fssai

TENDER NOTICE FOR INDUCTIVELY COUPLED PLASMA MASS SPECTROMETER (ICP-MS) ALONG WITH ALL ACCESSORIES AND SAMPLE PREPARATION FACILITY

Food Safety & Standards Authority of India

Ministry of Health & Family Welfare

FDA Bhawan, Kotla Road

New Delhi – 110002

Letter for invitation:

Dear Sir/Madam,

FSSAI has undertaken a major programme for strengthening of Food Testing System in the country. As part of this programme, 45 State Food Testing Labs will be modernised with the induction of state-of-the-art analytical instruments. FSSAI proposes to enter into rate contract with reputed Original Equipment Manufacturers/Authorized Suppliers in India for the supply of Inductively Coupled Plasma Mass Spectrometer (ICP-MS

Sealed tenders are, therefore, invited from reputed manufacturers/Authorized suppliers in India for finalising the rate contract for and on behalf of Food Safety and Standards Authority of India for the purchase of Inductively Coupled Plasma Mass Spectrometer (ICP-MS). The bids are to be submitted under a two bid system i.e. Technical and Financial Bids in the prescribed format. Financial bids of only technically qualified bidders would be opened.

FSSAI reserves the right to accept or reject any or all of the offers at any stage of the process without assigning any reason thereof and any claim /dispute on this shall not be entertained.

Yours Sincerely,

Head (Quality Assurance)
Food Safety and Standards Authority of India,
FDA Bhawan, Kotla Road, New Delhi – 110002

DATA SHEET

1	Name of Tendering Authority: FOOD SAFETY AND STANDARDS AUTHORITY OF INDIA, FDA Bhavan, Kotla Road, New Delhi.
2	1) **Method of Selection:** Selection of the Bidders will be a two stage process. In the first stage the Bidders will be pre-qualified based on the compliance to specification and other requirement mentioned in the Technical Bids. The bids of only the Technically qualified bidders will be considered for opening the Financial Bid. 2) L1 bidder will be selected from among the technically qualified bidder and all other bidders will be given an opportunity to match the L1 price. Rate contract would be signed with only those bidders who will match the L1 price.
3	A Pre- Bid conference will be held: **Yes** Date: 22nd November 2016 at 12:00 pm Venue: FSSAI HQ Details. 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 the Head (Quality Assurance), FSSAI by email at softel.fssai@gov.in. All queries should reach FSSAI by Email with an attachment in 'MS-Word format' at least two days prior to the pre-bid conference date as per details provided below. FSSAI shall endeavor to respond to the queries within the specified period specified therein but not less than 5 days prior to the Bid Due Date. FSSAI reserves the right not to respond to any question(s) or provide any clarifications.
4	Point of contact for any queries related to the tender: Head Quality Assurance Food Safety & Standards Authority of India, FDA Bhawan, Kotla Road, New Delhi – 110002

	Tele-No: 011-23220990 Website: http://www.fssai.gov.in Email: softel.fssai@gov.in
5	**The Bidder must submit one copy each of the technical bid and the Financial Bid in separate sealed cover. Bids received in unsealed conditions will be summarily rejected.**
6	The Bidders are required to submit two envelops, one labeled 'Technical Bid' the other labeled 'Financial bid' Both the bids must be sealed in one larger envelop and should be marked, *"Tender for Rate contract for .....(Name of the Equipment)- Do not open except in presence of the Evaluation Committee"* The name of the Bidder submitting the bid must also be clearly indicated on the envelope. Each bid (Technical and Financial separately) shall be page numbered and Financial figures shall be laminated/covered with transparent adhesive tape.
7	The Technical bid must not contain any pricing information. If the technical bid contains any commercial information, the bid is liable to be rejected. In submitting additional information, please mark it as "supplementary" to the required response. If the Bidder wishes to propose additional services (or enhanced levels of services) beyond the scope of this tender, the bid must include a description of such services as a separate and distinct attachment of proposal.
8	Bids must be submitted not later than on **2nd December 2016 at 1730 hours.** Bid received after this will not be entertained or considered.
9	Address for submission of the Bid: Head (Quality Assurance) Food Safety and Standards Authority of India, FDA Bhawan, Kotla Road, New Delhi – 110002
10	Date for public opening of Technical Bids- (To be notified)
11	Date for opening of Financial Bids of Eligible Bidders (to be notified)
12	Expected date for contract negotiations to be notified)
13	Documents to be submitted by the bidder: a) Technical bid in the format prescribed in this document along with supporting documents as mentioned herein with signature, name, designation and seal of the authorized representative of the bidder on each page of the technical bid. b) At least two Performance certificates from the organizations where the quoted equipment model has already been installed are to be provided by the bidder along with Technical bid. c) Financial bid in the format prescribed in this document with signature,

