

Central Glass & Ceramic Research Institute
KOLKATA (WEST BENGAL) INDIA
CORRIGENDUM

REFERENCE NO. :- PS-1//NC/199/ND/SPO/GT/19-20

DATE: 14/01/2020

NAME OF EQUIPMENT: GAS CHROMATOGRAPH

NOTE: The Bids must be submitted in the Central Public Procurement Portal (URL:<https://etenders.gov.in/eprocure/app>) only. Manual/Offline bids shall not be accepted under any circumstances.

CONSEQUENT TO THE PRE-BID MEETING HELD ON 06/01/2020, THE REVISED SPECIFICATION AND TERMS AND CONDITIONS OF THE TENDER ARE GIVEN BELOW:-

SPECIFICATIONS:-

Revised Spec after clarification of queries from pre bid meeting

Gas Chromatograph

Microprocessor controlled PC based Gas Chromatograph for the analysis of the permanent gases (H₂, CH₄, CO, CO₂, N₂, O₂ etc. in a gas mixture) with concentration of 0.01-100 % in a single injection in combination of two no's of TCD'S with column switching, Automatic Gas Sampling Valve & Backflush facility to be installed in a heated valve oven. The system must have user friendly operation to manage the work from LCD Screen with Keypad as and when require. The system should have capability to install minimum two or more numbers of Injectors and Detectors. Moisture should be back flushed to enhance the system performance. All measurement parameters must be stored automatically for checking reproducibility of analysis. The detailed technical specifications are provided below :

1 Column Type

- Porapak Q (2.5-3' X 1/8" SS 80/100) or substantially Equivalent - Qty 4
- Molecular Sieve- 5A (80/100 mesh 3.2 X 2.1mm) or substantially equivalent: Qty 2
- Suitable column inlet and outlet nuts and ferrules: 2 Nos. each

2 Inlet Configuration

- Independently temperature controlled injector ports. No of inlet : 2 (1 Capillary + 1 Packed) with electronic control for both the inlets
 - Split/Splitless capillary injector with electronic flow controls and septum purge function Additional Single Mass Flow Controller For Packed Injector
- Split ratio: 9000:1 or more for split type capillary column.
- Injecting sample: gas/volatile organic components
- Sample injection mode: micro syringe or direct from pipe line
 - Suitable gas sampling valve for direct gaseous sample injection from Tedlar bag or cylinder
- Syringe: 5 µl and 10 µl, (2 Nos. each) for liquid samples, and 1 ml, 2.5 ml and 5 ml Gas tight syringe (Qty 2 no of each) for gas samples
- Auto injector with at least 8 vials or more

3 Gas Flow Control

Electronic/ Programmable pneumatic flow control for simultaneous pressure, temperature and carrier/ auxiliary gas flow.

- Gas flow range : 0-1000 ml/min or higher.

4 GC Oven

- Temperature: At least 10 °C above ambient up to 400 with minimum heating rate of 1°C/min
- Temperature programming steps: min 7 steps

5 Thermal Conductivity Detector (Operating temperature range up to 400°C) - 2 nos

6. PC System

Branded PC to be installed with Windows operating system and latest software for smooth running of GC system.

The minimum features of computer specification is given below:

Intel core i5 or better processor, RAM: 8 GB or more, OS: windows 7 or higher version, Hard disk: 1TB or more, DVD read/write facility, 19" or larger LED monitor, USB, Keyboard and cordless Mouse.

Color Laser Jet printer with 1200 dpi resolution, 30+- 10 ppm, 256 MB RAM.

7. Software feature:

GC should be supplied with suitable original licensed software control through PC.

Software for calibration, blank correction, qualitative and quantitative data handling, analysis and reporting after data acquisition (automatic spectral deconvolution procedure to detect overlap peaks) are required.

The system should have facility to export the files including chromatogram to Microsoft office.

