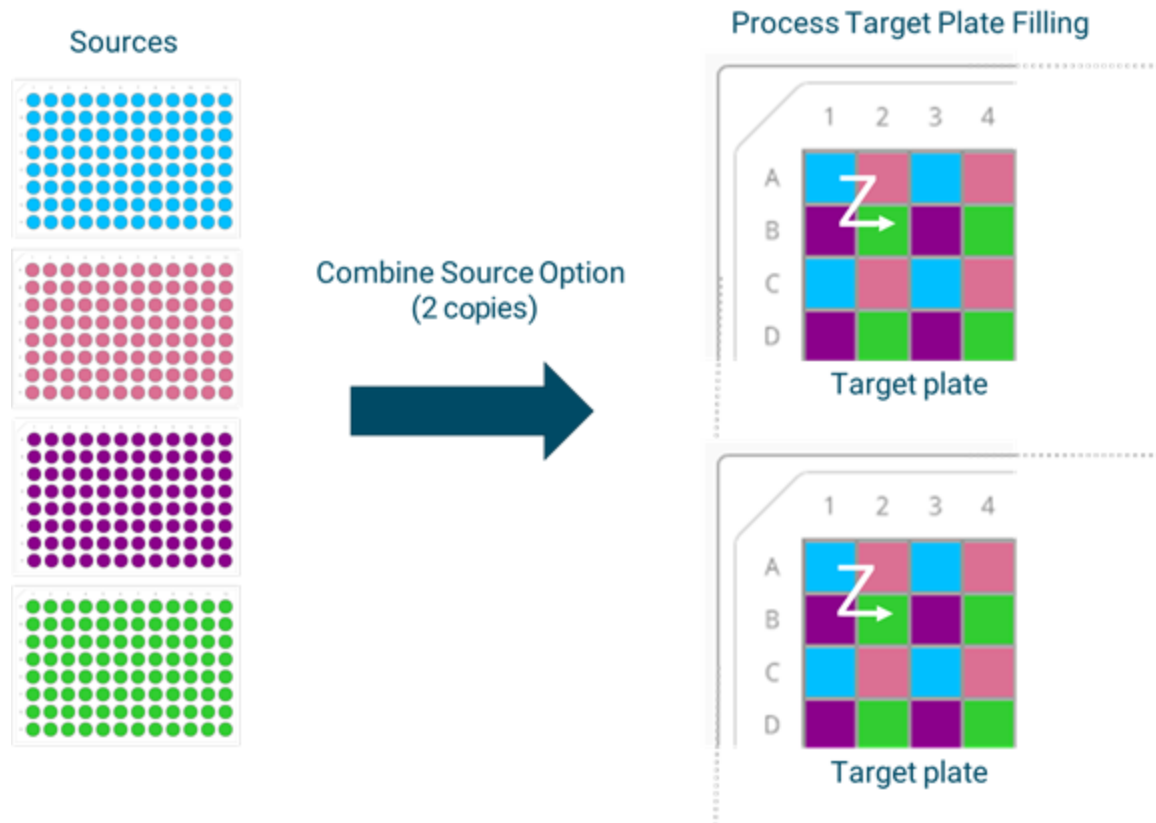
Pipe and Close is a summary page. View the source plates with updated volume.

Click **Close and Quit** to exit.

Tutorial: Plate Reformatting - Combined Source Option

Plate reformatting is the process of moving samples from one or several plates of one format, such as 96-well, to a different plate format, such as 384-well or 1536-well.

In this tutorial, we will combine the content of four 96-well plates into a 384-well plate according to the following illustration.



Dataset

The following data parameters must exist:

- Plate type: **Greiner PP96V** and **Greiner PP384V**
- Container usage: **Inventory**
- Location: **Paris**
- User role: **SAMPLE_PROCESSING**
- 96-well plates **PTEST001**, **PTEST002**, **PTEST003**, and **PTEST004** must be registered in the system.

Workflow

Job Initialization

1. Log onto BIOVIA Sample for Assay and click **Transformation**.
2. Click **Plate Reformatting**.
3. On the **Job Initialization** page specify the job name suffix. The prefix is generated automatically, the suffix is user defined. Click **Next**.

Requesting

1. Set the following parameters:
 - Source Type: **Plate**
 - Target Plate Barcode: **Generate New Barcode**
 - Target Plate Type: **Greiner PP384V**
 - Request From: **Text**
 - Source: **PTEST001 PTEST002 PTEST003 PTEST004**
2. Click **Add IDs**.
3. Click **Next**.
4. Define Transfer tasks:
 - Reformatting mode: **Combine Source**
 - Target Quadrant: **1, 2, 3 and 4** (in 4 different tasks)
 - Target Usage: **Inventory**
 - Number of Copy: **2**
 - Dilute: **Target**
 - Dilution Mode: **Dilution Factor**
 - Target Volume: **30 µL**
 - Dilution Factor: **10**
 - Solvent: **DMSO**

The *Combine Source* option follows the source plates in the order they were added. In this example, the process transfers sample from the first well of PTEST001 into the corresponding quadrant 1 of the new 384-well plate, then from the first well of PTEST002 into quadrant 2, and so on.

5. Click **Add this Task**.
6. Click **Next**.

Sourcing

Plates are sourced if the requested tasks are compatible, for example, sufficient volume is present in the source plates. Click **Next**.

