

Micro GC Fusion®

Pre-Installation Checklist

Site Preparation

Proper site preparation prior to installing Micro GC Fusion is very important. Contact INFICON (www.inficon.com) with any questions regarding site preparation.

NOTE: Checkboxes () identify hardware that must be available or actions that must be addressed when installing Micro GC Fusion.

List of Required Materials

The following tools are user supplied:

- ◆ 1-1/8 in. wrench recommended, or adjustable large wrench (for attaching regulator to gas tank)
- ◆ Teflon® tape for regulator connections
- ◆ 1/16 in. tubing and fittings for connection between user sample and Micro GC Fusion sample inlet
- ◆ Phillips #2 screwdriver (for rack mounting)

The following tools and parts are included in the optional Install Kit (PN 952-021-G1) to facilitate installation. If the optional install kit was not purchased, these parts must be provided by the user upon installation.

<u>PN</u>	<u>Description</u>	<u>Quantity</u>
059-0442	Ball Valve, 2-way. 0.125-Tube Brass RoHS	2 pc
059-0449	Union Tee, 0.125-Tube, 0.437 Nut Brass RoHS	1 pc
059-0554	Nut, 0.125-Tube, 0.437 Hex, 0.47 Lg Brass RoHS.	4 pc
059-0714	Ferrule Set, 0.125-Tube 10 Pack Brass RoHS	4 pc
069-0115	Copper Tubing, 0.128 OD, 0.065 ID	1 pc
070-1999	Hex Driver, 2.5 mm Ball Point L-Handle SS RoHS.	1 pc
070-2000	Tubing Cutter, 0.125 to 0.625 OD Tubes, RoHS	1 pc
070-2002	Wrench Combination, 0.312 Steel RoHS.	2 pc
070-2003	Wrench Combination, 0.437 Steel RoHS	2 pc
070-2004	Wrench Combination, 0.562 Steel RoHS.	1 pc

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Carrier Gas

- Carrier gas (e.g., helium, argon) with a purity of 99.999% (or minimum 99.995% when the appropriate carrier gas trap is installed).

NOTE: A pressurized (>16,547 kPa [>2,400 psi]) 50 liter tank of carrier gas will last approximately one year.

- Dual-stage regulator for pressurized carrier gas tank with outlet pressure regulated to 400-427 kPa (58-62 psi). A Swagelok 1/8 in. fitting is preferred on the regulator outlet to connect the carrier gas feed tube to Micro GC Fusion.

NOTE: In North America, use the CGA 580 inlet connection (PN 952-416-P1) for helium, nitrogen, and argon carrier gas. Use the CGA 350 inlet connection (PN 952-415-P1) for hydrogen carrier gas. For installations outside of North America, use the appropriate standard inlet connections for the region.



CAUTION

Carrier gas inlet (rear of instrument) pressure must be between 400-427 kPa (58-62 psi). Use a dual-stage regulator on the carrier gas cylinder to ensure the pressure range is maintained. Exceeding 427 kPa (62 psi) may damage Micro GC Fusion and require factory repair.

- Moisture/hydrocarbon trap (PN G2870A-01) is required for the carrier gas when using Molsieve or Alumina columns.



CAUTION

To protect Micro GC Fusion and to enhance performance, carrier gas traps should be used to purify the carrier gas before introduction into Micro GC Fusion. A hydrocarbon/moisture trap (PN G2870A-01) is recommended.

- Copper or stainless steel tubing (pre-cleaned) 1/8 in. OD for carrier gas connections between the tank regulator output and Micro GC Fusion carrier gas inlet. Micro GC Fusion has up to two 1/8 in. Swagelok male carrier gas inlet connections.

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NOTE: Included with Micro GC Fusion is 3 m (10 ft.) of pre-cleaned GC grade copper tubing. Additional copper tubing is available in the installation kit (PN 952-021-G1), or can be ordered in 15 m (50 ft.) lengths (PN 069-0115).



CAUTION

Do not clean copper or stainless steel tubing with solvent.



CAUTION

Do not use Teflon® or Tygon® tubing for carrier gas.

- Assortment of male and female Swagelok fittings for regulator, tubing, etc., including nuts and front and back ferrules. Typical size is 1/8 in., but adapters for 1/4 in. to 1/8 in. may be needed if 1/4 in. tubing is used.
- A 1/8 in. tee fitting and 1/8 in. ball valve, depending on connection requirements.

Calibration Gas

- Commercially supplied calibration gas specific to the analysis.
NOTE: Calibration gas must be available at the time of installation.
NOTE: Calibration gas must closely resemble the composition of the actual process gas.
- A regulator, if necessary, to reduce the calibration gas pressure to below 69 kPa (10 psi) at the Micro GC Fusion inlets. The regulator must be clean, grease-free and non-venting.
- Copper or stainless steel tubing (pre-cleaned) 1/16 in. OD for calibration and sample gas connections between the tank regulator output and Micro GC Fusion sample inlet.

NOTE: If the Integrated Sample Conditioner is configured, the standard 1/16 in. sample inlet is replaced with a 1/8 in. Quick Connect fitting.

