

भारत सरकार/GOVERNMENT OF INDIA
अंतरिक्ष विभाग/DEPARTMENT OF SPACE

क्रय यूनिट-III/PURCHASE UNIT-III

विक्रम साराभाई अंतरिक्ष केंद्र/VIKRAM SARABHAI SPACE CENTRE

तिरुवनंतपुरम/THIRUVANANTHAPURAM - 695 022

विज्ञा. सं. वीएसएससी/एसपीआरई-क्रय/19-2 दि. 31/08/2021

ADVT. NO. VSSC/SPRE-PUR/19-2 DT. 31/08/2021

भारत के राष्ट्रपति के लिए तथा उनकी ओर से वरिष्ठ प्रधान, क्रय एवं भंडार, विक्रम साराभाई अंतरिक्ष केंद्र (वीएसएससी), तिरुवनंतपुरम, निम्नलिखित के लिए ई-प्रापण के माध्यम से (क्रम सं. 1 के लिए) निविदाएं आमंत्रित करता है:-

For & on behalf of the President of India, the Sr. Head Purchase & Stores, Vikram Sarabhai Space Centre (VSSC), Thiruvananthapuram invites Tenders **through e-procurement (for Sl. No. 1 thru 3)** for the following :-

क्रम सं. Sl. No	निविदा सं. Tender No.	वर्णन / Description	मात्रा Qty.	निविदा शुल्क Tender Fee
1	VSSC/PURCHASE UNIT III (SPRE)/VS202000097401 [लोक निविदा - दो भाग/PUBLIC TENDER- TWO PART]	निराद्रीकारक की आपूर्ति, संस्थापना व कमीशनिंग Supply, Installation and Commissioning of Dehumidifier	1 सं./No.	लागू नहीं / NA
2	VSSC/PURCHASE UNIT III (SPRE)/VS202100363801 [लोक निविदा - दो भाग/PUBLIC TENDER- TWO PART]	लिथियम लोह फोस्फेट का प्रापण Procurement of Lithium Iron Phosphate	1 सं./No.	लागू नहीं / NA
3	VSSC/PURCHASE UNIT III (SPRE)/VS202000097301 [लोक निविदा - दो भाग/PUBLIC TENDER- TWO PART]	उत्पादन हब के लिए ग्लास रिएक्टरों का प्रापण-10 ली., 30 ली. व 50 ली. Procurement of Glass reactors for production hub-10L,30L and 50L	1 दल./Set.	लागू नहीं / NA
4	VSSC/PURCHASE UNIT III (SPRE)/VS202100121401 [लोक निविदा - दो भाग/PUBLIC TENDER- TWO PART]	प्रमापी तथा उसकी सहायक सामग्रियों के साथ एसएस304 ग्रेड नाइट्रोजन लाइन, एयर लाइन तथा निर्वात लाइन की आपूर्ति, संस्थापना तथा कमीशनिंग Supply, installation and commissioning of SS304 Grade Nitrogen Lines, Air Lines and Vacuum Lines with Gauges along with its accessories	1 दल./Set.	लागू नहीं / NA

5	VSSC/PURCHASE UNIT III (SPRE)/VS202100363601 [लोक निविदा - दो भाग/ PUBLIC TENDER- TWO PART]	इलेक्ट्रोलाइट का प्रापण Procurement of Electrolyte	5 किलो/Kg	लागू नहीं / NA
6	VSSC/PURCHASE UNIT III (SPRE)/VS202100349301 [लोक निविदा - दो भाग/ PUBLIC TENDER- TWO PART]	एकल पार्श्वित एफईपी लेपित पॉलिमाइड टेप की प्रापण Procurement of Single sided FEP Coated Polyimide Tape	50 किलो/Kg	लागू नहीं / NA

विशेष टिप्पणी/Special Note:-

विदेशी विक्रेताओं को निविदा प्रस्तुत करने की अनुमति नहीं है। मेक इन इंडिया नीति के अनुसार केवल श्रेणी-I और श्रेणी-II के स्थानीय आपूर्तिकार इस बोली में भाग लेने हेतु पात्र हैं। विदेशी ओईएम से सीधे प्राप्त उद्धरणों/या विदेशी ओईएमओं की ओर से उद्धरण प्रस्तुत कर रहे एजेंटों को इस निविदा में भाग लेने की अनुमति नहीं है।

Foreign vendors are not permitted to quote. Only Class-I and Class-II Local suppliers as per Make in India Policy are eligible to participate in the bid. Quotations directly from foreign OEM/ or from agents quoting on behalf of foreign OEMs are not allowed to participate in this tender.

क्रम सं. Sl. No.	बोली प्रस्तुत करने की समय-सीमा Time limit for submission of Bid	बोली खोलने की तिथि Bid Opening date
01.	दिनांक 12.08.2021 [14:00 बजे तक]	दिनांक 14.09.2021 [14:01 बजे]
02.	दिनांक 05.08.2021 [12:00 बजे तक]	दिनांक 16.09.2021 [14:01 बजे]
03.	दिनांक 17.08.2021 [16:00 बजे तक]	दिनांक 21.09.2021 [14:01 बजे]
04.	दिनांक 24.08.2021 [16:00 बजे तक]	दिनांक 28.09.2021 [14:01 बजे]
05.	दिनांक 30.08.2021 [12:00 बजे तक]	दिनांक 30.09.2021 [14:01 बजे]
06.	दिनांक 25.08.2021 [16:00 बजे तक]	दिनांक 07.10.2021 [14:01 बजे]

क्रम सं. 01 से 03 के लिए, ब्यौरे इसरो ई-प्रापण पोर्टल <https://eproc.vssc.gov.in> पर उपलब्ध हैं।

For Sl. No. 01 to 03., details are available on ISRO e-procurement portal <https://eproc.vssc.gov.in>.

