

Minutes of Pre-Bid Conference (PBC) held on 23-11-2023 for proposed procurement of  
"Supply Installation and commissioning of GEL PERMEATION CHROMATOGRAPHY SIZE  
EXCLUSION" –

**Chairpersons/ Members of the Technical Sub Committee (TSC) present during PBC  
including domain experts present during PBC:-**

1. Dr N Lingaiah Chairman
2. Dr. Jithender Reddy, Member
3. Dr Sreepariya Vedantam, Member
4. Shri D Venkateshwar Rao, Member
5. IO/PL – Dr. P.ARUNA
6. Dr. Rohit K. Rana – as Representative of IO

**Representatives of the following firm attended the PBC:**

1. M/s Camtek Labs, Hyderabad

**The following points were discussed during the PBC:**

**Query raised by M/s. Camtek Labs, Hyderabad, and response of CSIR-IICT:**

Query-1: Column compartment-temperature control

We request u to add the Thermostated column compartment with dual, independent Peltier element.

Response: Amended as "thermostat capable of heating and cooling"

Query-2: Compartment space –

We request u to add 4 or more columns of up to 300 mm length

Response: Amended

Query-3: RID-Detector Drift

We request u to amend -  $\pm 600 \times 10^{-6}$  RIU

Response: Representatives cancelled the query

Query-4: RID- Cell temperature range

We request u to amend - 5 °C above ambient to 55 °C

Response: Amended as 5°C above ambient to 50°C or more

Query-5: RID - Flow rate


We request u to amend - 5mL/Min

Response: Amended as  $\leq 0.5$ mL to  $\geq 5.0$ mL

Query-6: EISD – Flow rate

We request u to amend - 0.9 – 3.25 SLM

Response: Amended to 1.0 to 3.0 SLM or better

  
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Query-7: Software

We request to provide more clarity on re-calibration of flow rate and multi detectors

Response: Clarification provided.


**Points clarified by CSIR-IICT Team during PBC:**


The firm informed that they do not have problem with other points of tendered specifications and requirements. Participating bidders have been informed that points raised by them during PBC will be examined by CSIR-IICT's **Technical Sub Committee (TSC)** constituted for the purpose of procurement of said equipment and **post PBC changes** in tendered specifications and requirements to be agreed after due consideration of the same by TSC, if any, will be uploaded in **CPPP** as part of **revised/amended tendered specifications**.

Minutes of the PBC with changes agreed (if any) will be uploaded in due course at **CPPP** for information and reference of prospective bidders on or before **29.11.2023**. All bidders are requested kindly to take a note of changes in tendered specifications subsequent to PBC held today, i.e. 23-11-2023 before they start submitting their online bids through **CPPP**.


  
(Dr Jithender Reddy)  
Member

  
28-11-2023  
(Dr Sreepriya Vedantam)  
Member

  
28.11.23  
(D Venkateshwar Rao)  
Member

  
( Dr. P. Aruna)  
IO/PL

  
(Dr. Rohit K. Rana)  
as Representative of IO

  
(Dr. N Lingaiah)  
Chairperson  
28/11/2023

## Revised Specifications/Corrigendum

File Ref. No. PUR/IICT/DMS/1068/23-24

Dt 23.11.2023

### Specifications For Gel Permeation Chromatography (Size Exclusion Chromatography)

#### General specifications

The Basic components of the equipment should include:

1. Isocratic Pump
2. Sample injection valve
3. Degassers
4. Column compartment (with columns)
5. Detectors – RI and ELSD
6. Personal computer with the suitable analysis software

