



VARIAN

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Galaxie™ Column and Solvent Database Plug-in

User's Guide

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Using the Column and Solvent Database Plug-in

This document describes the functions of the Column and Solvent Database Plug-in for Galaxie.

Overview

The Column and Solvent Database Plug-in enables users to manage columns and solvents that are used in chromatographic systems. The columns and solvents and their properties are defined in a database that is available from Galaxie Chromatography Data Systems. The Column and Solvent database is used for all chromatography types.

The Column and Solvent Database Plug-in permits users to increment automatically column parameters at each system injection. The Generic Column Tracker driver must be added to the Galaxie chromatographic system and a column from the list must be chosen in the method.

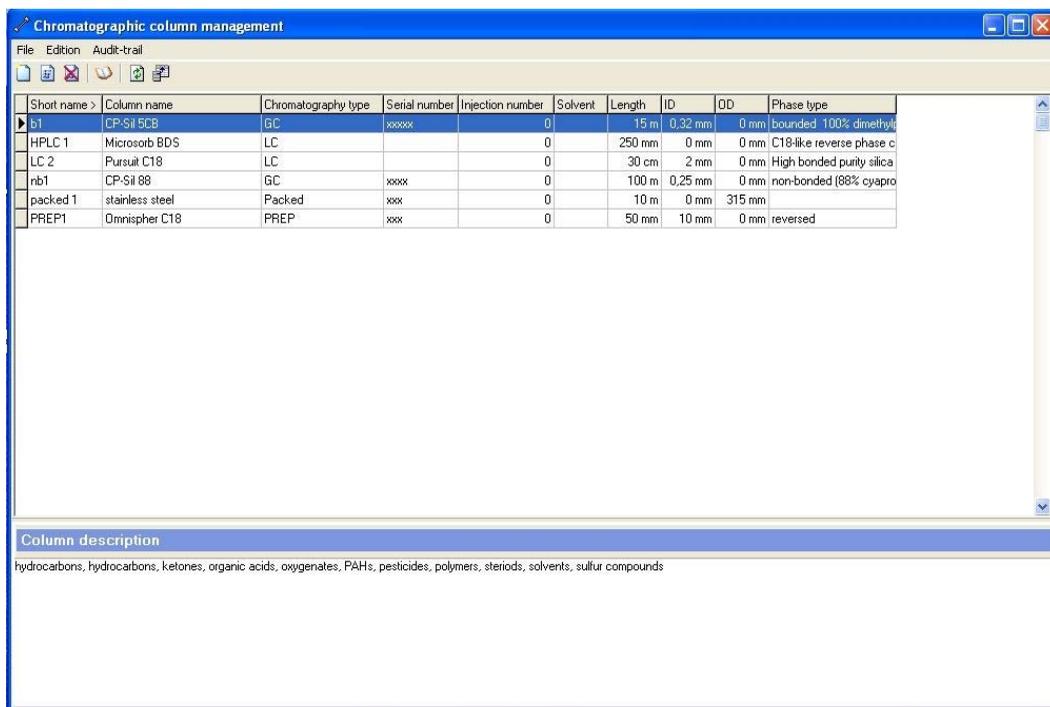
It can also manage solvent miscibility for Column Valve Modules.

A common audit trail lists all modifications in columns and solvents properties. The audit trail, the column and solvent properties and lists are exportable and printable.

Software functions

Chromatographic Column Management

In Galaxie, open the Chromatographic column management by selecting the  icon or the corresponding option in the Plug-ins menu. The following screen is displayed:



It contains the list of all defined columns of the database. When selecting a column line, the *Column description* is displayed at the bottom of the screen.

Adding a New Column and Modifying Column Parameters

Define a new column in the column database by pressing the  button, selecting **EDITION / NEW** menu or in the contextual  menu. Modify the properties of a selected column by pressing, double-clicking, selecting **EDITION / EDIT** or in the contextual  menu. Enter or modify the column parameters in the displayed column properties screen:

Only the column short name field must be entered, all other fields are optional.

