

Agilent 990 Micro GC CP-Al₂O₃/KCl Channels

Introduction

The Agilent 990 Micro GC system has been designed to accommodate up to four analytical channels. Each channel holds 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) configuration. Backflush allows heavier compounds to be backflushed, leaving a clean column and enabling 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+.

Agilent J&W CP-Al₂O₃/KCl channels for the 990 Micro GC offer high selectivity for separating C1 to C5 hydrocarbons in process streams, and separating paraffins and olefins. They are commonly used in refinery gas analysis.

Table 1. Available J&W CP-Al₂O₃/KCl channels for the Agilent 990 Micro GC system.

Part Number	Description	Length (m)	Precolumn (m)	BF
G3588-63713	MGC Al ₂ O ₃ , 10 m, HI, Str, Factl	10	–	No
G3588-63756	MGC Al ₂ O ₃ , 20 m, HI, Str, Factl	20	–	No
G3588-63933	MGC Al ₂ O ₃ , 10 m, HI, BF 0.2 m, Factl	10	0.2	Yes
G3588-63913	MGC Al ₂ O ₃ , 10 m, HI, BF 1 m, Factl	10	1	Yes
G3588-63956	MGC Al ₂ O ₃ , 20 m, HI, BF 1 m, Factl	20	1	Yes
G3588-63943	MGC Al ₂ O ₃ , 10 m, HI, BF2D, Factl	10	Tuned	Yes, BF2D

Product features

Configuration

- J&W CP-Al₂O₃/KCl phase
- J&W CP-Al₂O₃/KCl or CP-Sil 5 CB backflush (optional)
- BF to detector (optional)

Control

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

Injector

- Micromachined injector with no moving parts
- Injection volume: 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% RH (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 All specifications are determined with He carrier.

Table 2. Specifications for all available J&W CP-Al₂O₃/KCl channels for the Agilent 990 Micro GC.¹⁴

Part Number	Description	Length (m)	Precolumn (m)	Backflush	Detection Limit (As n-C5)	Repeatability (Peak Area at 0.2%)
G3588-63713	MGC Al ₂ O ₃ , 10 m, HI, Str, FactI	10	–	No	1.0 ppm	< 1.0% RSD
G3588-63756	MGC Al ₂ O ₃ , 20 m, HI, Str, FactI	20	–	No	1.0 ppm	< 1.0% RSD
G3588-63933	MGC Al ₂ O ₃ , 10 m, HI, BF 0.2 m, FactI	10	0.2	Yes	1.0 ppm	< 1.0% RSD
G3588-63913	MGC Al ₂ O ₃ , 10 m, HI, BF 1 m, FactI	10	1	Yes	1.0 ppm	< 1.0% RSD
G3588-63956	MGC Al ₂ O ₃ , 20 m, HI, BF 1 m, FactI	20	1	Yes	1.0 ppm	< 1.0% RSD
G3588-63943	MGC Al ₂ O ₃ , 10 m, HI, BFtoDET, FactI	10	Tuned	BF2D	1.0 ppm	< 1.0% RSD

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This information is subject to change without notice.

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