	name, designation and seal of the authorized representative of the bidder on each page of the financial bid. d) Acceptance of the terms and conditions contained herein in the format as given in the tender document.
14.	FSSAI reserves the right to accept or reject any or all of the offers at any stage of the process without assigning any reasons thereof and any claim /dispute on this shall not be entertained.

1. INTRODUCTION

The Food Safety and Standards Act, 2006 was enacted in 2006 in order to consolidate all the laws relating to food and to establish the Food Safety and Standards Authority of India (FSSAI) for laying down science-based standards for articles of food and for regulating their manufacture, storage, distribution, sale and import, for ensuring availability of safe and wholesome food for human consumption in the Country. By virtue of the mandate given to FSSAI, Rules and Regulations hitherto implemented under various regulatory orders were repealed with effect from 5th August 2011.

The Food Authority is mandated to lay down the procedure, guidelines and notification of the accredited laboratories. FSSAI may notify laboratories and research institutions accredited by NABL or any other accreditation agency. In addition to above, it also mandates the Food Authority to develop regulations for food testing laboratories, protocols for testing, audit of food safety systems and undertaking training and capacity building for laboratory staff and professional food analysts.

2. SCOPE OF THE WORK:

The scope of the work is divided into following components:

a) Providing, Installing and commissioning Testing of the equipment Inductively Coupled Plasma Mass Spectrometer (ICP-MS) along with all accessories and sample preparation facility.

b) Provision of Manpower .

c) Operation and maintenance of equipment during the contract period

4.a Equipment to be provided:

Inductively Coupled Plasma Mass Spectrometer (ICP-MS) along with all accessories and sample preparation facility as per the specification given in the technical Bid format.

Note:

a) The cost should be quoted separately for all the accessories, consumables, equipment for sample preparation, CRM etc required for the functioning of the respective equipment.
b) The purchased equipment should be able to meet the requirements of the LOD and LOQ (Limit of detection and Limit of quantification) for the relevant parameters as specified in FSSR, FSSAI Manuals, Relevant test methods and be compliant to the requirements of ISO 17025.

4.b Manpower to be provided:

Successful bidder will have to provide full time one trained personnel for three years who will be responsible for the working of the instrument i.e. sample preparation, method validation, operation of instrument and data interpretation. The personnel will not claim to be an employee of FSSAI/ state Laboratory. The person will work under the supervision of state laboratory head and carry out the required analysis of various samples received in the lab. He will also be responsible for providing training on the instrument to the laboratory staff.

Bidders will have to maintain backup of the manpower supplied in case of prolonged leave or any unforeseen circumstances.

In case the person provided by the bidder is found to be involved in any unlawful activity, the bidder will be liable to remove him immediately and provide a replacement. The decision of the state food lab would be final and binding to the bidder in this regard.

3. FORMAT OF THE TECHNICAL BID:

The bids of only the technically qualified bidders will be eligible for consideration for opening of financial bid. The technical bid of the bidders will be evaluated on the basis of specification of the offered model vis-à-vis the prescribed specification given below :

1. **Name of the Equipment: .....**
2. **Offered Model: .....**
3. **Brief details of the offered Model:** (in terms of sensitivity, specification, LOD, LOQ, etc.) (not more than 150 words)
4. **Specification: .....**

S. No.	Main Heads/ Components	Prescribed Specification	Please specify whether the quoted model meets the specification (Yes/No)	Specification of the Quoted Model
1.	**System Application**	The system should have • Computer controlled fully automatic ICP-MS system • Simultaneous multi-elemental analysis in ppm, ppb and ppt levels with required sensitivity and stability of diverse range of food and water samples • The system should be a space saving, compact model that can fit into allocated lab space with all the sub- systems and accessories. • Corrosion-resistant exteriors should be provided • Model number of the equipment proposed to be supplied to be clearly mentioned		
2.	**Sample Introduction system**	The system should have • **Nebulizer:** Concentric Micro mist Nebulizer with low sample flow rate • **Spray Chamber:** Peltier cooled spray chamber • **Peristaltic pump:** Low pulsation high precision peristaltic pump with minimum of three separate channels which can be controlled through the software.		
3.	**Plasma**	The system should have • **RF Generator:**		

