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GENERAL IMPORTS DIVISION
(5TH FLOOR)

CORRIGENDUM NO. 2 dtd. 05/03/2020
TO
TENDER NO.STC/CO/FGI/GID/01484/2019-20 dated 31/01/2020

All interested parties are requested to note the following changes in respect of STC's e-tender no. STC/CO/FGI/GID/01484/2019-20.

I. The technical specifications of Sr. No. 24- GC-MS-MS-HS have been revised.
The revised specifications of the items are as under:-

S. No.	Name of the Equipment & Specifications	Qty (No)	Location at which Equipment is to be delivered in India
24	**GC-HS-MS-MS instrument with detectors and accessories:-** **Triple Quadrupole Mass spectrometer (GC-MS-MS-HS)** The triple quadrupole GC-MS-MS-HS latest system must offer superior sensitivity and robustness, fast easy methods development for multi-component quantification and should have following specifications **Mode (MS)** It should have Full scan, selected ion monitoring (SIM), combined full scan/ SIM **Modes (MS/MS)** It should have multiple/ selected reaction monitoring (MRM/ SRM), combined SRM/ full scan, product ion scan and neutral loss modes **Ion source** • It should have EI source. Programmable to 300 deg C or more. • It should have integrated, dual filament for EI with	01	Ajmer

improved filament lifetime

Transfer Line Temperature

The temperature should be 350 deg C or more (more temprature will be preferred)

Quadrupole mass analyzer

- Mass range: 10-1000u or better
- Heated, off-axis ion guide for noise reduction and solid, homogenous, non-coated and cleanable Quadrupole rods or suitable technology
- Resolution: Automatic tuning down to 0.4u or better

Detection system

The detection system should be with off-axis dynode, discrete dynode electron multiplier and electrometer, linear range of >10^6 or preferably more

Electron energy

It should have an adjustable electron energy from 0ev to 150eV or more

Collision Energy range

0-60 eV or more

Scan speed

- The MS should have scan speed up to 15000u/sec or better
- 800 SRM or MRM transition/ sec or better
- O.5ms dwell time for SRM/MRM transition or better

Vaccum system

- It should have a high capacity (>250L/sec), dual stage turbomolecular pump or better
- It should have standard rotary vane pump

<u>Sensitivity specifications</u>

Electron ionization SRM/ MRM

1 ul of 100 fg/ ul octafluoronaphthalene (OFN) will produce the following minimum signal-to-noise for the transition from m/z 272 to m/z 222:10,000:1 or better

Electron ionization full scan

1 ul or 1 pg/ul OFN will produce the following minimum signal-to-noise for m/z 272 when scanning from 50-300 u:1,500:1 or better

Instrument detection limit (performance specification at lab)
0.5 fg or better OFN derived at the 99% confidence level from area precision of eight sequential injections of 1 ul, 10 fg/ul OFN, acquired in EI SRM/MRM

Gas Chromatography

Oven
The column oven should have an operating temperature range : ambient +4 deg C to 450 deg C. Cool down time from 450 deg C to 50 deg C should be less than 4 minutes

Oven ramps/ plateaus cool down

- It should have number of ramps/ plateaus : 20/21 or more
- The maximum heating rate should be 120 deg C/ min or more

Pneumatic controls
Electronic pneumatic controls for injector and detector modules. The electronic carrier gas controller should allow operating in constant and programmed flow and pressure modes.

- Pressure range: 0-140 psi or more
- Split ratio: up to 7500:1 or more
- Pressure set points minimum increments: 0.01 kPa-0.001 psi in all ranges
- Total flow setting:
- Control of split flow in 1 mL/ min from 0 to 1250 mL/ min or more
- Purge flow from 0 to 50 mL/ min or more

One PTV injector with electronic gas controller PTV injector Specifications:
Programmable Temperature vaporizing injector module, include: complete injector with integrated electronic gas control (IEC) featuring constant Flow and Pressure modes, programmable Flow and Pressure modes, Leak check; injector

	can operate in Constant or Programmed Temperature with a Tamp. Ramp 250˚ /min or more (up to 3 ramps or more); Maximum Tamp. 400 ˚ C or better; injector is equipped with air cooling fan able to cool down to few degrees above ambient Temperature; Split ratio up to 7500:1; Control of split flow in 1mL/min from 0 to 1200 mL/min or better; Purge flow from 0 to 50 ml/min (electronic control); Suitable for all capillary columns (50 µm to 530 µm id); Supports Large Volume injection and On Column (TPOC) using special liner; compatible Microseal septum. **Splitter:** Simultaneous injection through splitter in MS & FID. Dual detector microfluidics kit – splits single column effluent between two GC detectors (including MS) should be quoted – Qty 1 **Flame ionization detector with electronics gas controller – Qty 1** • Capillary column optimized compatible with 1/8" and 1/16" packed column • Flameout detection and automation re-ignition • Minimum detectable level (MDL): <1.4 pg C/s or better • Linear dynamic range > 10^7 or better • Maximum temperature: 450 deg C or more **GC analytical performance** • The GC should have a retention time repeatability of <0.0008 min • Typical peak area repeatability < 1.0% RSD **Columns** Suitable capillary columns for • Capillary column for Narcotic drugs Qty 1 • Capillary column for Alcohol samples Qty 1 • Capillary column for pesticides samples Qty 2 **Liquid & Headspace sampler Qty 1** XYZ robotic sample handling apparatus with syringe switch concept. The system should capable to access both injection port for liquid & Headspace sample analysis by changing only suitable syringe. The autosampler must be controlled through LAN/RS232 in remote or suitable technology. The autosampler		

