

Gel Permeation Chromatography GPC-System for Sample Preparation - Type BASIX



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Manual GPC-System, Type BASIX Main characteristics – Benefits for the user

The processing sequences for sample preparation in pesticide analysis are described o.a. within the AOAC method No. 984.21, USEPA SW-846 method 3640A, EN 12393, EN 1528 and within the L 00.00-34 method in accordance with § 35 LMBG. After extraction, these methods usually require the clean-up of the extract via a gel permeation chromatography (GPC) system. LCTech have developed a suitable GPC-system for this processing step.

This system, however, can also be utilised in many different areas, for example in universities or in R&D of industry. This has been realised through the remarkable flexibility of hardware and the low purchase costs.

Flexible ...

The GPC-system BASIX allows for variable set-ups, for example with regard to the column size used, the injection volume, flow rate, overpressure or underpressure cut-off of the GPC-pump, compressibility of solvents, forerun, main run and tailings and other parameters.

Easy to operate ...

Great effort has been put into the design to make it uncomplicated and easy to understand and operate. Via simple terminal input on the GPC-pump and the LOGO control unit, all important parameters can be defined.

Once the system is switched on, it is immediately ready for operation.

Robust for daily routine operation ...

To warrant smooth operation, all components have been designed to be very robust. All parts wetted by solvents are solvent resistant; materials used are glass, PTFE, stainless steel and PPS-E2. All solvent-carrying pipes are visible and therefore easily inspected and likewise easily exchanged. As a benefit of the robust design, no daily or weekly service needs to be carried out.

Summary...

The GPC-system, Type BASIX, is designed to be especially robust for daily routine operation in the laboratory. It is user friendly, versatile and quiet.

Flexible Configuration

Flexibility through intelligent construction

By careful combination of units already included in the basic equipment and components specified by the user, an extraordinary flexibility of the system can be ensured. Should you have further requirements, please don't hesitate to discuss these with us....

The GPC-system contains the following components:

- ≡ **High-quality LC-duplex pump, analytical or preparative**
- ≡ **Manual injection valve**
- ≡ **Time-controlled fraction on/off valve**
- ≡ **LOGO control unit**
- ≡ **Column stand**
- ≡ **All necessary tubing**

Column (diameter of 0 – 40 mm possible) and sample loop are to be ordered separately. We normally recommend a column with 25 mm inner diameter and a bed length of 320 mm and a 5.0 mL sample loop.

System Control

System parameterisation

Parameterisation is conducted via terminal input on the system and settings on the display of the GPC-pump. The following set-up options on the GPC-system, Type BASIX, are possible:

≡ **GPC-pump**

- Flow - analytical: 0.10 – 9.95 mL/min
- Flow - preparative: 0.40 – 40.00 mL/min
- Under/overpressure cut-off: variable, adjusted to column
- Compressibility: variable, for org. solvents usually 0.70 – 0.75

≡ **Forerun, main run and tailings from 0 to 100 min**

- Start is automatic via operation of the manual injection valve
- Injection by syringe with needle gauge 22



Technical Data / System Components

Measurements and weight, electrical connection

380 x 480 x 650 mm (W x D x H), ca. 12.5 kg
Connection 1x three-pin plug 230 V AC; 50 Hz; CE-certified

GPC-pump

The system contains a robust duplex pump, which has already proved itself many times to be excellently suited for continuous running. This is either a preparative (to be set anywhere between 0.40 and 40.00 mL/min) or an analytical (from 0.10 – 9.95 mL/min) pump. The pump flow rate can be adjusted; pulsation lies below < 1 %. Automatic cut-off on reaching certain thresholds for overpressure or underpressure as well as compressibility are part of the system standard equipment. The pump is solvent resistant and low in maintenance.

Pressure range

This system is permitted for an operational pressure of up to 17.5 bar (250 psi). A higher pressure range should be discussed first with the manufacturer.

