



ಭಾ. ಕೃ. ಅನು. ಪ - ಭಾರತೀಯ ತೋಟಗಾರಿಕಾ ಸಂಶೋಧನಾ ಸಂಸ್ಥೆ
ಹೆಸರಗಟ್ಟ ಕೆರೆ ಅಂಚೆ, ಬೆಂಗಳೂರು-560 089

ಭಾ.ಕೃ.ಅನು.ಪ.- ಭಾರತೀಯ ಬಾಗವಾನಿ ಅನುಸಂಧಾನ ಸಂಸ್ಥಾನ
ಹೆಸರಗಟ್ಟ ಲೇಕ್ ಪೋಸ್ಟ್, ಬೆಂಗಳೂರು - 560 089

ICAR-Indian Institute of Horticultural Research
Hesaraghatta Lake Post, Bengaluru - 560 089

EPABX: 080-23086100 Extn: 218, 452 & 217

FAX: 080-28466291 – Email: purchase.iihr@icar.gov.in



F.No.5-62/2022-23/IIHR/SP/

Dated: 13.09.2022

NOTICE FOR INVITING TENDER THROUGH E-PROCUREMENT

Online Bids are invited from interested firms under **Two bid system (Technical bid/financial bid)** for **Supply installation testing and commissioning of LC/IC-ICP-MS with accessories. to ICAR-IIHR**, Manual bids shall not be entertained.

Tender documents may be downloaded from e-procurement website of CPPP
<https://eprocure.gov.in/eprocure/app> as per the schedule given in CRITICAL DATE SHEET as under:

CRITICAL DATE SHEET

Tender No.	F.No.5-62/2022-23/IIHR/SP /
Name of Organization	ICAR-INDIAN INSTITUTE OF HORTICULTURAL RESEARCH, Hesaraghatta Lake Post, Bangalore
Date and Time for Issue/Publishing	13.09.2022 at 04:00 PM
Document Download/Sale Start Date and Time	13.09.2022 at 04:00 PM
Bid Submission start Date and Time	13.09.2022 at 04:00 PM
Pre Bid meeting Date and Time	20.09.2022 at 10:30 AM
Bid Submission End Date and Time	04.10.2022 at 03:00 PM
Date and Time for Opening of Technical Bids	06.10.2022 at 11:00 AM
Address for Communication	Asstt. Admn. Officer (Store Purchase), IIHR, Hesaraghatta Lake Post, Bangalore

INSTRUCTIONS FOR ONLINE BID SUBMISSION

1. The Tender form/bidder documents may be downloaded from the CPPP <https://eprocure.gov.in/eprocure/app> , **Online submission of Bids through CPPP Portal** is mandatory. Manual/Offline bids shall not be accepted under any circumstances.
2. Tenderers/bidders are requested to visit the website CPPP <https://eprocure.gov.in/eprocure/app> regularly. Any changes/modifications in tender enquiry will be intimated by corrigendum through this website only.
3. In case, any holiday is declared by the Government on the day of opening, the tenders will be opened on the next working day at the same time. The Council reserves the right to accept or reject any or all the tenders.
4. The interested Firms are required to deposit (in original) **EMD of Rs.3,60,000/-** in the shape of Demand Draft in favour of **THE DIRECTOR, ICAR, UNIT-IIHR payable at Bangalore** may be address to **Admn. Officer (Purchase), IIHR, Hessaraghatta Lake Post, Bangalore-560089** on or before **bid opening date and time as mentioned in the Critical Date Sheet.**
5. **Please note that only online Bids through CPPP portal will be accepted. However hard copy of documents and technical brochures uploaded by the firm deposited to Admn. Officer (Purchase), IIHR, Hessaraghatta Lake Post, Bangalore-560089 on or before bid opening date and time as mentioned in the tender document.**
6. Bidders need not come at the time of Technical as well as Financial bid opening at IIHR. They can view live bid opening after login on CPPP Portal (<https://eprocure.gov.in/eprocure/app>) at their remote end. If any dispute arises, Within Bengaluru Jurisdiction only.
7. A pre-bid conference will be held on **20/09/2022 10:30AM** at IIHR, Hesaraghatta, Bengaluru. A maximum of two representatives of each bidder shall be allowed to participate on production of a letter from the bidder. Bidders requiring any clarification on the tender may send their queries to email purchase.iihr@icar.gov.in. All queries should reach IIHR by email with an attachment in ms word format at least two days prior to the pre bid conference date. IIHR shall endeavour to respond to the queries within specified period specified therein but not less than five days prior to the bid due date. IIHR reserve the right not to respond to any questions or provide any clarifications.
8. The firms are also required to upload copies of the following documents compulsory for technical evaluation.
 - **Technical Bid**
 - a) Scanned copy of MSME or Udyog Aadhar or NSIC is a must for EMD Exemption if eligible, otherwise firms have to furnish EMD.
 - b) Scanned copy of valid firm's registration certificate from register of companies, PAN Card & GST Certificate is to be enclosed..
 - c) Scanned copy of Income Tax Returns Statement, for the financial year 2019-20, 2020-21 & 2021-22.

