Agilent Technologies

G2570A GC/MSD System

Site Preparation Manual Addendum

Document History

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Warranty

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Noise Declaration

Deutsch
LpA << 70 dB am Arbeitsplatz normaler Betrieb nach EN 27779:1991

English
LpA << 70 dB operator position normal operation per ISO 7779:1988

System Identification

Each of the following main components in the G2570A GC/MSD system is identified by a unique 10-character serial number:

MSD-Ready 6850A GC
Right side of the unit, lower left corner

G2629A Control Module
Back side of the unit, near center

G2577A Diffusion Pump MSD
Left side of the unit, lower right corner

Computer
Varies per model

Computer Monitor
Back side of the unit, near center

G1701CA MSD Productivity software
Registration number in Software Certificate and Registration Packet

Manual Conventions

Cautions
Cautions call attention to procedures which, if not correctly performed or adhered to, could result in *damage to the instrument*.

Warnings
Warnings call attention to procedures which, if not correctly performed or adhered to, could result in *personal injury.*

Part Numbers
In this manual, Agilent Technologies part numbers are generally listed in parentheses after the name of the part. Most part numbers are either four-digit-by-four-digit (1234-1234) numbers or five-digit-by-five-digit (12345-12345) numbers.

Safety Information

Safety Symbols (on equipment)


Refer to operating instructions


Indicates hazardous voltage


Indicates hot surface


Indicates earth (ground) terminal

Safety class
The 5973N Mass Selective Detector (MSD) is a Safety Class I instrument and has been designed and tested in accordance with IEC Publication 1010-1 Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use.

WARNING
Connecting the system to a power source which is not equipped with a protective earth contact creates a shock hazard for the operator and can damage the instruments. Likewise, interrupting the protective conductor inside or outside the system or disconnecting the protective earth terminal creates a shock hazard for the operator and can damage the instruments.

WARNING
Make sure that only fuses with the required current rating and of the specified type are used for replacement. The use of incorrect or makeshift fuses or the short-circuiting of fuse holders creates a shock hazard for the operator and can damage the instrument.

WARNING
Any adjustment, maintenance or repair of the opened instrument while it is connected to a power source should be avoided if possible and, if required, should be carried out only by trained persons who are aware of the hazards involved.

Safety Information is continued on the inside of the back cover.

Introduction

IMPORTANT

You ***must*** be familiar with the 5973N MSD Site Preparation Manual (Part No. G2589-90010). This manual addendum describes the site preparation requirements that would be ***different*** than those described in that manual.

The principal G2570A sub-systems are:

- An **MSD-ready 6850A GC** which supports the MSD as the only detector. The only communication with the MSD is via a remote start/stop cable. No communication with the MSD ChemStation software is supported.
- A **6850A GC Control Module** which is used to input parameters and control the 6850A GC. This module also controls automation using the **G2613A Autoinjector accessory**, if purchased.
- A **5973N MSD** diffusion pumped mass spectrometer which supports EI operation only. The largest recommended capillary column for use in the G2570A system has a 250 µm ID.
- An **MSD ChemStation** hardware and software for use with one MSD only. The software will not communicate with the GC and thus will not store GC parameters nor collect data from GC detectors.

Before the G2570A GC/MSD system can be installed, the site must be properly prepared. Site preparation includes, but is not limited to, ensuring that adequate facilities are available. Among the site requirements are:

- Adequate space is available for the GC/MSD system
- Suitable supporting bench is available
- Adequate electrical power is available at the correct voltages and frequencies
- Environmental control systems are adequate to maintain a correct, stable operating environment.
- Adequate preparations are in place for safe exhaust venting
- Supplies necessary for instrument operation are available, including solvents, helium carrier gas, and printer paper.

The responsibilities of the customer and an Agilent Technologies representative are the same as described in the 5973N MSD Site Preparation Manual, modified by the contents of this addendum. Also, the items that Agilent Technologies is NOT responsible for are the same as in the 5973N MSD Site Preparation Manual, modified by the contents of the manual for Installation and operation of the G2570A GC/MSD system (Part No. G2628-90008).

Space and weight requirements

Table 1 lists dimension and weight information for the major components in the G2570A GC/MSD system (shown in Figure 1). Your site must have enough bench space for the MSD, GC, data system and accessories. Follow the other requirements listed in this section of the 5973N MSD Site Preparation Manual.

Table 1. Product Dimensions[1]

Product	Dimensions, cm (in)			
	Height	**Width**	**Depth**	**Weight, kg (lb)**
5973N Diffusion pump EI MSD	40.6 (16)	29.8 (11.75)	54 (21.25)	36 (80)
MSD-ready 6850A GC[2]	50 (19.7) [3, 4]	34 (13.4)	54 (21.3)	23 (51)
Data System	Data system size and weight depend on the components included in the data system. Reserve at least 100 cm (39 in) of bench space for the data system. A typical data system weight is 34 kg (75 lb).			

