

# 1. Setting up a fraction collection method

The following manual will give a step-by-step guide to set up a fraction collection method with a Foxy fraction collector and a KNAUER valve. For a more specific overview about device support on different chromatography software, refer to our list of supported devices in chromatography data systems ([V1663](#)).



**Note:** To set up a collection method in Chromeleon 7.2 a fraction collection license upgrade (KNAUER A1783-8) and the corresponding KNAUER device drivers (KNAUER A1783-2) are needed.

## 1.1 Choosing the modules in the instrument configurator

### Necessary modules

- Chromatography system
- Generic fraction collector
- The fraction collection module of your choice



**Note:** Every other included device is specific to your own system and not necessary for a well running fraction collection method.



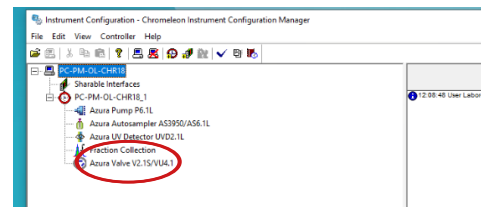
**Note:** Choose a unique device name. This applies to the valve based and the Foxy based fraction collection (see figure 2).

### Procedure

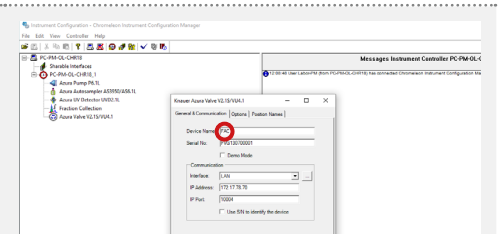
#### Process

1. Choose the fraction collection module in your Chromeleon system for which you wish to configure a method for.
2. Configure your system with the installed fraction collection module. In this example an AZURA® valve has been used (see figure 1).
3. Enter a unique device name.

#### Figure



**Fig. 1** Select fraction collection module



**Fig. 2** Enter device name

## Procedure

## Process

- Designate the waste position onto the last possible position of the valve.

## Figure

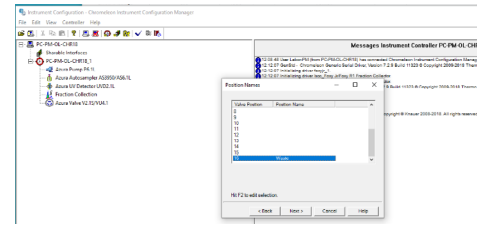


Fig. 3 Choose waste position

- Enter a unique name for the Foxy based fraction collection in order to ease the method development.

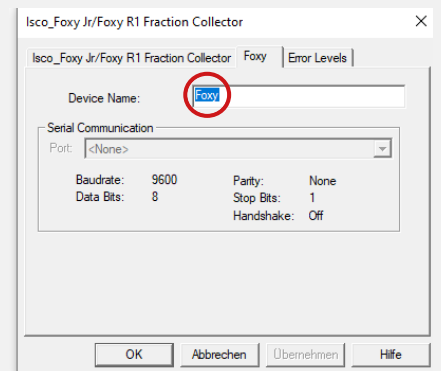


Fig. 4 Enter device name (Foxy based fraction collection)

**Next step** Define the parameters.

## 1.2 Defining the parameters



**Note:** The following procedure is not limited to a certain fraction collection method. Further settings (see figure 6 and 7) depend on the fraction collection method.

## Procedure

## Process

- To set up the general fraction detection type choose the slide *GENERAL OPTIONS* and click collect by peak.