Validate the new settings clicking on  or cancel them.

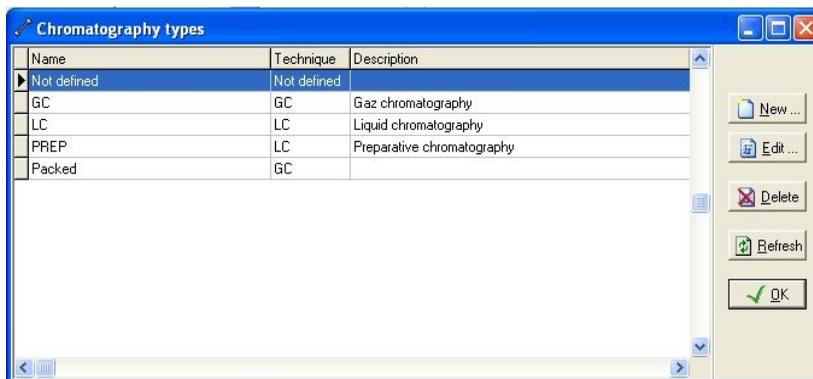
Column Properties Parameter Group

In the *Column name* field, enter the entire column name.

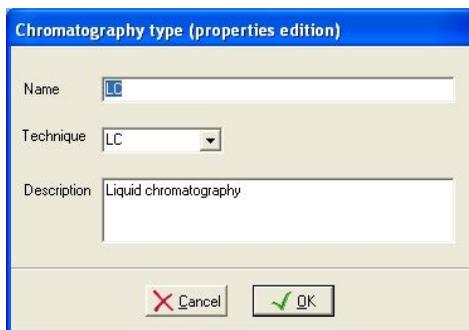
In the *Short name* field, enter a short name or click on the  button to automatically define the 10 first characters of the Column name as *Short name*. The *Short name* is used for the Galaxie column identification and is mandatory.

Fill in the *Column description*, the *Pre column name*, the *Pre column description*, the *Manufacturer* name and the *Serial number* of the column.

Select the Chromatography type in the corresponding scrolling list. By default, GC, LC, PREP, Packed and Not defined are the available types. Press **Types ...** to modify the chromatography types list. The following screen is displayed:



Press **New ...** to add a new type and press **Edit ...** to modify the selected one. Choose the *Technique* and fill in the new *Description* and *Name* field in the displayed Chromatography type properties edition screen:



Validate the new settings clicking on **OK**.

Press **Delete** to delete the selected chromatography type and **Refresh** to refresh the list.

Fill in the column *Length*, *Internal diameter*, *outside diameter* and *units* in the corresponding fields.

Chemical Parameters Parameter Group

Enter the *Phase type*, the *Film thickness*, the *Granulometry*, the *Pore size* and *units* in the corresponding fields. Choose the *Storage solvent* among the whole Solvent database list.

Note that the *Granulometry*, the *Pore size* and the *Storage solvent* fields are only available when the Chromatography technique is LC.

Physical Parameters Parameter Group

Enter the *pH* minimum and maximum values tolerated by the column in the *Min* and *Max* fields.

Enter the maximum *Pressure* and *Flow* with the units that the column can stand.

It is possible to fill in the *pH* and *Flow* fields only when the chromatography technique is LC.

Enter the column minimum and maximum temperatures when used in isothermal or programmed mode.

Managing the Columns List

Delete a selected column of the list by pressing the  button, selecting **EDITION / DELETE** menu or from the contextual menu.

To duplicate a column entry in the list, select it and then the **EDITION / DUPLICATE** menu or from the contextual menu. A new column entry is created with exactly the same parameters except the *Column name* and the *Short name*. The column name of the created column entry begins with “copy of “ and ends with the name of the duplicated column entry. The *Short name* of the created column entry corresponds to the first 9 characters of the duplicated *Column name* ended by a number suffix.

