

# सीएसआईआर-केंद्रीय खाद्य प्रौद्योगिक अनुसंधान संस्थान CSIR- CENTRAL FOOD TECHNOLOGICAL RESEARCH INSTITUTE मैसूरु / MYSURU-570 020, भारत / INDIA

(Constituent Laboratory of CSIR, New Delhi (Ministry of Science & Technology)
An ISO 9001:2008, ISO 14001:2004 & ISO 17025:2005, NABL Accredited Laboratory

# **CORRIGENDUM**

Tender Ref: CFTRI/52365/25-26 Date: 21-10-2025

Tender ID: 2025\_CSIR\_252850\_1

The revised and final specifications for supply of CHNS Elemental Analyser based on the deliberations in Pre Bid Conference held on 03-11-2025 @ 12.00P.M is uploaded herewith. All the prospective bidders are requested to take cognizance of the revised specifications and submit their bids accordingly on or before 03.00 p.m. on 24-11-2025.

All other terms and conditions of tender enquiry document remain unaltered.

Controller of Stores & Purchase

CSIR-CFTRI, Mysore

Dt. 07-11-2025

# Fully Automated PC controlled Elemental Analyser for automatic determination of C-H-N-S

## 1. Sample type

The Analyzer should be capable of analysing a wide range of food samples including solids, liquids, pastes, gels, blends and suspensions. AOAC and AOCS compliance required.

# 2. Detection range

0 to 100% for CHNS. The absolute measuring range for all elements may be mentioned with proof/documentation.

# 3. Sample size

0.1mg to 100 mg or better.

## 4. Analysis Time

≤ 8 minutes

#### 5. Standard deviation

< 0.1% of absolute for all elements

#### 6. Gas Flow Control

- 6.1 Must be equipped with electronic mass flow controller and digital flow sensors for accurate readout of flow.
- 6.2 All pressure and flow sensors must be electronic for better accuracy.
- 6.3 Flow meters on the analyser must be computer controlled.

#### 7. Furnace System:

- 7.1 Two zone furnace system, separate for combustion/reduction with independent temperature control for each furnace in CHNS mode.
- 7.2 It should be possible to set different temperature for combustion and reduction.
- 7.3 The controlled furnace temperature should be 1100°C or more and documentary proof has to be attached.
- 7.4 Should have possibility to use ceramic/quartz ash finger to handle high inorganic/halogen or fluorine contents sample.

## 8. Gas Separation:

Chromatographic separation of gases.

## 9. Detector System:

Oxygen free temperature stabilised TCD detector or IR detector for measurement of CHNS.

## 10. Autosampler System:

- 10.1 Electronic/ electro- mechanical auto sampler system with 100 positions or more.
- 10.2 Liquid, solid sample preparation accessories / sealing device should be included.
- 10.3 The autosampler should ensure zero blank setting and complete removal of atmospheric gases before sample injection into the reactor/ furnace.

#### 11. Microbalance:

- 11.1 Microbalance (Mettler/Sartorius make only) should have a readability of 0.001 mg or better, accuracy of ±0.002mg traceable to NIST and it should be interfaced with analyser to enable for direct transmission of weighing data.
- 11.2 Calibration should be fully internalised and automatic.
- 11.3 The balance should have high readability and excellent repeatability.
- 11.4 Should be equipped with anti-vibration features and draft shields to minimize external influences on measurements.

#### 12. Software:

- 12.1 Must be MS Windows based, compatible with the recent version i.e., MS Windows 11 or newer and should have display set and actual pressures, flow rates, temperatures, number of samples analysed with provision for setting maintenance interval with warning when maintenance is required.
- 12.2 Should have the feature of Data Export CSV, PDF, LIMS Integration via USB/Ethernet.
- 12.3 Should have automated protein calculation.
- 12.4 Should have segmented leak check through software to enable identification of exact position of leaks.
- 12.5 A branded PC(Dell/HP) or equivalent with CPU Intel i7, 14<sup>th</sup> generation 14700 Processor or better,32GB RAM, 512GB SSD and 1TB HDD, MS Windows 11 OS, 1 additional LAN card with 21" Full HD LED Monitor and Duplex Laser printer MFP needs to be supplied.
- 12.6 If any upgrade in MS Windows OS, OEM should provide compatible software upgrade free of cost for lifetime of the instrument.

