Agilent

Trusted Answers

990 Micro GC

Data Sheet Compendium

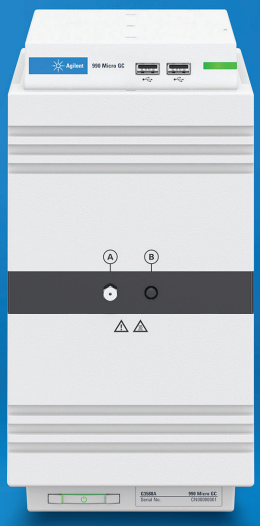

Table of Contents

Data Sheet

Agilent
Trusted Answers

Agilent 990 Micro GC

Introduction

The Agilent 990 Micro GC system is the next generation of Agilent Micro GCs, incorporating state-of-the-art technology also used in industry-leading bench GCs. The 990 takes flexibility, usability, and servicability to a next level.

The 990 makes a difference compared to its predecessors as well as its competition by:

Unmatched speed of analysis. Clever selection of short, narrow bore, and high-speed columns in combination with a backflush option provides the fastest cycle times in the market.

Enhanced flexibility. The 990 takes modularity to a next level. Changing GC channels has never been easier. You are up and running in less than 10 minutes. With 14 column chemistries to choose from, there is always a perfect match to any application.

Sensitivity in gas analysis. Whether you are interested in gas composition, odorants, air quality, mine safety, or mud logging, the 990 is your number one choice, providing lab-quality results with unmatched repeatability and sensitivity down to 0.5 ppm.

Sample handling accessories. A wide variety of sample handing accessories meets the needs of your in-lab or field analysis, including:

- A full range of Stream Selector Valves for easy switching between samples and calibration or verification gas
- Genie filters to ensure that no droplets nor particles enter the injector
- A touchscreen for quick status updates
- Optional sample pressure-reducing equipment

Table 1. Product dimensions and weight.

Instrument	Height		Width		Length		Weight*	
	in	cm	in	cm	in	cm	lb	kg
Micro GC	11.13	28.28	5.71	14.50	12.97	32.94	16.0	7.3
Micro GC with Channel Extension Cabinet Installed	11.13	28.28	11.83	30.04	12.97	32.94	34.5	15.6
Power Supply	1.8	4.6	3.3	8.5	8.3	21.0	2.4	1.1
Mobile Micro GC Quad Channel	10.6	26.9	16.0	40.6	21.2	53.8	82.67	37.5

* The weight may vary due to different analytical configurations.

Product features

Configuration

- One to four analytical GC columns

Control

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

Injector

- Micro-machined 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
- Optional backflush capability

Column oven

Temperature range: up to 180 °C, isothermal

Available column chemistries:

- CP-Sil 5 CB
- CP-Sil 5 CB for NGA
- CP-Sil 13 CB for TBM
- CP-Sil 19 CB
- CP-Sil 19 CB for THT
- CP-WAX 52 CB
- Molesieve 5A
- Aluminum oxide
- PoraPLOT Q
- PoraPLOT U
- Hayesep A
- COX
- SilicaPLOT
- Proprietary MeS in NGA

Detector

- Micro-machined thermal conductivity detector (TCD)
- Dual-channel (sample and reference flow)
- Internal volume 200 nL per channel
- Four filaments

Detection limits, TCD

Detection limits are typical for selected components, provided that the proper column length and chromatographic conditions are used.

- 0.5 ppm for WCOT capillary columns (CP-Sil 5 CB, CP-Sil 13 CB, CP-Sil 19 CB, and CP-WAX 52 CB) in 4 to 10 m length
- 2 ppm for PLOT columns (Molsieve 5A, PoraPLOT Q, PoraPLOT U, Aluminum oxide, SilicaPLOT, MeS)
- 10 ppm for Micropacked columns (Hayesep)
- 10 ppm for Micropacked columns (Carboxene)

Operating range, TCD

- Concentration: 0.5 ppm to 100 % level
- Linear dynamic range: 10^5 (0.5 ppm to 5%) for example, propane on a CP-Sil 5 CB channel
- For full range (low ppm to 100%), multilevel calibration is advised

Repeatability

<0.5 % RSD for propane at 1 mol % level for WCOT columns at constant temperature and pressure

Carrier gas

- He, H_2, N_2, or Ar, 550 ±10 kPa (80 ±1.5 psi) input
- Every channel can be operated with its own carrier gas.
- Inlet connection, 3.2 mm (1/8 in) stainless steel compression fitting

Sampling

- Sample inlet: 1.6 mm (1/16 in) stainless steel Valco fitting with replaceable 5 µm stainless steel filter
- Sample conditions: noncondensing gas of 0 to 110 °C
- Maximum sample inlet pressure: 100 kPa (14.5 psi)
- Software selectable sample pump or continuous flow
- Relay control for stream selection (extension boards required)
- Support of up to three multi position stream selection valves
- Optional manual sample inlet

Communications

See Table 2.

Data handling software

The 990 Micro GC is controlled by Agilent OpenLab CDS 2.x, Agilent OpenLab CDS EZChrom edition, and Agilent OpenLab CDS ChemStation edition.

- Natural gas physical properties calculations such as: calorific value, relative denstity, wobbe-index in accordance with ISO 6976, GPA 2172, and ASTM D3588
- OpenLab intelligent reporting provides custom reporting and calculations

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

Table 2. Communications.

