

Dated:07/07/2015

## **CORRIGENDUM-1**

**Tender enquiry No. R/5599/2015/1605V1 dt: 22/06/2015 with tender opening date 22/07/2015 for the item "Gas Chromatograph with Data Processor – Standard"**


As a result of pre bid meeting held on 29/06/2015 following changes have been made in the original tender document:-


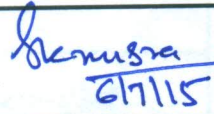
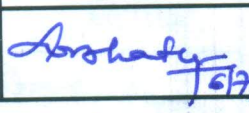
- (1) Technical specification **PR00106 Rev 03** has been revised as **PR00106 Rev 04** and **enclosed below for reference.**
- (2) Last date to get tender from BHEL has been extended from 21/07/2015 to **28/07/2015**
- (3) Tender opening date has been extended from 22/07/2015 to **29/07/2015**

Vendors are requested to quote according to the above changes.

FOR & ON BEHALF OF BHEL, HARIDWAR

**Engineer (PCRI-BOI)**


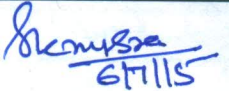
दिनांक एवं हस्ताक्षर SIGN & DATE			उत्पाद क्रय विनिर्देश		PR00106	
			PRODUCT PURCHASE SPECIFICATION		पृष्ठ	3 का 1
सुपरसेड्स INVENTORY NO.	1.0 <u>Name of Equipment:</u> Gas Chromatograph					
सुपरसेड्स INVENTORY NO.	2.0 <u>Specifications of Equipment:</u>					
COPYRIGHT AND CONFIDENTIAL The information on this document is the property of Bharat Heavy Electricals Limited. It must not be used directly or indirectly in any way detrimental to the interest of the company.	Microprocessor Controlled Gas Chromatography System for analysis of VOC's including BTX etc, Phenols, PCBs, PAHs and other hydrocarbons in air and water samples with FID & TCD with capability to install two-injector ports (preferably one capillary split / splitless & one packed column injector), two columns and two detectors simultaneously, Glass Apparatus, Dual Channel Chromatography Software and Standard Accessories, Installation Kit, to work on 220 V AC, 50Hz.					
	<b>1. Oven</b> (a) Temperature Range : Ambient to 400°C in steps of 1.0°C with accuracy $\pm 0.1^\circ\text{C}$ with one decimal display or better. (b) Temp. Programming : 1.0°C to 40°C / min or better (c) Ramps : 9 Ramps, 10-Plateaus with hold time in single method or better. (d) Auto Diagnostic : Should be available on standard. (e) Oven Capacity : S.S. body with 13-16 liter Capacity; Can accept Packed (S.S., Glass Column), all type of capillary columns, Two injectors, Two columns, 2 Detectors simultaneously installed. (f) Display : Large LCD display of set & actual status of temperature, current simultaneously.					
स्वत्वाधिकार एवं गोपनीय इस प्रयोग में ही गई सूचना भारत हेवी इलेक्ट्रिकल्स की सम्पत्ति है इसका प्रयोग एवं अप्रत्यक्ष रूप से किसी भी तरह प्रयोग, जो कि कंपनी के हित में अधिकारक हो न किया जाए।	<b>2. Injector</b> (a) Temperature Range : Ambient to 400°C in steps of 1.0°C with accuracy $\pm 0.1^\circ\text{C}$ with one decimal display or better. Can accept S.S/ Glass column upto 12m length, wide bore capillary column upto 110 meter length.					
	<b>3. On column capillary injector with split /split less facility (01 No.)</b> (a) Temperature Range : Ambient to 400°C in steps of 1.0°C with accuracy $\pm 0.1^\circ\text{C}$ Can accept all type of capillary column up to 110 meter length.					
हस्ताक्षर एवं दिनांक SIGN & DATE	<b>4. Pneumatic System</b> Automatic Flow Controller such as AFC/EFC/EPC for carrier, fuel & Air gas, entry through key board with simultaneous display of gas flow / pressure for set and actual parameters with gas name.					
	<b>5. Flame Ionization Detector (FID) (Single Type)</b> (a) Temperature Range : Ambient to 400°C in steps of 1.0°C with accuracy $\pm 0.1^\circ\text{C}$ with one decimal display or better. (a) Flame Detection : Automatic detection of flame out.					
सहायक सूची संख्या INVENTORY NO.	<b>6. Thermal Conductivity Detector (TCD) (Single Type)</b> (a) Temperature Range : Ambient to 350°C in step of 1.0°C with accuracy of $\pm 0.1^\circ\text{C}$ . (b) TCD Filament Design : Four filament Rhenium Tungsten on Wheatstone bridge principle.					
	सहमत विभाग AGREED DEPTT.		नाम NAME	दिनांक एवं हस्ताक्षर DATE & SIGNATURE	निर्माणकर्ता PREPARED BY	नाम NAME
				जांचकर्ता CHECKED BY	S.K.Mishra	<i>S.K.Mishra</i>
				पर्यवेक्षणकर्ता SUPERVISED BY	Dr. S. Bhatnagar	<i>Dr. S. Bhatnagar</i>
				स्वीकृति APPROVED : Dr. N.G. Shrivastava	<i>Dr. N.G. Shrivastava</i>	<i>Dr. N.G. Shrivastava</i>
REV.NO.	04			निर्माण PREPARED : S.K. Mishra	<i>S.K. Mishra</i>	जारी ISSUED : Dr. S. Bhatnagar
Dt.	06.07.2015					दिनांक DATE : 06.07.2015