## Figure

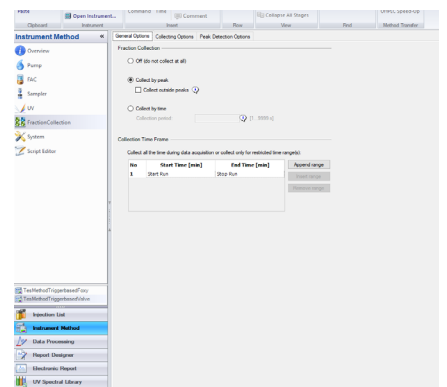


Fig. 5 Setting the General Options

**Procedure**

**Process**

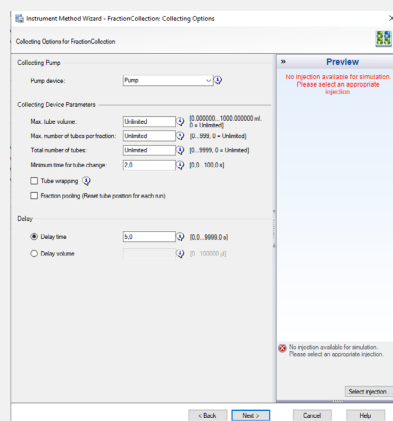
**Figure**

2. In the slide *COLLECTING OPTIONS* for FractionCollection the following collecting device parameters can be further adjusted:

- Max. number of tubes (important for Foxy module)
- Tube wrapping options (see section „1.3.1 Tube wrapping“ on page 6)



**Note:** For more information see the Chromeleon help file.



**Fig. 6** Setting the collection options

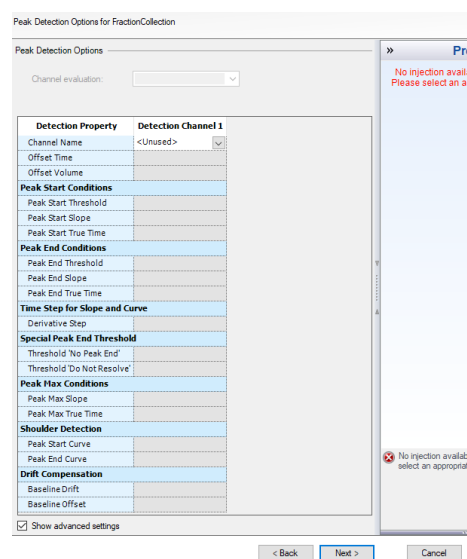
3. If a peak based fraction collection has been chosen, define the needed advanced peak detection options.



**Note:** This window does not appear for any other collection type.



**Note:** Not all parameters have to be defined for a working method.



**Fig. 7** Setting the advanced peak detection options

**Result**

After submitting the method, the overview panel of the generic fraction will appear.

## 1.2.1 Generic fraction overview

In the generic fraction overview the following can be checked:

- The status of the fractionation
- The current chromatogram
- The current tube number (see figure 8)



