



**Enquiry No.:** CHE/SSK/17-18/07

**Enquiry Date:** February, 27, 2018

**Closing Date:** March, 20, 2018

Sealed quotation(s) in Indian Rupees with all technical details so as to reach latest by 3:00 PM on March, 20, 2018 are invited for the supply of following items.

**Note: Price Bid and Technical bid of instrument should be provided separately with same date and also mention the enquiry number and instrument name on the sealed envelope carrying the quotation. Please provide all the mentioned parts together with name of the companies, specified.**

## Specifications for High Pressure Autoclave:

- a) **Volume & M.O.C** 100ml net filling capacity made from Hastelloy C bar stock (no welding) and all internal wetted parts of Hastelloy C.
- b) **Design Pressure** 200 Bar (Continuous safe working pressure should be at least 85% of the design pressure)
- c) **Maximum Working Temperature** 400 Deg C
- d) **Minimum Stir able Volume:** 20 ml
- e) **Water Pump and 10 Ltr. Tank** with tubing for circulating water to cool the magnetic drive, pressure sensor etc by water recirculation to save water
- f) **SS Trolley** with all 4 lockable wheels for easy & smooth movements instead of Table Top
- g) **Integrated Dispenser:** Automatic inline dispenser for dispensing additives during the reaction. It should be Programmable with 1400 different steps. Compatible for liquid and gases.
- h) **Nozzles & Fittings**
  - i) **External Fittings:** SS-316 Pressure gauge,, vent valve, safety rupture disc (Certified by original manufacturer), gas inlet-valve & liquid sampling valve mounted on common dip tube. Solenoid valve (SS-316) at the inlet of cooling coil pipe for automatic cooling.  
Note : All nozzles & valves shall be Hastelloy C & Valve end connection shall be ¼" BSPM.
  - ii) **Internal Fittings:** Single tube in tube out type cooling pipe, thermowell (with temp. sensor), dip tube.
- i) **Body & Head Sealing** Cam profile Gasket with split clamp type quick opening system with clamp bolts. Body clamps shall be with clit / latches to prevent flying off of clamps in case of over pressure.
- j) **Motor & drive** ¼ H.P Flame Proof AC Motor (Group II A & II B) and variable frequency drive with 100-1450 RPM infinitely variable speed & digital RPM indication. Motor shall have 3 piece quick & maintenance free connect/disconnect motor coupling for ease of operation. (in place of spring loaded clutching).
- k) **Shaft Sealing** Zero leakage Magnetic drive coupling. ( Maintenance free )
- l) **Stirrer** 4 bladed turbine stirrer with stirrer clamp & bush for the shaft (to prevent wear & run out of shaft at high rpm)

m)	Heating	External electrical ceramic band heater with insulation & with high temperature steel cladding & Cascade temperature controller to prevent temperature over shoot. It shall have insulated heater plate to prevent thermal shock to operator.
m)	Control Panel	<b>SS control panel with Programmable P.I.D temperature</b> Programs: 16 ramp/soak with OSIH over shoot inhibit parameter to control overshoot with standby mode to cut off heating & cooling) with high temperature alarm system & motor speed controller mounted on it. The panel shall be Screw less design with push lock enclosure, PVC Cable tray for internal wiring, safe & rugged metal clad military grade lockable plug sockets for all the sensors, heaters & motors (for tight connection & safety)
o)	Mains Power Supply	1φ, 220VAC ± 10%, 50Hz
p)	Mounting	Mounted on Table top with Polishing of complete autoclave.
q)	SS Pr. Regulator	With self venting for releasing the pressure, pressure gauge & 4m long flexible hose pipe with NRV for 0-140 bar O/P pressure for H <sub>2</sub> gas & adaptor for N <sub>2</sub> , O <sub>2</sub> or air cylinder.

### **Terms & Conditions:**

- I. Price Bid and Technical bid should be provided separately with same date.
- II. Prices (FOB/ High Sea Sales) should include delivery up to nearest airport.
- III. Clearly state the CIF charges to IIT Kanpur and other taxes as applicable.
- IV. Warranty should at least be for 1-3 years after installation.
- V. Validity of quotation should be at least for 60 days.
- VI. The delivery time should be clearly mentioned. Shorter delivery time may be given a preference.
- VII. Technical specifications along with the extent of compliance should be in a separate envelope with proper labels on the envelopes.

The delivery period should be specifically 4-6 weeks.

Kindly mention the enquiry number on the sealed envelope carrying the quotation and send the sealed quotation(s) to the following address:

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