



DATA MAINTENANCE FOR CYTEK® AURORA & NORTHERN LIGHTS™ SYSTEM ADMINISTRATORS

With SpectroFlo® Software version 3.0.0 and higher

Data Maintenance for Cytek® Aurora & Northern Lights™ System Administrators

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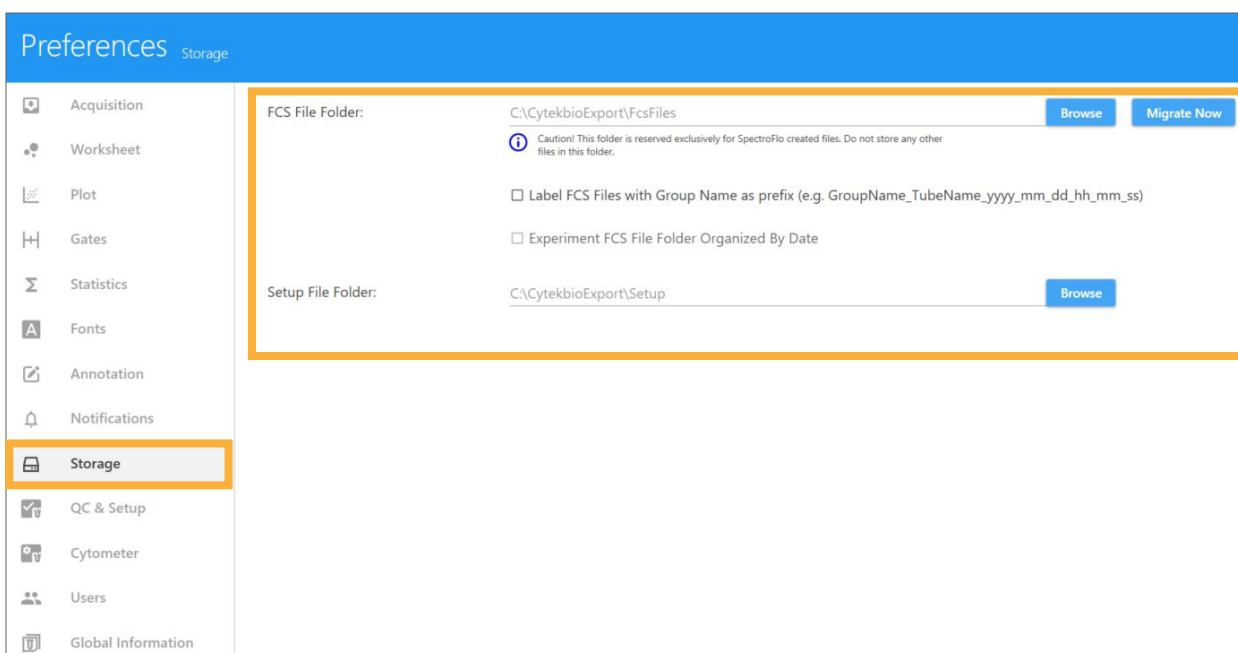
Data maintenance is essential for all flow cytometers in order to ensure optimal software performance. On Cytek® Aurora and Northern Lights™ systems using SpectroFlo® software, experiments can be stored with both raw and unmixed data. Storing the raw data, with up to 67 parameters, is useful to check the quality of unmixing and of the single color controls. For more established assays, just the unmixed files may be sufficient. Having a data maintenance plan is key to avoid your SpectroFlo database and computer harddrive from getting full, which might negatively impact the performance of SpectroFlo software, including lag and data loss.