शुद्धिपत्र, यदि कोई हो तो, हमारे वेबसाइट www.vssc.gov.in / www.isro.gov.in में मात्र प्रकाशित किया जाएगा।

Corrigendum, if any will be published in our websites : www.vssc.gov.in / www.isro.gov.in only.

हस्ताक्षरित/Sd/-

वरि. प्रधान, क्रय एवं भंडार / Sr. Head, Purchase & Stores

E-Tenders are invited for the above mentioned procurements through our E-procurement site <https://eproc.vssc.gov.in>. Bids can be submitted before the due dates mentioned.

Only online tenders will be accepted. No manual / Postal / e-mail / fax offers will be entertained. No manual tender document will be issued. Parties interested to participate in this e-Tender are required to register themselves as vendors, if not already registered, in our e-procurement portal <https://eproc.vssc.gov.in> by downloading plugins and help demos listed on the home page of the e-procurement link mentioned above to complete the vendor registration process. They can seek help from help desk 0471-2565454 also as provided in the home page of e-procurement portal in case of any problem for registration and subsequent process. Vendors may please note that without registering in our e-procurement portal, they will not be able to quote for this e-tender.

Important Notice: Tender will be automatically closed on the due date if at least one offer is received. If the tender could not be opened on the first day due to any technical snag, it will be opened on the subsequent day as per the schedule.

This being a Two Part Tender, Cost shall be mentioned in the Price Bid Only. All the documents being uploaded like quote split up details, AMC cost etc should not contain the rates/costs. However, a copy of your PRICE BID, AMC quote etc WITHOUT PRICE SHALL BE UPLOADED in the Documents Solicited from the Vendor Field [available in Bid forms] TO KNOW THE PATTERN OF QUOTE. [ENSURE NOT TO MENTION ANY PRICE, OTHERWISE THE QUOTE WILL BE INVALID].

THE TECHNICAL DOCUMENTS NEED TO BE ATTACHED ONLINE AS A SINGLE PDF FILE WITHOUT ANY PRICE INFORMATION, TECHNICAL BID CONTAINING PRICE DETAILS WILL BE TREATED AS REJECTED.

Tender Details

Tender No :	VS202000097401
Tender Date :	12-08-2021
Purchase Entity :	PURCHASE UNIT III (SPRE)
Centre :	VSSC

Procurement of Supply, installation and commissioning of Dehumidifier for PCM Production Hub

This tender is proposed as a DOMESTIC PUBLIC TENDER. This tender is restricted only to Class-I and Class-II Local Suppliers as defined under DPIIT Order dtd 04/06/2020- Preference to Make in India Order-2017 Revision. Non-Local Suppliers need not quote.

Foreign OEMs/Agents quoting on behalf of Foreign OEMs are not permitted to quote. High Sea Sales Quotes not permitted. The bids shall be in INR only.

Tenderers are advised NOT TO UPLOAD any documents revealing the price of the main equipment, accessories, spares or AMC. They are however, requested to upload UNPRICED BIDS (i.e. Price details masked) showing appropriate break-up of components of main equipment, individual accessories and spares as desired.

This is a TWO-PART tender i.e. Techno-Commercial Bid (Part-I) and Price Bid (Part-II) shall be submitted separately. All technical and commercial terms and conditions shall be furnished in the Techno-Commercial Bid while price shall be indicated only in the Price Bid. Uploading price details anywhere else other than the price-bid shall lead to unconditional rejection of the tender. Please make note of the same.

Purchase preference to eligible vendors are applicable as per extant notifications issued by the Government of India.

The Class-I/Class-II Local suppliers, at the time of submitting their offer, shall also indicate percentage of local content and provide self-certification that the item (s) offered meets the local content requirement for Class-I/Class-II Local Suppliers as the case may be. They shall also give details of location (s) at which the local value addition is made.

In cases if the item(s) offered exceed Rs. 10 Crores, the Class-I/Class-II Local Suppliers shall provide a Certificate from the statutory auditor or cost auditor of the company (in case of companies) or from a practicing cost accountant or practicing chartered accountant (in respect of suppliers other than companies) giving the percentage of local content.

False Declarations will be in breach of the Code of Integrity under Rule 175 (1) (i) (h) of the General Financial Rules for which a bidder or its successors can be debarred for up to two years

as per Rule 151 (iii) of the General Financial Rules along with such other actions as may be permissible under law.

Technical Bids will be opened at the scheduled due date & time. No further intimation will be sent in this regard. The schedule for price bid opening shown is only indicative. Price bids will only be opened in the case of parties who have been techno-commercially accepted, the details of which will be communicated at a later stage.