Port	Connection	Agilent 990 Micro GC	Agilent 990 Mobile Micro GC	Agilent 990-PRO Micro GC
LAN	Ethernet	Interface with PC	Interface with PC	Interface with PC
COM1	RS232	VICI Valve	VICI Valve	VICI Valve, Modbus[1]
COM2 and COM3	RS232 RS422 RS485 2-wire RS485 4-wire	Not available	Not available	Modbus[1,5]
Digital and Analog I/O		Digital I/O[2] Ready in – ready out Start in – start out	Digital I/O[2] Ready in – ready out Start in – start out	Digital Analog I/O[2] Ready in – ready out Start in – start out Extension boards[1,3]
HDMI	HDMI	LCD[3]	LCD[3,4]	LCD[3]
USB	USB	VICI Valve[6] WIFI interface	VICI Valve[6] WIFI interface USB storage License dongle	VICI Valve[6] WIFI interface USB storage License dongle
CAN	CAN	Channel Extension Cabinet connection		Channel Extension Cabinet connection

1. Requires a PRO license.
2. Y cable is available (part number G3588-60825).
3. Optional accessory.
4. This port is hidden inside the case, only for internal connection.
5. The plastic cover on the side of top assembly must be removed.
6. Requires a USB-to-RS232 converter.

990 Micro GC power requirements

- Power source: 100 to 240 VAC, 50/60 Hz
- GC Input: 12 VDC, 150 W max
- Must only use the power supply provided with your Micro GC

Safety and regulatory certification

- Name: 990 Micro GC
- Regulatory Model Number: RMN3588A

Conforms to the following safety standards:

- Canadian Standards Association (CSA) C22.2 No. 61010-1
- Nationally Recognized Test Laboratory (NRTL): ANSI/UL 61010-1
- International Electrotechnical Commission (IEC): 61010-1, 61010-2-010, 61010-2-081
- EuroNorm (EN): 61010-1

Conforms to the following regulations on Electromagnetic Compatibility (EMC) and Radio Frequency Interference (RFI):

- CISPR 11/EN 55011: Group 1, Class A
- IEC/EN 61326-1
- AS/NZS CISPR11
- This ISM device complies with Canadian ICES-001. Cet appareil ISM est conforme à la norme NMB-001 du Canada.
- Designed and manufactured under a quality system registered to ISO 9001; Declaration of Conformity available.
- This product complies with the EU RoHS Directive 2011/65/EU, and conforms to EN 50581.

www.agilent.com

This information is subject to change without notice.

© Agilent Technologies, Inc. 2019
Printed in the USA, October 17, 2019
5994-1273EN

Agilent
Trusted Answers

Data Sheet

Agilent

Trusted Answers

Agilent 990 Mobile Micro GC

Introduction

Taking your lab to your sample has never been easier. With the Agilent 990 Mobile Micro GC, you can analyze your gas samples wherever and whenever it is needed.

The field case, containing up to four GC channels, provides fast, repeatable, and lab-quality analysis results like its 990 lab version. Equipped with batteries and gas canisters, you are independent of external gas and power for up to 16 hours.

The optional mobile license enables you to wirelessly connect through a phone or tablet, effectively eliminating the need to carry cables and a laptop. Analysis results can be viewed in full or reported in true/false. Configurable alarms further improve follow-up actions by the operator.

Some of the key features include:

- **Rugged field case.** An industry standard field case ensures that your valuable equipment arrives in ready-to-go condition at the analysis site.
- **Ultimate flexibility.** The one-size field case accommodates one to four 990 Micro GC channels. These are installed in minutes, and are compatible with the lab version 990 Micro GC system.
- **Enhanced usability.** Two high-performance batteries and two gas cannisters ensure up to 16 hours of operation.
- **Wireless connectivity.** The optional mobile license enables wireless connection with your phone or tablet, eliminating the use of cables and laptops, significantly reducing your carry-on luggage.

Table 1. Product dimensions and weight.

Instrument	Height		Width		Length		Weight*	
	in	cm	in	cm	in	cm	lb	kg
Micro GC	11.13	28.28	5.71	14.50	12.97	32.94	16.0	7.3
Micro GC with Channel Extension Cabinet Installed	11.13	28.28	11.83	30.04	12.97	32.94	34.5	15.6
Power Supply	1.8	4.6	3.3	8.5	8.3	21.0	2.4	1.1
Mobile Micro GC Quad Channel	10.6	26.9	16.0	40.6	21.2	53.8	82.67	37.5

* The weight may vary due to different analytical configurations.

Product features

Field case configuration

- One to four analytical GC columns in one field case

Field case handling

The field case is equipped with:

- Wheels and a trolley function for easy transportation
- Second handle bar for easy lifting

Power, batteries, and charging

- The field case is equipped with a maximum of two high-performance batteries
- Expected up-time is up to 16 hours
- Alternatively, the field case can be operated by external power
- Advanced charging (fast and trickle, depending on status) automatically starts when connected to external power
- Real-time monitoring of status (temperature, charging/discharging current)
- Carrier gas, on-board and external
- The field case is equipped with a maximum of two gas modules and cannisters
- Quick-release levers for easy removal and refilling
- Per cylinder: 150 mL and 124 bar maximum pressure
- Suitable for He, N_2, Ar
- External carrier gas: 550 ±10 kPa (80 ±1.5 psi) input

Control

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

Injector

- Micro-machined 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
- Optional backflush capability

Column oven

Temperature range, up to 180 °C, isothermal

Available column chemistries:

- CP-Sil 5 CB
- CP-Sil 5 CB for NGA
- CP-Sil 13 CB for TBM
- CP-Sil 19 CB
- CP-Sil 19 CB for THT
- CP-WAX 52 CB
- Molesieve 5A
- Aluminumoxide
- PoraPLOT Q
- PoraPLOT U
- Hayesep A
- COX
- SilicaPLOT
- Proprietary MeS in NGA

Detector

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

Detection limits, TCD

Detection limits are typical for selected components, provided that the proper column length and chromatographic conditions are used.