Print or Export in HTML the columns list by selecting **EDITION / PRINT LIST** or **EDITION / EXPORT LIST**. Choose the path to export and the file is automatically displayed at screen. The

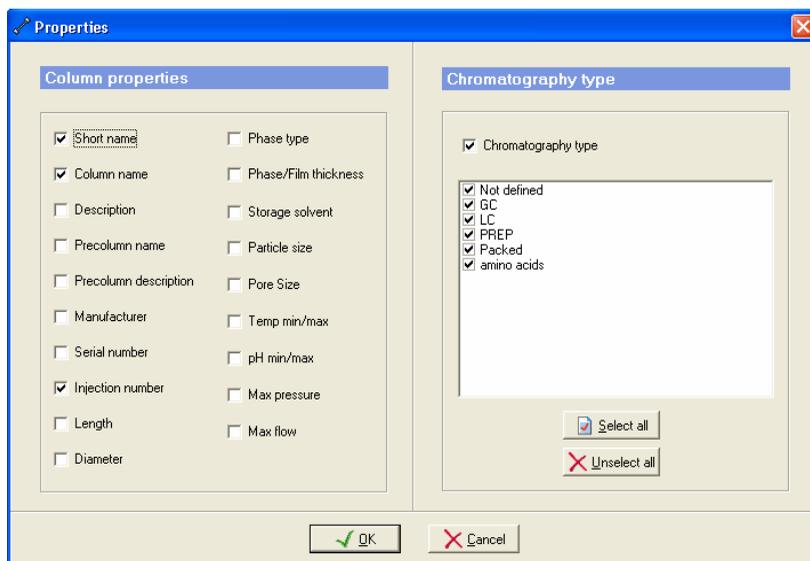
column parameters that are printed and exported are the currently displayed in the table and the *Column description*.

Print or Export in HTML each column parameters by selecting **EDITION / PRINT PROPERTIES** or **EDITION / EXPORT PROPERTIES** or from the contextual menu. Choose the path to export and the file is automatically displayed at screen.

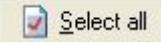
Displaying Columns Parameters

Click on the  button to refresh the database that can be modified from different stations at the same time when in Client/Server configuration.

Click on the  button or select *Properties* in the contextual menu to change the parameters to display in the column table. The following screen is then displayed:



To display a parameter in the column list table, check the corresponding box in the *Column properties* part. Choose also to display particular columns in the list depending on their chromatography types by selecting the type in the

