



## Product Description and Specification

Catalog No 21	Description
<b>Synthra RadChrom plus</b>	<b>Synthra RadChromplus is a completely radio/UV-HPLC system for routine quality control of any radio tracer.</b> To measure the radiochemical purity is simple, with easy-to-use and validated software Chromstar 7. Synthra offers two basic modules. One with an isocratic pump and a second one with a quaternary gradient pump. Both modules can be upgraded individually.

The isocratic unit is equipped with an isocratic pump. The integrated vacuum degasser supplies gas free solvents. Optional the RadChromplus is available with a quaternary pump.

The variable wavelength detector can record any wavelength between 190 - 900 nm.

1<sup>st</sup> Option: Dual-wavelength upgrade to record two channels at the same time.

2<sup>nd</sup> Option: The **RadChromplus** is provided with a diode array detector (DAD).

The isotopic detector records only  $\beta$  particles for a light and compact radio/UV-HPLC system without heavy lead shielding.

The integrated column oven (20 - 100 °C) can take 250 mm long columns.

With an upgrade it can contain up to four columns. The columns will be selected by a switching valve. Then the module can be used for a radiochemical analysis of four different tracers.

The system provides a manual injection valve to avoid radiation safety issues when using an autosampler. One injection needs only 20  $\mu$ L of the sample probe.

All wetted stainless steel parts like tubing, pump head, relief valve, flow cell and column are available in PEEK.

A portable PC for controlling the RadChromplus with min. 320 GB hard disk drive, 4 GB RAM, CD/DVD reading/writing, 15" screen and LAN port is included. The RadChromplus is controlled via USB from the provided notebook.

The software ChromStar 7 has a complete new structure and concept offering an even easier and faster user control and in particular an improved and simplified data management. With the great flexibility of ChromStar 7 all liquid chromatography processes are simple to carry out in full compliance with the GLP guidelines. ChromStar 7 gives an unlimited access to all the advantages of networks and supports national and international regulations such as 21 CFR Part 11.

## **Features RadChromplus, isocratic version :**

- **Variable wavelength detector**
  - Baseline Noise:  $\pm 1 \times 10^{-5}$  AU (240 nm, 1 s risetime)
  - Baseline Drift:  $2 \times 10^{-4}$  AU/h
  - Wavelength range: 190 - 900 nm, accuracy:  $\pm 2$  nm
  - Light source: Deuterium and tungsten lamp
  - Output:  $1 \times 1$  V (one channel)
- **Isocratic pump**
  - Micro: Flow rate 0.001 – 2.000 mL/min (0 – 40 bar)
  - Analytical: Flow rate 0.001 – 10.000 mL/min (0 – 40 bar)
  - Preparative: Flow rate 0.1 – 30.0 mL/min (0 – 25 bar)
  - Pressure pulsation: typical < 1 bar or < 1%
- **Vacuum degasser**
- **Manual injection valve (20  $\mu$ L sample loop)**
- **One radioactive radiation detector (One radioactive radiation detector (diode technology, only  $\beta$  particles or scintillation detector for  $\gamma$ emitters)**
- **One eluent solvent supply bottle**
- **The unit as well as the software are easy to set up and operate**
- **Electronic control and data collection system via USB**
- **cGMP compliance complete logbook for cGMP documentation**
- **Password protected access to software**
- **Computer, software (Windows 7, ChromStar 7) and mouse included**

## Features RadChromplus, quarternary version:

- **Variable wavelength detector**
  - Baseline Noise:  $\pm 1 \times 10^{-5}$  AU (240 nm, 1 s risetime)
  - Baseline Drift:  $2 \times 10^{-4}$  AU/h
  - Wavelength range: 190 - 900 nm, accuracy:  $\pm 2$  nm
  - Light source: Deuterium and tungsten lamp
  - Output:  $1 \times 1$  V (one channel)
- **Quarternary gradient pump**
  - Micro: Flow rate 0.001 – 2.000 mL/min (0 – 40 bar)
  - Analytical: Flow rate 0.001 – 10.000 mL/min (0 – 40 bar)
  - Preparative: Flow rate 0.1 – 30.0 mL/min (0 – 25 bar)
  - Pressure pulsation: typical < 1 bar or < 1%
  - Gradient Range: 0.0 - 100.0 %, 4 channels
  - Gradient Accuracy: < 0.25 %
  - Gradient mixing: active
  - Mixing volume: adjustable: 10 - 500  $\mu$ L
- **Vacuum degasser**
- **Column oven (20 °C - 100 °C)**
- **Manual injection valve (20  $\mu$ L sample loop)**
- **One radioactive radiation detector (One radioactive radiation detector (diode technology, only  $\beta$  particles or scintillation detector for  $\gamma$ emitters))**
- **Four eluent solvent supply bottles**
- **The unit as well as the software are easy to set up and operate**
- **Electronic control and data collection system via USB**
- **cGMP compliance complete logbook for cGMP documentation**
- **Password protected access to software**
- **Computer, software (Windows 7, ChromStar 7) and mouse included**

### Optional in both systems

- UV-detector upgrades:  $2 \times 1$  V (2 channels) or DAD
- Column oven (RT - 100 °C)
- Column oven upgrade: Up to four columns and column switching valve
- All wetted stainless steel parts are available in PEEK
- GM counter/NaI crystal with lead shielding
- Fraction collector



**Synthra RadChromplus**

### **Specifications:**

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Dimensions	43 × 45 × 23 (w × d × h in cm) without bottles
Weight	Approx. 19 kg (without lead shielding)

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