- 0.5 ppm for WCOT capillary columns (CP-Sil 5 CB, CP-Sil 13 CB, CP-Sil 19 CB, and CP-WAX 52 CB) in 4 to 10 m length
- 2 ppm for PLOT columns (Molsieve 5A, PoraPLOT Q, PoraPLOT U, Aluminum oxide, SilicaPLOT, MeS)
- 10 ppm for Micropacked columns (Hayesep)
- 10 ppm for Micropacked columns (Carboxene)

Operating range, TCD

- Concentration: 0.5 ppm to 100% level
- Linear dynamic range: 10^5 (0.5 ppm to 5% for propane on CP-Sil 5 CB channel)
- For full range (low ppm to 100%), multilevel calibration is advised

Repeatability

- <0.5 % RSD for propane at 1 mol %level for WCOT columns at constant temperature and pressure

Carrier gas

- He, N_2, or Ar, 550 ±10 kPa (80 ±1.5 psi) input
- Do not use H_2 as a carrier for the Mobile 990 Micro GC
- Every channel can be operated with its own carrier gas
- Inlet connection, 3.2 mm (1/8 in) stainless steel compression fitting

Sampling

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

- Software selectable sample pump or continuous flow
- Relay control for stream selection (extension boards required)
- Support of up to three multiposition stream selection valves
- Optional manual sample inlet

Communication

See Table 2.

Data handling software

The 990 Micro GC is controlled by Agilent OpenLab CDS 2.x, Agilent OpenLab CDS EZChrom edition, and Agilent OpenLab CDS ChemStation edition.

- Natural gas physical properties calculations such as: calorific value, relative denstity, wobbe-index in accordance with ISO 6976, GPA 2172, and ASTM D3588
- OpenLab intelligent reporting provides custom reporting and calculations

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

Power requirements

- Power source: 100 to 240 VAC, 50/60 Hz
- GC Input: 12 VDC, 180 W max
- Must only use the power supply provided with your Micro GC

Table 2. Communications.

Port	Connection	Agilent 990 Micro GC	Agilent 990 Mobile Micro GC	Agilent 990-PRO Micro GC
LAN	Ethernet	Interface with PC	Interface with PC	Interface with PC
COM1	RS232	VICI Valve	VICI Valve	VICI Valve, Modbus[1]
COM2 and COM3	RS232 RS422 RS485 2-wire RS485 4-wire	Not available	Not available	Modbus[1,5]
Digital and Analog I/O		Digital I/O[2] Ready in – ready out Start in – start out	Digital I/O[2] Ready in – ready out Start in – start out	Digital Analog I/O[2] Ready in – ready out Start in – start out Extension boards[1,3]
HDMI	HDMI	LCD[3]	LCD[3,4]	LCD[3]
USB	USB	VICI Valve[6] WIFI interface	VICI Valve[6] WIFI interface USB storage License dongle	VICI Valve[6] WIFI interface USB storage License dongle
CAN	CAN	Channel Extension Cabinet connection		Channel Extension Cabinet connection

1. Requires a PRO license.
2. Y cable is available (part number G3588-60825).
3. Optional accessory.
4. This port is hidden inside the case, only for internal connection.
5. The plastic cover on the side of top assembly must be removed.
6. Requires a USB-to-RS232 converter.

Safety and regulatory certification

- Name: 990 Mobile Micro GC
- Regulatory model number: RMN3588F

Conforms to the following safety standards:

- Canadian Standards Association (CSA): C22.2 No. 61010-1
- Nationally Recognized Test Laboratory (NRTL): ANSI/UL 61010-1
- International Electrotechnical Commission (IEC): 61010-1, 61010-2-010, 61010-2-081
- EuroNorm (EN): 61010-1

Conforms to the following regulations on Electromagnetic Compatibility (EMC) and Radio Frequency Interference (RFI):

- CISPR 11/EN 55011: Group 1, Class A
- IEC/EN 61326-1
- AS/NZS CISPR11
- This ISM device complies with Canadian ICES-001. Cet appareil ISM est conforme à la norme NMB-001 du Canada.
- Designed and manufactured under a quality system registered to ISO 9001; Declaration of Conformity available.
- This product complies with the EU RoHS Directive 2011/65/EU, and conforms to EN 50581.

www.agilent.com

DE69052645

This information is subject to change without notice.

© Agilent Technologies, Inc. 2019, 2023
Printed in the USA, November 20, 2023
5994-1272EN

Agilent
Trusted Answers

Data Sheet

Agilent
Trusted Answers

Agilent 990-PRO Micro GC for Process Monitoring

Introduction

Informed decision making requires continuous, fast, and reliable analytical results. The Agilent 990-PRO Micro GC gives you a fast, accurate answer to control your processes. The 990-PRO serves many different industrial gas analysis applications ranging from natural gas calorific value, composition, odorants, refinery gas composition, and trace contaminants down to low ppm levels in industrial gases. Configurations are available with up to four independently controlled GC channels. the 990-PRO meets the most demanding and complex samples in record speed.

The Agilent 990-PRO Micro GC features:

- **Repeatable, fast, and accurate monitoring.** With cycle times measured in seconds to minutes, you get high speed continuous monitoring, laboratory instrument quality results.
- **On-board data handling.** No local operator is needed as the 990-PRO monitors your process 24/7, and communicates the analysis results directly to your process control, ensuring optimal conditions or follow up actions.
- **On-board intelligence.** Ensures the complete operation from GC control, data collection, data integration, and results transfer through industrial communication protocols such as 4-20mA, Modbus, FTP server, and so forth.
- **Autonomous operation.** During operation, no external computer is needed to control the 990-PRO Micro GC.
- **Ensure safety.** Requiring only a small amount of sample gas, and operation without flammable gases enhances the operational safety often required in online or process analysis.

Table 1. Product dimensions and weight.

Instrument	Height		Width		Length		Weight*	
	in	cm	in	cm	in	cm	lb	kg
Micro GC	11.13	28.28	5.71	14.50	12.97	32.94	16.0	7.3
Micro GC with Channel Extension Cabinet Installed	11.13	28.28	11.83	30.04	12.97	32.94	34.5	15.6
Power Supply	1.8	4.6	3.3	8.5	8.3	21.0	2.4	1.1
Mobile Micro GC Quad Channel	10.6	26.9	16.0	40.6	21.2	53.8	82.67	37.5

* The weight may vary due to different analytical configurations.