## 13. Warranty:

- 13.1 Three Years Onsite Comprehensive Warranty for Complete Instrument from the date of successful installation
- 13.2 Ten Years Onsite Comprehensive Warranty for TCD or IR detector
- 13.3 Ten Years Onsite Comprehensive Warranty for the Furnace.

#### 14. Consumables

Consumables for 5,000 sample analyses in CHNS mode to be supplied. This should include enough quantity of appropriate certified calibration standards, tin capsules, tin boats, reagents and chemicals for refilling, catalysts, ash fingers ceramic/quartz, combustion/reduction tubes, tool kit etc.

#### 15. Gases

UHP grade Helium (50 Litres capacity) and UHP grade Oxygen (50 Litres capacity) gas cylinders with double stage SS regulator (Matheson/Swagelok make) needs to be quoted along with suitable tubings.

# 16. Installation & Training

Installation should be done by a qualified Service Engineer. Multiple On-site training sessions to the CSIR-CFTRI staff, regarding instrument configuration, experimental set-up, calibration, maintenance, data acquisition and report generation should be provided by the application specialist.

#### Eligibility Criteria and General Compliance

- 1. A point wise compliance statement as per the specifications must be submitted along with the offer. All specifications must be clearly highlighted in the brochure for verification and all eligibility conditions should be verifiable.
- 2. Original Equipment Manufacturers (OEM), its subsidiary, and authorized dealers in India can quote for this instrument. If the Authorised Vendor of the OEM is quoting, then an official letter on the Letter Head to be attached from the OEM indicating the Tender Number that the OEM will be completely responsible for the Supply and Service/Repair, etc., during the warranty and post-warranty for a period of 10 years and provide the required spares for minimum of 10 years, from the date of satisfactory installation.
- 3. The quoted model product catalogues attached along with the tender bid, should be available in the Global Public Platform (example in their official website or any other authentic source) and if CSIR-CFTRI requires to verify with the OEM, the complete contact details of the official, who is authorized by the OEM, to be provided, along with their Mobile/Telephone Number. E-Mail ID, Postal Address, etc., in the Technical Bid.
- 4. The bidder should provide the user list in India, along with the complete contact details including E-Mail ID, Mobile/Telephone No., etc. and the bidder should have installed minimum **Five** CHNS instrument in any Government Research Organizations such as CSIR, ICMR, ICAR, IISc, IITs, etc. in India. PO copies and Installation Certificates may be provided as proof of supply.

- 5. The supplier must declare the year of launch with proof on manufacturer's letter head.
- 6. The quoted model should be latest in the market.
- 7. The supplier must submit OEM technical brochures and proper application notes/manuals adequately explaining and confirming the availability of the features in the model of the equipment being quoted.
- 8. All future software upgrades done by OEM, and also consequent to MS Windows OS upgrades, to be provided free-of-cost, during the life-time of the instrument.
- 9. Number of service engineer(s) employed by them who is/are competent to service the equipment being quoted with their locations in India.
- 10. Service to be provided as and when the request is raised and the service engineers must be stationed in Mysuru/Bengaluru.
- 11. All consumables for trouble free operation should be supplied including tin capsules, tin boats, combustion/reduction tubes, ash fingers ceramic/quartz, chemicals for refilling, calibration standards, etc.
- 12. Perform IQ/OQ tests and provide the certificates with suitable traceable standards.
- 13. On-site training to be provided for operation, maintenance, calibration, application software, method development, data acquisition, post run analysis, qualitative and quantitative analysis, report generation, printing the results and also analyze some food samples at the time of installation.
- 14. To provide relevant published application notes and methods for food analysis by the OFM