8. Calibration Gas standard

Calibration Standard-Calibration Standard must be supplied. Calibration standard for pure He, a mix gas of CH₄, H₂, He, O₂, N₂, CO, CO₂ in balance Helium and (CH₄+He), (H₂+He), (O₂+He), (N₂+He), (CO+He), (CO₂+He) (50:50) each: 1 ltrs- Qty one each

9. Performance Specifications : Typical Retention Time Repeatability: 0.008 min or better

Typical Peak Area Repeatability: <2% RSD (relative standard deviation) or better

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14/1/2020
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TCD sensitivity : 40,000 mV or better
 Dynamic range : 10⁵ or better

10. Installation and commissioning of the machine with required accessories including
 S. S. Pipes for gas connectors;
 Nuts & ferrules for S. S. Pipes; Spanner & Soap bubble flow meter;
 Clamp, molecular sieve filter; Connectors; Tube PVC small for flow measure;
 Filter Oxy trap & Tube latex; Tube PVC big for flow measure; Tube S. S. 1/8" & Catheter No. 6;
 Screw driver set; Cylinder key & Nut driver 8 mm; Service manual & Instruction manual; Allen key 1.5, 2, 2.5, 3, 4 & 5 mm; Adjustable wrench 12"; Nose plier internal & external clip; Allen key set etc.

11. Upgradation possibility: GC should be upgradable with FID, ECD, FPD detectors and also should have provision for MS.

12. Power Supply: 230+- 10% V, AC, 50 +- 3% Hz.

13. Pre-requisite Installation Items:

- UPS 5KVA, input side : 3 phase 400volt +- 10%, output side : as per input of equipment, with 30 minutes battery backup
- UHP Grade Helium Gas with Double Stage SS Diaphragm Regulator-1 set
- UHP Grade Argon Gas with Double Stage SS Diaphragm Regulator 1 set
- UHP Grade Zero Air Gas with Double Stage SS Diaphragm Regulator 1 set
- Gas purification panel for all gases with Hydrocarbon trap, moisture trap and Oxy trap for all the mentioned gases. , column nut, GC septum (50 nos)

14. Other requirements.

- All specification offered needs to be supported with technical literature (datasheet, brochure etc).
- Calibration standard should be provided with certificate.
- Vendors should provide extensive training at CGCRI for one week for 4 persons after installation and commissioning.
- Documentation: All the manuals like operation, service and maintenance with all electronics circuit diagram to be provided in English.
- If there is any up-gradation of software within the period of warranty then the same should be provided free of cost by the supplier/ manufacturer.
- Instrument must be attended within 48 hour in case of break down during warranty period.
- Vendor should provide the list of 5 (five) users of similar apparatus along with performance result in India with their complete address including telephone numbers, e-mail etc. during last 5 years.
- Detailed list of Service Personnel stationed in Kolkata with contact nos, email id's needs to be mentioned in the offer.

15. Graphical User Interface: System should have easy to use Large LCD display where real time analysis can be seen, the graphical user interface should enable quick settings of all analytical conditions.

- Should have auto diagnostic and self diagnostic feature
- Carrier Gas Control: Digital setting by electronic flow controller
- Easy setting of carrier gases flow is a must by the electronic flow controllers / for both capillary and packed column analysis.
- For control of detector gas, Advanced Pressure controller mechanism is desirable for automatic control.

Warranty:

Five years comprehensive warranty after installation on complete Gas chromatography system including PC, UPS along with battery etc.

Installation and Commissioning of the of the items to be completed within one month of delivery to CSIR-CGCRI premises.

Purchase Preference Policies are per clause 1.9 I.T.B will be applicable.


Bidders are instructed to submit the consolidated price in the BOQ(.xls) format and give the break up cost of the items in the respective price schedules.

THE DEADLINE FOR SUBMISSION OF BIDS AND DATE OF OPENING OF BIDS REMAIN UNCHANGED, WHICH ARE AS FOLLOW:

Bid Submission Start Date	17/01/2020 at 6 P.M. (IST)	Last Date of Submission of Bids	27/01/2020 by 11:30 A.M. (IST)	Opening of Bids	28/01/2020 by 11.30 A.M. (IST)
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The above amendments shall amount to amendments of the relevant terms of our Bid Document for CGCRI Tender No. PS-1/1/NC/199/ND/SPO/GT/19-20.

All other Tender terms and conditions remain unchanged.


 (R. Ray)
 Stores & Purchase Officer
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