Recommended chromatography column

Refillable, DIN-compliant special column; materials subjected to wetting with solvents are glass and PTFE, 1/8"-PTFE-tube at inlet and outlet site, rigid PTFE-base and adjustable plunger, stable construction, high overpressure stability, wearing parts are individually available. If required, any other column may be built in, which is permitted for use in the low and intermediate pressure range. The column is not filled. Filling with 50.0 g Bio-Beads, Type S-X3, 200-400 mesh size is recommended.

Sample Loop

The supplied standard sample loops are made from PTFE and are set to either 5.0 mL or 1.0 mL. A measuring protocol is attached. Other volumes are available upon request. The sample loops can be exchanged without any effort.

Order Details

Systems:

- /// **Gel Permeation Chromatography (GPC) System , Type BASIX™, usable up to 17.5 bar, with preparative HPLC-pump**
(flow rate 0,40 to 40,0 mL/min); with time programmed valve for fraction collection; 240 VAC, 50 Hz
Order Number GPC-BASIX
- /// **Gel Permeation Chromatography (GPC) System , Type BASIX™, usable up to 200 bar, with preparative HPLC-pump**
(flow rate 0,40 to 40,0 mL/min); with time programmed valve for fraction collection; 240 VAC, 50 Hz
Order Number GPC-BASIX-HP
- /// **Gel Permeation Chromatography (GPC) System , Type BASIX™, usable up to 17.5 bar, with analytical HPLC-pump** (flow rate 0,10 to 9,95 mL/min); with time programmed valve for fraction collection; 240 VAC, 50 Hz
Order Number GPC-BASIX-A
- /// **Gel Permeation Chromatography (GPC) System , Type BASIX™, usable up to 400 bar, with analytical HPLC-pump** (flow rate 0,10 to 9,95 mL/min); with time programmed valve for fraction collection; 240 VAC, 50 Hz
Order Number GPC-BASIX-AHP

Accessories:

- /// **Column D25, unfilled,**
column ID 25 mm, OD 40 mm, filling length between 305 and 365 mm
Order Number GPC10010
 - /// **Column D25, filled** with 50 g Bio-Beads (Column GPC10010 / GPC10011)
Order Number GPC10011
 - /// **Column** filling kit (only for LCTech-Column GPC10010 / GPC10011)
Order Number GPC10012
 - /// **Refill** (Column GPC10010) with 50 g Bio-Beads
Order Number GPC10013
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- /// **Column D10, unfilled,**
column ID 10 mm, OD25 mm, filling length between 300 and 365 mm
Order Number GPC20010
 - /// **Column D10, filled** with 10 g Bio-Beads (Column GPC20010 / GPC20011)
Order Number GPC20011
 - /// **Column filling kit** (only for LCTech-Column GPC20010 / GPC20011)
Order Number GPC20012
 - /// **Refill** (Column GPC20010) with 10 g Bio-Beads
Order Number GPC20013
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- /// **Bio-Beads, SX-3,** 200 – 400 mesh size, VE = 100
Order Number GPC10001
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- /// **Sample loop 5.0 mL,**
Sample loop with fitting, adjusted to 5 mL, measuring protocol included
Order Number INJ-5
 - /// **Sample loop 1.0 mL,**
Sample loop with fitting, adjusted to 1 mL, measuring protocol included
Order Number INJ-1
 - /// **Sample loop 5.0 mL,**
Sample loop with fitting, adjusted to 5 mL, material stainless steel
Order Number INJ-5-HP
 - /// **Sample loop 1.0 mL**
Sample loop with fitting, adjusted to 1 mL, material stainless steel
Order Number INJ-1-HP
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- /// **Laboratory bottle** made of glass, 10.000 mL, screw thread GL 45 for **solvent supply**; with special sealing cap with separate options for the GPC pump and the syringe pump; 1/8 "-connection
Order Number F10000-DV
- /// **Laboratory bottle** made of glass, 10.000 mL, screw thread GL 45 with special sealing cap; connectable to **waste-line**
Order Number F10000-D