**GOVERNMENT OF INDIA
DEPARTMENT OF SPACE
VIKRAM SARABHAI SPACE CENTRE (VSSC)
THIRUVANANTHAPURAM**

**Tender for Supply, installation and commissioning of Dehumidifier for
PCM Production Hub**

Bids to be submitted online

Tender No.: VSSC/PURCHASE UNIT III (SPRE)/VS202000097401 dated 12-08-2021

A. Tender Details

Tender No :	VSSC/PURCHASE UNIT III (SPRE)/VS202000097401
Tender Date :	12-08-2021
Tender Classification:	GOODS
Purchase Entity :	PURCHASE UNIT III (SPRE)
Centre :	VIKRAM SARABHAI SPACE CENTRE (VSSC)

Procurement of Supply, installation and commissioning of Dehumidifier for PCM Production Hub

This tender is proposed as a DOMESTIC PUBLIC TENDER. This tender is restricted only to Class-I and Class-II Local Suppliers as defined under DPIIT Order dtd 04/06/2020- Preference to Make in India Order-2017 Revision. Non-Local Suppliers need not quote.

Foreign OEMs/Agents quoting on behalf of Foreign OEMs are not permitted to quote. High Sea Sales Quotes not permitted. The bids shall be in INR only.

Tenderers are advised NOT TO UPLOAD any documents revealing the price of the main equipment, accessories, spares or AMC. They are however, requested to upload UNPRICED BIDS (i.e. Price details masked) showing appropriate break-up of components of main equipment, individual accessories and spares as desired.

This is a TWO-PART tender i.e. Techno-Commercial Bid (Part-I) and Price Bid (Part-II) shall be submitted separately. All technical and commercial terms and conditions shall be furnished in the Techno-Commercial Bid while price shall be indicated only in the Price Bid. Uploading price details anywhere else other than the price-bid shall lead to unconditional rejection of the tender. Please make note of the same.

Purchase preference to eligible vendors are applicable as per extant notifications issued by the Government of India.

The Class-I/Class-II Local suppliers, at the time of submitting their offer, shall also indicate percentage of local content and provide self-certification that the item (s) offered meets the local content requirement for Class-I/Class-II Local Suppliers as the case may be. They shall also give details of location (s) at which the local value addition is made.

In cases if the item(s) offered exceed Rs. 10 Crores, the Class-I/Class-II Local Suppliers shall provide a Certificate from the statutory auditor or cost auditor of the company (in case of companies) or from a practicing cost accountant or practicing chartered accountant (in respect of suppliers other than companies) giving the percentage of local content.

False Declarations will be in breach of the Code of Integrity under Rule 175 (1) (i) (h) of the General

Financial Rules for which a bidder or its successors can be debarred for up to two years as per Rule 151 (iii) of the General Financial Rules along with such other actions as may be permissible under law. Technical Bids will be opened at the scheduled due date & time. No further intimation will be sent in this regard. The schedule for price bid opening shown is only indicative. Price bids will only be opened in the case of parties who have been techno-commercially accepted, the details of which will be communicated at a later stage.

A.1 Tender Schedule

Bid Submission Start Date : **12-08-2021 12:34**

Bid Clarification Due Date : **02-09-2021 17:00**

Bid Submission Due Date : **14-09-2021 14:00**

Bid Opening Date : **14-09-2021 14:01**

Price Bid Opening Date : **30-09-2021 14:00**

B. Tender Attachments

Technical Write-up/Drawings

Document : Specifications and terms and conditions

Instructions To Vendors

2. Instructions to Vendors

1. This is an E Tender. Hence Postal/Fax/Email tenders will not be accepted.
2. Last minute clarification on tenders will not be entertained.
3. This tender is proposed as a DOMESTIC PUBLIC TENDER. This tender is restricted only to Class-I and Class-II Local Suppliers as defined under DPIIT Order dtd 04/06/2020- Preference to Make in India Order-2017 Revision. Non-Local Suppliers need not quote.
4. Foreign OEMs/Agents quoting on behalf of Foreign OEMs are not permitted to quote. High Sea Sales Quotes not permitted. The bids shall be in INR only.
5. Tenderers are advised NOT TO UPLOAD any documents revealing the price of the main equipment, accessories, spares or AMC. They are however, requested to upload UNPRICED BIDS (i.e. Price details masked) showing appropriate break-up of components of main equipment, individual accessories and spares as desired.
6. This is a TWO-PART tender i.e. Techno-Commercial Bid (Part-I) and Price Bid (Part-II) shall be submitted separately. All technical and commercial terms and conditions shall be furnished in the Techno-Commercial Bid while price shall be indicated only in the Price Bid. Uploading price details anywhere else other than the price-bid shall lead to unconditional rejection of the tender. Please make note of the same.
7. Purchase preference to eligible vendors are applicable as per extant notifications issued by the Government of India.
8. The Class-I/Class-II Local suppliers, at the time of submitting their offer, shall also indicate percentage of local content and provide self-certification that the item (s) offered meets the local content requirement for Class-I/Class-II Local Suppliers as the case may be. They shall also give details of location (s) at which the local value addition is made.

9. In cases if the item(s) offered exceed Rs. 10 Crores, the Class-I/Class-II Local Suppliers shall provide a Certificate from the statutory auditor or cost auditor of the company (in case of companies) or from a practicing cost accountant or practicing chartered accountant (in respect of suppliers other than companies) giving the percentage of local content.

10. False Declarations will be in breach of the Code of Integrity under Rule 175 (1) (i) (h) of the General Financial Rules for which a bidder or its successors can be debarred for up to two years as per Rule 151 (iii) of the General Financial Rules along with such other actions as may be permissible under law.

11. Technical Bids will be opened at the scheduled due date & time. No further intimation will be sent in this regard. The schedule for price bid opening shown is only indicative. Price bids will only be opened in the case of parties who have been techno-commercially accepted, the details of which will be communicated at a later stage.