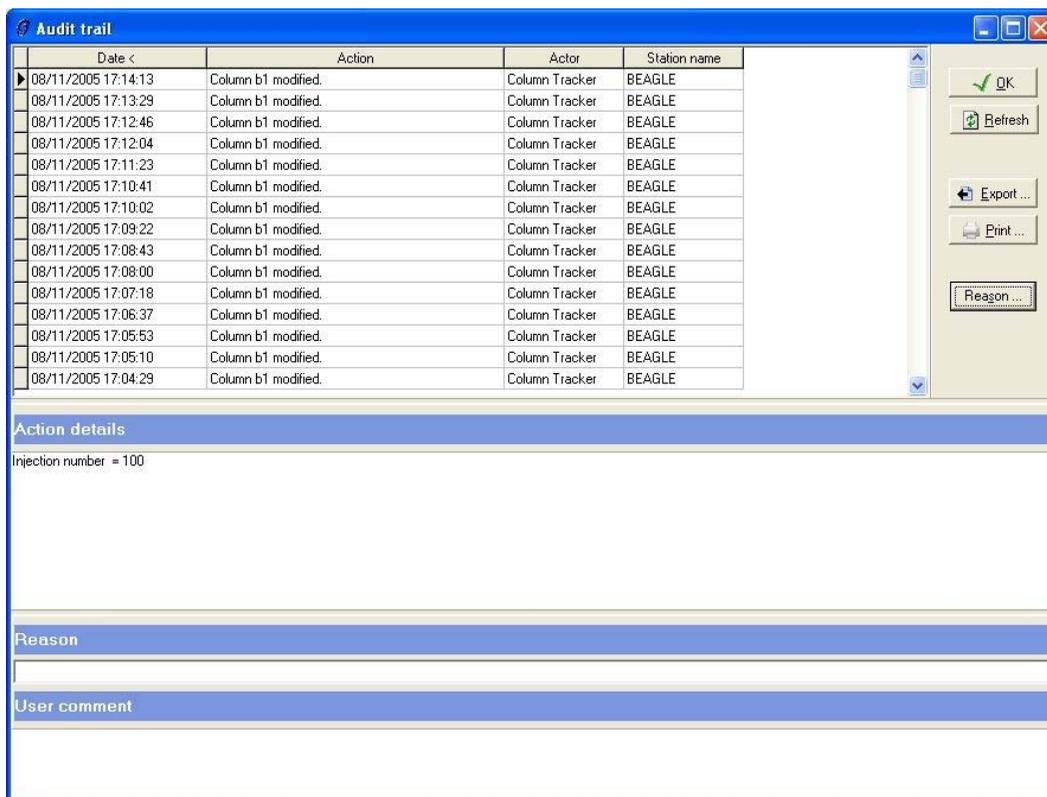
Chromatography type part. Press  or



to select all available chromatography types or to unselect all checked types.

Displaying Column and Solvent Database Audit Trail

Press the  button or select the **AUDIT TRAIL / VIEW AUDIT TRAIL** menu to display the column and solvent database audit trail.



The screenshot shows a window titled "Audit trail" with a table of actions and a details section below it.

Date <	Action	Actor	Station name
08/11/2005 17:14:13	Column b1 modified.	Column Tracker	BEAGLE
08/11/2005 17:13:29	Column b1 modified.	Column Tracker	BEAGLE
08/11/2005 17:12:46	Column b1 modified.	Column Tracker	BEAGLE
08/11/2005 17:12:04	Column b1 modified.	Column Tracker	BEAGLE
08/11/2005 17:11:23	Column b1 modified.	Column Tracker	BEAGLE
08/11/2005 17:10:41	Column b1 modified.	Column Tracker	BEAGLE
08/11/2005 17:10:02	Column b1 modified.	Column Tracker	BEAGLE
08/11/2005 17:09:22	Column b1 modified.	Column Tracker	BEAGLE
08/11/2005 17:08:43	Column b1 modified.	Column Tracker	BEAGLE
08/11/2005 17:08:00	Column b1 modified.	Column Tracker	BEAGLE
08/11/2005 17:07:18	Column b1 modified.	Column Tracker	BEAGLE
08/11/2005 17:06:37	Column b1 modified.	Column Tracker	BEAGLE
08/11/2005 17:05:53	Column b1 modified.	Column Tracker	BEAGLE
08/11/2005 17:05:10	Column b1 modified.	Column Tracker	BEAGLE
08/11/2005 17:04:29	Column b1 modified.	Column Tracker	BEAGLE

Action details
Injection number = 100

Reason

User comment

All modifications in the column parameters are listed in the audit trail with the corresponding date, actor and station. Each time an acquisition is done using a column that is defined in the Column and Solvent Database and in a system using the column tracker driver, the injection number of the column is automatically incremented in the column parameters. In that case, the actor

listed in the audit trail is the name of the system and the system acquisition server is listed as station name.

Click on the  button to refresh the audit trail.

Click on the  **Export ...** button to export the current audit trail. Choose the path to export and the file is automatically displayed at screen.

Click on the  **Print ...** button to print the current audit trail.

Press the  **Reason ...** button to display user reasons and comments.