Before starting, you should be familiar with the following concepts:

FCS File Folder

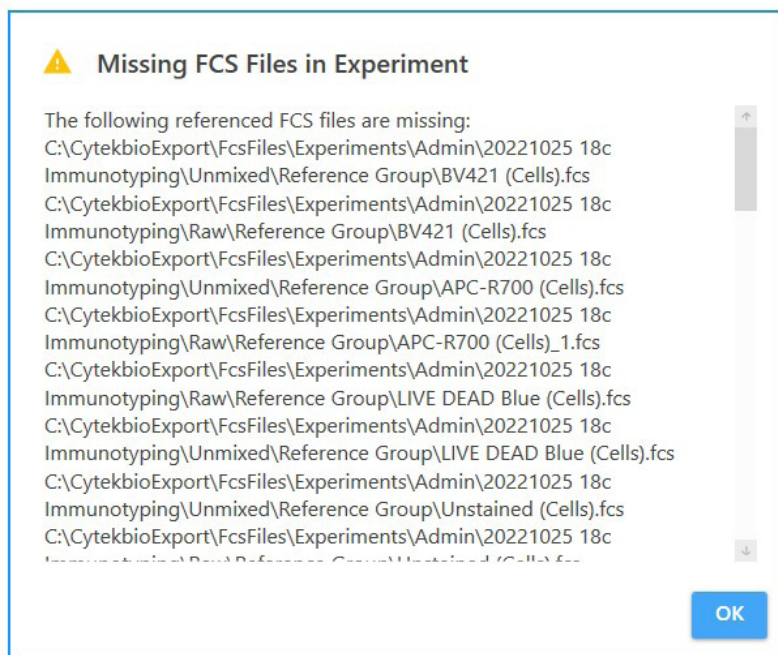
The FCS File Folder is the location where all FCS files created from the SpectroFlo software are saved. By default, this is located on the C: drive, under C:\CytekbioExport\FCSfiles\Experiments. Admin accounts in SpectroFlo can change this location from the Preferences module. SpectroFlo software requires a consistent, fast connection to the FCS File Folder, so this folder should not be located on an external hard drive or a server. To ensure optimal performance of SpectroFlo software, we recommend keeping the hard drive used to store the FCS File Folder below 70% capacity.

Note: We do not recommend modifying the path of the **Setup File Folder**.



When the FCS File Folder is changed, select **Migrate Now** to transfer experiments from the old location to the new one.

Note that FCS files stored in the FCS File Folder are linked to the SpectroFlo software database. Manually removing, duplicating, or renaming files from this location will result in a Missing FCS Files error (see below), and potential database corruption. To resolve this error, restore the missing FCS files to the appropriate folders.



The FCS File Folder also contains the RecycleBin, where all deleted FCS files are stored before they are manually removed from the system. We will discuss more about the RecycleBin later in this document.

Experiment Storage Folder

The experiment storage folder is the location where users export FCS files and Experiments from SpectroFlo software. This can be either your C: or D: drive, but we do not recommend exporting data directly to a server, external hard drive, or USB flash drive. Your D drive has a higher storage capacity and can be used up as a temporary experiment storage folder.

Make a Plan for Data Management

It is critical to create a plan for efficient and routine data management practices prior to generating data on the instrument. This will help you to maintain consistent and optimal performance of your cytometer workstation over time. The Administrator should develop a backup and data cleanup plan that will both protect user data and prevent data overload of the cytometer computer.

This plan should include:

- Where the FCS File Folder is located.
- How long users are allowed to keep in-use experiments under **My Experiments** in SpectroFlo software
- Where the experiment storage folder is going to be located
- How long users are allowed to store FCS files and exported experiments on the internal drives
- How often scheduled backups will occur

NOTE: It is recommended that administrators backup data files and the SpectroFlo database prior to scheduled maintenance and software upgrades.

