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CORRIGENDUM

PUR-4/EP/SEAF/2025-26 Date: 29.05.2025

Ref.: Tender ID No. 2025_CSIR_234768_1

After the Pre-Bid meeting held on 29.05.2025, Technical Specifications of the following equipment are amended and revised specification are as per Annexure-A.

(1) TQ-GC-MS with Electron Ionization with Thermal Desorber
(2) TQ-GC-MS with Electron Ionization and Chemical Ionization

Qualification requirement, Terms & Conditions, Bid submission end date and Bid opening date will remain same.

Sd-
भंडार एवं क्रय अधिकारी
Stores & Purchase Officer
CSIR-NEERI, Nagpur

Annexure-A

Revised Technical specifications of TQ-GC-MS with Electron Ionization with Thermal Desorber:

System 1: Gas Chromatograph Triple Quadrupole Mass Spectrometer with Electron Ionization with Thermal Desorber.

Sl. No	Requirement	Description
Gas Chromatography: GC with automated flow & Pressure Electronic /Pneumatic controlled for injector and detector ports and able to support 2 inlets, 2 detectors. GC Graphical User Interface (GUI)		
1	Column Oven	• Accommodate two capillary columns • Temp. Range: Ambient +4 to 450°C or better • Ramp rate: maximum 120°C/min or more • Cooling rate: 450°C to 50°C in less than 4 min or better • Typical Retention Time Repeatability: <0.008 min or better • Number of Ramps/Plateaus: 20/21 or more
2	Injector port - 1 No.	Split/split less capillary injector should be able to operate with capillary, wide bore column. • Maximum temperature: 400 °C or better • Split ratio 7500:1 or more • Purge flow upto 50 ml/min or better
3	Auto Sampler	• Automated liquid sampler with 100 Vials capacity or more • Syringes • Size : 5 µL, 10 µL
4	Thermal Desorber	• A thermal desorption assembly from a reputed OEM to be quoted and hyphenated with the quoted GC Triple Quadrupole system for environmental applications. • It should be fully automated thermal desorption system for the rapid and unattended processing of minimum up to 100 sample sorbent tubes in a single sequence. • Trap heating rates 30°C/sec or better • Primary tube desorption oven temperature range should be in the range 35°C to 425°C with settable in 1°C increments and user settable within the stated range. • Trap low temperature in the range: -30°C to 50°C, settable in 1°C increments. • 100 Qty. of tubes for environmental applications to be included. • Auto low flow TD sampling pump to be quoted. • Tube conditioner for TD tube conditioning should also be included • Transfer Line Temperature Settings: 50 °C to 220 °C or better
Triple Quadruple Mass Spectrometer with Electron Ionization Source		
5	Electron Impact Ionization	• Ion Source temperature: up to 350°C • Electron energy range up to 150 eV or better • Ionization modes: FI & System should have dual filament with automatic filament switching. • FI Scan sensitivity: 2000:1 for 1pg of OFN for the mass m/z 272 using 30 m column
6	Triple Quadrupole Analyzer	• Mass Range: 10 to 1000 amu or better. • The collision energy must be adjustable in the range of 1 – 60 eV • The collision cell must support minimum SRM dwell time of 500 µs. • Mass axis stability: ±0.1 amu over 48 hours • Mass resolution: 0.4 to 3.0 amu (FWHM) • MRM/SRM speed: 800 transition / second.

Sl. No	Requirement	Description
		• Dwell time: < 0.5 msec • Scan rate: 20000 amu/second (Q3 Scan) • The instrument control must have the ability to alternate between Full Scan MS and SRM/SIM target analysis on successive scans. • The instrument control must support the following scan modes: 1. MS Mode: full scan (FS), SIM and FS/SIM simultaneous within a single sample injection. 2. MS/MS Mode: full scan (FS), SRM and FS/SRM simultaneous within a single sample injection • Instrument Detection Limit : IDL ≤ 0.3 fg OFN
7	Detector	• Detector with off-axis, discrete dynode electron multiplier • linear range of $8X10^7$ or better
8	Vacuum pump:	• Dual inlet turbo molecular pump with capacity of 300 l/sec or better.
9	Database and software	• NIST 2023 library with license, Library data base in digital storage media • Compatible license software for instrument control and data analysis for qualitative & quantitative workflow
10	Computer & Printer	• Compatible latest PC with i7 processor or equivalent with 1 TB hard disk and 8 GB RAM and 24' TFT monitor with color printer
11	Consumables	10 µl SYR Bevel Tip -10 Nos. 5 µl SYR Bevel Tip -10 Nos. 10 µl SYR (Gas tight) -10 Nos. Filament for MS - 10 Nos. Liner for Split/Splitless Pk of 5 -5 Nos. Column nut, SSL side Pk of 10 -10 Nos. Column nut, MS side Pk of 10 -10 Nos. Oil., vacuum pump, 1 liter -3Nos MS performance spec kit -1 Set Mass calibration Standard-1 No. Vespel Ferrule capillary column 0.1 ID (Injector & MS Side) Pk of 10 -10 Nos. each Vespel Ferrule capillary column 0.25 ID (Injector & MS Side) Pk of 10 -10 Nos. each Vespel Ferrule capillary column 0.32 ID (Injector & MS Side) Pk of 10 -02 Nos. each Septa BTO PK of 50 - 10 Nos Alumina powder – 1 pack Cleaning paper/Material – 10 Nos. 1000 Qty. Autosampler vials with caps & septa Tool Kit for GC & MS Wall mount Gas purification and control system for gases with gas regulators Column : DB 5 MS UI - 30 mtr, 0.25 mm ID, 1µm FT or equivalent – 01 No. DB 624 MS UI - 30 mtr, 0.25 mm ID, 1µm FT or equivalent – 01 No DB WAX - 30 mtr, 0.25 mm ID, 1µm FT or equivalent - 01 No.
12	Supply requirement	230 V AC ± 5 V AC, 50 Hz
13	Warranty	• 1 year standard + 2 Year extended warranty for instrument should be provided from vendor
14	Training & Demonstration	• Vendor should have an application support center in India in case of any demonstration is required vendor should be able to demonstrate the system in India.