Product features

Configuration

- One to four analytical GC columns

Control

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

Injector

- Micro-machined 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
- Optional backflush capability

Column oven

Temperature range, up to 180 °C, isothermal

Available column chemistries:

- CP-Sil 5 CB
- CP-Sil 5 CB for NGA
- CP-Sil 13 CB for TBM
- CP-Sil 19 CB
- CP-Sil 19 CB for THT
- CP-WAX 52 CB
- Molesieve 5A
- Aluminumoxide
- PoraPLOT Q
- PoraPLOT U
- Hayesep A
- COX
- SilicaPLOT
- Proprietary MeS in NGA

Detector

- Micro-machined thermal conductivity detector (TCD)
- Dual-channel (sample and reference flow)
- Internal volume 200 nL per channel
- Four filaments

Detection limits, TCD

Detection limit:*

- 0.5 ppm for WCOT capillary columns (CP-Sil 5 CB, CP-Sil 13 CB, CP Sil 19 CB, and CP-WAX 52 CB) in 4 to 10 m length.
- 2 ppm for PLOT columns (Molsieve 5A, PoraPLOT Q, PoraPLOT U, Aluminum oxide, SilicaPLOT, MeS)
- 10 ppm for Micropacked columns (Hayesep)
- 10 ppm for Micropacked columns (Carboxene)

* Detection limits are typical for selected components, provided that the proper column length and chromatographic conditions are used.

Operating range, TCD

- Concentration: 0.5 ppm to 100% level
- Linear dynamic range: 10^5 (0.5 ppm to 5% for propane on a CP-Sil 5 CB channel)
- For full range (low ppm to 100%), multilevel calibration is advised

Repeatability

<0.5 % RSD for propane at 1 mol % level for WCOT columns at constant temperature and pressure

Carrier gas

- He, H_2, N_2, or Ar, 550 ±10 kPa (80 ±1.5 psi) input
- Every channel can be operated with its own carrier gas.
- Inlet connection, 3.2 mm (1/8 in) stainless steel compression fitting

Sampling

- Sample inlet, 1.6 mm (1/16 in) stainless steel Valco fitting with replaceable 5-µm stainless steel filter
- Sample conditions: noncondensing gas of 0 to 110 °C
- Maximum sample inlet pressure: 100 kPa (14.5 psi)
- Software selectable sample pump or continuous flow
- Relay control for stream selection (extension boards required)
- Support of up to three multiposition stream selection valves
- Optional manual sample inlet

Communication

See Table 2.

Data communication includes

- LAN (TCP/IP)
- RS-232 and RS-485
- Control of external devices
  - Up to 38 external relays
  - Up to 25 analog out (4 to 20 mA)
- Input from external devices
  - Up to 16 digital inputs
  - Up to six analog inputs (0 to 10 V)

Protocols

- Modbus serial and Modbus
- TCP/IP, configured as slave FTP for transferring results to an FTP server
- Webserver for monitoring sample results on a standard Internet browser PROstation

Table 2. Communications.

Port	Connection	Agilent 990 Micro GC	Agilent 990 Moile Micro GC	Agilent 990-PRO Micro GC
LAN	Ethernet	Interface with PC	Interface with PC	Interface with PC
COM1	RS232	VICI Valve	VICI Valve	VICI Valve, Modbus[1]
COM2&COM3	RS232 RS422 RS485 2-wire RS485 4-wire	Not available	Not available	Modbus[1,5]
Digital and Analog I/O		Digital I/O[2] Ready in – ready out Start in – start out	Digital I/O[2] Ready in – ready out Start in – start out	Digital Analog I/O[2] Ready in – ready out Start in – start out Extension boards[1,3]
HDMI	HDMI	LCD[3]	LCD[3,4]	LCD[3]
USB	USB	VICI Valve[6] WIFI interface	VICI Valve[6] WIFI interface USB storage License dongle	VICI Valve[6] WIFI interface USB storage License dongle
CAN	CAN	Channel Extension Cabinet connection		Channel Extension Cabinet connection

1. Requires a PRO license. 2. Y cable is available (part number G3588-60825). 3. Optional accessory. 4. This port is hidden inside the case, only for internal connection. 5. The plastic cover on the side of the top assembly must be removed. 6. Requires a USB-to-RS232 converter.

Data handling software

The 990 Micro GC is controlled by Agilent OpenLab CDS 2.x, Agilent OpenLab CDS EZChrom edition and Agilent OpenLab CDS ChemStation edition.

- Natural gas physical properties calculations such as: calorific value, relative denstity, wobbe-index in accordance with ISO 6976, GPA 2172, and ASTM D3588
- OpenLab intelligent reporting provides custom reporting and calculations

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

990 Micro GC power requirements

- Power source: 100 to 240 VAC, 50/60 Hz
- GC Input: 12 VDC, 150 W max
- Must only use the power supply provided with your Micro GC

Safety and regulatory certification

- Name: 990 Micro GC
- Regulatory Model Number: RMN3588A

Conforms to the following safety standards:

- Canadian Standards Association (CSA) C22.2 No. 61010-1
- Nationally Recognized Test Laboratory (NRTL): ANSI/UL 61010-1
- International Electrotechnical Commission (IEC): 61010-1, 61010-2-010, 61010-2-081
- EuroNorm (EN): 61010-1

Conforms to the following regulations on Electromagnetic Compatibility (EMC) and Radio Frequency Interference (RFI):

- CISPR 11/EN 55011: Group 1, Class A
- IEC/EN 61326-1
- AS/NZS CISPR11
- This ISM device complies with Canadian ICES-001. Cet appareil ISM est conforme à la norme NMB-001 du Canada.
- Designed and manufactured under a quality system registered to ISO 9001; Declaration of Conformity available.
- This product complies with the EU RoHS Directive 2011/65/EU, and conforms to EN 50581.

www.agilent.com

This information is subject to change without notice.