दिनांक एवं प्रसार SIGN & DATE		उत्पाद क्रय विनिर्देश		PR00106		
		PRODUCT PURCHASE SPECIFICATION		पृष्ठ	का	2
SUPERSEDES INVENTORY NO.				Page	of	3
सामग्री सूची संख्या को अधिकृत करना है		(c) TCD Filament Current Range	:	0-150mA or better, constant filament temperature with display of current. Overload protection, Pressure switch cut off for carrier gas supply failure.		
		<b>7. Chromatography Software</b>	:	Dual Channel Microsoft Windows Based for Quantitative & Qualitative End Results.		
		<b>8. Computer (Branded)</b>	:	Core i5, 4 GB RAM, 1000GB-HDD, 18.5" TFT Monitor, CD-Drive, 16GB Pen Drive, Mouse Pad, Key Board or better.		
		(a) Printer	:	Monochrome Laser Printer with speed 25 PPM or better.		
		(b) UPS for Computer	:	For 30 minutes backup.		
		9.		Complete glass apparatus for extraction of dissolved gases in transformer oil with mercury (3kg), Wooden Fixture, Vacuum Pump and Hot Plate cum Magnetic Stirrer, Tesla Coil (01 Set).		
		10.		UPS System 5 KVA capacity with one hour backup for GC System with trolley.		
		11.		Gas Purification Panel for Nitrogen / Argon, Fuel & Air with Oxy Filter and Control Box.		
		12.		Nitrogen / Argon, Hydrogen & Zero Air Gas Cylinder Filled with UHP Grade Gases (7 cu.m.) with Explosive Certificate & Double Stage S.S. Diaphragm Pressure Regulator 2 Nos. each (Total 6 Nos.) with color coded pressure tubings from reliable / standard Indian source.		
		13.		Bracket for Cylinder Holding - 6 Nos., Cylinder Trolley (1 No.)		
		14.		Standards for BTX, Phenols, PCBs, PAHs, CH <sub>4</sub> , CO <sub>2</sub> .		
		15.	Syringes :			
				<ul style="list-style-type: none"> <li>Hamilton Gas Tight Syringe, Capacity 100 µl - 2 Nos.</li> <li>Hamilton Gas Tight Syringe, Capacity 250 µl - 2 Nos.</li> <li>Hamilton Gas Tight Syringe, Capacity 500 µl - 2 Nos.</li> <li>Hamilton Gas Tight Syringe, Capacity 1000 µl - 2 Nos.</li> <li>Hamilton Liquid Syringe, 01 µl Capacity - 1 No.</li> <li>Hamilton Liquid Syringe, 10 µl Capacity - 1 No.</li> </ul>		
		16.		Silicon Rubber Septum (100 pcs/pkt) - 5 Pkt.		
		17.	<b>Columns</b>			
			(a)	S.S. 1/8" X 2 M Length Packed with Carbosphere Mesh Size 80/100 (1 No.)		
			(b)	S.S. 1/8" X 2 M Length Packed with Molecular Sieve 5A Mesh Size 80/100 (1 No.)		
			(c)	S.S. 1/8" X 2 M Length Packed with Porapaq- N Mesh 80/100 (1 No.)		
			(d)	S.S. 1/8" X 2 M Length Packed with Porapaq- Q Mesh 80/100 (1 No.)		
			(e)	Fused Silica Capillary Column 50 m Length (PLOT Column) 0.53 mm ID (1 No.)		
		18.		Fused Silica Capillary Column 5 meter X 0.53 mm ID with HC Mixture for Instrument Calibration with Manufacturer Test Certificate.		
		19.		<b>The system should be complete in all respect to install, demonstrate and to carry out the sample analysis.</b>		
		20.		Detailed printed Catalogue must be provided with the offer submitted.		
सामग्री सूची संख्या INVENTORY NO.	REV.NO.	04 Dated 06.07.2015	निर्माणकर्ता PREPARED BY	S.K. Mishra		
			जांचकर्ता CHECKED BY	Dr. S. Bhatnagar		