- d) Scanned copy of duly signed Annexure-I, II, IV & Tender acceptance letter (Annexure-V) duly signed.
 - e) Scanned copy of latest GST returns for the month of 08/2022.
 - f) Scanned copy of Chartered Accountant certified profit and Loss account, Balance sheet which are used for filing IT returns only are to be enclosed in support of firm's/Company turnover of Rs.4 Crores per year during the period 2019-20, 2020-21 & 2021-22.
 - g) Scanned copy of User List/Purchase Orders and its satisfactory installation certificate.
 - h) Scanned Copy of Make and model of all systems, sub systems and additional items should be mentioned in the technical bid and complete technical details should be provided in the form of Brochures and write-ups.
- **Financial Bid:-**
 - a) Price Bid as BOQ XXX.xls

Sd/-

SENIOR ADMINISTRATIVE OFFICER

Terms & Conditions

1. The Tenderer shall quote basic value of equipment/machinery rates, GST, Freight charges if any, should be indicated separately.
2. The rates should be quoted as per the BOQ uploaded on the CPPP Portal (reference may be obtained from Annexure-III). GST, if any, should be indicated separately. It must be noted that the contract shall be awarded to the firm which fulfils all the required terms and conditions and remains L-I for all the items put together.
3. The firm must also possess valid PAN No. & GST registration number and a copy of the same must also be enclosed with the tender document.
4. Copy of Financial year 2019-20, 2020-21 & 2021-22, Income Tax Statement may be furnished.
5. The firm should be in existence for over 05 (Five) years in the trade with the business turnover of not less than Rs.4 Crores per annum for 2019-20, 2020-21 & 2021-22. Chartered Accountant certified profit and Loss account, Balance sheet to this effect may be enclosed.
6. Modification in the tender documents after the closing date is not permissible.
7. The successful firm shall have to Supply installation testing and commissioning of LC/IC-ICP-MS with accessories - 01 No. to ICAR-IIHR - VII within 03 months from the date of purchase order and if the materials are not supplied in time then EMD shall be forfeited. The rates quoted shall be valid for one year from the date of opening of tender.
8. The contractor/bidder or his representative may contact the undersigned at **Tel. No. 080-23086100 Extn: 218, 452 & 217** for any further clarification. No variation in terms of quality of the items shall be entertained or else EMD/Security deposit shall be forfeited.
9. The Director, ICAR-IIHR, shall have the right to reject all or any of the offers, accept more than one offer, and assign part of the job without assigning any reason.
10. Merely quoting of lowest rates does not mean that order shall be given to that firm. The competent authority will finally decide on the basis of quality & performance of past installations.
11. The interested Firms are required to deposit an **Earnest Money Deposit of Rs.3,60,000/-** in original in the form of Demand Draft obtained from any of the Commercial Bank in favour of **THE DIRECTOR, ICAR, UNIT-IIHR payable at Bangalore** may be address to **Admn. Officer (Purchase), IIHR, Hessaraghatta Lake Post, Bangalore-560089 on or before bid opening date and time as mentioned in the Critical Date Sheet.** No quotation shall be considered without the earnest money deposit. Demand draft drawn in favour of any officer other than 'THE DIRECTOR, ICAR UNIT-IIHR payable at Bangalore' will not be accepted and the tender will be rejected. The earnest money will be refunded only after the finalization of the procurement and no interest will be paid on earnest money. The request letter for refund of EMD & performance security is to be submitted by the firm.
12. Rates once finalized will not be enhanced/reduced during the currency of the contract.
13. In case, the successful bidder shows inability at any stage, after the contract is finalized and awarded, for whatsoever reason(s), to honour the contract, the earnest money /performance security deposited would be forfeited.
14. The Director, ICAR-IIHR reserves the right to cancel the contract at any time during the currency period of the contract without giving any reason.
15. The firm, to whom the tender will be awarded, will have to deposit the performance security equal to 3% of the total amount at the time of installation of equipment. If the services are not found to be satisfactory, the performance security is liable to be forfeited. No interest will be paid on performance security.
16. If any dispute(s) arises between IIHR and the firm with reference to the contract, IIHR will decide it and its decision will be binding on the firms.
17. The Successful tenderer is required to submit Gem seller id mandatorily at the time of award of contract/placement of order.
18. The Tenderer shall only quote for the model of the equipment which is suitable for the specification as in Annexure-VII and also the model shall be available in the website of OEM. The model offered by the tenderer if found out dated or manufacturing of the same is discontinued, then the tender will not be considered.
19. Bid Validity: 180 days
20. Our Institute is registered with DSIR and we are exempted from Excise Duty & Custom Duty.