		RF Power range: 500W to 1600 W. Radio Frequency Generator (Solid State): 27 or 40 MHz Impedance Matching: Auto-tuning to get maximum coupling efficiency. • **Torch:** Easy mountable single piece quartz torch with shield torch (i) Torch movement should allow for complete computer-control and auto tunable in x-y-z directions with independent movements in the three directions. (ii) Provision for Auto-alignment of the torch after routine maintenance with a reproducibility better than 0.1 mm in x-y-z directions • **Plasma Gas Control:** Should have at least 4 Active Mass Flow Controllers (AMFC) for control plasma, auxiliary makeup, carrier gases. Gases used should be controlled with mass flow controller and fully computer controlled. • Argon gas dehumidifier must be quoted along with the main instrument.		
4.	**Ion Extraction Interface**	The system should have • Standard sample and skimmer cones with suitable orifice diameters to suit all application and to prevent clogging and minimize signal drift. It should be easily mountable and dismountable. • Scope of supply of standard and optional Nickel/Platinum cones should be clearly specified. • Lens/ extraction cones or equivalent should be easy to maintain.		
5.	**Ion Focusing System**	The system should have • Ion focusing system with efficient mechanism for removing all neutrals and photons from the Ion path. • Cell offering three modes of operation: Standard Mode, Collision Cell Mode and Reaction Cell • Switching of reaction and collision gases will be through software and automated. Unit will have the flexibility of applying both (collision, and reaction) gases using		

		single method for removal of interferences. Mass Cut off facility should be there to remove unwanted polyatomic interferences formed due to free atoms. • A reaction cell should be provided for poly atomic interference removal with Helium mode and Hydrogen mode. Separate AMFCs for Reaction cell gases. • Vendor should attach application notes for Arsenic analysis where O2 is used to remove interference for ArCl which demonstrates mass shift mode. • Reaction cell assembly and octopole/ hexapole assembly (if requires cleaning any time in lifetime) should be quoted.		
6.	**Quadrupole Assembly**	The system should have • Quadrupole Mass Analyzer: A quadrupole mass analyzer to provide effective ion transmission, superior resolution and abundance sensitivity. • Mass range: 5-260 amu or above • RF Frequency : Fully Digital RF generator with frequency 2-3 MHz • Abundance sensitivity: Low Mass Side: $\leq 5 \times 10^{-7}$ High Mass side: $\leq 1 \times 10^{-7}$ • Scan Speed: Greater than 3000 amu/s • Mass stability: $< \pm$ 0.05 amu over 8 hours of continuous operation. • Resolution: Variable from 0.3 u to 1.0 u, user definable		
7.	**Ion Detector Assembly**	The system should have • Solid State dual stage dynode discrete over 10 orders of 10 orders or more magnitude of linear dynamic range. • Should be unique log amplifier circuit, features a high speed analog mode for transient signals and a true nine orders dynamic range. • Minimum dwell time 100 µs (in both pulse count and analog modes. • Dual-stage detector assembly should come as a standard with the system.		
8.	**Vacuum System**	The system should have • Efficient Vacuum system with turbo molecular pump and single external		

		rotary pump for fast pump down and simple maintenance. • In the event of vacuum failure, the entire vacuum system is to be automatically back-filled by inert gas to preserve the cleanliness of the system.		
9.	**Performance Specifications**	Guaranteed sensitivity specifications will be considered (To be demonstrated during Demo): Typical sensitivity values will not be considered • Should be able to analyze Sn, Ni, Cu, Zn, Ba, Sb, Ni, B, Ag, Mg, Ca, Na, As, Cd, Cr, Hg, Pb, Se, Fe (but not limited to these elements) at a concentration of 0.05ppb with RSD of <5% at standard conditions. • Oxide ratio (%) CeO/Ce< 2 % • Double charged ratio < 3 % • Isotope-ratio Precision: 1%RSD		
10.	**Water Chiller**	The system should have a suitable re-circulating chiller changer of internationally reputed company for plasma component cooling.		
11.	**Auto Sampler / Diluter**	The system should have • Highly effective auto sampler/ diluter compatible with operation along with ICP- MS without user intervention. • Auto sampler with minimum 200 vials holding capacity with 500 nos. of 15 ml capacity tubes (as consumable). • Programmable complete with inert PTFE coated probe with PTFE inner tubing. • Spare extension tube complete with 20 ml syringe for programmed auto dilution • All accessories, racks, bottles, tubing assembly, waste container, dust cover etc.		
12.	**System Controller and Operating System**	The system should have • Software control for automatic data acquisition and processing. • mass spectrometer tuning and calibration auto and manual • Data Validation • Self-diagnostics • Multi element analysis capability Isotope ratio and dilution • Cool Plasma or other facility to eliminate polyatomic interferences.		

