

URANIUM CORPORATION OF INDIA LIMITED
TUMMALAPALLE PROJECT
M.C. PALLE (PO), VEMULA (MANDAL)
Y.S.R. REDDY (DIST.), ANDHRA PRADESH – 516 349, INDIA

NOTICE INVITING EXPRESSION OF INTEREST(EOI)

EOI NO: EOI/TMPL/IX-RESIN/21-22/ 001

Uranium Corporation of India Limited (UCIL), a Public Sector Undertaking under the Department of Atomic Energy (DAE) is engaged in mining and processing of uranium ore in the East Singhbhum District of Jharkhand and YSR (Kadapa) District of Andhra Pradesh.

Our Andhra Pradesh unit invites Expression of interest from reputed manufactures (or) their authorized dealers / agents/ distributors / partners/ authorized supplier who will fulfill the requirements mentioned in Annexure -1

Interested parties are requested to submit the details given below on or before 04/03/2022,

1. A letter of interest. 2. Company's profile. 3. Supporting documents / samples as required in this EOI.

Interested parties may visit our website www.ucil.gov.in for complete details and upload their credentials along with all supporting documents in <https://etenders.gov.in/eprocure/app> on or before 04/03/2022.

For Uranium corporation of India Limited

DGM(PURCHASE)
Phone No: 08588 282766,
E-mail Address:- tmplpur@uraniumcorp.in

TECHNICAL DETAILS FOR ION EXCHANGE RESIN

A) Duty Condition:

Strong Base Ammonical Anion Exchange Resin in Bicarbonate form will be used in fixed bed Ion Exchange system for selective adsorption of Anionic Uranyl Carbonate complex from mine water coming from host carbonaceous uranium ore, for the purpose of purification and concentration. The adsorbed uranium complex is subsequently eluted out of the resin by elution technique. 1M NaHCO₃ fresh eluent liquor at a temperature of about 35-45°C is used for elution. We have already carried out testing and found that Purolite-A4759 is performing as per our requirement. We need similar type of resin.

B) Other related information of plant operation:

- The resin used in the plant needs regeneration after 18-22 cycles of elution. Regeneration is done with 5% NaCl & 5% NaOH solution to remove temporary poisons like silica etc. from the resin & maintain its Uranium loading capacity later with 1M NaHCO₃.

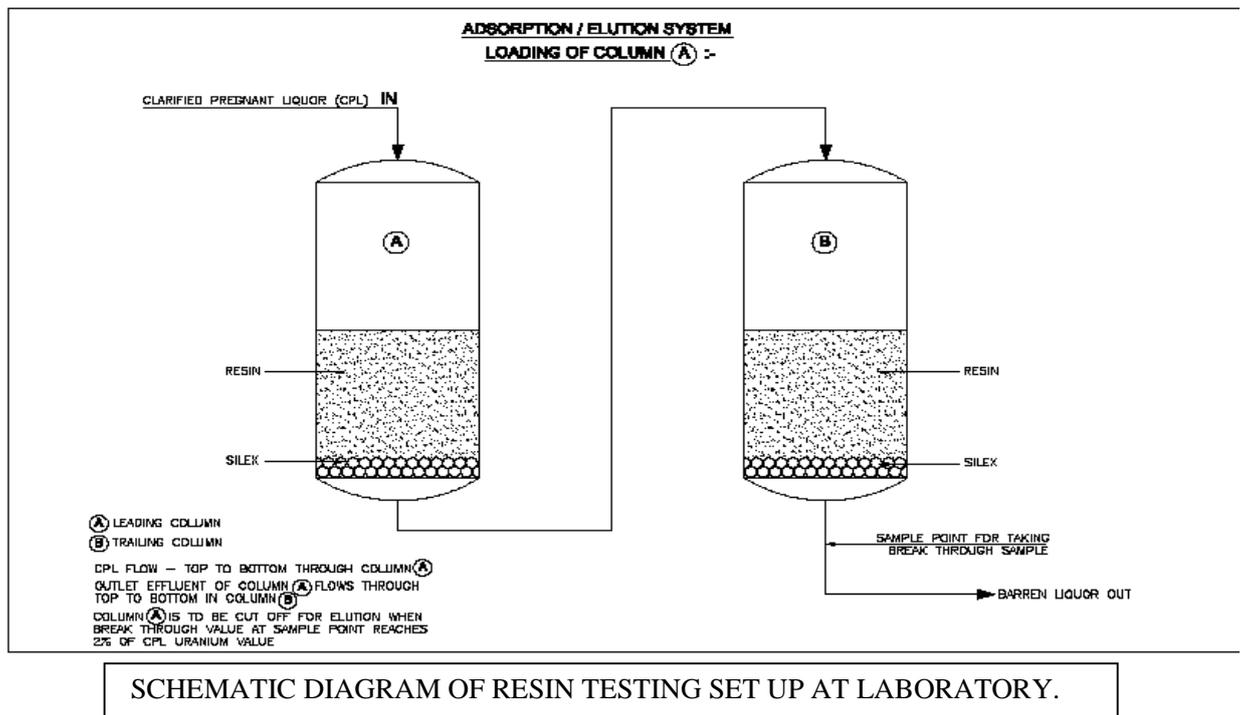
C) Arrangement of laboratory testing:

