



सीएसआईआर- भारतीय रासायनिक प्रौद्योगिकी संस्थान
CSIR-Indian Institute of Chemical Technology
आई. एस. ओ. 9001 संगठन (विश्लेषणात्मक परिसेवा हेतु) /ISO 9001 Organization (for Analytical Services)
(वैज्ञानिक तथा औद्योगिक अनुसंधान परिषद) / (Council of Scientific and Industrial Research)
तारनाका, उप्पल रोड, हैदराबाद. तेलंगाना राज्य, भारत. 500 007.
Tarnaka, Uppal Road, Hyderabad. Telangana State, India. 500 007



PURCHASE ORDER

No: PUR/IICT/0921/24-25/EQPT/ 2404

Date: 31-12-2024

To
M/s. RANVAC TECHNOLOGIES
No.49/3 & 49/4, Thonachinakuppe Village
Kasaba Hobli, Nelamangala Taluk
Bangalore -562123
Ph:080-27730387
Email:sales@ran-vac.com

Sub;- Supply Installation and Commissioning of "2 Ports Glove Box"- reg.

Ref: - 1. Our Tender Enquiry No. PUR/IICT/0921/24-25/EQPT DT.12.09..2024 and CPPP tender enquiry No.2024_CSIR_208060_1 Dt.12.09.2024.
2. Your bid reference No: RANVAC Q-24398 DT.15.10.24.
3. Your revised offer received through email dt.10.12.2024.

Dear Sirs,

Kindly supply the following item(s) strictly as per the terms and conditions.

Sl. No	DESCRIPTION OF MATERIAL	Quantity	Price in (₹)	Total Amount in (₹)
1.	2 PORTS GLOVE BOX Make : RANVAC <i>(Detailed Specifications and other items and accessories as per Annexure enclosed)</i>	1No.	25,00,000.00	25,00,000.00
				25,00,000.00
Add GST @18%				Inclusive
FOR CSIR-IICT, Hyderabad				25,00,000.00

TERMS & CONDITIONS:

- Prices:** FOR CSIR-IICT Inclusive of all taxes, duties etc., Hyderabad. Unloading the consignment at our site is your cost.
- Order Acknowledgement:** Kindly send order acknowledgement within 15 days through Email: cosp@iict.res.in and csiriicthyd@csiriict.in mention PO No. in the

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subject line. If you notice any discrepancy/typographical error etc. in this order, you must immediately request for its amendment/correction. Further along with duly signed and stamped copy of this P.O. as token of acceptance of terms and conditions of this P.O. You are also required to sign a contract agreement in pursuance of this Purchase Order in the prescribed format on a Non-Judicial Stamp paper of Rs 200/-**(contract form attached)**

3. **Taxes and Levies: Price includes GST@18% also**
4. **Delivery Period :** The ordered material should be supplied within the delivery period of 12 weeks from the date of receipt of the Purchase Order.
5. **PAYMENT TERMS:** I) 80% through RTGS /NEFT or online mode against supply in complete quantity of ordered items in good condition as per ordered specifications and terms, subject to its joint inspection in the presence of suppliers service engineers/ representative and its confirmations and acceptance by CSIR IICT user Scientist.
II) Balance 20% through RTGS /NEFT or online mode after successful completion of installation and commission and final acceptance of End User, our Bankers State Bank of India, IICT Branch, Hyderabad, successful Installation, subject to submission of prescribed PBG.
6. **Warranty:** Warranty should be furnished for **36 months** from the date of successful installation and commissioning of the equipment and subject to final acceptance of the same by the CSIR-IICT user. If CSIR IICT wants to enter into CAMC/AMC in future after warranty period the amount for AMC charges shall not exceed CAMC/AMC Charges indicated in quotation (if any) and the same will not be paid in advance and the same shall be paid on bill basis only.
7. **Performance Bank Guarantee: 5% PBG valid till 60 days** beyond the prescribed warranty period starting from the date of final installation and commissioning to be submitted within 21 days from the date of the Purchase Order, failing which order may be cancelled at the discretion of CSIR IICT.
8. **INSTALLATION, COMMISSIONING AND DEMONSTRATION:** A qualified and factory-trained service engineer should commission the supplied equipment free of cost within *one* month from the date of receipt of the ordered goods and onsite application training to be provided for 2 persons 3 working days at CSIR IICT., Telangana, India. Supplier has to inform pre-installation requirements if any for site readiness within 10 days of receipt of this mail.
9. **LD clause:** Timely supply is the essence of stipulation in the delivery period of our purchase order, for our requirements have got a direct bearing with time targeted research work. By any measure, if there is any delay in delivery of the ordered material(s), a sum equivalent to **0.5 (point five)** per cent of contract value for each week of delay or part thereof until actual delivery will be deducted

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from the contract value as liquidated damages, subject to the maximum deduction of **10 (ten) per cent** of P.O. Value. CSIR IICT is also at liberty to consider the termination of the contract of the items is not delivered within the delivery period without assigning any reason thereof.