NOTE: Checkout gas mixtures are only used for instrument installation and start up.

NOTE: Checkout gas mixtures supplied by INFICON are not calibration gases.

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Sample Gas Pressure Range



CAUTION

Sample gas pressure greater than 172 kPa (25 psi) will damage Micro GC Fusion.

- Maximum pressure for direct sample injection into either the front or rear sample inlet is 172 kPa (25 psi). The recommended input sample pressure is 69 kPa (10 psi) or lower.
- When the Integrated Sample Conditioner is installed, sample pressures up to 6,895 kPa (1,000 psi) can be introduced into the front sample inlet. Sample pressures higher than 6895 kPa (1,000 psi) must be reduced.
- When a Gas Liquid Separator (PN 952-022-G1) is installed, only sample pressures up to 172 kPa (25 psi) can be introduced, even though the Gas Liquid Separator itself is rated up to 3447 kPa (500 psi). Sample pressures higher than 172 kPa (25 psi) must be reduced.

Installation Space and Venting

- Installation space required for Micro GC Fusion is an additional 6.5 cm (2.5 in.) to the front, back and sides of the instrument.

Dimensions of 2-module Micro GC Fusion:
46.2 x 19.6 x 25.4 cm (18.2 x 7.7 x 10 in.)

Dimensions of 4-module Micro GC Fusion:
47.5 x 43.2 x 27.1 cm (18.7 x 17 x 10.7 in.)



CAUTION

Micro GC Fusion air pathways must remain unobstructed to allow cooling of the analytical column(s) following a temperature programmed method run. Allow a minimum of 6.5 cm (2.5 in.) clearance to the top, the front, the back and both sides of the instrument to provide unrestricted air flow to the instrument.

- Install Micro GC Fusion in a location with easy access to the instrument and associated computer.

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- For optimum Micro GC Fusion performance and to dissipate heat, do not restrict the airflow around Micro GC Fusion.



CAUTION

Ensure the Micro GC Fusion fan exhaust at the back of the instrument is not blocked and the air flow through the bottom of Micro GC Fusion is unobstructed. Regularly inspect and clean the filter at the bottom of the instrument.



CAUTION

Regularly inspect and clean the filter at the bottom of the instrument.



WARNING

Safely vent carrier and sample streams-potentially toxic, noxious, or flammable gases-outside Micro GC Fusion and away from the operating area. Vent toxic gases to a fume hood, chemical trap, or reaction medium.

- Avoid venting Micro GC Fusion into drafty areas, such as in front of a heating/cooling vent.

Power Requirement

- Standard 100-240 V (ac), 50 to 60 Hz, 5A (minimum) electric outlet for 2-module systems
- Standard 100-240V (ac), 50 to 60 Hz, 7A (minimum) electric outlet for 4-module systems
- Maximum power for Micro GC Fusion 2-Module instrument: 260 W
- Uninterruptible AC power source with surge protection is recommended

Every Micro GC Fusion 2-Module instrument is shipped with a 24 VDC power supply (IPN: 952-403-P1). Always use this power supply to power the instrument.

NOTE: Every 4-module system contains an internal 24 VDC power supply and does not need the external supply.

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CAUTION

Using an alternative power supply will void the warranty.

Computer Hardware Requirement

Minimum hardware configuration required to run Micro GC Fusion software:

Tablet

- RAM 1 Gb
- Memory 16 Gb
- CPU 1 GHz
- Screen Size 9.7 in.
- Resolution 1024 x 768 pixels
- Network Connectivity Wi-Fi wireless

Computer

- RAM 2 Gb
- Hard Drive 100 Gb
- CPU 1.5 GHz
- Screen Size 12 in.
- Resolution 1024 x 768 pixels
- Network Connectivity Wi-Fi wireless or RJ-45 wired

Minimum hardware configuration required to run optional INFICON EZ IQ software (purchased separately):

- RAM 2 Gb
- Hard Drive 10 Gb
- CPU 2 GHz
- Resolution 1024 x 768 pixels
- Network Connectivity RJ-45 wired
- Operating System....Windows XP or Windows 7 32-bit

NOTE: EZ IQ is not compatible with Windows 7 64-bit, Windows 8 or above operating system.

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Network Preparation

- If Micro GC Fusion will be connected to a local area network (LAN) using a static IP address, the Micro GC Fusion hostname and static IP address must be assigned by the LAN administrator.
- It is not necessary for a LAN administrator to set up the static IP address when Dynamic Host Configuration Protocol (DHCP) is used to assign the Micro GC Fusion IP address.

Web Browser Requirement

- Micro GC Fusion supports the following tablet web browsers:
 - ◆ Android™ 4+ stock browser
 - ◆ Google Chrome™ or Firefox® for Android
 - ◆ Safari® on iOS 6 for iPad

NOTE: Symbian is not supported.
- Micro GC Fusion supports the following computer web browsers:
 - ◆ Google Chrome for Mac OS and Windows® XP or above
 - ◆ Firefox for Mac OS and Windows XP or above
 - ◆ Internet Explorer® version 10 and above for Windows 7 or above

