

INDIAN INSTITUTE OF TECHNOLOGY KANPUR
Department of Chemical Engineering

Enquiry No.: IITK/CHE/RKG/2016-2017/01

Opening Date: 11/11/2016

Closing Date: 21/11/2016

Sub.: Quotation for Glove box with spincoater

We are interested in purchase of Glove box with spincoater, having following configuration/terms and conditions. Our organization is an educational institute of the repute and liable to get education discount from manufacturer, please specify it, separately. Please send sealed quotation, to undersigned, for the same.

Glove box specifications:

- Stainless steel **3 port glove box**, quality not less than **US304L** with maximal internal dimensions L*D*H 1500 x 1000 x 1000 mm.
Real **modular** glove box with dismountable side panels; tightness of side panels imperatively secured through butyl sealings (no silicon admitted).
The glove box must have possibility to dismount a side panel to connect a second module of glove box for expandable working area.
The glove box must have adaptations and adequate blanked pipings for connection of the purification unit to the 2nd additional glove box module.
Stand in stainless steel with rolls and jacks.
All pipings in Stainless Steel US304L
Front panel, with glove rings in diam. approx. 220 mm.
Butyl gloves not less than 0.6 mm thickness (better resistance).
Tightness of glove box according to O₂-increase method. Class 1 glove box (according to International Standards ISO 10648-2 – Leak rate < 0.05 Vol%/h).
- **Big vacuum chamber** of approx. diam. 400 mm and length 600mm.
Leak rate < 10⁻⁵ mbar.l/s (tested with helium mass spectrometer).
Equipped with 3 way valve and 2 doors.
- **One mini vacuum chamber** of approx. diam. 150 mm and length 400mm
Leak rate < 10⁻⁵ mbar.l/s (tested with helium mass spectrometer).
Equipped with 3 way valve and 2 doors.
- **One Purification unit** < 1 ppm O₂ and H₂O with minimal capacity of : O₂ = 30L and H₂O > 1300 g.
All piping and components must be in stainless steel (**US304L**).
Recirculation blower, type brushless motor mounted inside a stainless steel housing, with flow 40 m³/h with ΔP = 20 mbar (up to 110m³/h ΔP = 0 mbar at 230V/50Hz).
Regeneration Process: Automatic process; Heating of reactor: Integrated temperature regulation controlled through automatic and temperature cut out.
Tightness: Leak rate < 10⁻⁵ mbar.L/ sec (tested with helium mass spectrometer)
Regenerating gas : 95% N₂ or Ar + 5% H₂.
Any other accessory required should be clearly mentioned.
- **Automatic adjustable pressure regulation**, never connected and never linked to the vacuum pump.
Pressure regulation required without foot pedal and the vacuum pump will have to be switched-off when vacuum chamber(s) will not be used.
- **One pressure safety release valve** with HEPA filter for comfort and automatic mechanical discharge of exceeded gases in the glove box allowing full automatic pressure adjustment with no need for foot

pedal, most reactive pressure adjustment, increased comfort in handlings, excess gas discharge possible even in case of power cut.

- **O₂ Analyzer:** Ranges in ppm: (0-100/1-1000/0-10000), Ranges in %: (0-1/0-10/0-25). Electronics: Integrated microprocessor control, selection of ranges, calibration. Dual display of values – Touch Screen and inline display on the analyzer to verification of values in the touch screen. Data Readings: 2 wire loop powered connection via a 4-20 mA Analog output. Accuracy: +/- 1 ppm in full range. Repeatability: +/- 1% in full range Resolution: 0.1 ppm in full range.
- **H₂O analyzer** : capacitive sensor type, Measuring Range: 0 – 23000 ppm & -100/+20 °C (Dew Point), delivered with calibration certificate – Technology requiring no maintenance with phosphoric acid or similar.
- Glove box controlled through **PLC** – Display on colour touch screen. LED retro lighting. Windows professional interface. Continuous control, graphic seeing of datas (O₂, Pressure, Temperature) and automatic recording each 2 minutes. Historical period 2 months, adjustable alarms for oxygen (and in future moisture) concentrations.
- Glove box **flushing** mode available from touchscreen with adjustable time and automatic stop at the end of elapsed time.
- Warning display in case of recirculation blower stop.
- **Low noise level 49 dB(A)** under purification and pressure regulation
- ENERGY SAVING mode required ensuring low power consumption features.
- Lightning of the working area of the glove box through Led light spots from the ceiling of the glove box for improved brightness.
- 1 leaktight electrical feedthrough Bi + T 220V and at least 4 blanked leaktight feedthroughs on the back side.
- 1 leaktight vacuum feedthrough
- Activated charcoal reactor with capacity >6 Kg with three way valve. Easy replacement of loads by bypassing the circuit and easy conditioning of the charcoal without disturbing glove box atmosphere.
- Extra Blank feedthrough – 2 No
- Airgun Feedthrough
- One extra electrical feedthrough 230V/50hz.
- 2 extra pairs of butyl gloves should be included.
- **SPINCOATER INDECK:** In deck version, Material/ NPP, Substrate till 4"x4", Wafer till 6", Speed from 1 to 12000 rpm. Acceleration from 1 to 30000 rpm within 1sec, Spincoater indeck housing, Electrical feedthrough for spincoater feeding, Valve feedthrough for vacuum pump connection, Solvent recovering system. Control consol Out of the glove box. Foot pedal for spincoater control.
- At least 10 satisfied glove boxes installations in India with details to be provided.
- ***Any other accessory required should be clearly mentioned. The price for the same should be included in price bid.***

Terms and conditions:

1. Your quotation shall include Authorization Letter from manufacturer if you are a local agent. Include proprietary item certificate if applicable.
2. Technical and financial details should be in separate envelope. The Technical bid should contain the detailed technical specifications of the proposed machine, photographs of the machine and other accessories offered. The Technical Bid should not contain any prices. In the document for technical bid, mention in tabular form the compliance to each of the above specifications. Any quotation that does not carry technical and commercial bid separately or not accompanied with

- proper certificate will not be considered. The Price Bid should contain the technical specifications as well as prices in details. Send complete details of the product(s).
3. The prospective supplier should have supplied the offered machine to at least 3 government or government-affiliated institutes, which should be either an IIT, IISc, NIT or a national laboratory like NML, NCL etc. The list of such personals having this machine and their contacts should be included in the Technical Bid.
 4. In financial bid, mention price for Glove box with spincoater and each optional item price separately.
 5. Tendered price should include delivery, installation, commissioning and training at customer's location.
 6. Supplier should provide 1 set of installation manual, user manual, operation and troubleshooting manuals along with their soft copies along with equipment delivery.
 7. Vendor to provide both on-site and operator training for users on the system start-up, usage, maintenance, quality control, trouble shooting, etc. including comprehensive classroom training.
 8. Maximum discount should be offered. Institute is exempted for partial custom duty. Prices quoted should be FOB (indicating port of shipment) and CIF (New Delhi) values separately.
 9. The warranty shall commence only upon successful completion of the Acceptance Test or commissioning. Warranty period for the instrument should be for three years at least after installation and the after sales service and application support capabilities should be specified.
 10. Payment terms will be as per IIT Kanpur rules.
 11. All quotations must reach undersigned on or before **21/11/2016 at 1700 hrs.**
 12. Quotations should have a validity of a minimum of 90 days.
 13. Delivery period should not be more than **12 weeks.**
 14. The Institute reserves the right of accepting or rejecting any quotations without assigning any reason thereof.

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