|                               |  |
|-------------------------------|--|
| System configuration          | Modular ( should have the provision to be extended with additional components such as degasser, autosampler, detector etc. anytime later   |
| Essential feature             | <p>1. The basic component of the GPC equipment such as:</p> <ul style="list-style-type: none"><li>• Isocratic Pump</li><li>• Sample injection valve</li><li>• Degassers</li><li>• Column compartment</li></ul> <p>Should be manufactured by single OEM. Necessary Certificates should be enclosed.</p> <p>2. Information on GPC equipment supplied to any government organization in the last 3 years should be provided (with full contact details)</p> |
| Measurement method            | Isocratic; single flow   |
| Mobile phase delivery         | Serial or parallel with double plunger/piston  |
| Mobile phase flow rate range  | ≤0.001 to 10 mL/min.   |
| Flow rate accuracy            | Less than 2% or 2-5 µL/min   |
| Flow rate increment           | Less than 0.001 mL/min   |
| Flow rate precision           | Not more than 0.1%RSD or 0.05 min SD (whichever is greater   |
| Mobile phase degassing method | Vacuum method using degasser membrane  |
| Degassing line flow rate      | Not less than 200µL/min.   |
| Sample injection method       | Via manual injection valve   |
| Sample injection volume range | 1µL to 500µL (variable loop weighing)  |
| <b>Column compartment</b>     |  |
| Column temperature control    | Thermostat capable of heating and cooling  |
| Temperature range             | Room temperature to 70°C   |
| Compartment space             | Should accommodate 4 or more columns of up to 300 mm length  |
| Delivery pressure             | 40 MPa (max)   |
| Oven temperature accuracy     | ±0.5°C   |

*A. K. K. K.*  
23.11.2023

|                       |        |
|-----------------------|--------|
| Temperature precision | ±0.2°C |
|-----------------------|--------|

### Detectors

1. Refractive Index Detector (RID)
2. Evaporative Light Scattering Detector (ELSD)

### Specifications of RID

|                        |                                   |
|------------------------|-----------------------------------|
| Detector noise         | < $6 \times 10^{-9}$ RIU          |
| Detector drift         | < $2 \times 10^{-3}$ RIU/h        |
| Cell volume            | Should be within 10 – 20 $\mu$ L  |
| Cell temperature range | 5°C above ambient to 50°C or more |
| Flow rate              | $\leq 0.5$ mL to $\geq 5.0$ mL    |

### Specifications of ELSD

|                                |                                    |
|--------------------------------|------------------------------------|
| Light source                   | Suitable light source              |
| Detector                       | Photodiode/photomultiplier tube    |
| Nebulizer                      | User interchangeable               |
| Nebulizer gas                  | Air or Nitrogen                    |
| Operating pressure             | Minimum 50 psi                     |
| Gas flowrate                   | 1.0 to 3.0 SLM or better at 25 °C  |
| Temperature range (Evaporator) | 25 °C – 75 °C (with 1°C increment) |
| Temperature range (Nebulizer)  | 25 °C – 75 °C (with 1°C increment) |
| Eluent flow rate               | $\leq 0.2$ mL to 2.0 mL/min        |
| Detector noise                 | <2.0 mV                            |
| Drift                          | <2.0mV                             |

### Software

Software should have control to fix all the parameters like flow rate, oven temperature, column pressure, choice of solvent etc. It should be easy to use chromatography software which is compatible with the GPC control module with automated analysis. It should include re-calibration with added feature of flow rate and multi-detector delay correction.

### Computer

A personal computer with original operating system and printer is required. The computer should support the instrument software and which can be upgraded in future.

### Columns

1. Columns for analyzing samples in the molecular weight range of 1,000 Da to 25,00,000 Da.
2. Column size – Length max. 300 mm, Inner diameter upto 16 mm

*A. Chakraborty*  
23.11.2023

3. Mixed gel columns of styrene divinyl benzene for analysis of organic solvent (THF, DMF, NMP, DMAc, Toluene, Chloroform) soluble polymers – 2 sets
4. Methacrylate columns for water soluble polymers – 1 no.
5. Columns for strongly cationic samples and guard columns – 1 no.
6. Two Guard columns for each of the above columns

**Calibration standards**

Polystyrene standard calibration kit covering mol. wt. range of 1,000 Da to 25,00,000 Da

**Warranty**

2 years warranty

**Miscellaneous items to be provided at the time of supply of equipment**


1. Syringes for sample injection of different volumes
2. Filtration kit with filtration membranes
3. Syringe filters with required accessories
4. Solvent bottles for storing mobile phase and collecting used solvent
5. Sample vials
6. Nitrogen gas regulator, filters and necessary tubing for connecting the cylinder to the instrument
7. Suitable UPS with 1 Hour backup
8. Nitrogen gas generator which can supply N2 gas with 99.999% purity.

**All the other tender terms remains unchanged. Bidders may please submit their bids accordingly.**


  
(Dr Jithender Reddy)  
Member

  
28.11.2023.  
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