Chromatographic Solvent Management

In Galaxie, open the Chromatographic Solvent Management by selecting the  icon or the corresponding option in the Plug-ins menu. The following screen is displayed:

Solvent

Solvent list

Type 1 : Hydrophobic | Type 2 : Intermediate | Type 3 : Hydrophilic A | Type 4 : Hydrophilic B | Type 5 : Hydrophilic C

Short name	Name >	Concentration
HSA	Hexane Sulfonic Acid	
PO4-4.5	Potassium Phosphate buffer pH4.5	100 mmol
PO4-7.0	Potassium Phosphate buffer pH7.0	100 mmol
TEA	Triethylamine Acetate	50 mmol

New ...
 Edit ...
 Delete
 Duplicate
 Export ...
 Print ...
 Audit trail
 Refresh
 OK

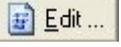
Type compatibility

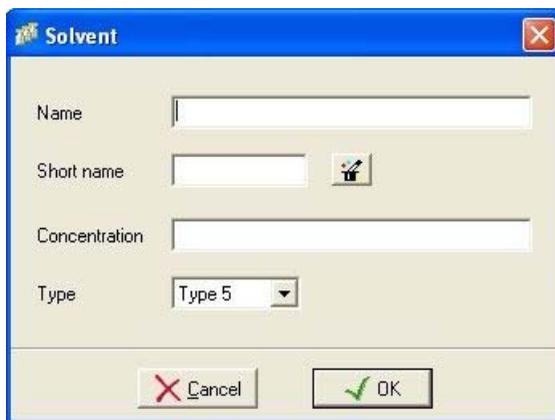
	Type Name	Type 1	Type 2	Type 3	Type 4	Type 5
Type 1	Hydrophobic		×			
Type 2	Intermediate	×		×		
Type 3	Hydrophilic A		×		×	
Type 4	Hydrophilic B			×		×
Type 5	Hydrophilic C				×	

It contains the list of all defined solvents that are distributed into 5 different tabs depending on their hydrophobia. The hydrophilic solvents are dispensed into tree different types: the more hydrophilic corresponds to *Type 5*, the less hydrophilic to *Type 3* and the moderately well hydrophilic to *Type 4*. The hydrophobic solvents are listed in the *Type 1* tab and the solvents of intermediate hydrophobia in the *Type 2* tab.

At the bottom of the screen, the *Type compatibility* table indicates the miscibility between solvents of different solvent types.

Adding a New Solvent and Modifying Solvent Parameters

Define a new solvent in the solvent type database by pressing the  button or from the contextual menu. Modify the properties of a selected solvent by pressing  or from the contextual menu. Enter or modify the solvent parameters in the displayed column properties screen:



The image shows a dialog box titled "Solvent" with a blue header and a red close button. It contains four input fields: "Name" (a text box), "Short name" (a text box with a small icon to its right), "Concentration" (a text box), and "Type" (a dropdown menu currently showing "Type 5"). At the bottom, there are two buttons: "Cancel" with a red X icon and "OK" with a green checkmark icon.

Enter the solvent *Name* and *Concentration*.

In the *Short name* field, enter a short name or click on the  button to automatically define the 10 first characters of the solvent name as *Short name*. The *Short name* is used for the Galaxie solvent identification.

The solvent *Name* and *Short name* must be filled in.

Managing the Solvents List

Delete a selected solvent entry of the list by pressing the  button or from the contextual menu.

To duplicate a selected solvent entry in the list, press  or select it from the contextual menu. A new solvent entry is created with exactly the same parameters except the solvent *Name* and the *Short name*. The solvent *Name* of the

created solvent entry begins with “copy of” and ends with the name of the duplicated solvent entry. The *Short name* of the created solvent entry corresponds to the first 9 characters of the duplicated solvent name ended by a number suffix.

Print or Export the solvent list and parameters by pressing the



or



button. Choose the path to export and the file is automatically displayed at screen.

Click on the  button to refresh the database that can be modified from different stations at the same time when in Client/Server configuration.

Displaying Solvents and Columns Database Audit Trail

Press the  button to display the column and solvent database audit trail.