		• Remote diagnostics • Software should control plasma, MS and other accessories like auto sampler • The system software shall support the following calibration curve fit modes for Quantitative analysis: i. Linear least squares. ii. Weighted linear least Squares iii. Linear forced-through-zero least squares. iv. Quantitative analysis including external calibration, additions calibrations, method of standard additions, isotope ratios and isotope dilution's and semi quantitative analysis. v. On-line help with quick steps to reference entire instrument user manual.		
13.	**Computer**	• Minimum Intel core i5/i7 processor, 2.0 Ghz or more, 19″or more LCD/TFT Monitor, 500 GB HDD, DVD Read/Write, 4 GB RAM,4 USB Port or higher configuration for use with the above system to be provided. • Reputed Branded colour Laser jet printer and automatic back to back should be provided		
14.	**Multi vessel Microwave digestion system**	The system should be provided with a suitable microwave digestion system of 20-25 samples processing capacity in one batch along with proper fume hood system. The specification along with the model should be provided at the time of tendering.		
15.	**Exhaust unit**	Exhaust unit for the ICP-MS has to be supplied along with the System		
16.	**Standards with minimum expiry of two years**	• Specially pure Analytical NIST traceable single element standard solutions(Minimum pack or100ml each whichever is lower) for Sn, Ni, Cu, Zn, Ba, Sb, Ni, B, Ag, Mg, Ca, Na, As, Cd, Cr, Hg, Pb, Se, Fe should be supplied • Multi element Calibration NIST traceable standards for ICP-MS - one set		
17.	**Power Supply**	The system should have UPS (minimum 10 KVA) of suitable rating with voltage regulation, spike protection and minimum 60 minutes back up for the supplied equipment.		

18.	**Accessories**	The following Items, but not limited to, has to be supplied along with the equipment • Peristaltic pump tubing-sample intake – 100 No's • Peristaltic pump tubing-Drain – 100 No's • Tubing – Auto Sampler to Peristaltic Pump – 25 No's • Micro mist nebulizer – 5 No's • Plasma Torch – 5 No's • Ni Sampling Cone – 4 No's and Pt Sampling Cone – 2 No's • Ni Skimmer Cone – 4 No's and Pt Skimmer Cone – 2 No's • Hyper skimmer cones/extraction system for HF digested sample. • Vacuum Pump oils – 5 litres • Argon Gas Cylinders-6 • Gas cylinder for Collision cell gases – Helium-1 • Gas cylinder for Reaction cell gases - Oxygen, Hydrogen & Ammonia (1Each), whichever is applicable for individual system for elimination of interference species along with 2 stage Gas pressure regulators for each cylinder. • Gas purification panel for Argon, Oxygen, Helium & Hydrogen with appropriate plumbing. • Optional: Any other accessory as felt required for the proper functioning of the equipment.		
19.	**Additional items**	• Consumables for Five years operation of the system for main ICP unit, spare torches, nebulizer, tunings, and moisture trap are required to be quoted. • Consumables for seven years operation of the system for main unit are required to be quoted for analysis in multiples of 100 samples. • Operation kit comprising all required items pump tubings, transfer tubings, work coils etc. for startup/regular operation of instrument. • Air conditioner to be quoted for required for maintaining the temperature of the room installed with ICP- MS.		