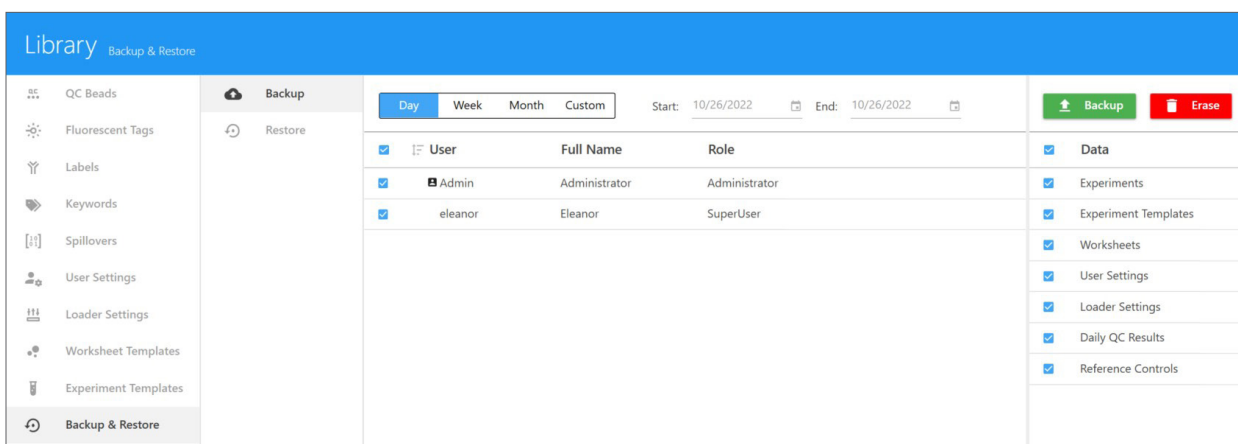
- How data will be transferred off the cytometer hard drives

Strategies for Backing Up Data

We recommend that users take responsibility for exporting and deleting their own data from **My Experiments** in SpectroFlo software.

[Download Data Management Instructable](#)

For scheduled backups, we recommend using the **Backup & Restore** tool in the SpectroFlo **Library** module. This tool allows Administrators to select the user(s), time frame, and type of data to be backed up and/or erased. The **Backup & Restore** function is faster than the using the separate DataMaintenanceSpectroFlo application described below and does not require Windows Administrator privileges. Please note that the **Backup** option will create a copy of all the experiments (if selected) but the **Restore** function will not restore corrupted experiments (improving SpectroFlo software performance).



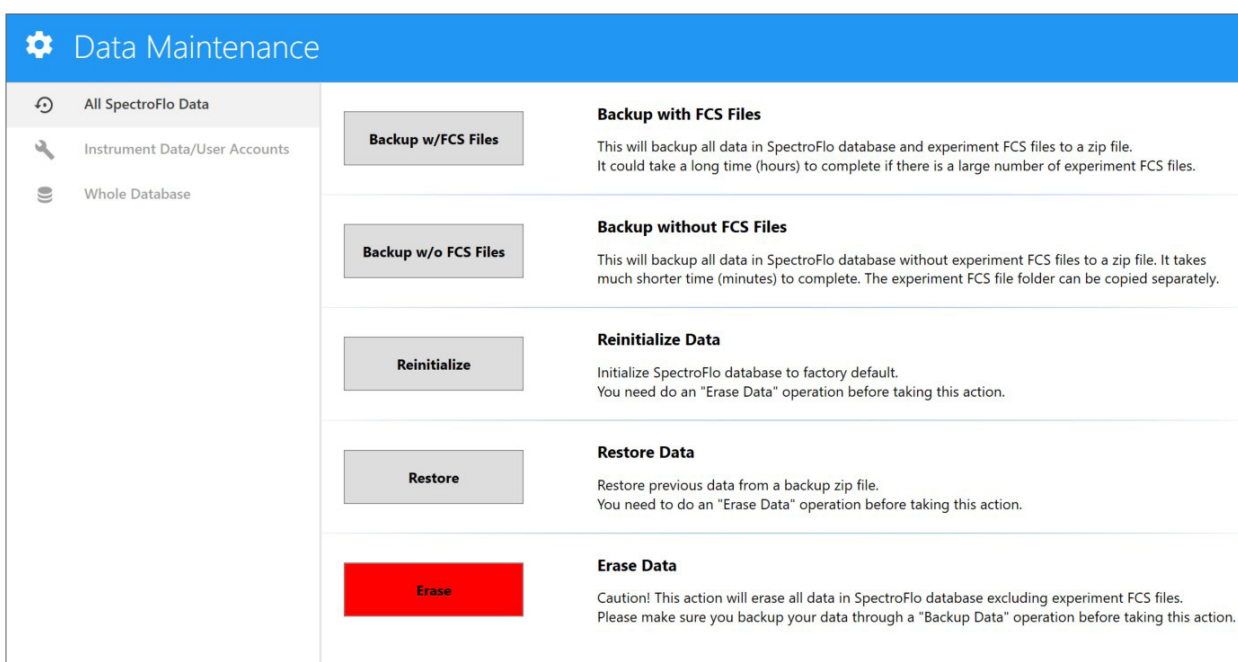
The screenshot shows the 'Library Backup & Restore' window. On the left is a sidebar with navigation options: QC Beads, Fluorescent Tags, Labels, Keywords, Spillovers, User Settings, Loader Settings, Worksheet Templates, Experiment Templates, and Backup & Restore (selected). The main area has tabs for 'Backup' and 'Restore'. Under 'Backup', there are filters for 'Day', 'Week', 'Month', and 'Custom'. The 'Start' date is 10/26/2022 and the 'End' date is 10/26/2022. There are 'Backup' and 'Erase' buttons. Below these are two tables. The first table lists users with checkboxes, and the second table lists data types with checkboxes.