Audit trail

Date <	Action	Actor	Station name
10/11/2005 09:38:36	Solvent 'Dichloromethane' duplicated in 'Copy of Dic	ay (ritrit)	BEAGLE
08/11/2005 17:14:13	Column b1 modified.	Column Tracker	BEAGLE
08/11/2005 17:13:29	Column b1 modified.	Column Tracker	BEAGLE
08/11/2005 17:12:46	Column b1 modified.	Column Tracker	BEAGLE
08/11/2005 17:12:04	Column b1 modified.	Column Tracker	BEAGLE
08/11/2005 17:11:23	Column b1 modified.	Column Tracker	BEAGLE
08/11/2005 17:10:41	Column b1 modified.	Column Tracker	BEAGLE
08/11/2005 17:10:02	Column b1 modified.	Column Tracker	BEAGLE
08/11/2005 17:09:22	Column b1 modified.	Column Tracker	BEAGLE
08/11/2005 17:08:43	Column b1 modified.	Column Tracker	BEAGLE
08/11/2005 17:08:00	Column b1 modified.	Column Tracker	BEAGLE
08/11/2005 17:07:18	Column b1 modified.	Column Tracker	BEAGLE
08/11/2005 17:06:37	Column b1 modified.	Column Tracker	BEAGLE
08/11/2005 17:05:53	Column b1 modified.	Column Tracker	BEAGLE
08/11/2005 17:05:10	Column b1 modified.	Column Tracker	BEAGLE
08/11/2005 17:04:29	Column b1 modified.	Column Tracker	BEAGLE
08/11/2005 17:03:46	Column b1 modified.	Column Tracker	BEAGLE
08/11/2005 17:03:04	Column b1 modified.	Column Tracker	BEAGLE
08/11/2005 17:02:24	Column b1 modified.	Column Tracker	BEAGLE
08/11/2005 17:01:41	Column b1 modified.	Column Tracker	BEAGLE
08/11/2005 17:00:59	Column b1 modified.	Column Tracker	BEAGLE
08/11/2005 17:00:16	Column b1 modified.	Column Tracker	BEAGLE
08/11/2005 16:59:34	Column b1 modified.	Column Tracker	BEAGLE
08/11/2005 16:58:53	Column b1 modified.	Column Tracker	BEAGLE
08/11/2005 16:58:10	Column b1 modified.	Column Tracker	BEAGLE
08/11/2005 16:57:27	Column b1 modified.	Column Tracker	BEAGLE
08/11/2005 16:56:44	Column b1 modified.	Column Tracker	BEAGLE
08/11/2005 16:56:01	Column b1 modified.	Column Tracker	BEAGLE

Action details

Name = Copy of Dichloromethane
 Type = 1
 Concentration =

Buttons: OK, Refresh, Export ..., Print ..., Reason ...

All modifications in the solvent parameters are listed in the audit trail with the corresponding date, actor and station.

Click on the  button to refresh the audit trail.

Click on the  button to export the current audit trail. Choose the path to export and the file is automatically displayed at screen.

Click on the  button to print the current audit trail.

Press the  button to display user reasons and comments.

Using the Generic Column Tracker Driver

Use the Generic Column Tracker Driver to use the Column and Solvent Management Plug-in to automatically increment column parameters.

