

ANNEXURE -I

Ion Chromatography System

- Ion Chromatography system for analysis of Anions like fluoride, chloride, nitrate, phosphate, sulphate , bromide , chlorite, speciation of arsenic (arsenite and arsenate) etc.cations like sodium , lithium , potassium , calcium , magnesium , barium , strontium, transition metals like cobalt, zinc, nickel, cadmium and various amines by conductivity detection.
- The system should be able to perform both suppressed and non-suppressed conductivity applications.
- The flow paths should be of PEEK material and inert withstanding the entire pH range 0-14.
- The system should be PC based with data acquisition and system control through the same software. The software should be able to identify various components like pump, column, and detectors automatically. The system must be compatible with other detectors such as UV-VIS, Electrochemical apart from the usual conductivity detector as well as auto sampler for future upgradation. The system should have the components with following technical specifications.

PUMP:

One number of high pressure pump of serial dual piston type with selectable 0.001 to 10mL / min flow rate with a flow reproducibility of $\pm 0.1\%$. Pump should have the following specifications :

- Serial dual pistons with two inert check valves.
- Resolution of flow rate : 0.001mL
- Pulsation : Lower than 1%
- Pressure range : 0 – 5000 PSI

Conductivity Detector:

- 1) One number of conductivity detector for analysis of anion and cation, should be microprocessor based with a thermo stated micro-flow cell conductivity block with an accuracy of $\leq 0.001^\circ$ C. The user should be able to set temperature of the conductivity block between $20^\circ - 50^\circ$ C.
- 2) Conductivity measurement range: 0 – 15000 μ S/ cm or more.
- 3) Electronic noise < 0.1 nS/cm at 1 μ S/cm level
- 4) Temperature co-efficient range: 0-5%

Column Housing:

Housing should be able to identify the columns and thermo stated as well as electrically insulated to set the optimal operating conditions for column operations.

IC Columns:

Suitable columns for analyses of all the above mentioned ions should be quoted with respective guard columns. The columns should have electronic chip to store data and history of column use. It should also be possible to record the number of injections and the working hours.

Injector:

Dual position 6-Port injector valve with fast response time and controlled through software.

Suppressor:

Suitable suppressor with high loading and high back-pressure (at least 300psi or more) tolerance with continuous regeneration. The regeneration of the suppressor should be by external mode. It should be able to take flow rate of 10ml/min. The suppressor should be 100% solvent – acetone, methanol & acetonitrile compatible. It should be covered under at least 5 years warranty along with manufacturer's certificate.

Data Work station:

Software for data acquisition & processing system along with complete system control should be offered. The necessary software should be fully Windows based. The software should be able to control the system.

Optional Item:

Auto Sampler of at least 35 positions with 10mL sample capacity vials should be quoted along with the system. The entire set-up provided should be automatic and controlled through the software.

Others:

- (i) One year instrument warranty on the instrument
- (ii) No gas should be used for complete operation of the system
- (iii) IC should be supplied with monographs and manuals
- (iv) Solvent and sample filtration kit has to be supplied along with the system
- (v) Compatible branded PC, Printer.
- (vi) Mixed anion and cation standard.

The bidder must have experience in dealing with similar products for past 10 years in India.