C. Bid Templates

C.1 Technical Bid - Supply, installation and commissioning of Dehumidifier for PCM Production Hub

1. Dehumidifier - Supply, installation and commissioning

Item specifications for Dehumidifier

Sl No	Specification	Value	Compliance	Offered Specification	Remark
1	Chamber Volume	12 m ² x 2.5m = 30 m ³	Yes / No / Explain		
2	Chamber RH	less than or equal to 10%	Yes / No / Explain		
3	Chamber temperature	20-25 deg. C	Yes / No / Explain		
4	No of opening towards the chamber	One door at the entry	Yes / No / Explain		
5	Door size	1.0 x 2.0 m (B X H) - minimum	Yes / No / Explain		
6	Sight glass	One no. (size 0.3 x 0.3 m) is to be provided on the door	Yes / No / Explain		
7	No of occupants	Maximum 3 people at a time	Yes / No / Explain		
8	Frequency of opening the door	5 times maximum per hour	Yes / No / Explain		
9	Technical Specification		-		
10	Dehumidifier type	Internationally reputed brand and quality of Indian, USA, Japan or European make	Yes / No / Explain		
11	Skin (Interior and exterior)	SS	Yes / No / Explain		
12	Casing Insulation	PUF	Yes / No / Explain		
13	Panel type and finish	PUF sandwiched panel should consist of SS with good finish	Yes / No / Explain		

14	Desiccant	Silicate based Adsorbent	Yes / No / Explain		
15	Packageability	Modular	Yes / No / Explain		
16	Control panel	As per electrical standards with PLC with provision for alarms when RH or temperature beyond set values	Yes / No / Explain		
17	Nominal (Deh. process) air flow	25 air changes per Hour minimum	Yes / No / Explain		
18	Refrigeration using chiller	Necessary refrigeration system shall be provided to maintain the room temperature at 22-25 deg. C with an RH of <10 % humidity levels. Party should provide 2 nos. of chilling units so as to ensure redundancy	Yes / No / Explain		
19	Ducting	Ducting should be made of SS 304 with suitable length and should be insulated	Yes / No / Explain		
20	Lighting	LED cleanroom lighting fixture	Yes / No / Explain		
21	Display	RH and temperature display should be provided	Yes / No / Explain		
22	Gowning Cloths (optional)	Gowning for 3 persons to work in low RH(<10%) area	Yes / No / Explain		

Common Specifications (Applicable for all items)

Sl No	Specification	Value	Compliance	Offered Specification	Remark
1	Chamber Volume	12 m ² x 2.5m = 30 m ³	Yes / No / Explain		
2	Chamber RH	<10%	Yes / No / Explain		
3	Chamber temperature	20-25 deg. C	Yes / No / Explain		
4	No of opening towards the chamber	One door at the entry	Yes / No / Explain		
5	Door size	1.0 x 2.0 m (B X H) - minimum	Yes / No / Explain		

6	Sight glass	One no. (size 0.3 x 0.3 m) is to be provided on the door	Yes / No / Explain		
7	No of occupants	Maximum 3 people at a time	Yes / No / Explain		
8	Frequency of opening the door	5 times maximum per hour	Yes / No / Explain		
9	Technical Specification		-		
10	Dehumidifier type	Internationally reputed brand and quality of Indian, USA, Japan or European make	Yes / No / Explain		
11	Skin (Interior and exterior)	SS	Yes / No / Explain		
12	Casing Insulation	PUF	Yes / No / Explain		
13	Panel type and finish	PUF sandwiched panel should consist of SS with good finish	Yes / No / Explain		
14	Desiccant	Silicate based Adsorbent	Yes / No / Explain		
15	Packageability	Modular	Yes / No / Explain		
16	Control panel	As per electrical standards with PLC with provision for alarms when RH or temperature beyond set values	Yes / No / Explain		
17	Nominal (Deh. process) air flow	25 air changes per Hour minimum	Yes / No / Explain		
18	Refrigeration using chiller	Necessary refrigeration system shall be provided to maintain the room temperature at 22-25 deg. C with an RH of $\pm 10\%$ humidity levels. Party should provide 2 nos. of chilling units so as to ensure redundancy	Yes / No / Explain		
19	Ducting	Ducting should be made of SS 304 with suitable length and should be insulated	Yes / No / Explain		
20	Lighting	LED cleanroom lighting fixture	Yes / No / Explain		

21	Display	RH and temperature display should be provided	Yes / No / Explain		
22	Gowning Cloths (optional)	Gowning for 3-persons to work in low RH(<10%) area	Yes / No / Explain		

Supporting Documents required from Vendor

- 1. Full certifications (including ISO, calibration certificate and traceability certificate for any standards used for calibration) should be provided for all the items.**
- 2. Name and contact details (including phone and fax numbers, email addresses) of the users of the instrument, both in India and abroad, should be provided.**
- 3. Detailed description of the control system is to be provided.**
- 4. Operation/maintenance manual, troubleshooting flowchart, detailed wiring diagrams/circuit, and maintenance tool kits are to be provided.**
- 5. Full technical details in English (both hard and soft copies) should be provided supported by well-documented catalogues/leaflets of the version supplied.**
- 6. Brochures/Catalogues of company with details**
- 7. Unpriced Bid showing the split up of main equipment, accessories, essential spares as applicable**
- 8. Detailed Techno commercial offer(without price details)**
- 9. Unpriced AMC Quote in Split-up format for each year required.**
- 10. Unpriced list of essential/ optional spares for 3 years maintenance.**
- 11. Declaration regarding the percentage of local content (or value addition) in the item offered.**
- 12. Detailed Compliance Matrix vis-a-vis the item specification in tenders.**
- 13. Additional Documents from Vendor**