© Agilent Technologies, Inc. 2019
Printed in the USA, October 17, 2019
5994-1271EN

Agilent
Trusted Answers

Data Sheet

Agilent
Trusted Answers

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 CO_2 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 (N_2, O_2, CO, H_2, CH_4) 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, FactI	4		No
G3588-63714	Molsieve 5Å, 10 m, HI, straight, FactI	10		No
G3588-63514	Molsieve 5Å, 10 m, HI, straight, RTS, FactI	10		No
G3588-63716	Molsieve 5Å, 20 m, HI, straight, FactI	20		No
G3588-63516	Molsieve 5Å, 20 m, HI, straight, RTS, FactI	20		No
G3588-63914	Molsieve 5Å, 10 m, HI, BF 1 m, FactI	10	1	Yes
G3588-63544	Molsieve 5Å, 10 m, HI, BF 1 m, RTS, FactI	10	1	Yes
G3588-63934	Molsieve 5Å, 10 m, HI, BF 3 m, FactI	10	3	Yes
G3588-63584	Molsieve 5Å, 10 m, HI, BF 3 m, RTS, FactI	10	3	Yes
G3588-63954	Molsieve 5Å, 10 m, HI, BF 5 m, FactI	10	5	Yes
G3588-63594	Molsieve 5Å, 10 m, HI, BF 5 m, RTS, FactI	10	5	Yes
G3588-63916	Molsieve 5Å, 20 m, HI, BF 1 m, FactI	20	1	Yes
G3588-63546	Molsieve 5Å, 20 m, HI, BF 1 m, RTS, FactI	20	1	Yes
G3588-63985	Molsieve 5Å, 20 m, HI, BF 3 m, FactI	20	3	Yes
G3588-63585	Molsieve 5Å, 20 m, HI, BF 3 m, RTS, FactI	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

Column[1]
- 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 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
- 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

www.agilent.com

DE63432314

This information is subject to change without notice.

© Agilent Technologies, Inc. 2024
Printed in the USA, March 26, 2024
5994-7299EN

Agilent
Trusted Answers

Data Sheet

Agilent
Trusted Answers

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%)

www.agilent.com

DE76628538

This information is subject to change without notice.

© Agilent Technologies, Inc. 2024, 2025

Printed in the USA, June 12, 2025
5994-7474EN

Agilent
Trusted Answers

Data Sheet

Agilent
Trusted Answers

Agilent 990 Micro GC CP-Al_2O_3/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-Al_2O_3/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-Al_2O_3/KCl channels for the Agilent 990 Micro GC system.

Part Number	Description	Length (m)	Precolumn (m)	BF
G3588-63713	MGC Al_2O_3, 10 m, HI, Str, FactI	10	–	No
G3588-63756	MGC Al_2O_3, 20 m, HI, Str, FactI	20	–	No
G3588-63933	MGC Al_2O_3, 10 m, HI, BF 0.2 m, FactI	10	0.2	Yes
G3588-63913	MGC Al_2O_3, 10 m, HI, BF 1 m, FactI	10	1	Yes
G3588-63956	MGC Al_2O_3, 20 m, HI, BF 1 m, FactI	20	1	Yes
G3588-63943	MGC Al_2O_3, 10 m, HI, BF2D, FactI	10	Tuned	Yes, BF2D

Product features

Configuration

- J&W CP-Al_2O_3/KCl phase
- J&W CP-Al_2O_3/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

Column[1]

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 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
- 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-Al_2O_3/KCl channels for the Agilent 990 Micro GC.[1,4]

Part Number	Description	Length (m)	Precolumn (m)	Backflush	Detection Limit (As n-C5)	Repeatability (Peak Area at 0.2%)
G3588-63713	MGC Al_2O_3, 10 m, HI, Str, FactI	10	–	No	1.0 ppm	< 1.0% RSD
G3588-63756	MGC Al_2O_3, 20 m, HI, Str, FactI	20	–	No	1.0 ppm	< 1.0% RSD
G3588-63933	MGC Al_2O_3, 10 m, HI, BF 0.2 m, FactI	10	0.2	Yes	1.0 ppm	< 1.0% RSD
G3588-63913	MGC Al_2O_3, 10 m, HI, BF 1 m, FactI	10	1	Yes	1.0 ppm	< 1.0% RSD
G3588-63956	MGC Al_2O_3, 20 m, HI, BF 1 m, FactI	20	1	Yes	1.0 ppm	< 1.0% RSD
G3588-63943	MGC Al_2O_3, 10 m, HI, BFtoDET, FactI	10	Tuned	BF2D	1.0 ppm	< 1.0% RSD

www.agilent.com

DE33513298

This information is subject to change without notice.

© Agilent Technologies, Inc. 2024
Printed in the USA, May 21, 2024
5994-7475EN

Agilent
Trusted Answers

Data Sheet

Agilent
Trusted Answers

Agilent 990 Micro GC J&W CP-PoraPLOT Q 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-PoraPLOT Q channels for the 990 Micro GC are ideal for hydrocarbon separations C1 to C6, halocarbons/freons, anesthesia gases, sulfur gases H_2S/COS, CO_2, and volatile solvents. They are widely used in natural gas and biogas analysis, reaction monitoring, and catalyst research for their ability to provide full separation of propane/propylene. CP-PoraPLOT Q will not separate ethylene/acetylene.

Table 1. Available J&W CP-PoraPLOT Q channels for the Agilent 990 Micro GC system.