Revised Technical specifications of TQ-GC-MS with Electron Ionization and Chemical Ionization:

System 2 : Gas Chromatograph Triple Quadrupole Mass Spectrometer with Electron Ionization and Chemical Ionization.

Sl. No	Requirement	Description
Gas Chromatography: GC with automated flow & Pressure Electronic /Pneumatic controlled for injector and detector ports and able to support 2 inlets, 2 detectors. GC Graphical User Interface (GUI)		
1	Column Oven	• Accommodate two capillary columns • Temp. Range: Ambient +4 to 450°C or better • Ramp rate: maximum 120°C/min or more • Cooling rate: 450°C to 50°C in less than 4 min or better • Typical Retention Time Repeatability: <0.008 min or better • Number of Ramps/Plateaus: 20/21 or more
2	Injector port – 1 No.	Split/split less capillary injector should be able to operate with capillary, wide bore column. • Maximum temperature: 400 °C or better • Split ratio /500:1 or more • Purge flow upto 50 ml/min or better
3	Auto Sampler	• Automated liquid sampler with 100 Vials capacity or more • Syringes ▪ Size : 5 µL, 10 µL
Triple Quadruple Mass Spectrometer with Electron Ionization Source & Chemical Ionization Source		
4	Electron Impact Ionization	• Ion Source temperature: up to 350°C • Electron energy range up to 150 eV or better • Ionization modes: EI & System should have dual filament with automatic filament switching. • EI Scan sensitivity: 2000:1 for 1pg of OFN for the mass m/z 272 using 30 m column
5	Chemical Ionization	Mode : Positive Chemical Ionization (PCI) & Negative Chemical Ionization (NCI) S/N ratio : In PCI – 2500:1, In NCI – 10000:1
6	Triple Quadrupole Analyzer	• Mass Range: 10 to 1000 amu or better. • The collision energy must be adjustable in the range of 1 – 60 eV • The collision cell must support minimum SRM dwell time of 500 µs. • Mass axis stability: ±0.1 amu over 48 hours • Mass resolution: 0.4 to 3.0 amu (FWHM) • MRM/SRM speed: 800 transition / second. • Dwell time: < 0.5 msec • Scan rate: 20000 amu/second (Q3 Scan) • The instrument control must have the ability to alternate between Full Scan MS and SRM/SIM target analysis on successive scans. . • The instrument control must support the following scan modes:

Sl. No	Requirement	Description
		1. MS Mode: full scan (FS), SIM and FS/SIM simultaneous within a single sample injection, 2. MS/MS Mode: full scan (FS), SRM and FS/SRM simultaneous within a single sample injection • Instrument Detection Limit : IDL < 0.3 fg OFN
7	Detector	• Detector with off-axis, discrete dynode electron multiplier • linear range of $8X10^6$ or better
8	Vacuum pump:	• Dual inlet turbo molecular pump with capacity of 300 L/sec or better.
9	Database and software	• NIST 2023 library with license, Library data base in digital storage media • Compatible license software for instrument control and data analysis for qualitative & quantitative workflow
10	Computer & Printer	• Compatible latest PC with i7 processor or equivalent with 1 TB hard disk and 8 GB RAM and 24' TFT monitor with color printer
11	Consumables	○ 10 µl SYR Bevel Tip -10 Nos. ○ 5 µl SYR Bevel Tip -10 Nos. ○ 10 µl SYR (Gas tight) -10 Nos. ○ Filament for MS - 10 Nos. ○ Liner for Split/Split less Pk of 5 - 5 Nos. ○ Column nut, SSL side Pk of 10 - 10 Nos. ○ Column nut, MS side Pk of 10 - 10 Nos. ○ Oil., vacuum pump, 1 liter -3Nos ○ MS performance spec kit -1 Set ○ Mass calibration Standard 1 No. ○ Vespel Ferrule capillary column 0.1 ID (Injector & MS Side) Pk of 10 -10 Nos. each ○ Vespel Ferrule capillary column 0.25 ID (Injector & MS Side) Pk of 10 -10 Nos. each ○ Vespel Ferrule capillary column 0.32 ID (Injector & MS Side) Pk of 10 -02 Nos. each ○ Septa BTO PK of 50 – 10 Nos. ○ Alumina powder – 1 pack ○ Cleaning paper/Material – 10 Nos. ○ 1000 Qty. Autosampler vials with caps & septa ○ Tool Kit for GC & MS ○ Wall mount Gas purification and control system for gases with gas regulators Column : DB 5 MS UI - 30 mtr, 0.25 mm ID, 1µm FT or equivalent – 01 No. DB 624 MS UI - 30 mtr, 0.25 mm ID, 1µm FT or equivalent – 01 No DB WAX - 30 mtr, 0.25 mm ID, 1µm FT or equivalent – 01 No.
12	Supply requirement	230 V AC ± 5 V AC, 50 Hz
13	Warranty	• 1 year standard + 2 Year extended warranty for instrument should be provided from vendor
14	Training & Demonstration	• Vendor should have an application support center in India in case of any demonstration is required vendor should be able to demonstrate the system in India.