Testing of resin for its Uranium loading capacity & elution performance shall be done for 20 cycles with actual Mine liquor in two column system with liquor flowing from bottom to top (upward) through the resin bed.

Adsorption of Uranium in resin shall be continued till the uranium concentration in the outgoing liquor of trailing (2nd) column reaches 1% of feed liquor Uranium concentration (breakthrough value [B.T.]). Thereafter Uranium is removed from the resin of leading (1st) column by elution technique. This complete testing of uranium loading and elution is defined as one cycle of operation.

For second cycle, the partly loaded trailing (2nd) column of 1st cycle will become the leading (1st) column & the eluted Uranium free resin column of 1st cycle will become the trailing (2nd) column. Adsorption of Uranium from mine water will be carried out in 2nd cycle till reaching of B.T. value in the outgoing liquor of second column. Thereafter elution of the loaded resin of leading column of 2nd cycle will be carried out. In similar way testing shall be continued till completion of 20th cycle.

During adsorption, the total volume of liquor passed will also be recorded. Feed liquor flow rate during adsorption in all cycle of testing shall remain same. Similarly the flow rate and time of elution steps shall also be kept same during testing. Uranium concentration of outgoing liquor at a predefined fixed interval shall be analysed during all steps of elution to plot the elution curve of all the cycles.



F) Terms and conditions for laboratory testing of resin

1. Interested party shall submit three litres of resin sample (free of charge) along with its detail technical specifications.
2. One party shall submit 1 no. of sample to UCIL Laboratory for testing.
3. The sample of resin shall be tested at UCIL laboratory on chargeable basis @ Rs.1,00,000.00/sample (Rs one lakh only). Party should submit these testing charges in the form of Demand Draft drawn in favour of Uranium Corporation Of India Limited, payable at SBI – Main branch – Pulivendula. This should be submitted along with the sample on or before the due date of this EOI. Samples received without DD will not be considered for laboratory testing and this amount will not be refunded.
4. There is no need for the party to quote any commercial rate for supply of resin in the EOI.
5. The resin sample accepted after the laboratory testing will be included in the makes mentioned in our tender for bulk procurement.
6. **Resin qualifying criteria in lab testing:**
 - a) The sample of resin shall have a minimum 22-24 gms of U_3O_8 per litre of wet settled resin (wsr) saturation absorption.
 - b) Resin should handle at least 1600 BV of mine effluent with a feed concentration of 2000 ppb and effluent discharge concentration should be 20 ppb and if feed Uranium concentration increases, then bed volume handled by resin shall proportionally be lowered. But discharge Uranium concentration will remain same.
 - c) The resin shall give an elution peak value of minimum 7 g of U_3O_8 per lit (wsr) or above.
 - d) The resin will be put into service after converting it into bicarbonate form for adsorption of uranium.