Hence CDEC/DSIR will be provided to the firm, if demanded. Rate should be quoted accordingly.

21. Payment:-

a. Payment for goods supplied from abroad

- i. On shipment 90% of the contract price (FOB) shall be paid through irrevocable letter of credit upon submission of documents detailed in L/C.
- ii. 10% of the contract price (FOB) (in foreign currency) and other charges like freight etc., from FOB to FOR, IIHR, Bangalore /(in INR) will be released after satisfactory installation/working of equipment/machine etc. As well as on submission/production of Performance Bank Guarantee by the Supplier(s).

OR

- iii. 100% payment through wire transfer/FDD after satisfactory installation and submission of P.B.G.

b. Payment of goods supplied within India

- i. 100% of the contract price on receipt of goods by the consignee supported by satisfactory installation/working report & submission of PBG.

22. Installation:- Within **30 days from the date of receipt of equipment** in the Institute, failing which Liquidated Damage clause shall apply.

Liquidated Damage clause: It would be realized @ 0.5% (half per cent) of the base price (excluding taxes) of the delayed goods for each week of delay subject to maximum 20%.

23. Prices:

- i. Price to be quoted in Foreign Currency CIP, Bengaluru Airport and to be delivered @ IIHR Hesaraghatta, Bangalore.
- ii. If any bidder wants to quote in INR, price be quoted on FOR, IIHR, Hesaraghatta, Bangalore basis.
- iii. In case the stores pertains to Import:

- a) Kindly ensure to enclose manufacturer's authorization in favour of Indian subsidiary firm. It may also be noted that further authorization by subsidiary firm in favour of any other firm located in India to promote their sale must have authorization from the Principal firm for further authorization to an Indian firm, failing which the tender is liable to be cancelled.
- b) Price can also be quoted in INR (FOR Hesaraghatta, Bangalore basis), but in that case either CDEC/DSIR or GST can be demanded. Demand for both GST & CDEC/DSIR cannot be considered.
- c) Price should be quoted from FOB to FOR destination (IIHR, Hesaraghatta, Bangalore) in case of Indian currency (INR) also.
- d) IIHR do not have Clearing Agent, Hence Supplier shall clear consignment from Airport/Customs authority and delivered to IIHR, Hesaraghatta, Bangalore.
- e) Rate of GST and amount of GST charged on the basic value of the equipment should be shown separately, while quoting in the financial bid, otherwise tender liable for rejection.

24. The HSN Code is to be mentioned in the invoice bill otherwise payment will not be released.

'Terms & Conditions are acceptable'

Dated

(Authorized signatory of the firm)

Annexure-III

(Reference for BOQ) (To be quoted in format provided on CPPP Portal)

Price bid for “Supply installation testing and commissioning of LC/IC-ICP-MS with accessories Specifications as in annexure VII- 01 No. to ICAR-IIHR” at, Hesaraghatta lake Post, Bangalore- 560089.

