



सीएसआईआर - राष्ट्रीय धातुकर्म प्रयोगशाला
CSIR - NATIONAL METALLURGICAL LABORATORY
(Council of Scientific & Industrial Research)

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CORRIGENDUM

Tender Reference No. :- P/NC/941/NSR/SM/OTE/23-24

Tender ID :- 2024_CSIR_215128_1

**Item Name :- Supply, Installation & Commissioning of
High Temperature TG-DTA Analyzer**

NOTE: The Bids must be submitted in the Central Public Procurement Portal (URL:<https://etenders.gov.in/eprocure/app>) only. Manual/Offline bids shall not be accepted under any circumstances. Bidders should quote in INR only.

Consequent to the Pre-Bid Meeting held on 28/11/2024, the revised technical specifications are attached in Annexure-A.

The bidders are requested to submit their bid based on this revised technical specifications as per Annexure-A

All other terms and conditions shall remain same.

Stores & Purchase Officer,
CSIR-NML, Jamshedpur



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ANNEXURE-A

Revised Technical Specification

Equipment: High Temperature TG-DTA analyzer (compatible to corrosive gases)

Test temperature range	<ul style="list-style-type: none">Ambient to 1600 °C or higher with a single furnace.
Thermogravimetric system	<ul style="list-style-type: none">A suitable furnace system with precise heating controls.
	<ul style="list-style-type: none">TG Resolution: 0.1 µg minimum.
	<ul style="list-style-type: none">TG Thermobalance: 0.1 µg to 25 g or higher.
	<ul style="list-style-type: none">Heating rate: 0.1 to 50 °C per minute or higher.
	<ul style="list-style-type: none">Measuring range: ±2000 mg or higher.
	<ul style="list-style-type: none">DTA resolution: 1 nV or 1 µW or a lower value.
	<ul style="list-style-type: none">DTA range: 250 to 2500 µV or better.
	<ul style="list-style-type: none">Mass flow controller (MFC): minimum 03 nos.
	<ul style="list-style-type: none">Gas supply rate through MFC: Programmable from 5 to 250 mL/min.
	<ul style="list-style-type: none">Atmosphere: Inert, oxidizing, reducing.
	<ul style="list-style-type: none">Gases to be used: N₂, Ar, O₂, CO₂, H₂, CO.
	<ul style="list-style-type: none">Compatibility to corrosive gases: (i) Up to 1000°C for 100 Vol% of any of the above gases, and (ii) beyond 1000°C for the mixture of above gases in 5-90 Vol% with inert gas.
	<ul style="list-style-type: none">Thermocouple: Compatible from RT to 1600 °C.
	<ul style="list-style-type: none">Evacuation system with necessary vacuum pump(s) and control
Cooling system	<ul style="list-style-type: none">Integrated cooling system, capable of cooling from 1200 °C to 50 °C in maximum 120 minutes.



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Vacuum system	<ul style="list-style-type: none">• Integrated vacuum system (up to 10^{-2} bar or better at RT) with necessary pressure gauges and controls.
Safety	<ul style="list-style-type: none">• In-built probes for inflammable gases.• Interlocked gas supply system with auto supply shut-off.• Emergency stop button.• CE or equivalent certification.
System control	<ul style="list-style-type: none">• Data Acquisition, Processing and Analysis Software compatible with Window 10 or higher.• A compatible computer of latest configuration not less than: Windows 10/11 64 bit Professional, Core i5, 8 GB RAM, 1TB HDD, 24 inch monitor, 3 USB ports.• Anti-vibration table dedicated for the TG-DTA equipment. A separate table for the computer should be supplied.• Regulators for Ar, N₂, H₂, O₂, CO₂ gas cylinders and any other peripheral items.• All compatible Gas tubing/valves (SS/Teflon or better) as part of equipment must be compatible in size to the regulators.
Accessories	<ul style="list-style-type: none">• Essential Tool kit: 01 no.• Platinum crucibles: 10 nos. with alumina liners.• Alumina crucibles: 50 nos.• Calibration Standards for mass and enthalpy: 02 nos. each.• O rings: 01 set.• Essential fuse: 01 set.
Scope	<ul style="list-style-type: none">• Supply, installation, commissioning, and training.
Warranty	<ul style="list-style-type: none">• 03 years comprehensive.
Annual Maintenance Contract	<ul style="list-style-type: none">• AMC charges should be quoted along with the quotation indicating year on year increment. It will be applicable after the expiry of the comprehensive warranty• AMC offer will be considered during price bid evaluation.
Others	<ul style="list-style-type: none">• Operation Manual.• System Warranty documents.
Service and maintenance	<ul style="list-style-type: none">• On-site service and maintenance by OEM authorised service agents.

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