



सी एस आई आर -राष्ट्रीय पर्यावरण अभियांत्रिकी अनुसंधान संस्थान

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CORRIGENDUM

PUR-311/EP/SEAF/2023-24

Date: 27.02.2024

After the Pre-Bid meeting held on 26.02.2024, Technical specifications of **Ion Chromatograph** is amended and revised specification is as per Annexure-A.

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

भंडार एवं क्रय अधिकारी
Stores & Purchase Officer

Revised Technical Specification for Ion Chromatograph.**ION CHROMATOGRAPHY SYSTEM (REVISED)**

Dual channel Ion Chromatography system for analysis of Anions like fluoride, chloride, nitrite, nitrate, phosphate, sulphite, sulphate speciation of arsenic, selenium by suppressed conductivity detection using carbonate / bicarbonate eluent chemistry, cations like lithium, sodium, potassium, calcium, potassium by conductivity detection. Must be able to perform transition metal analysis using conductivity detector. Should be able to use Organic modifiers (at least up to 50%) like acetone, acetonitrile and methanol in the eluent. The system should be able to perform both suppressed and non-suppressed conductivity applications. The system should be PC based with data acquisition and system control through the same software. The software should be able to identify columns pump, detector automatically. The system should have the components with following technical specifications.

Technical Specification:-**(A) PUMPS :**

- 1) Two numbers of high pressure pumps upgradable to ternary gradient with ::
 - (i) Adjustable flow rate : 0.001 to 20mL / min
 - (ii) Flow reproducibility / precision : < 0.1% or better
 - (iii) Serial dual pistons
 - (iv) Resolution of flow rate / flow increment : 0.001mL (1 μ L)
 - (v) Pulsation / Pressure Ripple : < 1% or better
 - (vi) Pressure range : 0 – 5000 PSI / 0-350 bar or better

(B) Conductivity Detector:

Two numbers of Conductivity detectors for analysis of Anion and Cation which are:

- (i) Temperature stability / Accuracy of $\leq 0.001^{\circ}$ C.
- (ii) The user should be able to set temperature of the conductivity block between 20-50°C or better
- (iii) Measurement range: 0 – 15000 μ S/ cm or better.
- (iv) Electronic noise: < 0.1nS at 1nS/cm

(C) Chemical Suppressor:

Chemical suppressor should have high back pressure tolerance / resiliency with continuous regeneration.

- (i) Regeneration of the suppressor should be by external chemical regeneration mode with the possibility of controlling the regenerant flow rate.
- (ii) Suppressor should have 100% solvent compatibility.
- (iii) Minimum 8 years warranty for suppressor should be provided along with manufacturers certificate indicating the warranty.

(D) Injector:

Two numbers of dual position 6-Port injector valve should controlled automatically through software

(E) IC Columns:

One IC column each for analyses of Anions, Cations, and Transition metals should be individually quoted with respective guard columns.

- (i) The columns should have electronic chip or suitable software facility to store data and history of column use.
- (ii) It should also be possible to store the data (controlled function), number of samples injected, working hours etc.

(F) Automation:

Auto sampler with minimum 50 positions or more should be quoted along with the vials of minimum of 10mL capacity and caps. The software should be able to control the sample processor completely.

Automation should feed dual system (Anion and Cation) parallel for ease of use and higher sample throughput.

(G) Data Processor:

The system should be PC based with data acquisition and system control through the same software.

- (a) **The latest Branded PC (all in one)** has a minimum 13th Gen Intel® Core i7, Preinstalled legal OS: Windows 11 and MS Office 2016, 16 GB, DDR4, 3200 MHz, 512 GB, SSD storage, 60.5-cm. display Full HD (1920X1080)
- (b) Printer cum copier : A3 SIZE COLOR, MFP ,26 PPM , COLOR LASER PRINT, SCAN,COPY, NETWORK, WIFI , USB PRINT, DUPLEX, WITH DADF ,1200 SHEET PAPER, CAPACITY, 2+1 TRAY, 2GB RAM with DADF, WITH INBUILT DUPLEX (FOR BOTH SIDE PRINT), WARRANTY 1 YEAR or 50000 PRINTS WHICHEVER IS EARLIER

(I) Others:

- (i) Calibration Standards for the Cations and Anions shall be provided.
- (ii) Variable Micropipette with tips (1Box) , tips holder and Pipette stand:
- (a) Range: 0.1 uL to 10 uL
 - (b) Range: 10 uL to 100 uL
 - (c) Range: 1 ml to 10 ml
- (iii) Ternary Gradient upgrade kit should be quoted in optional.

(J) On-site Training:

Operational training to be conducted at CSIR-NEERI, Nagpur (Minimum Three Days)

(K) Warranty:

Three Years warranty

(L) Power requirement:

230 V AC \pm 10% @ 50 Hz