1 All dimensions are approximate.

2 Be sure to plan for the space for your helium carrier gas source.

3 Allow an additional 30 cm (12 in) to open the column oven door.

4 Allow an additional 54 cm (21.25 in) for the AutoInjector (if available). Remove the AutoInjector before opening the oven door.

NOTE The G2570A data system will support only a single MSD.

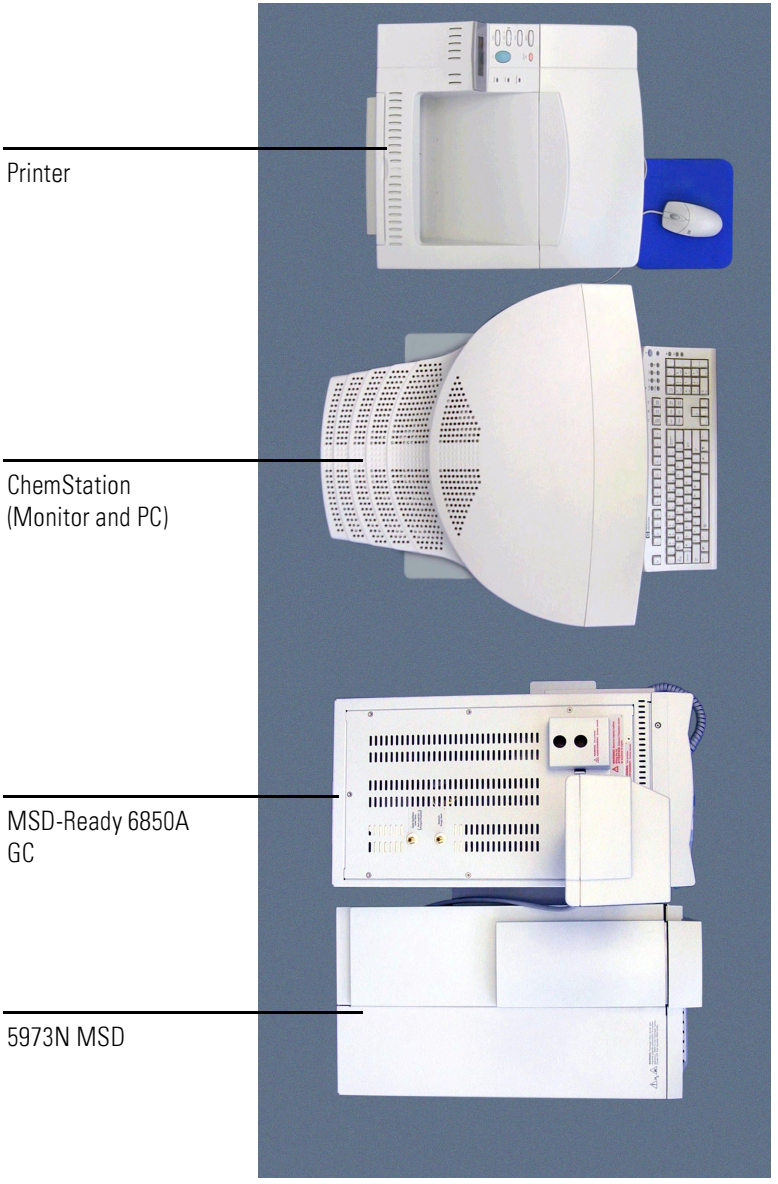

Figure 1. Top View of the G2570A GC/MSD System

Communications requirements

Follow the requirements listed in this section of the 5973N MSD Site Preparation Manual.

NOTE For the G2570A system, the GC will NOT be connected to either the system LAN or the building's network. See Figure 2.

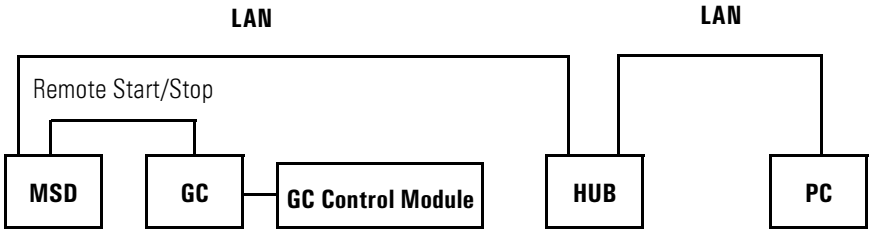

Figure 2. Communication Block Diagram for the G2570A GC/MSD System

Electrical requirements

You are responsible for providing appropriate electrical power and power outlets for all of the components in your G2570A GC/MSD system. Power considerations include voltage ranges of major system components, power configurations, power requirements, and power plugs and cords

Electrical requirements for all major system components except the MSD-ready 6850A GC are the same as described in the corresponding section of the 5973N MSD Site Preparation Manual. The voltage ranges, power configurations, and power requirements for the MSD-ready 6850A GC are contained in Table 2.

Table 2. Electrical Requirements for the MSD-ready GC[1]

Line voltage (± 10%)	Current	Maximum Power Consumption	Line Frequency
120 V	15A	1440 W	47.5 – 63 Hz
200 – 240 V	8A – 12A	2000 W	47.5 – 63 Hz

1 The 5973N MSD does not support 100 VAC input power. In countries that have only 100 VAC power, a step-up transformer must be used for the MSD to provide the appropriate voltage to this sub-system.

Air conditioning requirements

Air conditioning considerations include temperature, humidity, heat dissipation, airborne dust, and exhaust venting. The requirements for the G2570A GC/MSD system are shown in Table 3.

Table 3. Air Conditioning Requirements for the G2570A GC/MSD System

	Temperature	Humidity	Altitude
Operating	15° C – 35° C (59° F – 95°F)	40% – 80%	< 2000 m (6562 ft)

Carrier gas requirements

Follow the requirements for helium gas purity, pressure, and flow as described in Table 4 below:

Table 4. Carrier Gas Requirements

	Purity	Typical Pressure Range (psi)	Typical Flow (mL/min)
Helium	99.999% or better (hydrocarbon free)	50 – 80	20 – 50 (column and split flow)

Laboratory supply requirements

Follow the laboratory supply requirements as described in the 5973N MSD Site Preparation Manual. Two types of supplies are NOT required for the G2570A system when operated within recommended conditions:

- Chemical Ionization Consumables
  CI filaments, PFDTD CI calibration fluid, benzophenone, and methane/ isobutane gas purifier
- Fittings for non-recommended columns
  Injection port and GC/MSD interface ferrules for 0.32- and 0.53-mm id columns

Receiving the system

When the G2570A GC/MSD system is delivered, it is your responsibility to provide for removal of the shipping containers from the truck and for their storage until installation. Contact your Agilent Technologies service representative as soon as your shipment arrives to arrange an installation date.

The following cartons make up the G2570A GC/MSD system:

- MSD-ready 6850A gas chromatograph
- 6850A GC Control Module
- 5973N*etwork* MSD (diffusion pump)
- Foreline pump
- Data system

Accessories such as the G2613A autoinjector and the 59864B ion gauge controller will be packed in separate cartons.

Several of these cartons may be combined into larger shipping containers.

Follow the Inspecting, Storage, and Unpacking instructions in the 5973N MSD Site Preparation Manual.

Installation and verification

Activities for installation and verification are found in the 5973N MSD Site Preparation Manual. The EI scan sensitivity specification for the G2570A GC/MSD system is published in the *5973Network Mass Selective Detector Specifications* (5968-7358E).

NOTE SIM performance verification is not performed at installation and must be purchased if desired.

Safety Information – *Continued*

Electrical Safety

WARNING
Connecting the system to power sources that are not equipped with protective earth contacts creates a shock hazard for the operator and can damage the instruments.

Interrupting the protective conductor inside or outside the system or disconnecting the protective earth terminal creates a shock hazard for the operator and can damage the instruments.

Make sure the power cords supplied with the system are appropriate for your country and site before using them. Maintain easy access to the power cords so they can be disconnected during maintenance.

WARNING
The use of incorrect or makeshift fuses or the short-circuiting of fuse holders creates a shock hazard for the operator and can damage the instrument. Replace fuses only with fuses of identical current rating and type.

WARNING
Dangerous voltages are present inside the system even if the power switches are off. Turn off the system power switches and disconnect the system power cords from their outlets before removing any covers unless you are specifically instructed to do otherwise by this manual.

WARNING
Excessive fluctuations in the line voltage can create a shock hazard and can damage the instrument. Make sure the supply voltage does not fluctuate more than +5% or -10% from the rated voltage. This equipment must be installed in a Category II environment as defined in IEC664.

Thermal Safety

WARNING
Many parts of the system operate at dangerously high temperatures. Make sure the system is off and these parts are cool before removing any covers unless you are specifically instructed to do otherwise by this manual.

Chemical Safety

WARNING
The foreline pump exhaust and split vent exhaust will contain traces of the chemicals you are analyzing. These could potentially be toxic. Vent the foreline pump exhaust and split vent exhaust outside your laboratory or into a fume hood. Be sure to comply with all local environmental regulations.

Hydrogen carrier gas is extremely flammable. Explosions can result if hydrogen is allowed to build up in the MSD or GC oven. Study the Hydrogen Carrier Gas Safety Guide
(Part No. 5955-5398) before operating the MSD with hydrogen carrier gas.

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