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**स्वाधिकाृत एवं गोपनीय**  
इस प्रलेख में दी गई सूचना भारत भारी इलेक्ट्रिकल्स की सम्पत्ति है इसका प्रसार एवं उपयोग अन्य से किसी भी तरह प्रयोग, जो कि कंपनी के हित में अधिकारिक हो न किया जाए।

दिनांक एवं प्रसार  
SIGN & DATE

दिनांक एवं हस्ताक्षर SIGN & DATE		उत्पाद क्रय विनिर्देश		PR00106			
		PRODUCT PURCHASE SPECIFICATION		पृष्ठ	3	का	3
समग्री सूची संख्या को अधिकृतित करता है	SUPERSEDES INVENTORY NO.	3.0 <u>General Terms &amp; Conditions</u>		Page	3	of	3
COPYRIGHT AND CONFIDENTIAL The information on this documents is the property of Bharat Heavy Electrical Limited. It must not be used directly or indirectly in any way detrimental to the interest of the company	3.1 <b>Document:</b> One hard copy of O&M Manual in English language giving complete technical information for operation and maintenance of the equipment including circuit diagram shall be supplied.	3.2 <b>Installation and Commissioning:</b> The supplier shall install & commission the equipment at site. Supplier should demonstrate the performance of the Equipment and all its accessories to ensure compliance with complete specifications & parameters quoted by them to the satisfaction of BHEL/end user. Cost of installation & Commissioning, if any, should be indicated separately.		Training to chemists at site during installation should be provided for routine maintenance, operation and safety purpose.			
		3.3 <b>Guarantee:</b> The equipment shall be guaranteed for satisfactory performance for a period of 12 months from the date of installation or 18 months from date of dispatch, whichever is earlier.		<b>Failing to comply to the Installation and Commissioning clause, the offer will be rejected straightaway.</b>			
स्वाधिकारित एवं गोपनीय इस प्रलेख में दी गई सूचना भारत हेवी इलेक्ट्रिकल्स की सम्पत्ति है इस्तेमाल के इरादों के अलावा अन्य उद्देश्यों के लिए इस सूचना को प्रसारित करने से प्रतिबंधित है।	3.4 <b>Packing &amp; Dispatch:</b> The equipment / accessories shall be packed in a suitable water proof/vibration proof packing box capable of bearing air and road transit hazards. Packing box shall be properly identified and marked with BHEL's (India) Purchase Order Number. Also, "PCRI HWR" should be written in bold letters on all four sides of the packing box.	3.3 <b>Guarantee:</b> The equipment shall be guaranteed for satisfactory performance for a period of 12 months from the date of installation or 18 months from date of dispatch, whichever is earlier.		<b>Failing to comply to the Guarantee clause, the offer will be rejected straightaway.</b>			
हस्ताक्षर एवं दिनांक SIGN & DATE	REV.NO.	04 Dated 06.07.2015	निर्माणकर्ता PREPARED BY	S.K. Mishra			
समग्री सूची संख्या INVENTORY NO.			जांचकर्ता CHECKED BY	Dr. S. Bhatnagar	