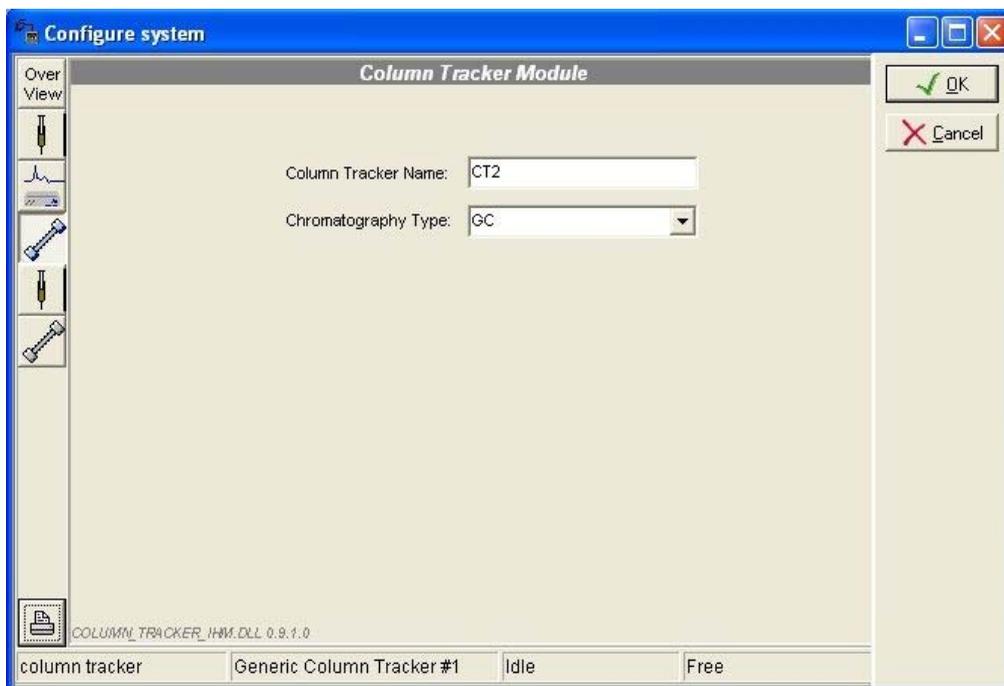
Configuring the Generic Column Tracker

The driver software configuration is done in the Galaxie Configuration Manager when a new chromatographic system is created.

NOTE: If the system is equipped with several columns, it is necessary that system driver list contains the column tracker driver as many times as the columns number of the system.



Click on the  button corresponding to the Generic Column Tracker driver and the configuration screen appears.



In case the system contains several columns, enter a *Column Tracker Name* to differentiate each column of the system. This *Column Tracker Name* should be different for each Column tracker module of the system.

Choose the *Chromatography Type* of each column of the system in the corresponding scrolling list. All the defined chromatography types of the column database are available.

Configuring the Synopsis

In the *Overview* part of the system configuration, a synopsis can be defined for the system. This synopsis depends on the configured devices.

Right click on the system name in the bottom part of the **Galaxie Configuration Manager** screen. A pop-up menu appears: click on *Stop*. Then right click on the system name again, and click on *Start*.

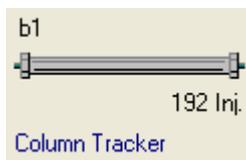


The synopsis will be displayed in the Galaxie Chromatography Data System, in the *Systems* tab. In this tab, the *Overview* will show the synopsis of the system.

For example, the following pictures represent the synopsis of the Generic Column Tracker:



Galaxie Configuration Manager screen



Galaxie Chromatography Data System screen

NOTE: Once the system has been created and correctly configured, it must be associated with one or more projects in order to start some acquisitions. For more details about the creation and configuration of a system, refer to the Galaxie Configuration Manager User's Guide.



Press the  button to print the current configuration.

Building a Method

Create a new method for the system using the Generic Column Tracker driver.