Sl. No.	Name of item	Quantity	Unit of Measure	Per unit price* (in figures) (as per BOQ)
01	A.1 LC	1	No.	Price Should be quoted in BOQ Excel Sheet
02	A.2 IC	1	No.	
03	B) ICP-MS with A bench top model with B1. Sample introduction system	1	No.	
04	B2. Ion Source and RF Plasma	1	No.	
05	B3. Ion Extraction Interface	1	No.	
06	B4.Collision/Reaction Cell	1	No.	
07	B5. Mass analyser and Detector	1	No.	
08	B6. Performance specifications	1	No.	
09	B7. Vacuum system	1	No.	
10	B8. System Controller and Operating System	1	No.	
11	B9. Fully automated microwave digestion system	1	No.	
12	C) Essential Accessories C1. UPS - 20 KVA Online UPS with 120 min backup	1	No.	
13	C2.Gas cylinders - Argon- 2 Nos with gas manifold and panel	2	No's	
14	C3. Exhaust - Exhaust for ICP-MS and auto sampler	1	No.	
15	D) Consumables D1.1 ICP-MS Grade/suprapure Acids: 2.5 L Nitric acid	2.5	Lit	
16	D1.2 ICP-MS Grade/suprapure Acids: 2.5 L Hydrochloric acid	2.5	Lit	
17	D1.3 ICP-MS Grade/suprapure Acids: 2 ltr Hydrogen Peroxide acid	2	Lit	
18	D1.4 ICP-MS Grade/suprapure Acids 2.5 Ltr Hydrofluoric acid.	2.5	Lit	
19	D2.NISTCalibration standards of 22/23 elements (100 ppm, 250 ml & Single element (100 ppm, 125 ml) standards for Hg & Au.	1	No.	
20	D3. Ni sampler, skimmer cone (01 sets)	1	Set	
21	D4.Pt sampler, skimmer cone (01 sets)	1	Set	
22	D5. Standard torch -02 set	2	Set	
23	D6. Standard nebulizer & Spray chamber - 01 Set	1	Set	
24	D7.Standard peristaltic pump tubing for drain (pk/12) – 4 Nos.	4	No's	
25	D8. Standard Peristaltic pump tubing for samples (pk/12) – 4 Nos.	4	No's	
26	D9. Peristaltic pump tubing for ISTD (pk/12) – 4 Nos	4	No's	
27	D10.Tubing autosampler (pk/12) – 4 Nos	4	No's	
28	D11. Oil Element for Outlet Mist Filter -02 set	2	Set	
29	D12. Graphite gasket for Sampling cone- 5 Nos.	5	No's	
30	D13. Sample tubing for nebulizer 10 Nos.	10	No's	
31	D14. Tubing for spray chamber drain	1	No.	
32	D15. Pump oil (1L) - 3 sets	3	Set	

33	D16. Skimmer base for Ni cone – 01 Set Each	1	Set
34	D17. Screw, spacer, and O-ring for cell - 02 sets	2	Sets
35	D18. Fluid filter for chiller - 02 sets	2	Sets
36	D19. Fluid for chiller - 07 L	7	Lit
37	D20. Cone cleaning solvent/supra pure chemical - 02 L	2	Lit
38	D21. Swab (cotton-tipped both ends) - 100 Nos.	100	No's
39.	D22. Autosampler vials - 1000 Nos.	1000	No's
40	D23. Standard autosampler probe and complete tubing set - 01 sets	01	Set

*Annexure-VII

- Items should be of reputed make and suitable for high end elite users
- **The instrument is to be installed at ICAR-IIHR, Hesaraghatta lake post, Bangalore-560089**

Note: The above mentioned Financial Proposal/Commercial bid format is provided as BoQ_XXXX/xls along with this tender document at <https://gem.gov.in> Bidders are advised to download this BoQ_XXXX.xls as it is and quote their offer/rates in the permitted column and upload the same in the Financial bid. **Bidder shall not tamper/modify downloaded price bid template in any manner.** In case if the same is found to be tempered/modified in any manner, tender will be completely rejected and EMD would be forfeited and tenderer is liable to be banned from doing business with IIHR.