	control (method, sequences etc.) must be possible within the chromatography data system in use, without any external software needed. **Liquid sampler:** Liquid sampler with minimum 100 vial capacity or more of 2 ml vial size should be quoted **Headspace sampler:** Head space sampler with minimum 50 vial capacity or more Vial volume – 20/22 mL Syringe temperature: 50 deg C to 150 deg C in 1 deg steps or more Incubation oven capacity: 6 vials or more Incubation oven temperature range: 50 deg C to 200 deg C in 1 deg C steps with agitation or more Headspace crimper & decapper should be quoted **Data system software with workstation** • It should have a software for controlling GCMSMS, Liquid & Headspace sampler and acquiring data from Mass and conventional detector • Fully automated data acquiring & processing software should be quoted with catalogue number • The latest version of the NIST Library software with original CD should be quoted • It should have easy automatic method development feature • Branded and compatible Desktop PC with suitable screen and laser printer should be quoted • The system should be of highest/ latest version • System should have facility for automatic creation of method files with optimized dwell time • System can be used for full scan analysis like single Quad MS. System should have fast GCMS facility as to enhance productivity to analyze more samples/ day • Standard samples for EI scanning, MRM • System should have provision to mount 2 or more detectors other than MS • The system should be upgradable for further analysis and requirement for CI and DIP • The system should be upgradable for minimum detection limit if require in future		

- Forensics / Pesticides MRM / SRM database for minimum 800 molecules or more should be quoted

Warranty

2 years warranty

AMC for one years after the warranty should be offered

Consumables

- Graphite/ Vespel ferrule for 0.25ID column Qty 10
- Graphite/ Vespel ferrule for 0.32ID column Qty 10
- Injector Septa – Qty 50
- Capillary column nut for S/SL and PTV injector – each qty 5
- Liner for S/SL & PTV injector – Qty 5
- Liner sealing ring for S/SL and PTV injector – Qty 10
- Screw top vial with cap & septa 2 ml size – Qty 1000
- Crimp top vial with cap & septa 20/22 ml size – Qty 1000
- Vaccum pump oil 1 ltr – Qty 1
- Filament – Qty 2
- Mass tuning/ calibration solution – Qty 1
- Syringe 10 ul capacity – Qty 3

Accessories/ necessary parts to install the equipment

- High purity helium gas filled cylinder – Qty 2
- High purity argon gas filled cylinder – Qty 1
- High purity Hydrogen gas filled cylinder – Qty 1
- High purity Nitrogen gas filled cylinder-Qty-1
- High purity zero air gas filled cylinder – Qty 1
- Double stage SS diaphragm regulator for Helium, Hydrogen & Zero air each Qty 1
- Gas purification panel for all gases
- 10 kVA online UPS backup 30 min or more– 230 VAC, 50 Hz, single phase I/P & O/P
- Suitable table and three cushioned chair

Training

Training must be given at vendor training centre in India and the training schedules should be at least 5 days and 10 days at our site. Application design service personal will provide services to develop methods for various applications from time to time whenever required urgently to end users and all trainees' staff. For optimum usability two persons should be

	given training at the manufacturer customer support centre to further strengthen the lab working. **IMPORTANT NOTE:** Offer should indicate all parts with detail specification and brand clearly as required in our specifications Guaranteed IDL specification at our site The supplier should enclose the technical compliance statements against our technical specifications clearly mentioning for each point. The statement should be supported by relevant literatures/ data. The lab requires analysis of blood alcohol and its concentration. Analysis of anaesthetics, drugs, tranquilizers, benzodiazepine, alkaloids, pesticides etc. The detection of snake poison is also needed. **Note**: 1. Slight technical variation will be considered in condition they will fulfill the lab analysis purpose of the instrument 2. If the cost exceeds it would be the sole discretion of the committee to reduce the training terms.		

II. **Clause No. 10 (Schedule to Tender):** The tender closing and related critical dates are modified as under:-

Particular	Earlier	Read As
Document Sale End Date	05.03.2020 at 1500 Hrs.	19.03.2020 at 1500 Hrs.
Seek Clarification End Date	05.03.2020 at 1500 Hrs.	19.03.2020 at 1500 Hrs.
Date of Closing of Tender	05.03.2020 at 1500 Hrs.	19.03.2020 at 1500 Hrs.
Opening of the Technical Bids	05.03.2020 at 1530 Hrs.	19.03.2020 at 1530 Hrs.

All other Terms and Conditions of tender shall remain unchanged.

(Akhil Mathur)
Deputy General Manager