

Agilent 990 Micro GC Channel CP-Molsieve 5Å

Introduction

The Agilent 990 Micro GC system has been designed to accommodate up to four analytical channels. Each channel has its own MEMS-based inlet, isothermal column, and micro TCD detector.

These channels are available in > 15 different column chemistries and > 60 unique configurations. Agilent offers different lengths in straight or backflush (BF) configurations. Backflush allows heavier compounds to be backflushed, leaving a clean column and faster analysis. Backflush to detector (BF2D) backflushes to the detector instead of the vent using pretuned restrictions. This results in a composite peak for the backflushed compounds, typically C6+.

RTS carrier gas filtering, available on CP-Molsieve 5Å channels only, removes trace CO₂ and water from the carrier gas for excellent RT stability.

Agilent CP-Molsieve 5Å channels for the 990 Micro GC are ideal for fast, high-resolution separation of permanent gases (N₂, O₂, CO, H₂, CH₄) and noble gases (He, Ar, Ne). Separation of Ar/O₂ can reliably be achieved on the 20 m versions.

Table 1. Available CP-Molsieve 5Å channels for the Agilent 990 Micro GC.

Part Number	Description	Length (m)	Precol (m)	Backflush
G3588-63712	Molsieve 5Å, 4 m, HI, straight, Factl	4		No
G3588-63714	Molsieve 5Å, 10 m, HI, straight, Factl	10		No
G3588-63514	Molsieve 5Å, 10 m, HI, straight, RTS, Factl	10		No
G3588-63716	Molsieve 5Å, 20 m, HI, straight, Factl	20		No
G3588-63516	Molsieve 5Å, 20 m, HI, straight, RTS, Factl	20		No
G3588-63914	Molsieve 5Å, 10 m, HI, BF 1 m, Factl	10	1	Yes
G3588-63544	Molsieve 5Å, 10 m, HI, BF 1 m, RTS, Factl	10	1	Yes
G3588-63934	Molsieve 5Å, 10 m, HI, BF 3 m, Factl	10	3	Yes
G3588-63584	Molsieve 5Å, 10 m, HI, BF 3 m, RTS, Factl	10	3	Yes
G3588-63954	Molsieve 5Å, 10 m, HI, BF 5 m, Factl	10	5	Yes
G3588-63594	Molsieve 5Å, 10 m, HI, BF 5 m, RTS, Factl	10	5	Yes
G3588-63916	Molsieve 5Å, 20 m, HI, BF 1 m, Factl	20	1	Yes
G3588-63546	Molsieve 5Å, 20 m, HI, BF 1 m, RTS, Factl	20	1	Yes
G3588-63985	Molsieve 5Å, 20 m, HI, BF 3 m, Factl	20	3	Yes
G3588-63585	Molsieve 5Å, 20 m, HI, BF 3 m, RTS, Factl	20	3	Yes

Product features

Configuration

- CP-Molsieve 5Å
- PoraBOND Q backflush column (optional)
- RTS filtering (optional)

Control

- Independent control of channel
- Pneumatics, including proportional column pressure programming
- Independent column, injector, and detector settings

Injector

- Micromachined injector with no moving parts
- Injection volume of 1 to 10 µL, software selectable injection time
- Heated injector, up to 110 °C, including heated sample transfer line

Column¹

- Temperature range: up to 180 °C, isothermal

Detector

- Micromachined thermal conductivity detector (TCD)
- Dual-channel TCD (sample/reference flow)
- Internal volume: 200 nL per channel
- Four filaments

Detection limit, TCD^{1,4}

- See Table 2

Operating range, TCD

- Linear dynamic range²: 10⁵

Repeatability¹

- See Table 2

Carrier gas³

- He, H₂, N₂, or Ar, 550 ± 10 kPa (80 ± 1.5 psi) input

Sampling

- Sample inlet: 1.6 mm (1/16 in) stainless steel Valco fitting with replaceable 5 µm SST filter
- Sample conditions: noncondensing gas of 0 to 110 °C
- Maximum sample inlet pressure: 100 kPa (14.5 psi)

Environmental conditions

- Ambient operating temperature: 0 to 50 °C
- Ambient operating humidity: 5 to 95% relative humidity (noncondensing)
- Storage extremes: –40 to 70 °C
- Altitude: Up to 2,000 m above sea level

¹ Specifications are determined under specific test conditions for this channel and are valid for new channels only. Results may vary with different conditions used and may degrade with use.

² For full range calibrations (low ppm to 100%), multilevel calibration is strongly advised.

³ Hydrogen carrier is not permitted on the Agilent 990 Mobile Micro GC system.

⁴ Detection limits are determined with He carrier.

Table 2. Specifications for all available CP-Molsieve 5A channels for the Agilent 990 Micro GC.^{1,4}

Part Number	Description	Length (m)	Precol (m)	Backflush	Detection Limit (ppm) (As Neon)	Repeatability (% RSD) (Peak Area at 0.2%)
G3588-63712	Molsieve 5Å, 4 m, HI, straight, FactI	4		No	2	< 1
G3588-63714	Molsieve 5Å, 10 m, HI, straight, FactI	10		No	2	< 1
G3588-63514	Molsieve 5Å, 10 m, HI, straight, RTS, FactI	10		No	2	< 1
G3588-63716	Molsieve 5Å, 20 m, HI, straight, FactI	20		No	2	< 1
G3588-63516	Molsieve 5Å, 20 m, HI, straight, RTS, FactI	20		No	2	< 1
G3588-63914	Molsieve 5Å, 10 m, HI, BF 1 m, FactI	10	1	Yes	2	< 1
G3588-63544	Molsieve 5Å, 10 m, HI, BF 1 m, RTS, FactI	10	1	Yes	2	< 1
G3588-63934	Molsieve 5Å, 10 m, HI, BF 3 m, FactI	10	3	Yes	2	< 1
G3588-63584	Molsieve 5Å, 10 m, HI, BF 3 m, RTS, FactI	10	3	Yes	2	< 1
G3588-63954	Molsieve 5Å, 10 m, HI, BF 5 m, FactI	10	5	Yes	2	< 1
G3588-63594	Molsieve 5Å, 10 m, HI, BF 5 m, RTS, FactI	10	5	Yes	2	< 1
G3588-63916	Molsieve 5Å, 20 m, HI, BF 1 m, FactI	20	1	Yes	2	< 1
G3588-63546	Molsieve 5Å, 20 m, HI, BF 1 m, RTS, FactI	20	1	Yes	2	< 1
G3588-63985	Molsieve 5Å, 20 m, HI, BF 3 m, FactI	20	3	Yes	2	< 1
G3588-63585	Molsieve 5Å, 20 m, HI, BF 3 m, RTS, FactI	20	3	Yes	2	< 1

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This information is subject to change without notice.

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