		• Firm should also quote all essential pre-installation requirements and utility requirement for ICP-MS. • Give the Detection limits (DL) chart for Sn, Ni, Cu, Zn, Ba, Sb, Ni, B, Ag, Mg, Ca, Na, As, Cd, Cr, Hg, Pb, Se, Fe (but not limited to these elements. Provide for as many elements as vendor can) and give the conditions at which the DLs are measured. • Operation and maintenance manual for each unit in both hard copy and soft copy. • Service manual with set of required tools for each system/unit. • The system should have Server connectivity and should be capable of 21 CFR Part 11 and food safety compliance. The necessary validations will have to be carried out by the equipment suppliers. • Methods library for all food matrixes, related software's and user manuals to be provided. PLEASE PROVIDE MAINTENANCE CHART FOR ALL OF THE COMPONENTS IN ICPMS SYSTEM.		
20.	**Operation and maintenance** **&** **Training Component**	• The supplier will have to carry out successful installation at our laboratory premises (where ever the system has to be installed) and provide on – site comprehensive training for scientific personnel operating the system and support services till customer satisfaction with the system and a training at the suppliers lab premises is also required. • One trained personnel should be provided by instrument suppliers for seven years who will be responsible for the working of the instrument i.e. sample preparation, method validation, operation of instrument and data interpretation. The personnel will not claim to be an employee of FSSAI/ state Laboratory. The personnel will work under state laboratory head. He will also be responsible for providing training of the instrument to the laboratory staff.		

21.	**IQ/OQ/PQ**	• IQ/OQ/PQ of the system is required		
22.	**Warranty**	• Standard Warranty of 24 months starting from date of satisfactory and faultless functioning of the equipment for 60 days at the respective laboratory premises. • Comprehensive Maintenance Contract Service for 60 months after expiry of standard Guarantee/Warranty should be quoted • Annual calibration of the equipment shall be a part of the CMC. It shall also be mandatory to perform calibration after every major repair/breakdown. • The vendor should have available for ten years guaranteed parts and CMC service • The supplier or his authorized agent should have after sales and service centre near each of our laboratory location where the equipment is to be supplied. • Current user's / performance list with contact details (Customer name, phone email id etc) and date of installation to be provided (Minimum 5 installations of the model quoted) • Number and details of the service engineers has to be provided • Onsite technical performance evaluation of the quoted model of the equipment will be carried out for those who qualify in the technical bid.		
23.	**Preinstallation requirements**	• Provide all pre-installation requirements		

5. **List of Installations of the quoted Model preferably in food analysis sector in India** (Attach Performance certificate from the organizations where the quoted equipment has already been installed)

Note:

- The technical bids have to be filled in the above format only. Separate application notes and details can be attached but the above format is to be filled mandatorily.
- List of the 5 Installations in country, preferably in Food sector along with the Contact Name, contact no, mail ID and complete address should be enclosed with the technical bid.

- At least two Performance certificate (indicating LOD/LOQ of at least 10 parameters relevant to food sector) from the organizations where the quoted equipment has already been installed to be provided by the bidder along with Technical bid.
- The supplier should aim at a turnkey supply and installation of the equipment. Any accessory which is felt mandatory for the proper working of the equipment but not mentioned in the specification has to be quoted and supplied along with.
- Any unfair practice at any stage of the tendering process will lead to automatic disqualification of the concerned firm.
- No financial costs should be mentioned in the technical bid and the same shall be provided separately in a sealed envelope marked financial bid.
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I ..... (Name of the person) Authorized signatory of M/S ..... (Name of the firm) herby agree to all the term and conditions. FSSAI in its own discretion can cancel /modify the tender process and FSSAI will have the right to accept or reject any or all Bids and to annul the qualification process at any stage without any liability or any obligation for such acceptance, rejection or annulment, without assigning any reasons.

Name:
Signature:
Date:
Seal:

(To be filled in the format given above and signed by the authorized representative of the bidder.)