Annexure-IV

EPABX: 080-23086100 Extn: 218 & 217

FAX: 080-28466291 – Email: purchase.ihr@icar.gov.in



ICAR-INDIAN INSTITUTE OF HORTICULTURAL RESEARCH

HESSARAGHATTA LAKE POST, BANGALORE-560 089

Name of the Firm _____
Registered/Postal Address _____
Email id: _____
Contact person name: _____
Contact mobile number: _____

1	Permanent Account Number (PAN)	
2	GST Registration No.	
3	Bank Details	
a	Bank Name	
b	Branch Address	
c	Account Number	
d	Type of account (current/saving) MICR No.	
e	IFSC Code	

Date:

Name of the Authorized Signatory

Place:

Stamp & Signature

TENDER ACCEPTANCE LETTER
(To be given on Company Letter Head)

Date:

To,
The Director,
ICAR-IIHR,
Hesaraghatta Lake Post,
Bangalore-560089.

Sub: Acceptance of Terms & Conditions of Tender.

Tender Reference No. _____

Name of Tender/Work:

Dear Sir,

1. I/ We have downloaded/obtained the tender document(s) for the above mentioned 'Tender/work' from the web site(s) namely:

As per your advertisement, given in the above mentioned website(s).

2. I/We hereby certify that I/We have read the entire terms and conditions of the tender documents from Page No. _____ to _____ (including all documents like annexure(s), schedule(s), etc...) which form part of the contract agreement and I/We shall abide hereby the terms/conditions/clauses contained therein.
3. The corrigendum(s) issued from time to time by your department/organization too have also been taken into consideration, while submitting this acceptance letter.
4. I/we hereby unconditionally accept the tender conditions of above mentioned tender documents/corrigendum(s) in its totality/entirely.
5. I/we do hereby declare that our Firm has not been black-listed/debarred by any Govt. Department/Public sector undertaking.
6. I/we certify that all information furnished by our Firm is true & correct and in the event that the information is found to be incorrect/untrue or found violated, then your department/organization shall without giving any notice or reason therefore or summarily reject that bid or terminate the contract, without prejudice to any other rights or remedy including the forfeiture of the full said earnest money deposit absolutely.

Yours Faithfully,

(Signature of the Bidder, with Official Seal)

Details of Equipments & EMD

Sl. No.	Purchase of item	Earnest Money in INR	File. No. for reference
01	Supply installation testing and commissioning of LC/IC-ICP-MS WITH ACCESSORIES - 01 No. to ICAR-IIHR *	Rs.3,60,000/-	F.No.5-62/2022-23/IIHR/SP

Note: EMD defined on to the Portal is MINIMUM. Bidder has to submit the EMD as per item for which quoting for.

***Installation at ICAR-IIHR, Hesaraghatta lake Post, Bangalore.**

TECHNICAL SPECIFICATIONS FOR LC/IC-ICP-MS WITH ACCESSORIES

A fully automatic bench top, compact, ICP-MS hyphenated with either a compatible Liquid chromatography(LC) system OR an Ion Chromatography (IC) system for speciation and trace elemental analysis in the area of food and water samples. The instrument must be suited to follow the guidelines of International Food Safety Standards and Regulatory Agencies such as US-EPA, WHO, FSSAI.

Vendor may quote for

i) a LC OR an IC system and

ii) an ICP-MS system.

A)	LC System	
	LC	<ul style="list-style-type: none"> • Inert HPLC Pump with dual piston binary pump with completely inert and metal-free fluid path for lower detection limits and better accuracy. System should work in both isocratic and gradient mode • Pump must have post-seal wash to avoid salt build-up behind the pump seal. • Pump should support minimum of four solvents, low-pressure gradient valve for quaternary gradient analysis should be provided. • Pump should have incorporated pulse dampener to ensure that pulsations are kept to a minimum. • Integrated vacuum degassing (4 channel or more) to effectively remove/reduce ghost peaks. • Operating pressure should be 5800 psi or better at 5 mL/min. • Flow rate should be 0.01 to 5 mL/min or more with at least 0.01 ml increments. • Flow accuracy should be $\pm 1\%$ or better, flow precision- 0.5% RSD or better. • It should have leak sensors as standard and safe leak handling. • System should work in the pH range of 2 to 12 • The auto sampler tray should have capacity up to 100 vials (2 mL) or more • The autosampler should be peltier based temperature-controlled system with a temperature range of 4-40°C with 1.0°C increments. • The sample carryover should be less than 0.004%. • Column compartment should have capacity for 2 columns or more • Should include required integrated interface accessory to couple HPLC with ICP MS.
	IC	<ul style="list-style-type: none"> • Quaternary pump that can be operated on both isocratic and gradient mode and to support standard bore, microbore and capillary applications. All modules of IC system to be controlled by a single software. • Flow rate of 0.01 to 20 mL/min or better • Flow precision $\pm 0.1\%$ • Max operating pressure- 5000 psi or better • Capable of withstanding high backpressure with continuous reThe pump must have as an option a piston seal wash, which can be continuously operated when connected to rinse solution supply generation • All modules should be metal free • The auto sampler tray should have capacity up to 100 vials (2 mL) or more