5 additional documents can be uploaded by the vendor

C.2 Commercial Terms / Bid

Sl. No.	Description	Compliance	Vendor Terms
1	All corrosive components should be painted with anticorrosive paint.	Yes / No / Explain	
2	All necessary safety interlocks and earthing should be provided for operator's safety.	Yes / No / Explain	
3	Detailed description of the control system is to be provided.	Yes / No / Explain	
4	Technical bid and price bid should be sent separately in sealed envelopes. Price bid should be sent strictly as hard copy only. Price bid should not be sent as email or email attachment.	Yes / No / Explain	
5	All subsystems, accessories and optional accessories mentioned in the specification should be quoted separately.	Yes / No / Explain	
6	Full certifications (including ISO, calibration certificate and traceability certificate for any standards used for calibration) should be provided for all the items.	Yes / No / Explain	
7	Name and contact details (including phone and fax numbers, email addresses) of the users of the instrument, both in India and abroad, should be provided.	Yes / No / Explain	
8	Party has to give a compliance matrix along with the offer. Otherwise, the offer will not be accepted.	Yes / No / Explain	
9	Pre-delivery inspection should be arranged.	Yes / No / Explain	
10	Party should be ready to accommodate any minor modifications, if required.	Yes / No / Explain	
11	Party should provide all utility requirements from VSSC for the complete installation and demonstration of the operation of the instrument.	Yes / No / Explain	
12	Party should provide all accessories and tools required for the complete installation of the machine.	Yes / No / Explain	
13	Operation/maintenance manual, troubleshooting flowchart, detailed wiring diagrams/circuit, and maintenance tool kits are to be provided.	Yes / No / Explain	

14	Full technical details in English (both hard and soft copies) should be provided supported by well-documented catalogues/leaflets of the version supplied.	Yes / No / Explain	
15	During guarantee period, spares taken from our stock, if any, should be replaced by the party free of cost.	Yes / No / Explain	
16	3 years' AMC from 3rd year onwards should be provided. The AMC cost needs to be included in the quotation.	Yes / No / Explain	
17	Guarantee/warranty: The complete supply with dessicant, refrigeration unit and control unit must be guaranteed for free repair/replacement for 24 months from the date of installation, commissioning and acceptance by VSSC.	Yes / No / Explain	
18	Recommended set of spare parts and consumables for two years of operation should be supplied. (please provide a complete list of spare parts with item-wise price).	Yes / No / Explain	
19	Installation, commissioning and on-site user training are to be provided by the party free of cost.	Yes / No / Explain	
20	Taxes and other costs, if any . [Note: VSSC is a Public Funded Research Institution under the administrative control of Department of Space and is eligible for partial exemption of IGST @5% vide Notfn No. 45/2017, 47/2017 dt 14.11.2017 respectively. Necessary IGST EXEMPTION CERTIFICATE shall be issued.]	Yes / No / Explain	
21	Security Deposit (Applicable if Offer Value is Rs. 5 Lakhs or above. MSME/NSIC Units are NOT EXEMPTED from the payment of SD. Bank Guarantee @ 3% of Order Value valid till 60 days from the date of supply to be submitted. Mandatory compliance required. Only Government Bodies/PSUs/PSEs can submit Indentity Bond in lieu of BG. In the event of non-performance of contractual obligations, SD will be forfeited).	Yes / No / Explain	
22	Delivery Terms.	Yes / No / Explain	
23	Delivery Period	Yes / No / Explain	

24	Liquidated Damages (Applicable beyond the delivery period mentioned in this tender @ 0.5% per week or part thereof on the undelivered portion subject to a maximum of 10% of the contract value. Mandatory compliance required).	Yes / No / Explain	
25	Warranty	Yes / No / Explain	
26	Performance Bank Guarantee (PBG) Bank Guarantee @ 3% of Order Value valid till the completion of warranty period plus 2 months claim period to be submitted. Mandatory compliance required. Only Government Bodies/PSUs/PSEs can submit Indemnity Bond in lieu of BG. In the event of non-performance of warranty obligations, PBG will be forfeited).	Yes / No / Explain	
27	Payment Term: (Our Default payment term: For indigenous orders: 100% within 30 days after receipt and acceptance of item at our site. For import cases: 100% by Sight Draft with Bank Charges to respective accounts. NOTE: CONSEQUENT TO COVID 19 PANDEMIC AND AS PER EXTANT GUIDELINES FROM DEPARTMENT OF SPACE, NO ADVANCE PAYMENT IS PAYABLE TO THIS TENDER).	Yes / No / Explain	
28	Definitions: A supplier or service provider, whose goods, services or works offered for procurement, has local content: a) Equal to or more than 50% : Class-I local supplier. b) More than 20% but less than 50% : Class-II local supplier. c) Less than or equal to 20% : Non-local supplier. Mention your category.	Yes / No / Explain	
29	Local content means the amount of value added in India (i.e. indigenous items/services added in the offered products/services/works) be the total value of the item offered (excluding net domestic indirect taxes) minus the value of imported content in the item (including all customs duties/IGST) as a proportion of the total value (excluding net domestic indirect taxes), in percent. Indicate extent of Minimum Local Content in offered product/service and location of such value additions.	Yes / No / Explain	