☒	User	Full Name	Role
☒	Admin	Administrator	Administrator
☒	eleanor	Eleanor	SuperUser

☒	Data
☒	Experiments
☒	Experiment Templates
☒	Worksheets
☒	User Settings
☒	Loader Settings
☒	Daily QC Results
☒	Reference Controls

Another option for scheduled backups is the separate DataMaintenanceSpectroFlo application, which is installed along with SpectroFlo. Note that SpectroFlo software must be closed before you can launch DataMaintenanceSpectroFlo and that the DataMaintenanceSpectroFlo application requires Windows Administrator access to launch.

There are two ways to create a backup using this app: 1) **Backup with FCS Files** or 2) **Backup w/o FCS Files**.



The screenshot shows the 'Data Maintenance' application window. On the left is a sidebar with navigation options: All SpectroFlo Data, Instrument Data/User Accounts, and Whole Database. The main area has five sections, each with a button and a description:

- Backup w/FCS Files**: Backup with FCS Files. This will backup all data in SpectroFlo database and experiment FCS files to a zip file. It could take a long time (hours) to complete if there is a large number of experiment FCS files.
- Backup w/o FCS Files**: Backup without FCS Files. This will backup all data in SpectroFlo database without experiment FCS files to a zip file. It takes much shorter time (minutes) to complete. The experiment FCS file folder can be copied separately.
- Reinitialize**: Reinitialize Data. Initialize SpectroFlo database to factory default. You need do an "Erase Data" operation before taking this action.
- Restore**: Restore Data. Restore previous data from a backup zip file. You need to do an "Erase Data" operation before taking this action.
- Erase**: Erase Data. Caution! This action will erase all data in SpectroFlo database excluding experiment FCS files. Please make sure you backup your data through a "Backup Data" operation before taking this action.

Option 1: Backup with FCS Files

All experiments in the CytekBioExport\FcsFiles\Experiments folder will be zipped as individual files with an added string of numbers and letters at the end.

To reimport these experiments individually back to SpectroFlo software you will need to remove these numbers and letters. This option might require a long time to be completed, depending on the amount of data stored.

Option 2: Backup without FCS Files

A new tool available in SpectroFlo software 3.0.X is the **Backup without FCS Files** option in the DataMaintenanceSpectroFlo application. The FCS files in CytekBioExport\FcsFiles\Experiments need to be manually copied to a secure backup location. When you restore from a **Backup without FCS Files** you will need to copy all FCS files back into the CytekBioExport\FcsFiles\Experiments folder.