**Note:** Before a measurement is started, the generic fraction collection is blank, as shown in the figure below.

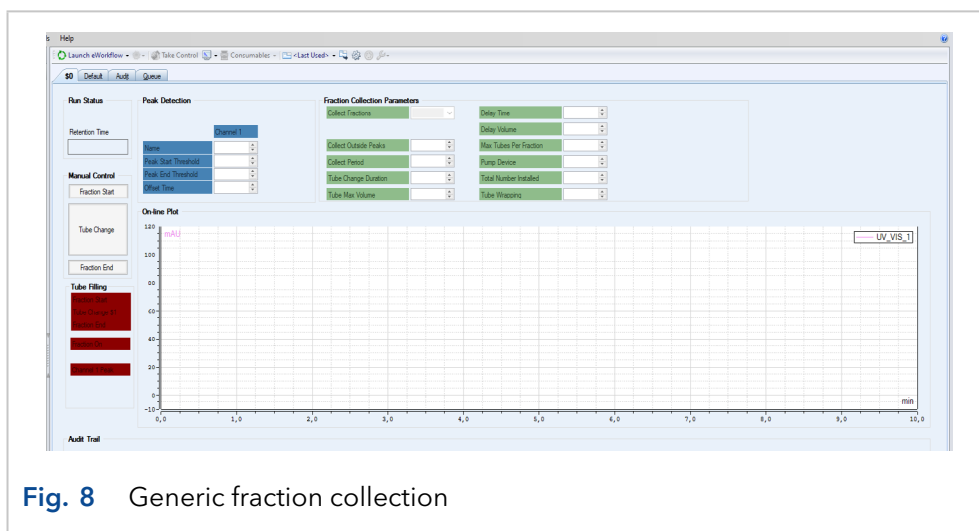


Fig. 8 Generic fraction collection

**Next step** Include triggers in order to use a third party instrument.

## 1.2.2 Including triggers for the usage of a third party instrument

In order to use third party instruments for fraction collection, two triggers need to be programmed. The triggers define the reaction of the instrument when the generic fraction collector detects a peak. To include these triggers proceed as follows:

### Procedure

#### Process

1. Choose *CONDITIONAL* from the menu bar and then *INSERT TRIGGER*. Insert the trigger into any place at the upper part of the method where the overall parameters are listed.



**Note:** Inserted triggers in the upper part of the method file are valid during the whole run.

#### Figure

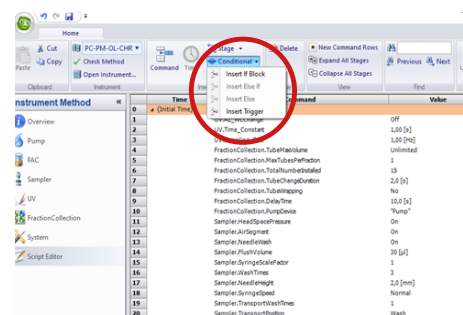
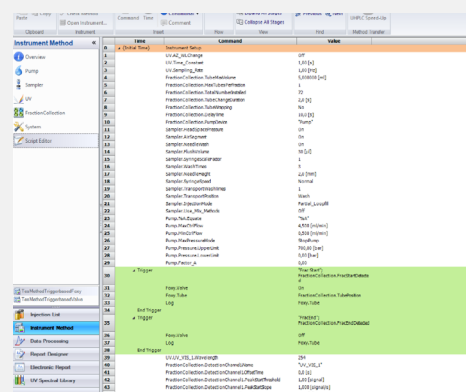


Fig. 9 Inserting a trigger into the method

**Procedure****Process**

- Two triggers have to be defined. Define one trigger for the start (*FRAC START*) of the fractionation process and one for the finish (*FRACEND*).

**Figure**

**Fig. 10** Triggers for a fractionation (Foxy fraction collector)

The first row shows the name of the trigger (*FRAC START*) and its defined conditions ("FractionCollectionFracStartDetected"). This is the signal sent by the generic fraction collector when a fraction is detected under the defined conditions.

The following rows are the definition of how the third-party instrument should proceed under the above defined conditions. In this case the Foxy. Valve switches to the "ON" position and the Foxy. Tube switches to the Tube number of the generic fraction collection. For example, when fraction 5 starts in the generic fraction collector (see figure 8), the Foxy.Tube will be the same number.

The second trigger defines the end of the fraction collection process. The same scheme as above applies. A name and the signal from the generic fraction collector needs to be defined. In this case the fraction valve from the Foxy just needs to shut down.

**Next step**

Include triggers in order to use a KNAUER valve drive.

## 1.2.3 Including triggers for the usage of a KNAUER valve drive

In order to use a KNAUER valve drive for fraction collection, two triggers need to be programmed. The triggers define the reaction of the instrument when the generic fraction collector detects a peak.



**Note:** The number of possible fractions cannot exceed the number of valve positions. This has to be considered before the measurement is initiated. Otherwise an error message will appear.