		<ul style="list-style-type: none"> • The autosampler should be temperature-controlled with a temperature range of 4-40°C with 1.0°C increments. • The sample carryover should be less than 0.004%. • Column compartment should have capacity for 2 columns or more <p>Should include required integrated interface accessory to couple IC with ICP MS.</p>
B)	ICP-MS	A bench top model with
1.	Sample introduction system	<ul style="list-style-type: none"> a) Glass concentric nebulizer b) Peltier cooled glass Spray Chamber with external torch base. Operating temperature range -5 °C to +20 °C or better. c) System must have integrated, software controlled Argon gas dilution capability to introduce high TDS ($\geq 25\%$) content samples d) The system should have capability/provision of at least three dedicated gas channels to use varied collision/ reactions gases like He, O₂, NH₃, etc for effective removal of interferences in challenging sample matrices e) Online internal standard kit with splitter and tubing set should be provided to be utilized specifically for online internal standard addition only
2	Ion Source and RF Plasma	<p>The system should have</p> <ul style="list-style-type: none"> a) Solid state RF Generator 27/40 MHZ or better b) RF power range 500 W-1600W c) One-piece user-changeable quartz torch, fully automated X Y Z torch alignment should be provided d) Should have at least 04 mass flow controllers (MFC) for control plasma, auxiliary, carrier gas and makeup/dilution gas.
3	Ion Extraction Interface	<ul style="list-style-type: none"> a) Single cone interface to achieve all instrument guaranteed performance specifications without any manual intervention or changeover for high matrix, high sensitivity, and high TDS samples. b) suitable Ion lens to provide high ion transmission and low backgrounds.
4	Collision/Reaction Cell	<ul style="list-style-type: none"> a) Cell should be capable of operating in standard, collision and reaction modes with pure or pre-mixed gas. b) Cell should be able to remove polyatomic interferences as per national and international regulations. Kinetic energy discrimination (KED) facility must be available to remove interferences. c) Cell should have provision for fully automated and software-controlled changeover between standard, collision and reaction modes without any manual intervention.
		d) Must have separate gas lines along with dedicated MFC for collision and reaction gas. Suitable reaction gas/gases (atleast one) should be offered to fulfill above specified application & to comply all elemental national and international regulation.
5.	Mass analyser and Detector	<ul style="list-style-type: none"> a) Quadrupole based, RF 2.0 MHz or higher. b) Resolution : 0.3 amu or better b) Mass range: 5-260 amu or better. c) True linear dynamic range: 10 orders of magnitude or better d) Mass scan speed: 3000 amu/s or better, Li7 to U238 along with 40 intervening masses e) Dwell time: 0.1ms(100us) for fastest settling or better