4. FORMAT FOR FINANCIAL BID:

S. No.	Specifications	Prescribed Requirement	Price in INR
1.	**System Application**	The system should have • Computer controlled fully automatic ICP-MS system • Simultaneous multi-elemental analysis in ppm, ppb and ppt levels with required sensitivity and stability of diverse range of food and water samples • The system should be a space saving, compact model that can fit into allocated lab space with all the sub- systems and accessories. • Corrosion-resistant exteriors should be provided • Model number of the equipment proposed to be supplied to be clearly mentioned	
2.	**Sample Introduction system**	The system should have • **Nebulizer:** Concentric Micro mist Nebulizer with low sample flow rate • **Spray Chamber:** Peltier cooled spray chamber • **Peristaltic pump:** Low pulsation high precision peristaltic pump with minimum of three separate channels which can be controlled through the software.	
3.	**Plasma**	The system should have • **RF Generator:** RF Power range: 500W to 1600 W. Radio Frequency Generator (Solid State): 27 or 40 MHz Impedance Matching: Auto-tuning to get maximum coupling efficiency. • **Torch:** Easy mountable single piece quartz torch with shield torch (i) Torch movement should allow for complete computer-control and auto tunable in x-y-z directions with independent movements in the three directions. (ii) Provision for Auto-alignment of the torch after routine maintenance with a reproducibility better than 0.1 mm in x-y-z directions • **Plasma Gas Control:** Should have at least 4 Active Mass Flow Controllers (AMFC) for control plasma, auxiliary makeup, carrier gases. Gases used should be controlled with mass flow controller and fully computer controlled. • Argon gas dehumidifier must be quoted along with the main instrument.	

4.	**Ion Extraction Interface**	The system should have • Standard sample and skimmer cones with suitable orifice diameters to suit all application and to prevent clogging and minimize signal drift. It should be easily mountable and dismountable. • Scope of supply of standard and optional Nickel/Platinum cones should be clearly specified. • Lens/ extraction cones or equivalent should be easy to maintain.	
5.	**Ion Focusing System**	The system should have • Ion focusing system with efficient mechanism for removing all neutrals and photons from the Ion path. • Cell offering three modes of operation: Standard Mode, Collision Cell Mode and Reaction Cell • Switching of reaction and collision gases will be through software and automated. Unit will have the flexibility of applying both (collision, and reaction) gases using single method for removal of interferences. Mass Cut off facility should be there to remove unwanted polyatomic interferences formed due to free atoms. • A reaction cell should be provided for poly atomic interference removal with Helium mode and Hydrogen mode. Separate AMFCs for Reaction cell gases. • Vendor should attach application notes for Arsenic analysis where O2 is used to remove interference for ArCl which demonstrates mass shift mode. • Reaction cell assembly and octopole/ hexapole assembly (if requires cleaning any time in lifetime) should be quoted.	
6.	**Quadrupole Assembly**	The system should have • Quadrupole Mass Analyzer: A quadrupole mass analyzer to provide effective ion transmission, superior resolution and abundance sensitivity. • Mass range: 5-260 amu or above • RF Frequency : Fully Digital RF generator with frequency 2-3 MHz • Abundance sensitivity: Low Mass Side: $\leq 5 \times 10^{-7}$ High Mass side: $\leq 1 \times 10^{-7}$ • Scan Speed: Greater than 3000 amu/s • Mass stability: $< \pm$ 0.05 amu over 8 hours of continuous operation. • Resolution: Variable from 0.3 u to 1.0 u, user definable	
7.	**Ion Detector Assembly**	The system should have • Solid State dual stage dynode discrete over 10 orders of 10 orders or more magnitude of linear dynamic range. • Should be unique log amplifier circuit, features a high	

		speed analog mode for transient signals and a true nine orders dynamic range. • Minimum dwell time 100 µs (in both pulse count and analog modes. • Dual-stage detector assembly should come as a standard with the system.	
8.	**Vacuum System**	The system should have • Efficient Vacuum system with turbo molecular pump and single external rotary pump for fast pump down and simple maintenance. • In the event of vacuum failure, the entire vacuum system is to be automatically back-filled by inert gas to preserve the cleanliness of the system.	
9.	**Performance Specifications**	Guaranteed sensitivity specifications will be considered (To be demonstrated during Demo): Typical sensitivity values will not be considered • Should be able to analyze Sn, Ni, Cu, Zn, Ba, Sb, Ni, B, Ag, Mg, Ca, Na, As, Cd, Cr, Hg, Pb, Se, Fe (but not limited to these elements) at a concentration of 0.05ppb with RSD of <5% at standard conditions. • Oxide ratio (%) CeO/Ce< 2 % • Double charged ratio < 3 % • Isotope-ratio Precision: 1%RSD	
10.	**Water Chiller**	The system should have a suitable re-circulating chiller changer of internationally reputed company for plasma component cooling.	
11.	**Auto Sampler / Diluter**	The system should have • Highly effective auto sampler/ diluter compatible with operation along with ICP- MS without user intervention. • Auto sampler with minimum 200 vials holding capacity with 500 nos. of 15 ml capacity tubes (as consumable). • Programmable complete with inert PTFE coated probe with PTFE inner tubing. • Spare extension tube complete with 20 ml syringe for programmed auto dilution • All accessories, racks, bottles, tubing assembly, waste container, dust cover etc.	
12.	**System Controller and Operating System**	The system should have • Software control for automatic data acquisition and processing. • mass spectrometer tuning and calibration auto and manual • Data Validation • Self-diagnostics • Multi element analysis capability	