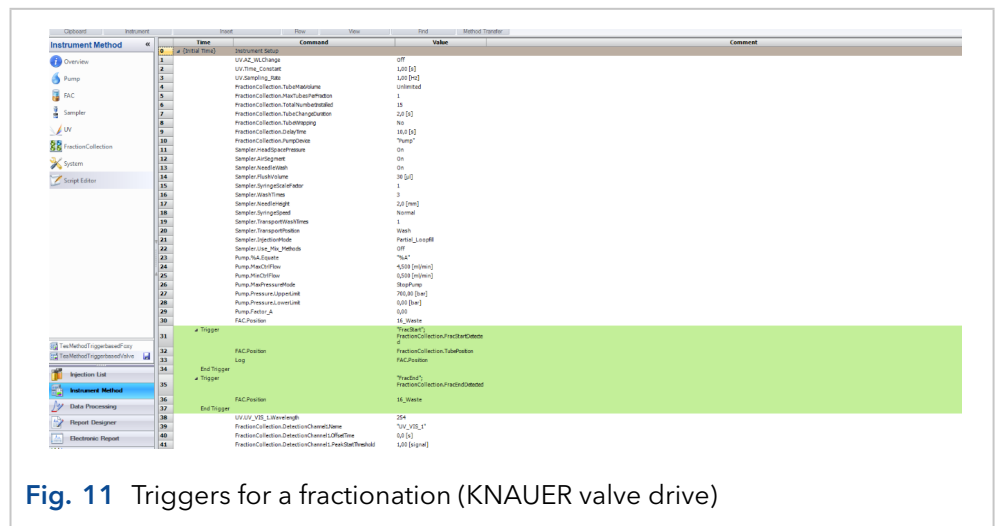


Fig. 11 Triggers for a fractionation (KNAUER valve drive)

**Result** Finished triggers for a fractionation will be marked green.

## 1.3 Additional options

Additional options are used for routine measurements, when the methods are established in the lab. The first four options are dependent on the fraction collection module. For further information on this topic, refer to the Chromeleon help file.

### 1.3.1 Tube wrapping

When the maximum positions of the fraction collection device are reached, it starts again from position 1 (see figure 12).



**Note:** Tube wrapping bears the risk of contamination and is only recommended when the user is familiar to the sample and the method.

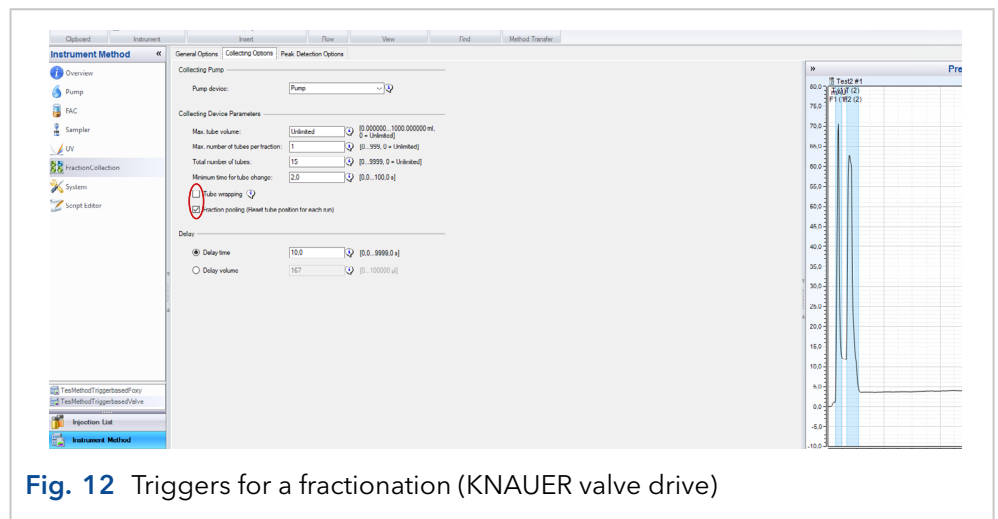


Fig. 12 Triggers for a fractionation (KNAUER valve drive)

### 1.3.2 Fraction pooling

Fraction pooling resets the tube number for each consecutive run. If fraction 1-3 are used for the run, the next run will also start with tube 1.



**Note:** It is recommended to use fraction pooling only with the KNAUER valve drive as with this setup the fraction volume is not limited.