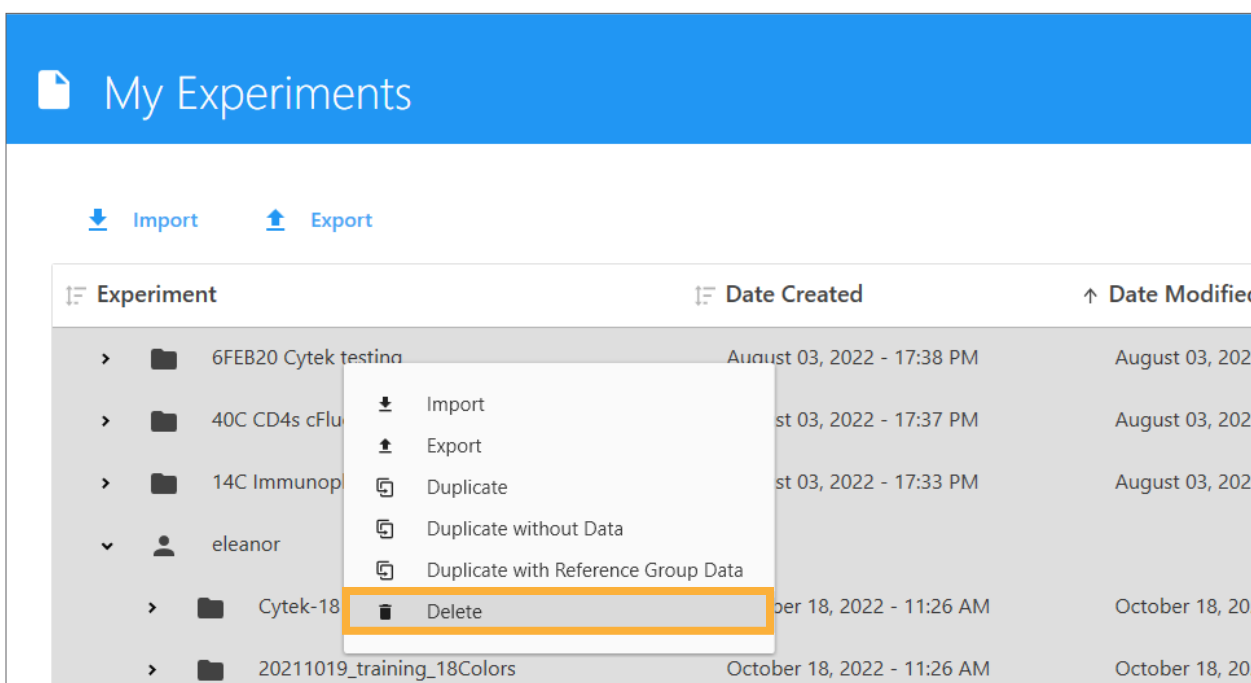
This is the fastest backup option and can be useful when there is not enough time for a complete **Backup with FCS Files**.

Data Cleanup

Experiments and FCS files should be removed when the backup is completed, or according to your pre-established data management policies.

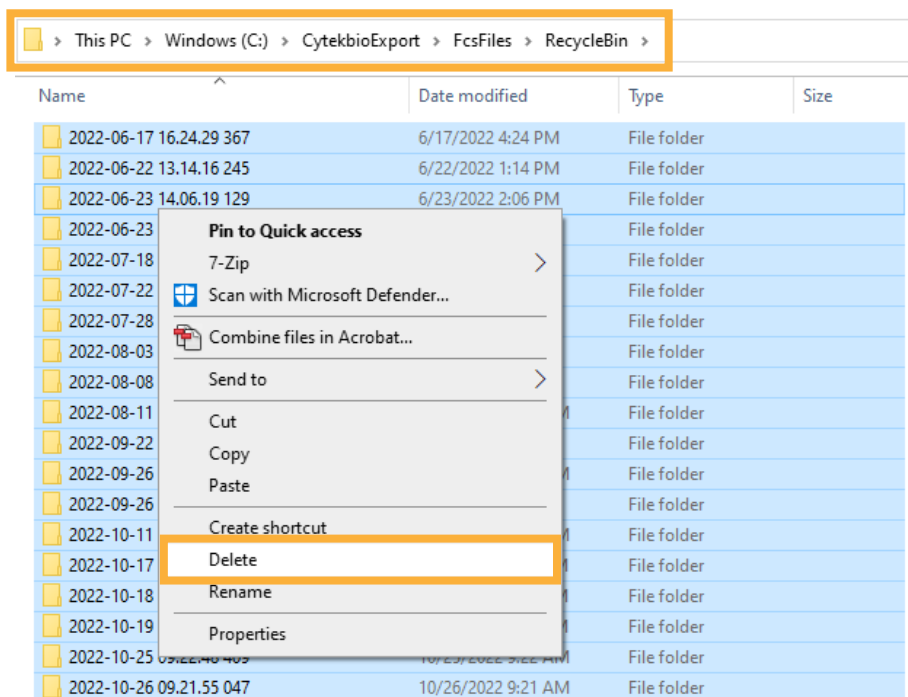
There are 3 locations where data may need to be removed:

1. **My Experiments** - When logged into SpectroFlo an Admin account, select the experiment(s) to be deleted under **Acquisition > Experiment > My Experiments**. Right click and select **Delete**.

