Data Sheet

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Agilent 990 Micro GC Hayesep A 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 HayeSep A is a robust choice for permanent gases up to C3. It efficiently separates critical components in natural gas (air composite, methane, carbon dioxide, ethane, and propane) in less than 2 minutes.

Table 1. Available HayeSep A channels for Agilent 990 Micro GC.

Part Number	Description	Length (m)	Precolumn (m)	BF
G3588-63747	MGC HSA-NG, 25 cm, HI, Str, FactI	0.25	–	No
G3588-63728	MGC HSA-NG, 40 cm, HI, Str, FactI	0.4	–	No
G3588-63928	MGC HSA, 40 cm, HI, BF 1 m, FactI	0.4	1	Yes
G3588-63779	MGC HSA-NG, 40 cm, HI, straight, bundled, FactI	0.4	–	No

Product features

Configuration

- HayeSep A phase
- HayeSep A backflush column (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: 1 to 10 µL, software-selectable injection time
- Heated injector temperature: up to 110 °C, including heated sample line transfer, except for G3588-63779, which is up to 80 °C[5]

Column[1]

- Temperature range: up to 160 °C, isothermal
- Resolution: see Table 2

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 range[2]: 10^5

Repeatability[1]

See Table 2

Carrier gas[3]

He, H_2, N_2, 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 for all, except G3588-63779, which has extended temperature range of –5 to 55 °C[5]
- 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 Mobile 990 Micro GC system.

[4] Detection limits are determined with He carrier.

[5] Sensitivity on bundled channels may be slightly lower than on comparable regular channels, as the TCD runs cooler at maximum injector temperature (80 °C).

Table 2. Specifications for all available HayeSep A channels for the Agilent 990 Micro GC.[1,4]

Part Number	Description	Length (m)	Precolumn (m)	BF	Resolution (N_2/Methane at 0.8%/85%)	Detection Limit (As CO_2)	Repeatability (Peak Area at 0.8/8/85%)
G3588-63747	MGC HSA-NG, 25 cm, HI, Str, FactI	0.25	–	No	6.5*	2.4 ppm	< 1% RSD
G3588-63728	MGC HSA-NG, 40 cm, HI, Str, FactI	0.4	–	No	1.2	1.8 ppm	< 0.4% RSD
G3588-63928	MGC HSA, 40 cm, HI, BF 1 m, FactI	0.4	1	Yes	0.9	1.8 ppm	< 0.4% RSD
G3588-63779	MGC HSA-NG, 40 cm, HI, straight, bundled, FactI	0.4	–	No	1.2	3 ppm	< 0.4% RSD

* Resolution measured as N_2/ethane (0.8%/8%)

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