6.	Performance specifications	<p>a) Detection Limits:</p> <ul style="list-style-type: none"> • Low mass (Be/Li): ≤ 0.5 ppt • Mid mass (Y/In): ≤ 0.25 ppt • High Mass (Tl/Bi): ≤ 0.25 ppt <p>b) Sensitivity:</p> <ul style="list-style-type: none"> • Low mass (Be/Li): > 6 Mcps/mg/L • Mid Mass (In/Y): ≥ 100 Mcps/mg/L • High Mass (Tl/U): ≥ 80 Mcps/mg/L <p>c) Mass resolution @ 5-260 amu : Variable from 0.3 u to 1.0 u or better across entire mass range</p> <p>d) Abundance sensitivity at Cs/U : 10^{-7} or 0.5 ppm or better</p> <p>e) Oxide ratio (CeO^+/Ce^+): $< 2.5\%$ or better</p> <p>f) Background noise (no gas mode): < 1 cps</p> <p>g) Isotope-ratio precision: Ag: 0.2% RSD or better</p>
7	Vacuum system	<ul style="list-style-type: none"> • It shall consist of multi stage corrosion resistant vacuum turbomolecular pump and maintain vacuum at $1e^{-6}$ torr (or better) • Vacuum should be maintained even in case of a power failure or the system should be backfilled with inert gas or suitable mechanism to prevent damage to collision/reaction cell and quadrupole
8	System Controller and Operating System	<ul style="list-style-type: none"> • Original licensed copy of software compatible to latest windows version. • The software should provide full control of operation of the Instrument and accessories. • Independent desktop computer to be provided (i7/i5 processor, 16GB RAM, 1 TB hard disk or better) for data analysis with 64 bit system and 21 inch LCD/LED monitor. Licensed copy of windows to be provided. • Multi-function laser printer with scanning
9	Fully automated microwave digestion system	<ul style="list-style-type: none"> • Minimum power output of 1400 watts or more. • Touch screen with storage capacity of more than 100 methods. • Should hold at least 12 no's high pressure vessels and should be high purity TFM-PTFE or equivalent. Vessel volume should be 100 ml. <p>Additional rotor should be quoted which can hold 50 ML vessels (20 nos vessels, two sets).</p>
		<p>All the required accessories for the use of these vessels in the quoted microwave digestion system should be provided.</p> <ul style="list-style-type: none"> • Temperature capacity of 26000C and above maximum pressure 60 bar or more. • Should have Inbuilt exhaust system. • Good interlocking system for safety. Certified by necessary safety authority for safe operation. • The system software should meet the 21 CFR part 11 compliance and other GLP requirements. • Necessary tool kit for routine maintenance of the system should be provided. • The system should be compatible with USP 232 and 233 methods

C)	Essential Accessories	
	UPS	20 KVA Online UPS with 120 min backup
	Gas cylinders	Argon- 2 Nos with gas manifold and panel
	Exhaust	Exhaust for ICP-MS and autosampler
D)	Consumables	<ul style="list-style-type: none"> ● ICP-MS Grade/suprapure Acids: 2.5 L Nitric acid, 2.5 L Hydrochloric acid, 2 ltr Hydrogen Peroxide, 2.5 ltr Hydrofluoric acid. ● NIST Calibration standards of 22/23 elements (100 ppm, 250 ml & Single element (100 ppm, 125 ml) standards for Hg & Au. ● Ni sampler, skimmer cone (01 sets) ● Pt sampler, skimmer cone (01 sets) ● Standard torch -02 set ● Standard nebulizer & Spray chamber - 01 Set ● Standard peristaltic pump tubing for drain (pk/12) – 4 Nos. ● Standard Peristaltic pump tubing for samples (pk/12) – 4 Nos. ● Peristaltic pump tubing for ISTD (pk/12) – 4 Nos ● Tubing autosampler (pk/12) – 4 Nos ● Oil Element for Outlet Mist Filter -02 set ● Graphite gasket for Sampling cone- 5 Nos. ● Sample tubing for nebulizer 10 Nos. ● Tubing for spray chamber drain ● Pump oil (1L) - 3 sets ● Skimmer base for Ni cone – 01 Set Each ● Screw, spacer, and O-ring for cell - 02 sets ● Fluid filter for chiller - 02 sets ● Fluid for chiller - 07 L ● Cone cleaning solvent/supra pure chemical - 02 L ● Swab (cotton-tipped both ends) - 100 Nos. ● Autosampler vials - 1000 Nos. ● Standard autosampler probe and complete tubing set - 01 sets
E)	Additional requirement	The required IQ, OQ, PQ needed, should be generated during installation and operation by vendor and provided to us free of cost.
F)	Warranty	One year warranty from the date of installation on main Instrument, Microwave Digester, Exhaust system, Chiller, and 4 years AMC on the same should be provided.
G)	Training	Vendor to ensure demonstration and operation/application training at buyer's site at the time of installation. Onsite technical/application support must be made available from the selected vendor from time to time during the warranty period.
<ul style="list-style-type: none"> ● Vendor should provide complete user list (including email id and phone numbers) and performance certificate of their equipment (quoted model or equivalent) from at least three installations preferably in food testing sector, one of which should be from a public sector installation. ● Vendor should quote a model which is available on the OEM's website. ● Technical bid should include vendor's quotation for each of the above specification. Compliance certificate supplied if any will not be considered as a substitute for quoted bid document. 		

Sd/-

SENIOR ADMINISTRATIVE OFFICER