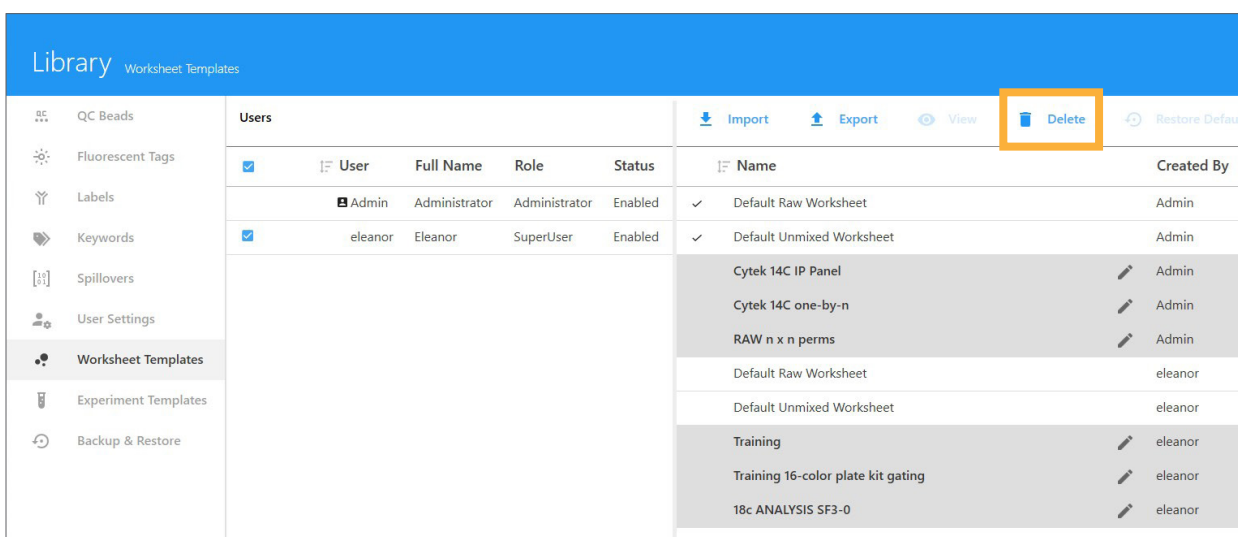


2. **RecycleBin Folder** - Any deleted experiments from the previous step will be relocated to the CytekbioExport\FcsFiles\RecycleBin folder automatically the next time SpectroFlo is opened. Navigate to CytekbioExport\FcsFiles\RecycleBin and delete all files in that folder.

Note that files are not moved to the RecycleBin folder until SpectroFlo software is restarted.



3. **Library** – It may be necessary to periodically delete items that are stored in the **Library** module such as **Worksheet Templates**, **Experiment Templates**, and **User Settings**. The Administrator should check with individual users to identify items that are no longer in use. Multi-select items to delete by holding the Shift or Control key while clicking on the items, then click the **Delete** button in the top menu bar as shown below.



Communicate With Your IT Department In Advance

The cytometer Administrator needs Administrative Access to the Windows operating system to use the DataMaintenanceSpectroFlo application.

An important aspect of data management is determining how data will be transferred from the cytometer computer to an external storage location (e.g. USB drives, network drives, cloud storage) for subsequent analysis.

Depending on your organization's security policies there may be restrictions on network access and removable media. We strongly recommend that the Administrator consult with the organization's IT Department and create a plan for data transfer before the cytometer is installed.

Additional Resources

If you have additional questions, please reach out by emailing Cytek Technical at technicalsupport@cytekbio.com or Applications Support at applicationsupport@cytekbio.com.

[Download the Data Management Instructable here.](#)

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