

LIST OF ITEMS

Sr. No.	Item / Description	Quantity
01	<p><u>Dual Channel, Ion Chromatography System (IC) With Auto-Sampler</u></p> <p>Model: Dionex Ics 6000 Or Equivalent</p> <p>ORIGIN: UK, US, European</p> <p>SPECIFICAITONS: (Enclosed)</p> <p><u>TERMS AND CONDITIONS:</u></p> <ol style="list-style-type: none"> 1. Installation & Commissioning of instrument at site will be the responsibility of the supplier. 2. Instrument must have at least one year warranty which will start after installation and commissioning of instrument at site. 3. Vendor training of operation and pre-maintenance of the instrument shall be provided by the supplier. 4. Supplier will provide guarantee for the availability of consumables and spare parts for 10 years. 5. Five (05) years preventive measures program, biannual calibration/certification at site shall be included. 6. Supplier should quote price of individual item separately. 	01 Nos.
2.	<p><u>Spare Parts / Consumable for 01 Year Operation</u></p> <p>(All spare parts columns, accessories, compatible with IC system)</p>	01 Set
2(a)	Column for Anion Analysis (one for each Channel)	02 Nos.
2(b)	Guard Column for Anion Analysis	02 Nos.
2(c)	KOH Eluent Cartridge (compatible)	02 Nos.
2(d)	Suppressor Module for Anion Analysis	02 Nos.
2(e)	Degasser Module	01 Nos.
2(f)	Continuously Regenerated Trap Column (CRTC) Module	01 Nos.
2(g)	Auto-Sampler Maintenance Kit	01 Sets
2(h)	Maintenance Kit that include tubing, fittings, valves, O-rings, gauge, cable, fuses etc. (for one year smooth operation)	01 Sets

TECHNICAL SPECIFICATION FOR REAGENT FREE ION CHROMATOGRAPH

#	Parameters	Specifications
1. Basic Requirements		
a.	System	<ul style="list-style-type: none"> ❖ Dual pump configuration ❖ Hybrid Systems (Two dimensional Analytical) ❖ System for dual Application (Anions in Ammonia and ETA mediums separately) ❖ Reagent Free Ion Chromatography system
b.	Separation Column	Analytical columns for anions in Ammonia & ETA (Dia. ~4mm)
c.	Sample Injection	Dual injector for independent injection with provision of manual and auto sample.
d.	Anions Measuring Range	Fluoride: $\leq 0.5 \mu\text{g/L}$ Chloride: $\leq 0.5 \mu\text{g/L}$ Sulfate: $\leq 0.5 \mu\text{g/L}$
e.	System Control	Through licensed software
f.	Computer Required	Minimum Core i5 or above with minimum 21 inch LED
g.	Printer	LaserJet Color Printer
2. PUMP SPECIFICATIONS		
a.	Type	Dual piston (in series), Variable Speed
b.	Construction	Metal free Pump (Compatible with aqueous eluents from pH 0-14)
c.	Pressure Range	0 - 5000 psi (0 - 35 MPa)
d.	Flow Rate Range	0 - 10 ml/min with settable flow increments at 0.001 ml/min
e.	Flow Rate Precision	$\leq 0.1\%$ (Analytical)
f.	Flow Rate Accuracy	$\leq 0.1\%$ (Analytical)
g.	Vacuum Degasser	Integrated for isocratic pump
h.	Leak Sensor	Optical, standard
3. SUPPRESSION REQUIREMENT		
a.	Type	Electrolytic Suppression (Self generating for both columns)
b.	Carbonic Acid Removal	Included for Anions
c.	Suppression Capacity	(4 mm) 30 $\mu\text{eq/min}$
4. ELUENT GENERATOR SPECIFICATIONS		
a.	Eluent Concentration	0.1 - 100 mM
b.	Flow Rate	0.1 - 3 ml/min
c.	Eluent Type	KOH
d.	Maximum Operating Pressure	5000 psi (35 MPa)
e.	Number of Cartridges Supported	<ul style="list-style-type: none"> ❖ Two dual cartridge support ❖ RFIC Eluent Degasser
5. DETECTOR SPECIFICATIONS		
a.	Type	Combination of two conductivity detector
b.	Maximum Range	15000 μS
c.	Leak Detection	Optical Leak Sensor Standard
d.	Resolution	$\leq 0.0025 \text{ nS/cm}$
e.	Flow Cell Volume	$\leq 0.7 \mu\text{L}$
6. AUTO SAMPLER		
a.	Sample Preparation	Dilution, addition of internal standards, concentration/matrix elimination, derivatization
b.	Dilution	1:1 to 1:1000
c.	Dilution Precision	$\leq 1.0\%$ RSD for a 1:10 dilution
d.	Maximum Injection Volume	$\geq 7500 \mu\text{L}$
e.	Variable Volume Range	1-100 μL in 0.1 μL increments; 100-7500 μL in 1 μL increments
f.	Sample Conductivity & pH	Inline measurement of sample conductivity and pH with post run functionality
g.	Sampling Technique	Pull Mode; Push Mode
h.	Auto Dilution	With post run functionality and Auto Dilution License software