# *ANNEX II + III:* TECHNICAL SPECIFICATIONS + TECHNICAL OFFER

**Contract title: Supply of equipment for sampling, laboratory analysis and consumables for detecting the microplastics in water for the project MICROPLASTICS p 1 /7**

**Publication reference:** **01-94/8/HU-SRB supply**

**Columns 1-2 should be completed by the contracting authority**

**Columns 3-4 should be completed by the tenderer**

**Column 5 is reserved for the evaluation committee**

Annex III - the contractor's technical offer

The tenderers are requested to complete the template on the next pages:

* Column 2 is completed by the contracting authority shows the required specifications (not to be modified by the tenderer),
* Column 3 is to be filled in by the tenderer and must detail what is offered (for example the words ‘compliant’ or ‘yes’ are not sufficient)
* Column 4 allows the tenderer to make comments on its proposed supply and to make eventual references to the documentation

The eventual documentation supplied should clearly indicate (highlight, mark) the models offered and the options included, if any, so that the evaluators can see the exact configuration. Offers that do not permit to identify precisely the models and the specifications may be rejected by the evaluation committee.

The offer must be clear enough to allow the evaluators to make an easy comparison between the requested specifications and the offeredspecifications.

**LOT no. 1- Equipment for analysis**

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| **1.**  **Item number** | **2.**  **Specifications required** | **3.**  **Specifications offered** | **4.**  **Notes, remarks,**  **ref to documentation** | **5.**  **Evaluation committee’s notes** |
| **1** | **Microscope including Software for microplastic identification with following specification- 1 pc:**  Instrument; IR Microscope with MCTA detector and kit for microplastic filters  Instrument and software should be compatible for current FT IR spectrometer model Nicolet iS20, that Institute already owns (must include motorized external beam mirror for FT IR, interface between microscope and FT IR)  Resolution: highest sensitivity for samples as small as 10 microns  Objectives: Fixed objectives, 10x IR objective 0.71 N.A.  Condenser: Permanent centration, 10x IR condenser  Viewing options: must include trinoc & camera option, simultaneous view/sample  Illumination: LED illumination  Stage: Manual x, y stage, Manual course and fine focusing, 3-Hole slide, Square filter holder  Focal length: approximately 7.37 mm  Detector: Cooled detector MCT-A (11,700-600 cm-1) with Stainless steel proprietary dewar design, 16 hours LN2 hold-time  Apertura: Fixed 100 micron aperture orbiter  Working mode: Transmission, Reflection modes, ATR ready for potential upgrade  Video Image: 1.3 megapixel camera  Additional accessories: Basic sampling tool kit, microparticles preparation starter kit with included setup for filtering, 50 Si Filter, 50 Si Gaskets, 50 Teflon Gaskets, Tweezers  Validation accessories: must include stage holder with serialized and certified qualification disc for manual operation, NIST polystyrene for Transmission, NIST polystyrene for Reflection, Gold reference disk for reflection background reference, NIST traceability certificate and protective case, Serialized and certified ATR qualification plate for manual operation and integrated NIST polystyrene for ATR  Power Requirements: Powered by the spectrometer  **Software:**  Identify constituents in mixture samples with multi-component and contaminant searches  Maintain historical data  Ensure quality results with live displays for active data viewing  Identify mixtures in one step for ultimate speed and confidence  Communicate efficiently with modern PDF reports  Copy directly into word processing programs  It is required to submit for the purpose of verifying technical specification **a catalog/brochure,** or similar document, or an excerpt from a catalog, brochure, or similar document, based on which the technical characteristics of the offered equipment can be unequivocally determined, thereby proving without doubt that the offered supply meet all the required technical specifications. |  |  |  |
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| **2** | **Ion chromatograph for Simultaneous Analysis of Anions and Cations and software, with the following specification- 1 pc**  Chemically inert, non-metallic (PEEK) material for corrosion prevention and contamination throughout the sample and mobile phase flow.  Pump (two units, one for anion and one for cation analysis):   * Operating Principle: Dual piston, serial, variable speed, microprocessor-controlled * Pump Head: Chemically inert, non-metallic (PEEK), compatible with reversed-phase and aqueous eluents (pH 0-14) * Pressure: 0-35 MPa or better * Flow Rate: 0.00–5.00 mL/min in increments of 0.01 mL/min or better * Flow Precision: < 0.1% or better * Flow Accuracy: < 0.1% or better * Pressure Variation: < 1% or better * Piston Washing: Must have * Leak Sensor: Must have * Vacuum Degasser: Must have   **Conductivity Detector (two units, one for anion and one for cation analysis):**   * Temperature Range: 30–50 °C or better * Maximum Pressure: 10 MPa or better * Signal Range: 0-18000 μS/cm or better * Linearity: r2≥0.999% or better * Resolution: 0.002 nS/cm or better * Electrochemical Cell Body: Chemically inert material * Flow Cell Volume: < 1 μL or better   **Autosampler:**   * Filtration: Individual filtration of each sample through a 20-micron filter or better (Inline filtration) * Injection Volume: 0.1 mL to 5.0 mL in increments of 0.1 mL or better * Injection Speed: 0.1 mL/min to 5.0 mL/min in increments of 0.1 mL/min or better * Injection Mode: Simultaneous injection or better * Vial Size Support: Must support vial sizes 0.5 mL and 5 mL or better * Capacity: Minimum of 50 vials or better   **Other:**   * Suppression: Must have Electrolytic Suppressor * Column Heater: Must have, controlled via software, up to 60 °C or better   **Software:**   * Data collection, quantification, and report generation software * System Performance Prediction: Must have   **Consumables:**   * 500 vials with inline filters * column and precolumn anion (Fluoride, Chloride, Nitrite, Bromide, Nitrate, Phosphate, Sulfate) analysis (4 micron particle size) * column and precolumn anion analysis for cation (Lithium, Sodium, Ammonium, Porassium * Magnesium, Calcium) analysis (4 micron particle size) * eluent for cation analysis * eluent for anion analysis * Electrolytic Suppressor for cation analysis * Electrolytic Suppressor for anion analysis   It is required to submit for the purpose of verifying technical specification **a catalog/brochure,** or similar document, or an excerpt from a catalog, brochure, or similar document, based on which the technical characteristics of the offered equipment can be unequivocally determined, thereby proving without doubt that the offered supply meet all the required technical specifications. |  |  |  |
| **3.** | **Training**  The Contractor has the obligation to provide the Contracting Authority with appropriate training in the use of the appliances after delivery and installation of supplies. Accordingly, training related to the use of purchased equipment will be carried out in 5 days for maximum 10 persons. Trained staff should receive training certificates upon completion of the training. |  |  |  |
| **4.** | **After-sales service**  After-sales and maintenance service for one year.  All service technicians must be authorized and certified by the equipment manufacturer. |  |  |  |