Part Number	Description	Length (m)	Precolumn (m)	BF
G3588-63725	MGC PPQ, 4 m, HI, Str, FactI	4	–	No
G3588-63726	MGC PPQ, 10 m, HI, Str, FactI	10	–	No
G3588-63926	MGC PPQ, 10 m, HI, BF 1 m, FactI	10	1	Yes
G3588-63946	MGC PPQ, 10 m, HI, BF 10 m, FactI	10	10	Yes

Product features

Configuration

- J&W CP-PoraPLOT Q phase
- J&W CP-PoraBOND Q 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, up to 110 °C, including heated sample transfer line

Column[1]

- Temperature range: up to 180 °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
- 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.

[4] Detection limits are determined with He carrier.

Table 2. Specifications for all available J&W CP-PoraPLOT Q channels for the Agilent 990 Micro GC.[1,4]

Part Number	Description	Length (m)	Precolumn (m)	Backflush	Resolution (iC4/nC4 at 0.2%)	Detection Limit (As n-C5)	Repeatability (Peak Area at 0.2%)
G3588-63725	MGC PPQ, 4 m, HI, Str, FactI	4	–	No	2.0	2 ppm	< 1% RSD
G3588-63726	MGC PPQ, 10 m, HI, Str, FactI	10	–	No	3.0	2 ppm	< 1% RSD
G3588-63926	MGC PPQ, 10 m, HI, BF 1 m, FactI	10	1	Yes	2.4	2 ppm	< 1% RSD
G3588-63946	MGC PPQ, 10 m, HI, BF 10 m, FactI	10	10	Yes	1.5*	2 ppm	< 1% RSD

* Resolution measured as methane/CO_2 (100%/1.5%)

www.agilent.com

DE76576156

This information is subject to change without notice.

© Agilent Technologies, Inc. 2024
Printed in the USA, May 21, 2024
5994-7476EN

Agilent
Trusted Answers

Data Sheet

Agilent
Trusted Answers

Agilent 990 Micro GC Channel PoraPLOT U

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) 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+.

Agilent PoraPLOT U channels for the 990 Micro GC are ideal for hydrocarbon separations C1 to C6, halocarbons/freons, anesthesia gases, sulfur gases (H_2S/COS), CO_2, and volatile solvents. They are widely used in biogas analysis, reaction monitoring, and catalyst research for their ability to provide full separation on ethane, ethylene, and acetylene. PoraPLOT U will not separate propane and propylene.

Table 1. Available PoraPLOT U channels for the Agilent 990 Micro GC.

Part Number	Description	Length (m)	Precol (m)	Backflush
G3588-63732	Micro GC PPU, 10 m, HI, straight, FactI	10		No
G3588-63932	Micro GC PPU, 10 m, HI, BF 1 m, FactI	10	1	Yes
G3588-63791	Micro GC PPU, 20 m, HI, BF 1 m FactI	20	1	Yes

Product features

Configuration
- PoraPLOT U phase
- PoraBOND Q 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 of 1 to 10 µL, software-selectable injection time
- Heated injector, up to 110 °C, including heated sample transfer line

Column[1]
- Temperature range: up to 180 °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
- 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 PoraPLOT U channels for the Agilent 990 Micro GC.[1,4]

Part Number	Description	Length (m)	Precol (m)	Backflush	Resolution (iC4/nC4 at 0.2%)	Detection Limit (ppm) (As n-C5)	Repeatability (% RSD) (Peak Area at 0.2%)
G3588-63732	Micro GC PPU, 10 m, HI, straight, FactI	10		No	2.0	2	< 1
G3588-63932	Micro GC PPU, 10 m, HI, BF 1 m, FactI	10	1	Yes	1.8	2	< 1
G3588-63791	Micro GC PPU, 20 m, HI, BF 1 m FactI	10	1	Yes	2.5	2	< 1

www.agilent.com

DE59331912

This information is subject to change without notice.

© Agilent Technologies, Inc. 2024
Printed in the USA, March 26, 2024
5994-7300EN

Agilent
Trusted Answers

Data Sheet

Agilent

Trusted Answers

Agilent 990 Micro GC J&W CP-COX 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) configurations. 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-COX channels are micro packed, carbon-based column channels that can separate both carbon monoxide and carbon dioxide in permanent gas-type mixtures. Water will also elute from COX, providing more stable retention times. Oxygen and nitrogen will coelute and form a (quantifiable) composite peak on COX.

Table 1. Available CP-COX channels for the Agilent 990 Micro GC.

Part Number	Description	Length (m)	Precolumn (m)	BF
G3588-63729	MGC COX, 1 m, HI, Str, Factl	1	–	No
G3588-63929	MGC COX, 1 m, HI, BF 1 m, Factl	1	1	Yes

Product features

Configuration
- J&W CP-COX phase
- J&W CP-PoraBOND Q precolumn (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 of 1 to 10 µL, software-selectable injection time
- Heated injector, up to 110 °C, including heated sample transfer line

Column[1]
- Temperature range: up to 180 °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 (SST) 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-COX channels for the Agilent 990 Micro GC.[1,4]

Part Number	Description	Length (m)	Precolumn (m)	BF	Resolution (as N_2/CO, 1% each)	Detection Limit (As CO_2)	Repeatability (Peak Area)
G3588-63729	MGC COX, 1 m, HI, Str, FactI	1	–	No	1.5	10 ppm	1.0%
G3588-63929	MGC COX, 1 m, HI, BF 1 m, FactI	1	1	Yes	1.2	10 ppm	1.0%

www.agilent.com

DE05782981

This information is subject to change without notice.

© Agilent Technologies, Inc. 2024
Printed in the USA, July 24, 2024
5994-7603EN

Agilent
Trusted Answers

Data Sheet

Agilent
Trusted Answers

Agilent 990 Micro GC Channel CP-Sil 5 CB

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) 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+.

Agilent CP-Sil 5 CB channels for the 990 Micro GC are ideal for separating saturated hydrocarbons (C3 to C10), aromatics, and organic solvents, and they are widely used for analyzing natural gas, refinery streams, and biogas.

