

**Corrigendum-1**

**Date: 20.09.2022**

**Subject:** Minor revision in Technical Specification for the Procurement of GC-FID-TCD-DHA

A minor revision has been done in the technical specification for the procurement of GC-FID-TCD-DHA with reference no. RGIPT/JAIS/CRF-LAB/2022-23/03. A corrigendum is being published for the aforementioned procurement. Revised Technical Specification is attached with this corrigendum.

A handwritten signature in blue ink, appearing to read 'U. Ojha', with a horizontal line underneath it.

Dr. U. Ojha

Chairman, CRF Purchase Committee

RAJIV GANDHI INSTITUTE OF PETROLEUM TECHNOLOGY

Modified Technical Specification for Procurement of **GC-FID-TCD-DHA**

S.No.	Technical Specification of <b>GC-FID-TCD-DHA</b> system
1	Fully automatic microprocessor based Gas Chromatography system with Auto Injector/Auto Sampler for Analysis of detailed Hydrocarbons upto C13 by using FID and analysis of gaseous sample – CH <sub>4</sub> , CO, CO <sub>2</sub> , N <sub>2</sub> and O <sub>2</sub> in a gaseous mixture by using TCD. The system should have automatic/Electronic gas control system and can be controlled from chromatography management software. User friendly operation to manage the work from LCD Screen and Keypad as when required. The system should have capability to install three or more numbers of Injectors and Detectors. Auto Diagnostics : Checks, corrects, operations and status of GC control, RAM, ROM, CPU Sensor, Keyboard and live Auto Diagnosis while Starting and while Running
2	<b>Column Oven</b> Column Oven Size should be 10 ltrs or more Operating Temperature range – Ambient +5 °C to 450 °C or better Temperature Set Point Resolution: 1 °C Number of Ramps/Plateaus: 7/8 or more Maximum Heating Rate: 45 °C/min or more Oven Cool-Down (22 °C ambient): 400 °C to 50 °C in < 6 min Should be offered with liquid nitrogen kit for sub ambient operation
3	<b>Performance Specifications</b> Typical Retention Time Repeatability: 0.008 min or better Typical Peak Area Repeatability: <2% RSD or better
4	<b>Automatic / Electronic Pressure Control</b> Up to 10 channels or more of integrated electronic gas control Pressure Set Points Minimum Increments: 0.01 psi in all ranges Should be quoted Auxiliary electronic gas control for backflush – Qty 1
5	<b>Auto Injector /Auto Sampler</b> Minimum vial capacity 8 with pre & post wash facility Should be quoted 2ml vial – Qty 500
6	<b>Carrier Gas Control for Capillary Column Injector</b> Pressure Range: 0–140 psi or more Modes: Constant Pressure, Constant Flow and Programmed Pressure
7	<b>Programmed Temperature Vaporizer with Electronics gas controller– Qty 1</b> Suitable for all (0.1 mm to 0.55 mm i.d.) capillary columns Temperature Range: 50 degC - 450 degC Constant pressure & constant flow modes. Pressure programming with

	<p>three ramps and four plateaus  Gas saver mode: Standard  Modes: Split, Splitless and Solvent Split  Temperature Programming Rate: 1 degC/min to 250 degC/min</p>
8	<p><b>Packed Column Injector with electronic gas controller – Qty 1</b>  Suitable for different OD Packed columns and wide bore Capillary columns with adaptor  Temperature Range: 50 degC – 450degC</p>
9	<p><b>Detector</b>  <b>Flame Ionization Detector with Electronics gas controller – Qty 1</b>  Compatible with different OD Packed columns, narrow &amp; wide bore capillary columns  Flameout detection  MDL: &lt;1.4 pg C for C12 hydrocarbon  Linear Dynamic Range: &gt;10<sup>7</sup>  Maximum Temperature: 450 degC or more</p>
10	<p><b>Thermal Conductivity Detector with Electronic gas controller – Qty 1</b>  Compatible with different OD Packed columns, narrow &amp; wide bore capillary columns  MDL: &lt;800 pg Dodecane/ml He  Sensitivity: 10 μV /ppm for Dodecane or better  Linear Dynamic Range: &gt;10<sup>4</sup>  Maximum Temperature: 350 degC or better</p>
11	<p><b>Columns</b></p> <ul style="list-style-type: none"> <li>• Porapak Q 3 feet X 1/8" SS 80/100 or Equivalent - Qty 1</li> <li>• Porapak Q 6 feet X 1/8" SS 80/100 or Equivalent - Qty 1</li> <li>• Molecular Sieve 5A 10 feet X 1/8" SS 80/100 mesh or Equivalent - Qty 1</li> <li>• 100 column for DHA analysis.</li> </ul>
12	<p><b>Automatic Heated Gas Sampling Valve &amp; Startup Kit</b></p> <ul style="list-style-type: none"> <li>• Automatic heated 6 port column switching valve -- Qty 1</li> <li>• Automatic heated 10 port inject &amp; backflush valve – Qty 1</li> <li>• Additional separate valve oven to keep all gas sampling valves – Qty 1</li> <li>• 1ml loop or suitable with fittings – Qty 1</li> <li>• 0.1ml loop or suitable with fittings – Qty 1</li> <li>• Installation/Startup Kit – Qty 1</li> <li>• 1ml Gas tight syringe – Qty 1</li> <li>• AGSV line filter with fittings – Qty 1 sets</li> </ul>

*JW*

*Lenz*

*AG*

*M.S.A*

13	<b>Software</b> Suitable original license based Chromatography Management Software 32/64 bit windows 10/Window 11 or suitable based chromatography integration software with PC, Printer to be offered. Original DHA software need to be quoted with the system- Qty-1
14	<b>Consumables &amp; Spares</b> All necessary consumables & spares like all Gases with regulators, Tubing, Nut & ferrule to install the equipment. UHP grade Helium filled cylinder with double stage SS regulator – Qty 1 UHP grade Nitrogen filled cylinder with double stage SS regulator – Qty 1
15	<b>Calibration Standard</b> Calibration Standard mixture for O <sub>2</sub> , N <sub>2</sub> , CO, CO <sub>2</sub> & CH <sub>4</sub> in balance Helium 0.5 ltrs WC– Qty 2 DHA calibration Standards- Qty-1
16	<b>Warranty</b> Standard warranty – Three years

**Members of CRF Purchase Committee**

 14.9.2022  
 Dr. A. K. Choubey

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 14/09/2022  
 Dr. M.S. Balethanigaimani,

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