10. **CSIR-IICT-GST No: 36AAATC2716R2ZF**
PAN No. AAATC2716R TAN No. HYDI00674C
11. **Availability of spares and service engineer support shall be conformed for a period of 10 years as part of after sales and service support on applicable charges after warranty period.**
12. The dispute settlement mechanism/arbitration proceedings shall be Concluded as under:
 - a) If any dispute or difference arises between the parties hereto as to the construction, interpretation, effect and implication of any provision of this agreement including the rights or liabilities or any claim or demand of any party against other or in regard to any other matter under these presents but excluding any matters, decisions or determination of which is expressly provided for in this Agreement, such disputes or differences shall be referred to **Delhi International Arbitration Centre (DIAC), New Delhi**. A reference to the Arbitration under this Clause shall be deemed to be submission within the meaning of the Arbitration and Conciliation Act, 1996 and the rules framed thereunder for the time being in force. Each party shall bear and pay its own cost of the arbitration proceedings unless the Arbitrators otherwise decides in the Award.
 - b) In the case of a dispute between the purchaser and a Foreign Supplier, the dispute shall be settled by arbitration in accordance with provision of sub-clause (a) above. But if this is not acceptable to the supplier then the dispute shall be settled in accordance with provisions of UNCITRAL (United Nations Commission on International Trade Law) Arbitration Rules.

The venue of the arbitration shall be the place from where the purchase order or contract is issued. (for further information please refer to our Tender Document)

13. **Jurisdiction** - All disputes related to this tender shall be subject to the local court of competent jurisdiction at **HYDERABAD,**

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Telangana, India only.

14. The terms and conditions and tender specifications and clarification there off as contained in the tender document shall form part of this purchase order .However, Incase of any discrepancy between this P.O. and Tender terms this purchase order (P.O.) shall prevail.

Yours faithfully,
For & on behalf of CSIR,

(Dharmendra Kumar)
Controller of Stores & Purchase

Note: Kindly, mention our purchase order reference number for all your future correspondence so as to enable us to avoid any delay while tracking/clearing the material(s).

Budget Head: FCP-512403 for Rs.25,00,000/- (Rupees Twenty Five lakhs only)

1. Indentor's copy: P.V.S.S.Srinivas (FAC Divn) 2. Accounts copy; 3. Office copy; 4. Guard File copy 5. Spare copy;



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NO.PUR/IICT/0921/24-25/EQPT/2404

DT.31.12.2024

Technical Specifications

Inert Atmosphere Glove Box with Gas Purification & Regeneration System

Make: RANVAC

The main elements of the glove box unit are:

1. Glove Box
2. Cylindrical Main Antechamber
3. Cylindrical Mini Antechamber
4. Gas purification and recirculation unit
5. Oxygen analyzer
6. Moisture analyzer
7. Vacuum Pump
8. Solvent adsorption unit
9. Control system
10. Refrigerator

Glove Box

1. Material of Construction SS 304 thickness of 3mm
2. Internal Dimensions 1250mm (Length) x 920mm (Height) x 780mm (Depth)
3. Glove Box Details: The side panels are easily removable (bolted side panels) and are designed to be easily fitted with other glove boxes thereby expandable on site. Inside of the box is brush finished (Ra 1.2 μ m or better), and outside powder coated (RAL 9003). Single side.
4. Leak Rate < 0.05 Vol%/h (according to International Standards ISO 10648-2). Leak test certificate certifying the leak tightness will be provided.
5. Front Panel: 10mm thick toughened glass which provided chemical and scratch resistance or polycarbonate sheet with SAPHIR coating with chemical and scratch resistance coating.
6. Stand: 1000mm (adjustable) with castors and machined feet Lockable leveling feet
7. Number of Glove Ports 2
8. Glove Port Details: 220mm (Diameter), with O-ring sealed, with glove port cover Glove Ports of POM (white) polymer material
9. Gloves Details 2x Butyl, 0.4mm thickness
10. Filters 2x HEPA H13 @ 0.3 micron One gas inlet filter and another for gas outlet filter
11. Number of Flanges 4x DN40 Flanges on back panel
12. Leak-tight feedthrough 1x Electrical feedthrough with socket connection
13. Shelves 3x Stainless steel shelves with multiple adjustable height positions
14. Lighting Front mounted LED/Fluorescent light mounted with control facility

Cylindrical Main Antechamber

1. Material of Construction SS 304, 3mm thick.
2. Internal Dimensions Right side, Cylindrical, 400mm (Diameter) x 600 mm (Length)
3. Chamber Details Doors flat anodized aluminum, easy to operate, Dock spindle lock Stainless steel sliding tray with telescopic rails Typical vacuum: 1×10^{-3} mbar Pressure gauge: Analog display Vacuum/refill: Control through manual ball valve as well as PLC controlled with solenoid valves.
4. Sealing Viton O-rings
5. Leak Rate < 10^{-5} mbar l/s (tested with Helium mass spectrometer)