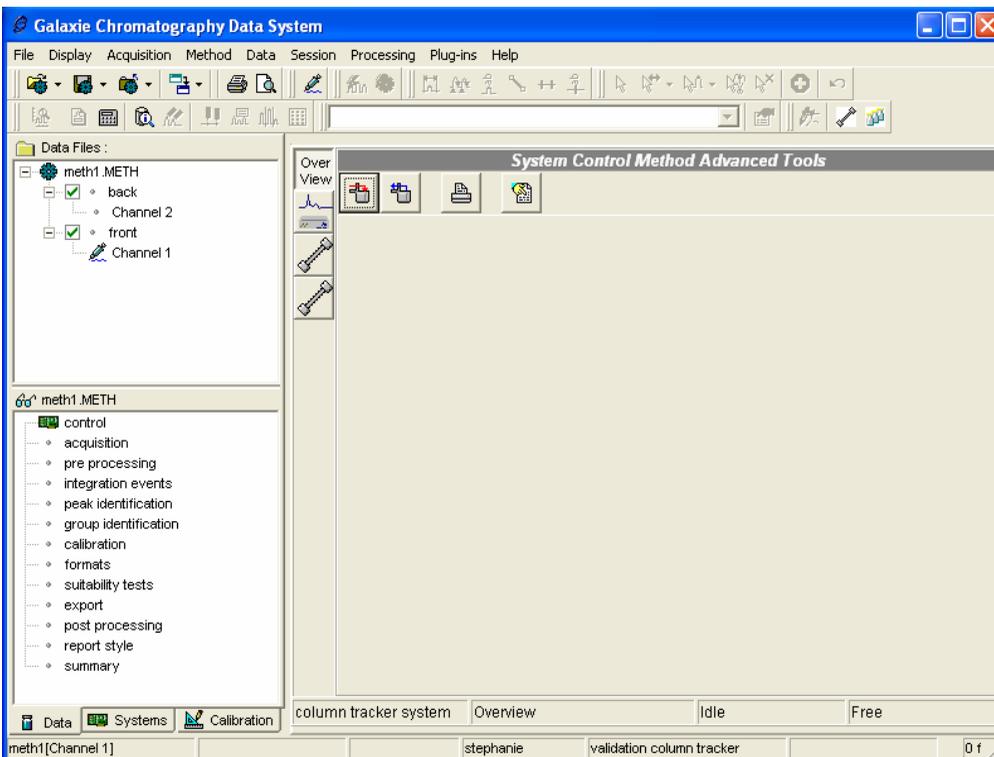
The control section must be defined in order to start an acquisition. In the following part of this guide, only the control section for the Generic Column Tracker is detailed.

NOTE: For more details about the programming of each method section, turn to the Galaxie Chromatography Data System User's Guide.

Control Method Section for the Generic Column Tracker

In the method, select the control section in the lower part of the browser.

The following screen appears:



Click on the  button to display the Generic Column Tracker control method section.

Column Tracker Module Control

Column Tracker Module - 5890-back

Over View
5890
7673

Column type: GC
Column Short name: GC 3

Column properties: **GC 3**

Column name: Gas column 3
Column description: column for gas chromatography
Pre column name: no pre column
Pre column description: NA

Manufacturer: VARIAN
Serial number: xxxxyyy
Chromatography type: GC
Injection number: 12227

Length: 60.00 m
Internal diameter: 0.53 um
Outside diameter: 1.00 mm

Chemical parameters
Phase type: silanol phase à 40%
Phase thickness: 42.50 um
Granulometry: 0.00
Pore size: 0.00 A
Storage solvent:

Physical parameters

	Min	Max	Unit
pH	0.00	0.00	
Pressure		150.00	Bar
Flow		0.00	ml/min
Temperature	10.00	Iso	
		250.00	Prog
		250.00	

COLUMN_TRACKER_IHM.DLL 1.0.1.1

5890+7673 Generic Column Tracker #2 Running anais [VALIDATION] 5890 column 1.METH

The *Chromatography type* chosen while configuring the system is displayed at the top of the control screen.

Select the *Column Short name* to be used in the system in the corresponding scrolling list just above. Only the columns defined for this *Chromatography type* are available in the scrolling list.

Once a column is selected, its *Column properties*, *Chemical parameters* and *Physical parameters* are automatically displayed on screen.

Starting and Viewing an Acquisition

To view a running acquisition, click on the *Systems* tab then select the running system.

Status of the Generic Column Tracker



Click on the  button corresponding to the Generic Column Tracker driver and the Generic Column Tracker status screen will appear.

Status Window

Column Tracker Module - 5890-back

Column properties: **GC 3**

Column name	Gas column 3	Manufacturer	VARIAN
Column description	column for gas chromatography	Serial number	xxxxxxx
		Chromatography type	GC
		Injection number	12228
Pre column name	no pre column	Length	60.00 m
Pre column description	NA	Internal diameter	0.53 um
		Outside diameter	1.00 mm

COLUMN_TRACKER_IHM.DLL 1.0.1.1

The **Status** window displays the column properties as defined in the column database. All fields are in read-only mode. The *Injection number* is incremented at each injection.