

Gas Chromatograph Fraction System

# VPS2800



# Overview GC Preparative System VPS2800

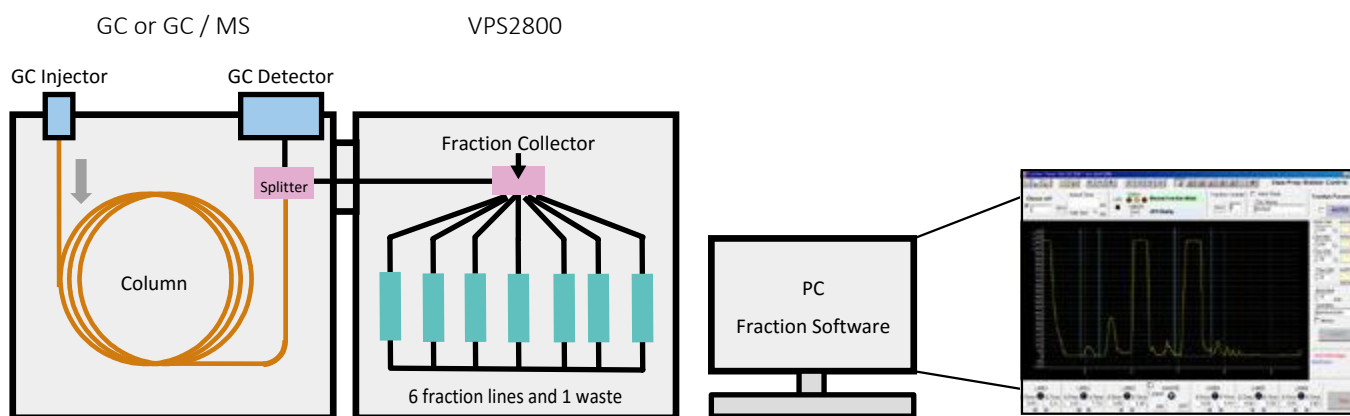


A Preparative Gas Chromatograph System can collect the target compounds which were separated by Gas Chromatography.

A highly inert and unique internal flow path is introduced with the VPS2800.

- Electronic cooling system, to achieve a high recovery (Stirling cooling technology)
- Low running cost because of no need for Liquid Nitrogen
- The sample flow path does not absorb any compounds due to no-cold spots, high temperature and a highly inert flow path
- Collecting the sample can be done in automatic or manual mode

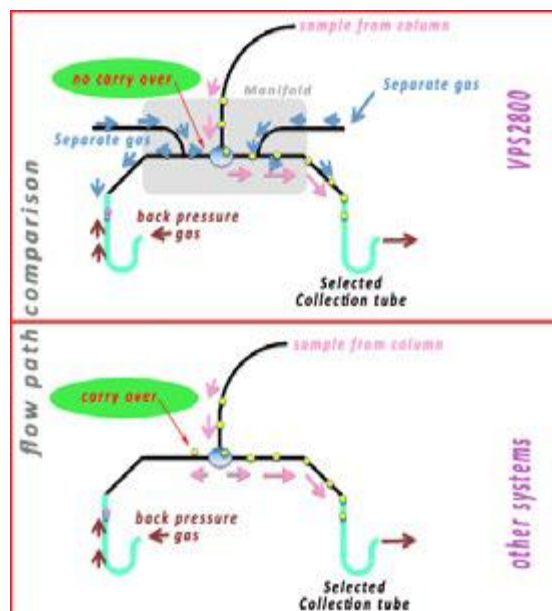
## Schematic System Overview



## No absorption and contamination with unique flow path

Components coming from the column pass through the manifold and are recovered in one of the preparative tubes by switching the back pressure gas.

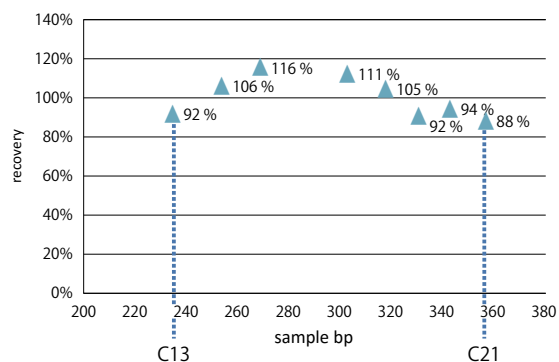
In order to prevent contamination, the VPS2800 uses a separate gas for sealing the entrance of the preparative tube which it is not in use. The unique GL Sciences deactivation of the sample lines reduces the absorption effect resulting in very precise fractions of the sample (chromatogram).



## High recovery

The instrument is designed to have no cold spots. The high temperature of the transfer line and manifold results in high recovery of the sample, even for high-boiling components.

The figure on the right shows recovery data of collected hydrocarbons (C13-C21) with 1% 5µl, 5 times injected. It is possible to have a high recovery for more high boiling compounds with a boiling point around 350°C.