Processing

The plates are created during processing. Click **Next**.

Storing

1. After the plate barcodes are generated, click **Assign Location**.
2. Select target location: **Paris**.
3. Click **Next**.

Pipe and Close

Pipe and Close is a summary page. Click **Close and Quit** to exit.

Tutorial: Update Plate Containers

The *Update Containers* workflow is used to modify the container attributes. You can adjust the quantity, liquid volume, concentration, and solvent values.

In this tutorial, we update the volume of five 384-well plates to 100 uL at 10 mM.

Dataset

The following data parameters must exist:

- Plate type: **Greiner PP384V**
- Container usage: **Inventory**
- Solvent: **DMSO**
- Location: **Paris**
- Parser: **TECAN (Container)**
- User role: **SAMPLE_PROCESSING**
- 5 plates 384 (100 uL – 10 mM). Layout with columns 1 and 24 as empty

Workflow

Job Initialization

1. Log onto BIOVIA Sample for Assay and click **Update**. The Update page shows a summary of the existing processes, in progress or already closed. Follow Container – Update Attributes on the Create Workflow right panel.
2. Set *Workflow* to **Container – Update Attributes**.
3. On the **Job Initialization** page specify the job name suffix. The prefix is generated automatically, the suffix is user defined.
4. Set *Job Status* to **Creation**.
5. Set *Assigned To* (defaults to current user).
6. .Click **Next**.

Requesting

1. Set the following parameters:
 - Source Type: **Plate**
 - Request From: **Text**
2. Paste in the source area: PTEST006:PTEST007:PTEST008:PTEST009:PTEST010
Plate names can be colons or line break separated.
3. Click **Add IDs**.
4. Click **Next**.

Task Requesting

1. Choose the task to be applied to the selected plate on *Job Initialization > Requesting > Task Requesting*:
 - Target Usage: **Inventory**
 - Target Plate Type: **Greiner PP384V**
- State: **Solution**
- Target Volume: **1000 µL**

- Target Concentration: **10 mM**
- Buffer (Solvent): **DMSO**
 1. Click **Add this Task**. The system updates to show the scheduled task.
 2. Click **Next**.

Sourcing

The Sourcing page confirms that the requested operations are compatible with the source plates. Click **Next**.

Processing

Processing is divided into two tasks:

1. Fill in information on the page *Job Initialization > Requesting > Task Requesting > Sourcing > Processing* to format the worklist as a CSV file using ";" delimiter. Click **Next**.
2. To load a custom worklist instead of the automatically generated list, map the custom headers to the expected ones. For the purposes of this tutorial, skip this step. We are using the generated CSV file.

Storing

In the workflow, you can update optionally the location. By default, the system keeps the current plates location.

Click **Next**. The input plate is placed in the previous location by default.

Select **Yes** you want to increment the *Thawing Cycle* of the input plates.

Pipe and Close

Pipe and Close is a summary page. View the source plates with updated volume.

You can also pipe this job to another one, allowing you to immediately start a new job using the input plates from this one.

Click **Close and Quit** to exit.

Tutorial: Plate Replication

Replication is a plate processing procedure used to create multiple plates from a single plate. Increasing the number of plates is the best way to statistically analyze test results.

In this tutorial, we will make two copies of five 384-well plates (100 uL – 10 mM). The created plates will have a volume of 30 uL and will be diluted by a factor of 10 (resulting in 30 uL – 1 mM).

Dataset

The following data parameters must exist:

- Plate type: **Greiner PP384V**
- Container usage: **Inventory**
- Location: **Paris**
- Automation plate created example_dataset: **True**
- User role: **SAMPLE_PROCESSING**

Workflow

Job Initialization

1. Log onto BIOVIA Sample for Assay and click **Transformation**.
2. Click **Plate Replication**.
3. On the **Job Initialization** page specify the job name suffix. The prefix is generated automatically, the suffix is user defined. Click **Next**.

Requesting

1. Set the following parameters:
 - Source Type: **Plate**
 - Target Plate Type: **Greiner PP384V**
 - Source (type in text box): **PTEST006:PTEST007:PTEST008:PTEST009:PTEST010** and click **Add IDs**.
2. Click **Next**.

Task Requesting

1. Choose the task applied to the selected plates and apply the following parameters:
 - Source Selection Mode: **All Sources**
 - Target Usage: **Inventory**
 - Number of Copy: **2**
 - Dilution: **Target**
 - Dilution Mode: **Dilution Factor**
 - Target Volume: **30 µl**
 - Dilution Factor: **10**
 - Buffer (Solvent): **DMSO**
2. Click **Add this Task**.
3. Click **Next**.

Sourcing

The Sourcing page confirms that the requested operations are compatible with the source plates. Click **Next**.

Processing

1. Set robotic equipment : **Tecan (Container)**
2. Click **Generate Worklist**.
3. Click **Next**.
4. Set DEST LABEL to **DEST QUADRANT**.
5. Click **Next**.

Storing

1. Click **Assign Location**.
2. Select target location: **Paris**.
3. Click **Next**.
4. Select a new location or the default location for the input plate storage. Click **Next**.

Pipe and Close

Pipe and Close is a summary page. Click **Close and Quit** to exit.