



HICHROM

Chromatography Columns and Supplies

**LC CONSUMABLES
AND ACCESSORIES
Knitted Open Tubular
(KOT) Reactor**

Catalogue 9

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KNITTED OPEN TUBULAR (KOT) REACTOR

- Efficient post-column reagent mixing
- Efficient post-column reaction delay
- Made from totally inert PTFE

Knitted Open Tubular (KOT) reactors from Biotech AB are designed to provide an efficient reagent mixing and/or a reaction delay in liquid chromatographic post-column reactions. This is accomplished due to the tortuous path which forces the fast moving centre of the liquid stream to mix radially with the slower moving boundary liquid layer. By minimising axial dispersion, the shape of a chromatographic peak is preserved. To ensure a stable radial mixing within the KOT reactor, a minimum linear flow rate of 10cm/s is recommended (see Table 1).

The KOT reactor is typically inserted in the flow path to create a delay line, so that a reaction that requires a certain time can take place. Different delay or reaction times are accomplished by changing the inner diameter and length of the KOT reactor, taking the flow rate through the KOT reactor into consideration.

KOT reactors are made from translucent PTFE tubing, which is chemically inert and capable of operation at elevated temperatures.



Table 1. Recommended Minimum Flow Rate

Tubing i.d. (mm)	Linear Flow (cm/s)	Volumetric Flow (ml/min)
0.25	10	0.29
0.50	10	1.2
0.75	10	2.7

Application Areas

The delay introduced by the KOT reactor can, for example, be used to allow a mass spectrometer to analyse the eluate and intelligently control a fraction collector connected in parallel (see Figure 1), without loss of chromatographic efficiency.

Biotech KOT reactors can also be used in post-column reaction detection in HPLC (see Figure 2) at both room temperature or above. Typical reactions include the production of fluorescent products from reactions between eluted compounds and reagents.

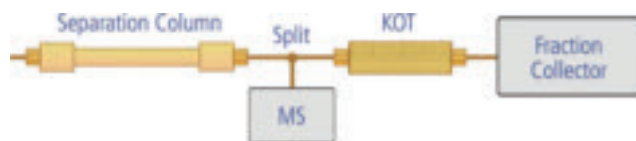


Figure 1. A KOT applied as a delay coil allowing the result from the MS to control the fraction collector

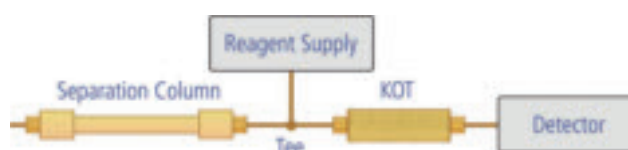


Figure 2. Typical use of a KOT as a mixer and reactor in HPLC post-column reaction detection

Ordering Information

Tubing Length (m)	0.25mm i.d.	0.50mm i.d.	0.75mm i.d.	Price
1	3000-123	3000-125	3000-128	
2	3000-223	3000-225	3000-228	
4	3000-423	3000-425	3000-428	
5	-	3000-525	-	
10	3000-133	3000-135	3000-138	

Most dimensions are also available in black PTFE – intended for light sensitive compounds. Please enquire for details.