		Isotope ratio and dilution • Cool Plasma or other facility to eliminate polyatomic interferences. • Remote diagnostics • Software should control plasma, MS and other accessories like auto sampler • The system software shall support the following calibration curve fit modes for Quantitative analysis: vi. Linear least squares. vii. Weighted linear least Squares viii. Linear forced-through-zero least squares. ix. Quantitative analysis including external calibration, additions calibrations, method of standard additions, isotope ratios and isotope dilution's and semi quantitative analysis. x. On-line help with quick steps to reference entire instrument user manual.	
13.	**Computer**	• Minimum Intel core i5/i7 processor, 2.0 Ghz or more, 19"or more LCD/TFT Monitor, 500 GB HDD, DVD Read/Write, 4 GB RAM,4 USB Port or higher configuration for use with the above system to be provided. • Reputed Branded colour Laser jet printer and automatic back to back should be provided	
14.	**Multi vessel Microwave digestion system**	The system should be provided with a suitable microwave digestion system of 20- 25 samples processing capacity in one batch along with proper fume hood system. The specification along with the model should be provided at the time of tendering.	
15.	**Exhaust unit**	Exhaust unit for the ICP-MS has to be supplied along with the System	
16.	**Standards with minimum expiry of two years**	• Specially pure Analytical NIST traceable single element standard solutions(Minimum pack or100ml each whichever is lower) for Sn, Ni, Cu, Zn, Ba, Sb, Ni, B, Ag, Mg, Ca, Na, As, Cd, Cr, Hg, Pb, Se, Fe should be supplied • Multi element Calibration NIST traceable standards for ICP-MS - one set	
17.	**Power Supply**	The system should have UPS (minimum 10 KVA) of suitable rating with voltage regulation, spike protection and minimum 60 minutes back up for the supplied equipment.	
18.	**Accessories**	The following Items, but not limited to, has to be supplied along with the equipment • Peristaltic pump tubing-sample intake – 100 No's • Peristaltic pump tubing-Drain – 100 No's	

		• Tubing – Auto Sampler to Peristaltic Pump – 25 No's • Micro mist nebulizer – 5 No's • Plasma Torch – 5 No's • Ni Sampling Cone – 4 No's and Pt Sampling Cone – 2 No's • Ni Skimmer Cone – 4 No's and Pt Skimmer Cone – 2 No's • Hyper skimmer cones/extraction system for HF digested sample. • Vacuum Pump oils – 5 litres • Argon Gas Cylinders-6 • Gas cylinder for Collision cell gases – Helium-1 • Gas cylinder for Reaction cell gases -Oxygen, Hydrogen & Ammonia (1Each), whichever is applicable for individual system for elimination of interference species along with 2 stage Gas pressure regulators for each cylinder. • Gas purification panel for Argon, Oxygen, Helium & Hydrogen with appropriate plumbing. • Optional: Any other accessory as felt required for the proper functioning of the equipment.	
19.	**Additional items**	• Consumables for Five years operation of the system for main ICP unit, spare torches, nebulizer, tunings, and moisture trap are required to be quoted. • Consumables for seven years operation of the system for main unit are required to be quoted for analysis in multiples of 100 samples. • Operation kit comprising all required items pump tubings, transfer tubings, work coils etc. for startup/regular operation of instrument. • Air conditioner to be quoted for required for maintaining the temperature of the room installed with ICP- MS. • Firm should also quote all essential pre-installation requirements and utility requirement for ICP-MS. • Give the Detection limits (DL) chart for Sn, Ni, Cu, Zn, Ba, Sb, Ni, B, Ag, Mg, Ca, Na, As, Cd, Cr, Hg, Pb, Se, Fe (but not limited to these elements. Provide for as many elements as vendor can) and give the conditions at which the DLs are measured. • Operation and maintenance manual for each unit in both hard copy and soft copy. • Service manual with set of required tools for each system/unit. • The system should have Server connectivity and should be capable of 21 CFR Part 11 and food safety compliance. The necessary validations will have to be carried out by the equipment suppliers.	

