



CSIR-Indian Institute of Petroleum

(Council of Scientific & Industrial Research)

P.O.I.I.P., MOHKAMPUR, DEHRADUN – 248005 (UA) INDIA

Ph.0135-2525762 & 2525754, Fax. 0135-2660072, 2660202-203

E-Mail- cosp@iip.res.in

Website : www.iip.res.in



ISO-9001 Regd. Institute

CORRIGENDUM

Tender Notice Ref.: IIP/PUR/1/19-20/691/RRB/LSPD/PO:

**SUB: Amendment in Specifications (Revised Specifications) for Gas Analyzer and
Extension of Due Date**

With reference to above tender for Gas Analyzer, please note that **we have revised the specifications of the above tender (as per attached Annexure) and due date for submission of tender is extended up to 03.03.2020, 3:00P.M.** which will be opened on **04.03.2020 at 3:00 P.M.**

Sd/-

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TECHNICAL SPECIFICATION (Annexure A)

Gas analyzer for CO, CO₂, O₂, C2-C5 hydrocarbons and its isomers including BTX

S. No	Element	Specifications
1	Chromatography Performance	i) Retention time repeatability < 0.008% or <0.0008 min or better
		ii) Area repeatability <1% RSD
		iii) Automatic leak check and self-diagnostic in case of errors.
2	Oven	i) Ambient temp +4°C to 450°C.
		ii) Maximum achievable temp rates: 100°C/min or better for all voltages
		iii) Oven cool down time from 400°C to 50°C in less than 5.0 min or better
		iv) Temp stability should be within 0.1% of the actual temp.
		v) Temp. Set point resolution 0.1°C
		vi) should have 24 rapms and 25 plato or better
3	Heated gas sampling Valve (GSV)	i) Heated GSV 150 ⁰ C or above
4	Valve	Valco made suitable valve
5	Injector	i) Split/splitless Inlet system with pneumatics control, Maximum temp : 400°C, 0-150 psi or better operation with 0.1psi increments, split ratio up to 7000:1 or better to avoid column overload and Gas saver mode to reduce gas consumption
6	Thermal Conductivity Detector (TCD)	i) Linear dynamic range: > 10 ⁵ or better& with automatic bridge balancing
		ii) Maximum temperature: 400°C or better
		iii) Minimum detectable level: 400 pg tridecane or 300pg butane or > 20,000 mVXmL/mg(dk) with He carrier gas.
		iv) Thermal conductivity detector with EPC. Includes adapters/connectors for capillary, 1/8□inch and 1/4□inch columns.
	Flame Ionization Detector (FID)	i) FID with pneumatic control
		ii) Maximum temp: 450°C
		iii) Minimum Detectable level ≤ 1.4pg C/s, for tridecane)

		iv)Linear dynamic range : > 10 ⁺⁷
		v)Flame out detection & auto reignite
		vi))Data rates 500 Hz or better with 25 ms half height
		vii) FID with pneumatic control
7	Flow control system	i)The EFC/EPC/PPC/AFC/APC should be able to set the pressure to a minimum accuracy of 0.1 or better ii)EPC /EFC for Capillary Inlet iii) Provides two channels of EPC. One channel is either flow or Pressure, the second is pressure only.
8	Columns	Suitable column for our applications
9	Accessories	Install Kit for GCs with Gas Purifiers from OEM for carrier gases
10	Chromatography Management Software	The chromatography software should be dual channel and compliant with latest windows based operating system. The software should have standard GC software features like interactive graphics, tool bar for online editing, batch data processing, automated ba`seline correction, peak integration, overlay, baseline compensation, S/N ratio adjustment
11	PC	The system should be supplied with a branded computer, having latest and required configuration for running the system software for data acquisition, data processing and data storing and printing purpose.
12	Warranty	Minimum 1 years of warranty and AMC for 2 year after completion of warranty
13	Service Support	10 Year service support with required accessories
The system should be factory tested at the vender side as per our applications. Schematic diagram of the customised analyser along with the chromatogram of the compounds of our required gases/hydrocarbons should provide before shipment of the instrument. The TCD should detect and separate 500ppm to 80 % of the gases and FID should detect and separate 50ppm to 100 % of the hydrocarbons and gases.		

Required analysis details

O2, CO2, CO, Methane, ethane, ethylene, propane, propylene, acetylene, i-butane, n-butane, t-2-butene, 1- butene, sys 2 butene, propadiene, iso- petane, n-pantane, 1,3, butadiene, 2 methyle 2 butane, benzene, xylene and toluene.

Sd/-

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