30	The Class-I & II local supplier should provide a Self Certification along with your offer in PDF format indicating that the item offered meets the minimum local content as called for in the tender as mentioned above and provide the % of local content along with details of the location(s) at which the local value addition is made. In case of two part tenders, it is mandatory to indicate compliance to MLC(minimum local content) in technical bid itself. Confirm attachment of Self declaration along with the offer.	Yes / No / Explain	
31	PO Placement Address (with Name and Contact Details of sales person concerned).	Yes / No / Explain	
32	Any Other Terms	Yes / No / Explain	
33	Acceptance to provide Non-Comprehensive AMC for a period of 3 years after the completion of warranty period. AMC cost shall only be mentioned in the specific slot in price bid.	Yes / No / Explain	
34	List of essential spares for the trouble free operation of the equipment to be uploaded (without price details). Details of optional spares may also be provided (without price details).	Yes / No / Explain	
35	Kindly ensure that NO DOCUMENTS WITH PRICE DETAILS ARE UPLOADED. Price shall only be mentioned in the price bid. Uploaded documents with price details shall summarily be rejected.	Yes / No / Explain	
36	Ensure you are a Class-I Local Supplier/ Class-II Local Supplier. The offer shall be in INR only. Bids from foreign OEMs and offer on High Sea Sales basis are not allowed. Please mention the category of the bidder.	Yes / No / Explain	

C.3 Price Bid

Sl. No.	Item	Quantity	Unit Price	Currency	Total Price	Remark
1	Dehumidifier - Supply, installation and commissioning	1.00 Nos.		-		

Common charges (Applicable for all items)

Annual Maintenance Contract Charges	
Optional Spares Cost (lumpsum)	
Any Other Charges	
Essential Spares Cost (lumpsum)	
Packing and Forwarding Charges	
Freight charge	
Installation & Commissioning Charges	

Tender Details

Tender No :	VS202100363801
Tender Date :	26-08-2021
Purchase Entity :	PURCHASE UNIT III (SPRE)
Centre :	VSSC

Procurement of Lithium Iron Phosphate

This Tender is for the procurement of Lithium Iron Phosphate

This tender is proposed as a DOMESTIC PUBLIC TENDER. This tender is restricted only to Class-I and Class-II Local Suppliers as defined under DPIIT Order dtd 04/06/2020- Preference to Make in India Order-2017 Revision. Non-Local Suppliers need not quote.

Foreign OEMs/Agents quoting on behalf of Foreign OEMs are not permitted to quote. High Sea Sales Quotes not permitted. The bids shall be in INR only.

Tenderers are advised NOT TO UPLOAD any documents revealing the price of the main equipment, accessories, spares or AMC. They are however, requested to upload UNPRICED BIDS (i.e. Price details masked) showing appropriate break-up of components of main equipment, individual accessories and spares as desired.

This is a TWO-PART tender i.e. Techno-Commercial Bid (Part-I) and Price Bid (Part-II) shall be submitted separately. All technical and commercial terms and conditions shall be furnished in the Techno-Commercial Bid while price shall be indicated only in the Price Bid. Uploading price details anywhere else other than the price-bid shall lead to unconditional rejection of the tender. Please make note of the same.

Purchase preference to eligible vendors are applicable as per extant notifications issued by the Government of India.

The Class-I/Class-II Local suppliers, at the time of submitting their offer, shall also indicate percentage of local content and provide self-certification that the item (s) offered meets the local content requirement for Class-I/Class-II Local Suppliers as the case may be. They shall also give details of location (s) at which the local value addition is made.

In cases if the item(s) offered exceed Rs. 10 Crores, the Class-I/Class-II Local Suppliers shall provide a Certificate from the statutory auditor or cost auditor of the company (in case of companies) or from a practicing cost accountant or practicing chartered accountant (in respect of suppliers other than companies) giving the percentage of local content.

False Declarations will be in breach of the Code of Integrity under Rule 175 (1) (i) (h) of the General Financial Rules for which a bidder or its successors can be debarred for up to two years as per Rule 151 (iii) of the General Financial Rules along with such other actions as may be

permissible under law.

Technical Bids will be opened at the scheduled due date & time. No further intimation will be sent in this regard. The schedule for price bid opening shown is only indicative. Price bids will only be opened in the case of parties who have been techno-commercially accepted, the details of which will be communicated at a later stage.

**GOVERNMENT OF INDIA
DEPARTMENT OF SPACE
VIKRAM SARABHAI SPACE CENTRE (VSSC)
THIRUVANANTHAPURAM**

Tender for Lithium Iron Phosphate

Bids to be submitted online

Tender No.: VSSC/PURCHASE UNIT III (SPRE)/VS202100363801 dated 26-08-2021

A. Tender Details

Tender No :	VSSC/PURCHASE UNIT III (SPRE)/VS202100363801
Tender Date :	26-08-2021
Tender Classification:	GOODS
Purchase Entity :	PURCHASE UNIT III (SPRE)
Centre :	VIKRAM SARABHAI SPACE CENTRE (VSSC)

Procurement of Lithium Iron Phosphate

This Tender is for the procurement of Lithium Iron Phosphate

This tender is proposed as a DOMESTIC PUBLIC TENDER. This tender is restricted only to Class-I and Class-II Local Suppliers as defined under DPIIT Order dtd 04/06/2020- Preference to Make in India Order-2017 Revision. Non-Local Suppliers need not quote.