		• Methods library for all food matrixes, related software's and user manuals to be provided. PLEASE PROVIDE MAINTENANCE CHART FOR ALL OF THE COMPONENTS IN ICPMS SYSTEM.	
20.	**Any Other**	Any other accessory as felt required for the proper functioning of the equipment.	
21.	**Operation and maintenance training component**	• The supplier will have to carry out successful installation at our laboratory premises (where ever the system has to be installed) and provide on – site comprehensive training for scientific personnel operating the system and support services till customer satisfaction with the system and a training at the suppliers lab premises is also required. • One trained personnel should be provided by instrument suppliers for three years who will be responsible for the working of the instrument i.e. sample preparation, method validation, operation of instrument and data interpretation. The personnel will not claim to be an employee of FSSAI/ state Laboratory. The personnel will work under state laboratory head. He will also be responsible for providing training of the instrument to the laboratory staff.	
22.	**IQ/OQ/PQ**	• IQ/OQ/PQ of the system is required	
23.	**Warranty**	• Standard Warranty of 24 months starting from date of satisfactory and faultless functioning of the equipment for 60 days at the respective laboratory premises. • Comprehensive Maintenance Contract Service for 60 months after expiry of standard Guarantee/Warranty should be quoted • Annual calibration of the equipment shall be a part of the CMC. It shall also be mandatory to perform calibration after every major repair/breakdown. • The vendor should have available for ten years guaranteed parts and CMC service • The supplier or his authorized agent should have after sales and service centre near each of our laboratory location where the equipment is to be supplied. • Current user's / performance list with contact details (Customer name, phone email id etc) and date of installation to be provided (Minimum 5 installations of the model quoted) • Number and details of the service engineers has to be provided • Onsite technical performance evaluation of the quoted model of the equipment will be carried out for those who qualify in the technical bid.	

Pre installation requirements: List out all pre-installation requirements (which are to be provided by the Lab)

Note:

1. The financial bid has to be filled necessarily in the format given above and has to be signed by the authorized representative of the bidder with full name designation and seal on each page.
2. Price quoted should be valid for minimum 2 years.
3. Explanatory notes if so desired can be separately submitted along with the financial bid but financial bid in the above format is required to be submitted.
4. All the payment terms and condition should be clearly mentioned along with the financial bid.
5. All costs to be quoted shall be exclusive of taxes.

I ..... (Name of the person) Authorized signatory of M/S ..... (Name of the firm) herby agree to all the term and conditions. FSSAI in its own discretion can cancel /modify the tender process and FSSAI will have the right to accept or reject any or all Bids and to annul the qualification process at any stage without any liability or any obligation for such acceptance, rejection or annulment, without assigning any reasons.

Name:
Signature:
Date:
Seal:

(To be filled in the format given above and signed by the authorized representative of the bidder.)

Terms and Conditions of the Contract:

Liability of the successful bidder:

1) List of the 5 Installations in country, preferably in Food sector along with the Contact Name, contact no, mail ID and complete address should be enclosed with the technical bid.
2) At least two Performance certificate with LOD/LOQ from the organizations where the quoted model of the equipment has already been installed to be provided by the bidder along with Technical bid.
3) Price quoted should be valid for minimum 2 years.
4) The bidders need to give an undertaking that application support and services would be available for minimum 10 years.
5) Service support should be available throughout the country with a maximum turn around time of 3 working days.
6) 5% of the cost of equipment need to be submitted as Performance Bank Guarantee at the time of placing the order by the respective lab.
7) The successful bidder shall have complete responsibility for the equipment in consultation with the staff of state lab where the equipment will be installed. In the event of any equipment going out of calibration the successful bidder shall be responsible for carrying out required repairs and adjustments.
8) The bidders will have to enter into tripartite agreement with FSSAI and with the respective state Governments before placement of actual supply order for the equipment

I ..... (Name of the person) Authorized signatory of M/S ..... (Name of the firm) herby agree to all the term and conditions. FSSAI in its own discretion can cancel /modify the tender process and FSSAI will have the right to accept or reject any or all Bids and to annul the qualification process at any stage without any liability or any obligation for such acceptance, rejection or annulment, without assigning any reasons.

Name:
Signature:
Date:
Seal: