Agilent 7200B Series GC/Q-TOF System

Data Sheet

The Agilent 7200B Series Q-TOF GC/MS System with Agilent MassHunter Software offers outstanding sensitivity, selectivity, and mass spectral information. High resolution and accurate mass allows identification of unknown compounds in the most complex matrix. MS/MS with high resolution accurate mass product ion spectra can provide structural information, further increases the selectivity, and can remove matrix interferences. Acquisition rates up to 50 Hz allow even the narrowest chromatographic peaks to be analyzed with full scan spectra. Fast acquisition speed and accurate mass facilitate deconvolution of coeluting GC peaks that are inseparable by low resolution MS. The 7200B Series System must be combined with the high performance Agilent 7890B Gas Chromatograph.

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Quadrupole time-of-flight mass spectrometer

Ionization mode (standard)	EI (High Sensitivity Extraction Source)
Ionization mode (standard)	PCI and NCI
Ion source material	Noncoated, proprietary inert source
Ion source temperature	106 to 350 °C
Electron energy	10 to 200 eV
Removal ion source	Ion source (including the ion volume, lens and filaments) removable without breaking vacuum through an isolation valve; dual filaments for EI source, single filament for CI source.
Quad Isolation mass range (m/z)	20 to 1,050
Resolution (full width at half height)	Selectable, 0.7 to 3.0 Da using default tune Settable, 0.4 to 4.0 Da using custom tune
Dynamic range (electronic)	$> 10^5$
Mass filter	Proprietary monolithic hyperbolic gold-coated quadrupole
Quadrupole mass axis stability	$< \pm 0.10$ Da over 24 hours (10–40 °C)
Quadrupole temperature	100 to 200 °C
Collision cell	Linear hexapole
Collision cell gas	Nitrogen
Collision energy	Selectable up to 60 eV
Ion extraction and mirror	Two stage second order corrected
TOF flight path length	2 m
Detector	Microchannel plate/scintillator/PMT; ADC electronics
TOF Mass Range (m/z)	25–1,700; Extended 15–3,000
TOF detector sampling rate	ADC - 32 Gbits/sec
Tuning	Autotune or manual
Spectra acquisition rate	1–50 spectra/sec

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Pumping system	Four stages; split flow turbomolecular pump 200/200 L/sec (N_2) and two 300 L/sec (N_2) turbomolecular pumps
Software	Agilent MassHunter Acquisition, data analysis (Qual and Quant) and reporting
Simultaneous MS and GC	Collect two GC detector signals while acquiring MS data

Gas chromatograph (Agilent 7890B GC)

For more specifications on GCs, refer to the GC Data Sheet.

Injector	Split/splitless, Multi-mode inlet, PTV and others
Autosampler	Agilent 7693 ALS, Agilent 7650, Agilent 7683 ALS; CombiPAL, PAL3; Agilent 7697A Headspace Sampler
Oven temperature	Ambient + 4 to 450 °C
Oven ramps/plateaus	20/21. Negative ramps are allowed.
Electronic pneumatic control (EPC)	Auto pressure regulation for split/splitless, septum purge
Carrier gas control modes	Constant pressure and flow modes; pressure and flow programmable
Pneumatic splitter	Capillary Flow Technology devices for effluent splitting, backflushing, and column switching
Backflush ready	3-Channel CC/EPC Module

Installation checkout specifications[1]

EI instrument detection limit	240 fg or less OFN[2].Statistically derived at 99% confidence level from the area precision (< 8% RSD) of eight sequential splitless injections (ALS7693A) of 1 µL, 1 pg/µL OFN, at m/z 271.9867
EI full scan sensitivity	Splitless injection of 1 pg OFN will have a S:N > 2,000:1 (RMS noise) at m/z 271.9867
TOF mass resolution	Splitless injection of 1 pg OFN will have a resolution (width at half height) > 12,000 at m/z 271.9867 (> 13,500 typical)
TOF mass accuracy	Eight sequential splitless injections of 1 pg OFN will have an average mass error of < 3 ppm RMS at m/z 271.9867 (typical mass accuracy < 2 ppm)
PCI full scan sensitivity	Splitless injection of 100 pg BZP will have a S:N > 1,500:1 (RMS noise; using methane) at m/z 183.0804

Physical requirements[3]

Dimensions (MS only)	63.5 cm (w) × 89 cm (d) × 47 cm (h)
Weight (MS only)	148 kg
Dimensions DS202 rough pump	18 cm (w) x 35 cm (d) x 28 cm (h)
Weight rough pump	21.5 kg
Dimensions (7890B GC)	58 cm (w) × 54 cm (d) × 57 cm (h)
Weight (7890B GC)	45 kg

1. Area precision specification is only demonstrated if autosampler is part of system (8% for ALS)

2. OFN = Octofluoronaphthalene; BZP = Benzophenone

3. For more details, see Site Preparation Document (Conversion:1 kg = 2.2 lbs; 1 cm = 0.39 in)

For More Information

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