

## 6.2836.000 Post Column Reactor

---

### Instructions for Use



Teachware  
Metrohm AG  
Oberdorfstrasse 68  
CH-9101 Herisau  
[teachware@metrohm.com](mailto:teachware@metrohm.com)

3rd Edition 2005

These instructions are protected by copyright. All rights reserved.

Although all the information given in these instructions has been checked with great care, errors cannot be entirely excluded. Should you notice any mistakes please inform the author at the address given above.

## Description of the instrument

The **6.2836.000 Post Column Reactor** can be used to obtain derivatives of substances after they have been separated. In the post column reactor the eluent from the separating column is mixed with a reagent pumped in by a peristaltic pump; the mixture is transported to the detector. In the most frequent application ions which would otherwise not be detected are converted to species which can be (optically) detected.

A typical application involving a post column reaction in IC is the determination of chromate. This and other applications are described in the Metrohm IC Application Works together with all the necessary equipment, reagents, amounts and settings.

## Safety information



### **Warning!**

*This instrument should only be used in accordance with the information given in these Instructions for Use.*

**Always wear suitable protective clothing.**



*Derivatization reagents may be aggressive or health-hazardous substances. **This is why the post column reactor must be installed so that, if a leak should occur, any liquid which may escape cannot damage persons or equipment!***

## Installation

### **1 Location**

Place the post column reactor in a container equipped with an outlet connected to a waste container.



*In a Metrohm IC system we recommend that the **post column reactor** is placed in the **column compartment** of the 820 IC Separation Center, the 861 Compact IC, the 844 UV/VIS Compact IC or the 790 Personal IC.*

### **2 Connections**

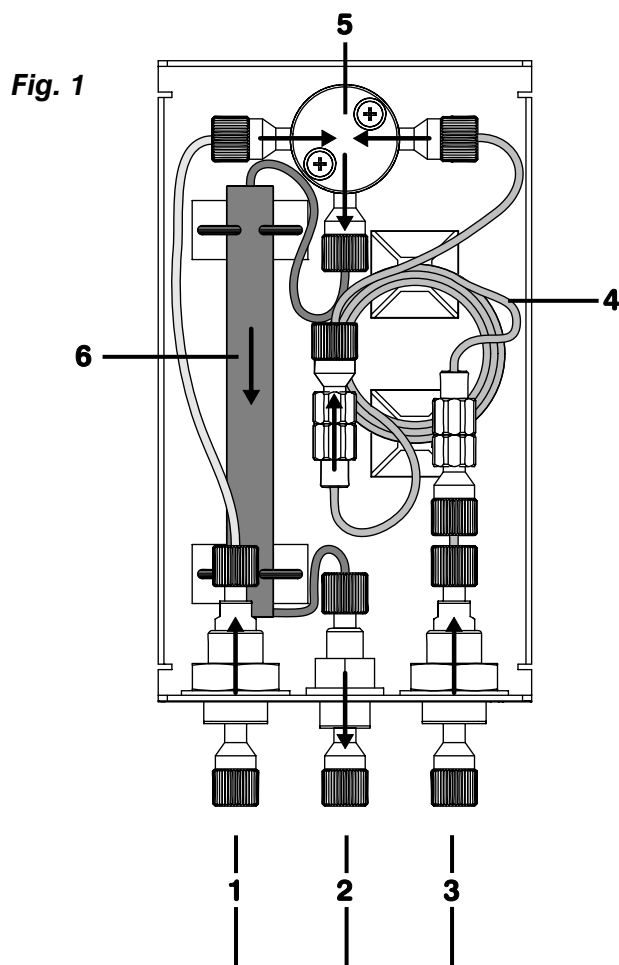
- Connect the separating column outlet to the "**eluent in**" **1** inlet of the post column reactor, see Fig. 2.
- Connect the outlet of the peristaltic pump to the "**reagent in**" **3** inlet of the post column reactor.
- Connect the "**to detector**" **2** outlet of the post column reactor to the inlet of the detector.

Tighten up all the PEEK connections by hand.

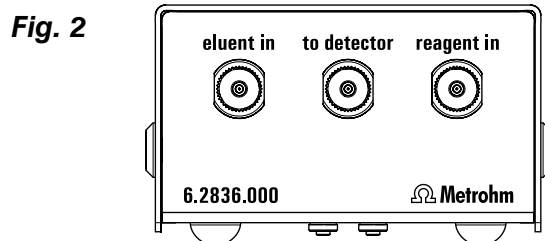


*The inlets "**eluent in**" **1** and "**reagent in**" **3** are both equipped with a check valve to avoid contamination of column and reagent.*

## How it works



- |          |   |
|----------|---|
| <b>1</b> | <b>eluent in</b><br>inlet from column<br>(check valve)                                      |
| <b>2</b> | <b>to detector</b><br>outlet to detector  |
| <b>3</b> | <b>reagent in</b><br>inlet of post column reagent<br>from peristaltic pump<br>(check valve) |
| <b>4</b> | <b>Pulsation dampener</b><br>6.1816.040 Silicone tubing,<br>length 1 m                      |
| <b>5</b> | <b>Mixing chamber</b><br>6.2744.150 PEEK T-piece  |
| <b>6</b> | <b>Mixing reactor</b><br>6.2758.010 PTFE Eluent<br>mixing reactor                           |



**Fig. 1: View of opened reactor from above; with flow diagram**

**Fig. 2: Front view**

## Operation



*Information about the safe and interference-free operation of the post column reactor.*

- Always filter the reagent (e.g. Filter unit PEEK 6.2821.120) to avoid that particles are reaching the reactor.
- The derivatization reagent could damage the separating column. This is why the following sequence has to be followed when starting up the system:

1. Switch on analytical flow of your IC system.
2. Switch on peristaltic pump supplying the reagent.

Proceed in the reverse order when closing down the system.

- The flow rates of the eluent and reagent depend on the particular application. Typical values, such as used for the determination of chromate, are 0.7 mL/min for the eluent flow and 0.5 mL/min for the post column reagent.
- You can use the total flow at the "**to detector**" **2** connection to check whether the post column reactor is working properly. The total flow must correspond approximately to the total of the values set for the eluent flow and the reagent flow; if this is not the case then this could have the following possible causes:
  - There is air in the system. **Solution:** carefully rinse the system until all air bubbles have been removed.
  - Either no reagent at all or not enough is being pumped.  
**Solution:** Set the contact pressure on the peristaltic pump tubing so that the correct amount of post column reagent is delivered.
- The post column reactor is designed for a maximum counterpressure of 5 bar at the "**to detector**" **2** outlet. This value must not be exceeded as otherwise a leak could occur.

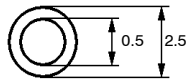
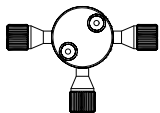
## Technical data

Flow rate peristaltic pump	0.2...0.7 mL/min, typical value 0.5 mL/min
Counterpressure	max. 5 bar
Ambient temperature	+10...+30 °C
Dimensions	width 89 mm, height 54 mm, depth 150 mm
Weight	0.57 kg

## Spare parts



We reserve the right to make alterations !  
All dimensions in mm.

No.	Order no.	Description	
1	6.1816.040	Silicone tubing, length = 1 m Pulsation dampener	
1	6.2744.150	T-piece UNF 10/32, PEEK with 3 pressure screws (PEEK) Mixing chamber	
1	6.2758.010	PTFE eluent mixing reactor, length = 2 m	