Table 1. Available CP-Sil 5 CB channels for the Agilent 990 Micro GC.

Part Number	Description	Length (m)	Precol (m)	Backflush
G3588-63752	Micro GC 5CB, 4 m, HI, straight, FactI	4		No
G3588-63736	Micro GC 5CB, 6 m, HI, straight, FactI	6		No
G3588-63721	Micro GC 5CB, 8 m, HI, straight, FactI	8		No
G3588-63737	Micro GC 5CB, 10 m, HI, straight, FactI	10		No
G3588-63738	Micro GC 5CB, 15 m, HI, straight, FactI	15		No
G3588-63774	Micro GC 5CB, 20 m, HI, straight, FactI	20		No
G3588-63952	Micro GC 5CB, 4 m, HI, BF 1 m, FactI	4	1	Yes
G3588-63936	Micro GC 5CB, 6 m, HI, BF 1 m, FactI	6	1	Yes
G3588-63931	Micro GC 5CB, 8 m, HI, BF 1 m, FactI	8	1	Yes
G3588-63951	Micro GC 5CB, 8 m, HI, BF2D, FactI	8	Tuned	Yes, BF2D
G3588-63734	Micro GC 5CB, 6 m HI, straight, bundled, FactI	6		No

Product features

Configuration
- CP-Sil 5 CB (100% PDMS) phase
- CP-Sil 5 CB backflush (optional)
- BF to detector (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 G3588-63734, which is up to 80 °C[5]

Column[1]
- Temperature range: up to 180 °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 G3588-63734, which has extended temperature range of –5 to 55 °C[5]
- 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] All specifications 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 CP-Sil 5 channels for the Agilent 990 Micro GC.[1,4]

Part Number	Description	Length (m)	Precolumn (m)	Backflush	Resolution (iC4/nC4 at 0.15/0.2%)	Detection Limit (ppm) (As n-C5)	Repeatability (% RSD) (Peak Area at 0.2%)
G3588-63752	Micro GC 5CB, 4 m, HI, straight, FactI	4		No	1.5	0.3	< 0.5
G3588-63736	Micro GC 5CB, 6 m, HI, straight, FactI	6		No	1.5	0.5	< 0.5
G3588-63721	Micro GC 5CB, 8 m, HI, straight, FactI	8		No	1.5	0.5	< 0.5
G3588-63737	Micro GC 5CB, 10 m, HI, straight, FactI	10		No	1.7	0.8	< 0.5
G3588-63738	Micro GC 5CB, 15 m, HI, straight, FactI	15		No	2.0	0.9	< 0.5
G3588-63774	Micro GC 5CB, 20 m, HI, straight, FactI	20		No	2.0	1.0	< 0.5
G3588-63952	Micro GC 5CB, 4 m, HI, BF 1 m, FactI	4	1	Yes	1.2	0.4	< 0.5
G3588-63936	Micro GC 5CB, 6 m, HI, BF 1 m, FactI	6	1	Yes	1.5	0.5	< 0.5
G3588-63931	Micro GC 5CB, 8 m, HI, BF 1 m, FactI	8	1	Yes	1.5	0.6	< 0.5
G3588-63951	Micro GC 5CB, 8 m, HI, BF2D, FactI	8	Tuned	Yes, BF2D	1.5	0.8	< 0.5
G3588-63734	Micro GC 5CB, 6 m, HI, straight, bundled, FactI	6		No	1.5	1.0	< 0.5

www.agilent.com

DE47476054

This information is subject to change without notice.

© Agilent Technologies, Inc. 2024, 2025
Printed in the USA, June 12, 2025
5994-7298EN

Agilent
Trusted Answers

Data Sheet

Agilent

Trusted Answers

Agilent 990 Micro GC J&W CP-Sil 13 CB 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) configurations. 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-Sil 13 CB is a medium polarity column channel. It is highly selective for resolving the natural gas odorizing agent tert-butyl mercaptan (TBM) from the typical natural gas matrix components at very low concentrations.

Table 1. Available CP-Sil 13 CB channels for the Agilent 990 Micro GC.

Part Number	Description	Length (m)	Precolumn (m)	BF
G3588-63739	MGC 13CB TBM, 12 m, HI, Str, FactI	12	–	No

Product features

Configuration
- J&W CP-Sil 13 CB phase

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 of 1 to 10 µL, software-selectable injection time
- Heated injector, up to 110 °C, including heated sample transfer line

Column[1]
- Temperature range: up to 180 °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 (SST) 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-Sil 13 CB channels for the Agilent 990 Micro GC.[1,4]

Part Number	Description	Length (m)	Precolumn (m)	BF	Detection Limit (As TBM)	Repeatability (Peak Area TBM at 5 ppm)
G3588-63739	MGC 13CB TBM, 12 m, HI, Str, FactI	12	–	No	0.7 ppm*	< 8.0% RSD

*Channel specifically tuned for TBM. Detection limit and precision measured as TBM at 5 ppm concentration.

www.agilent.com

DE94393338

This information is subject to change without notice.

© Agilent Technologies, Inc. 2024
Printed in the USA, July 24, 2024
5994-7604EN

Agilent
Trusted Answers

Data Sheet

Agilent

Trusted Answers

Agilent 990 Micro GC J&W CP-Sil 19 CB 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) configurations. 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-Sil 19 CB channels have a medium polarity and are highly selective for resolving the natural gas odorizing agent tetrahydrothiophene from the typical natural gas matrix components at very low concentrations.

Table 1. Available J&W CP-Sil 19 CB channels for the Agilent 990 Micro GC.