Foreign OEMs/Agents quoting on behalf of Foreign OEMs are not permitted to quote. High Sea Sales Quotes not permitted. The bids shall be in INR only.

Tenderers are advised NOT TO UPLOAD any documents revealing the price of the main equipment, accessories, spares or AMC. They are however, requested to upload UNPRICED BIDS (i.e. Price details masked) showing appropriate break-up of components of main equipment, individual accessories and spares as desired.

This is a TWO-PART tender i.e. Techno-Commercial Bid (Part-I) and Price Bid (Part-II) shall be submitted separately. All technical and commercial terms and conditions shall be furnished in the Techno-Commercial Bid while price shall be indicated only in the Price Bid. Uploading price details anywhere else other than the price-bid shall lead to unconditional rejection of the tender. Please make note of the same.

Purchase preference to eligible vendors are applicable as per extant notifications issued by the Government of India.

The Class-I/Class-II Local suppliers, at the time of submitting their offer, shall also indicate percentage of local content and provide self-certification that the item (s) offered meets the local content requirement for Class-I/Class-II Local Suppliers as the case may be. They shall also give details of location (s) at which the local value addition is made.

In cases if the item(s) offered exceed Rs. 10 Crores, the Class-I/Class-II Local Suppliers shall provide a Certificate from the statutory auditor or cost auditor of the company (in case of companies) or from a practicing cost accountant or practicing chartered accountant (in respect of suppliers other than companies) giving the percentage of local content.

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Financial Rules for which a bidder or its successors can be debarred for up to two years as per Rule 151 (iii) of the General Financial Rules along with such other actions as may be permissible under law. Technical Bids will be opened at the scheduled due date & time. No further intimation will be sent in this regard. The schedule for price bid opening shown is only indicative. Price bids will only be opened in the case of parties who have been techno-commercially accepted, the details of which will be communicated at a later stage.

A.1 Tender Schedule

Bid Submission Start Date : **26-08-2021 14:00**

Bid Clarification Due Date : **13-09-2021 10:00**

Bid Submission Due Date : **07-10-2021 14:00**

Bid Opening Date : **07-10-2021 14:00**

Price Bid Opening Date : **19-10-2021 14:07**

B. Tender Attachments

NA

Instructions To Vendors

1. Instructions to Vendors

1. This is an E Tender. Hence Postal/Fax/Email tenders will not be accepted.
2. Last minute clarification on tenders will not be entertained.
2. This tender is proposed as a DOMESTIC PUBLIC TENDER. This tender is restricted only to Class-I and Class-II Local Suppliers as defined under DPIIT Order dtd 04/06/2020- Preference to Make in India Order-2017 Revision. Non-Local Suppliers need not quote.
3. Foreign OEMs/Agents quoting on behalf of Foreign OEMs are not permitted to quote. High Sea Sales Quotes not permitted. The bids shall be in INR only.
4. Tenderers are advised NOT TO UPLOAD any documents revealing the price of the main equipment, accessories, spares or AMC. They are however, requested to upload UNPRICED BIDS (i.e. Price details masked) showing appropriate break-up of components of main equipment, individual accessories and spares as desired.
5. This is a TWO-PART tender i.e. Techno-Commercial Bid (Part-I) and Price Bid (Part-II) shall be submitted separately. All technical and commercial terms and conditions shall be furnished in the Techno-Commercial Bid while price shall be indicated only in the Price Bid. Uploading price details anywhere else other than the price-bid shall lead to unconditional rejection of the tender. Please make note of the same.
6. Purchase preference to eligible vendors are applicable as per extant notifications issued by the Government of India.
7. The Class-I/Class-II Local suppliers, at the time of submitting their offer, shall also indicate percentage of local content and provide self-certification that the item (s) offered meets the local content requirement for Class-I/Class-II Local Suppliers as the case may be. They shall also give details of location (s) at which the local value addition is made.
8. In cases if the item(s) offered exceed Rs. 10 Crores, the Class-I/Class-II Local Suppliers shall provide a Certificate from the statutory auditor or cost auditor of the company (in case of companies) or

from a practicing cost accountant or practicing chartered accountant (in respect of suppliers other than companies) giving the percentage of local content.

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C. Bid Templates

C.1 Technical Bid - Lithium Iron Phosphate

1. BATTERY MATERIALS

Lithium Iron Phosphate

Item specifications for BATTERY MATERIALS

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Surface Area, m2/g	13±2	Yes / No / Explain		
2	Tap density, g/cm3	1.0±0.2	Yes / No / Explain		
3	Particle size, D10 (µm)	<3.0	Yes / No / Explain		
4	Particle size, D50 (µm)	6.0 ± 2.0	Yes / No / Explain		
5	Particle size, D90 (µm)	<25	Yes / No / Explain		
6	Moisture, ppm	< 800	Yes / No / Explain		
7	Lithium, %	4.2 ± 0.5	Yes / No / Explain		
8	Iron, %	35 ± 1.5	Yes / No / Explain		
9	Phosphorous, %	20 ± 1	Yes / No / Explain		
10	1st discharge capacity at C/10, mAh/g	160 ± 3	Yes / No / Explain		
11	1st Coulombic efficiency, %	> 90	Yes / No / Explain		
12	Packing	20 kg pack	Yes / No / Explain		