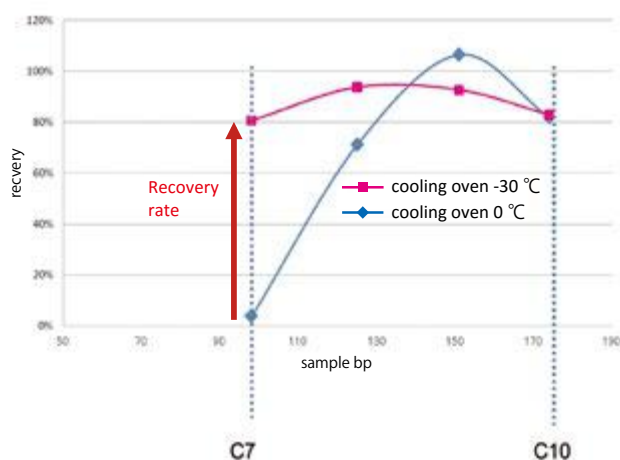
## Equipped with next-generation electronic cooling function

The electronic cooler is a completely new cooling mechanism, it is using the intake and exhaust heat during compression and expansion of the refrigerant gas (Helium) in a closed circuit. The Stirling cooler is electrical driven and no liquid nitrogen is needed for cooling.

The VPS2800 comes standard with this environmentally friendly, low-cost and safe cooling.

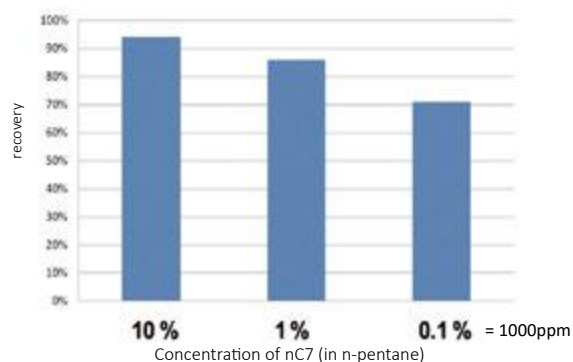
### Effect of Sterling cooler

- Improvement of the recovery rate by the cooling



- Recovery of low boiling components

Straight-chain saturated hydrocarbon (C7) (boiling point 98°C) each concentration 5 µl, 5 injections  
Surface cooling set temperature: -80°C.



\*Patent pending for FPSC cooling in fraction collector.

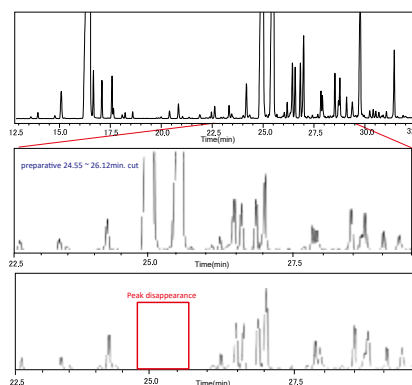
## Option for Shimadzu instruments

### Shimadzu MDGC Switching device

When combined with Shimadzu GC-2010 Plus and MDGC switching devices, it becomes possible to collect the complete peak and not a split of the peak. Target peaks are disappeared completely from the chromatogram and transferred to the VPS2800.

The Shimadzu MDGCsolution Software makes it easy to select a peak in the chromatogram and send it to the VPS2800.

Contact Shimadzu for more information.



Example of essential oil

## Specifications

Number of fraction tubes		7 pcs. (Including waste line)
Gas-input connections		O.D. 1/8" Swagelok®
Gas exhaust		O.D. 5 mm tube
Heating oven	Thermostatic	Forced air circulation system
	Temperature range	60 ~ 380°C
	Safety mechanism	Temperature runaway prevention, heating and fan stop when the door is open
Cooling oven	Thermostatic	Forced air circulation system
	Cooling mechanism	FPSC (Free piston Stirling system refrigerator)
	Temperature range	Forced air 0 ~ -30°C Cooling block surface 0 ~ -60°C (-80°C possible when lab temperature is below 25°C)
	Safety mechanism	Temperature runaway prevention, cooling and fan stop when the door is open
Transfer line	Temperature control	SSR zero cross proportional control
	Temperature range	60 ~ 380°C
	Safety mechanism	Temperature runaway prevention
I / O	PC communication	Serial RS-232C
	Analog signal input	DC -0.1 ~1.2 V
	Logic Signals input	START, READY
	Logic Signal output	READY
Installation environment	Temperature	10 to 30°C
	Humidity	less than 85% RH
Recommended OS		Windows 7 Professional (32 bit or more)
Memory		Minimum 4 GB
Communication port		RS-232C 1 serial port
Size		500 (W) ×500 (D) × 440 (H) mm
Weight		About 45 kg
Power supply		AC100 V 50/60 Hz Max.1500 VA

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