Part Number	Description	Length (m)	Precolumn (m)	BF
G3588-63764	MGC 19CB, 6 m, HI, Str, FactI	6	–	No
G3588-63768	MGC 19CB THT, 6 m, HI, Str, FactI	6	–	No
G3588-63789	MBC 19CB, 12 m, HI, BF 1 m, FactI	12	1	Yes

Product features

Configuration
- J&W CP-Sil 19 CB phase
- J&W CP-Sil 19 CB Backflush column (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 of 1 to 10 µL, software-selectable injection time
- Heated injector, up to 110 °C, including heated sample transfer line

Column[1]
- Temperature range: up to 180 °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 (SST) 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-Sil 19 CB channels for the Agilent 990 Micro GC.[1,4]

Part Number	Description	Length (m)	Precolumn (m)	BF	Resolution (iC4/nC4 at 0.15/0.2%)	Detection Limit (As TBM)	Repeatability (Peak Area at 0.15/0.2%)
G3588-63764	MGC 19CB, 6 m, HI, Str, FactI	6	–	No	1.5	0.3 ppm	< 0.5% RSD
G3588-63768*	MGC 19CB THT, 6 m, HI, Str, FactI	6	–	No	1.3*	0.6 ppm*	< 10% RSD*
G3588-63789	MBC 19CB, 12 m, HI, BF 1 m, FactI	12	1	Yes	2.5	0.6 ppm	< 0.5% RSD

*Channel specifically tuned for THT. Resolution and precision measured as THT/n-C_9 at 4.5 ppm each. Detection limit measured using THT at 4.5 ppm.

www.agilent.com

This information is subject to change without notice.

© Agilent Technologies, Inc. 2024
Printed in the USA, July 24, 2024
5994-7605EN

Agilent
Trusted Answers

Data Sheet

Agilent
Trusted Answers

Agilent 990 Micro GC J&W CP-Wax 52 CB 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) configurations. 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-Wax 52 CB are high-polarity, polyethylene glycol-based channels for the 990 Micro GC, and are ideal for separating more polar compounds. They are commonly used for analyzing solvents and BTEX in air.

Table 1. Available J&W CP-Wax 52 CB channels for the Agilent 990 Micro GC.

Part Number	Description	Length (m)	Precolumn (m)	BF
G3588-63757	MGC 52CB 0.5 µm, 10 m, HI, Str, FactI	10	–	No
G3588-63758	MGC 52CB 1.2 µm, 10 m, HI, Str, FactI	10	–	No
G3588-63769	MGC 52CB 1.2 µm, 4 m, HI, Str, FactI	4	–	No

Product features

Configuration

- J&W CP-Wax 52 CB phase

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 of 1 to 10 µL, software-selectable injection time
- Heated injector, up to 110 °C, including heated sample transfer line

Column[1]

- Temperature range: up to 180 °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 (SST) 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-Wax 52 CB channels for the Agilent 990 Micro GC.[1,4]

Part Number	Description	Length (m)	Precolumn (m)	BF	Resolution (MeOH/EtOH at 0.27/0.17%)	Detection Limit (As Acetone)	Repeatability (Peak Area (at 0.2%))
G3588-63757	MGC 52CB 0.5 µm, 10 m, HI, Str, FactI	10	–	No	1.6	0.3 ppm	< 1.0% RSD
G3588-63758	MGC 52CB 1.2 µm, 10 m, HI, Str, FactI	10	–	No	1.6	0.3 ppm	< 1.0% RSD
G3588-63769	MGC 52CB 1.2 µm, 4 m, HI, Str, FactI	4	–	No	1.6	0.3 ppm	< 1.0% RSD

www.agilent.com

DE05149313

This information is subject to change without notice.

© Agilent Technologies, Inc. 2024
Printed in the USA, July 24, 2024
5994-7607EN

Agilent
Trusted Answers

Data Sheet

Agilent

Trusted Answers

Agilent 990 Micro GC J&W CP-Volamine 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) configurations. 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-Volamine channels are based on a nonpolar stationary phase and use Multi-Purpose Deactivation (MPD) technology to produce symmetrical peaks. J&W CP-Volamine is particularly stable for analyzing volatile amines, even when the sample contains substantial amounts of water. Typical examples for the applicability of CP-Volamine channels in the Agilent 990 Micro GC system are the analysis of ammonia, formaldehyde, and dimethyl ether.

Table 1. Available CP-Volamine channels for the Agilent 990 Micro GC.

Part Number	Description	Length (m)	Precolumn (m)	BF
G3588-63793	MGC CHA Volamine, 15 m, HI, Str, FactI	15	–	No

Product features

Configuration
- J&W CP-Volamine phase

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 of 1 to 10 µL, software-selectable injection time
- Heated injector, up to 110 °C, including heated sample transfer line

Column[1]
- Temperature range: up to 180 °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 (SST) 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-Volamine channels for the Agilent 990 Micro GC.[1,4]

Part Number	Description	Length (m)	Precolumn (m)	BF	Resolution (iC4/nC4 at 0.15/0.2%)	Detection Limit (As n-C5)	Repeatability (Peak Area (at 0.15/0.2%))
G3588-63793	MGC CHA Volamine, 15 m, HI, Str, FactI	15	–	No	2.0	0.8 ppm	< 1.0% RSD

www.agilent.com

DE05453983

This information is subject to change without notice.

© Agilent Technologies, Inc. 2024
Printed in the USA, July 24, 2024
5994-7606EN

Agilent
Trusted Answers

Learn more:
www.agilent.com/en/product/gas-chromatography/gc-systems/990-micro-gc-system

Buy online:
www.agilent.com/chem/store

Get answers to your technical questions and access resources in the Agilent Community:
community.agilent.com

U.S. and Canada
1-800-227-9770
agilent_inquiries@agilent.com

Europe
info_agilent@agilent.com

Asia Pacific
inquiry_lsca@agilent.com

This information is subject to change without notice.

© Agilent Technologies, Inc. 2025
Published in the USA, July 23, 2025
5994-8531EN

Agilent
Trusted Answers