Cylindrical Mini-Antechamber

1. Material of Construction SS 304, thickness of 3mm
2. Dimensions Right side, Cylindrical, 150mm (Diameter) x 400mm (Length)
3. Chamber Details Ball valve for evacuation and refill Inside/outside doors of hinged type Stainless steel sliding tray Typical vacuum: 1×10^{-3} mbar Vacuum/refill: Control through a 3-way manual ball valve
4. Sealing Viton O-rings
5. Leak Rate < 10^{-5} mbar. l/s (tested with Helium mass spectrometer)

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Gas Purification and Recirculation Blower System

1. Details PUR-1: Automatic Purification Regeneration Process Single column purifier Closed loop gas re-circulation system
2. Each column Purification: Oxygen < 1 ppm, 36 liters removal capacity or better
3. Each column Purification: Moisture < 1 ppm, 1500g removal capacity or better
4. Leak Rate < 10⁻⁵ mbar l/s (tested with helium mass spectrometer)
5. Material of Construction for piping/components SS304 piping
6. Recirculation blower Details Brushless motor mounted inside a stainless-steel housing
7. Integrated blower: The circulation unit is integrated with the hermetically sealed, oil-free dualstage blower (which is vacuum tight) and has a variable capacity of up to 110m³/h at 50Hz. Highly efficient blower with noiseless operation < 47 (A) dB. The VFD attached to the blower along with the PLC provides the ability to control the speed/frequency of the blower.
8. Pressure control Automatic pressure control adjustable between -15to +15mbar System operates in negative and/or positive pressure settings
9. Pressure Adjust Foot switch (with waterproof foot pedal) to adjust pressure during operation
10. Regeneration Process Automatic process, inlet and outlet regeneration gas through electro valves (solenoid valves)
11. Working Gas Nitrogen, Argon, Hydrogen

Oxygen Analyzer

- Solid state oxygen analyzer, Make: Ntron, UK
- 0-1000 ppm range
- Repeatability: +/- 1% of full range
- PLC controlled and operated via system control panel
- CE Certified, NIST traceable certificate provided
- Product datasheet attached for additional details.

Moisture Analyzer

- Solid state moisture analyzer Make: Michell Instruments
- 0-1000 ppm range
- Dew point accuracy: +/- 2°C
- Repeatability: +/- 1% in full range
- PLC controlled and operated via system control panel
- CE certified, NIST traceable certificate provided
- Product datasheet attached for additional details.

Vacuum Pump

- Rotary vane pump, Make: Edwards Vacuum, Model E2M18
- Automatic gas ballast control, Pumping capacity 17m³/h
- The pump on/off and auto-switch off is controlled via the PLC
- Oil-mist filter, oil recirculation
- Product datasheet attached for additional details.

Refrigerator

- Refrigerator Integrated on left-hand side panel of the Glove box (to -20°C or better).
- Capacity of 15L
- Height adjustable shelves provided.
 - Storage box made of SS 304

Solvent Adsorption Unit

- Solvent trap loaded with replaceable 5 kg or more activated charcoal with inline and by-pass manual valves. The solvent adsorption unit is in-line with the gas purification unit. Includes inline and bypass mode with manual valves.
- Easy replacement of loads by bypassing circuit and easy conditioning of charcoal without disturbing glove box atmosphere.
- Upgrade option: PLC controlled regenerable solvent trap and PLC controlled inline in circulation piping positioned solvent sensor range 0 to 500/2000/6000ppm.

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Control system

- Siemens S7-1200 based PLC controlled with color Siemens 7" HMI Touch panel for all operations of the glove box.
- Control for purification regeneration, box purging, and box pressure manipulation.
- Automatic box purging, circulation control, and data log for pressure, Oxygen, and Moisture provided.
- Real-time graphical display in the color of glove box parameters including oxygen, moisture, and pressure levels.
- Data logging for up to 2-3 months of data.
- Language: English

System Power

- Power: 220V AC, 50Hz, 1-phase, Indian standard socket connection

Spares/Consumables:

- Gloves: One pair of spare butyl gloves, ambidextrous and chemical resistant, size 7.5 of 0.4mm thickness or better with the glove box unit.
- Vacuum pump oil: 4 Liters of rotary vacuum pump oil
- Analytical Balance: One number of digital analytical balance, dimension 90 mm, maximum up to 120 g with 0.1 mg sensitivity, 0.1 mg repeatability (standard deviation), readability 0.1 mg and internal calibration (Make: Saffron/Equivalent)

The Supplied Equipment along with accessories should completely comply with all the technical specifications and related requirements indicated in Chapter 4 of Tender Documents on the subject and subsequent "corrigendum" issued in pursuance of the same.

COSP