Document : GeM Non-availability certificate

Supporting Documents required from Vendor

- 1. Party has to supply 200 g of LiFePO₄ for analysis at our end without which the offer will not be accepted**
- 2. Party has to submit the specification sheet of the material**
- 3. Brochures/Catalogues of company with details**
- 4. Detailed Techno commercial offer (without price details)**
- 5. Declaration regarding the percentage of local content (or value addition) in the item offered.**
- 6. Detailed Compliance Matrix vis-a-vis the item specification in tenders.**
- 7. Additional Documents from Vendor.**

5 additional documents can be uploaded by the vendor

C.2 Commercial Terms / Bid

Sl. No.	Description	Compliance	Vendor Terms
1	The material should be properly packed to avoid moisture ingress	Yes / No / Explain	
2	The Class-I & II local supplier should provide a Self Certification along with your offer in PDF format indicating that the item offered meets the minimum local content as called for in the tender as mentioned above and provide the % of local content along with details of the location(s) at which the local value addition is made. In case of two part tenders, it is mandatory to indicate compliance to MLC(minimum local content) in technical bid itself. Confirm attachment of Self declaration along with the offer.	Yes / No / Explain	
3	PO Ordering Address with Name and Contact Details of Sales Person concerned (e-mail and phone number).	Yes / No / Explain	
4	Any Other Terms	Yes / No / Explain	
5	Taxes and other costs, if any . [Note: VSSC is a Public Funded Research Institution under the administrative control of Department of Space and is eligible for partial exemption of IGST @5% vide Notfn No. 45/2017, 47/2017 dt 14.11.2017 respectively. Necessary IGST EXEMPTION CERTIFICATE shall be issued.]	Yes / No / Explain	
6	Security Deposit (Applicable if Offer Value is Rs. 5 Lakhs or above. MSME/NSIC Units are NOT EXEMPTED from the payment of SD. Bank Guarantee @ 3% of Order Value valid till 60 days from the date of supply to be submitted. Mandatory compliance required. Only Government Bodies/PSUs/PSEs can submit Indentity Bond in lieu of BG. In the event of non-performance of contractual obligations, SD will be forfeited).	Yes / No / Explain	
7	Delivery Terms.	Yes / No / Explain	
8	Delivery Period	Yes / No / Explain	

9	Liquidated Damages (Applicable beyond the delivery period mentioned in this tender @ 0.5% per week or part thereof on the undelivered portion subject to a maximum of 10% of the contract value. Mandatory compliance required).	Yes / No / Explain	
10	Payment Term: (Our Default payment term: For indigenous orders: 100% within 30 days after receipt and acceptance of item at our site. For import cases: 100% by Sight Draft with Bank Charges to respective accounts. NOTE: CONSEQUENT TO COVID 19 PANDEMIC AND AS PER EXTANT GUIDELINES FROM DEPARTMENT OF SPACE, NO ADVANCE PAYMENT IS PAYABLE TO THIS TENDER).	Yes / No / Explain	
11	Definitions: A supplier or service provider, whose goods, services or works offered for procurement, has local content: a) Equal to or more than 50% : Class-I local supplier. b) More than 20% but less than 50% : Class-II local supplier. c) Less than or equal to 20% : Non-local supplier. Mention your category.	Yes / No / Explain	
12	Local content means the amount of value added in India (i.e. indigenous items/services added in the offered products/services/works) be the total value of the item offered (excluding net domestic indirect taxes) minus the value of imported content in the item (including all customs duties/IGST) as a proportion of the total value (excluding net domestic indirect taxes), in percent. Indicate extent of Minimum Local Content in offered product/service and location of such value additions.	Yes / No / Explain	

C.3 Price Bid

Sl. No.	Item	Quantity	Unit Price	Currency	Total Price	Remark
1	BATTERY MATERIALS Lithium Iron Phosphate	40.00 KG		-		

Common charges (Applicable for all items)

P&F Charges	
Freight charge	
Documentation & Hadnling charges	
Other Charges (If any)	

Tender Details

Tender No :	VS202000097301
Tender Date :	17-08-2021
Purchase Entity :	PURCHASE UNIT III (SPRE)
Centre :	VSSC

Procurement of Glass reactors for production hub-10L,30L and 50L

This tender is proposed as a DOMESTIC PUBLIC TENDER. This tender is restricted only to Class-I and Class-II Local Suppliers as defined under DPIIT Order dtd 04/06/2020- Preference to Make in India Order-2017 Revision. Non-Local Suppliers need not quote.

Foreign OEMs/Agents quoting on behalf of Foreign OEMs are not permitted to quote. High Sea Sales Quotes not permitted. The bids shall be in INR only.

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Purchase preference to eligible vendors are applicable as per extant notifications issued by the Government of India.

The Class-I/Class-II Local suppliers, at the time of submitting their offer, shall also indicate percentage of local content and provide self-certification that the item (s) offered meets the local content requirement for Class-I/Class-II Local Suppliers as the case may be. They shall also give details of location (s) at which the local value addition is made.

In cases if the item(s) offered exceed Rs. 10 Crores, the Class-I/Class-II Local Suppliers shall provide a Certificate from the statutory auditor or cost auditor of the company (in case of companies) or from a practicing cost accountant or practicing chartered accountant (in respect of suppliers other than companies) giving the percentage of local content.

False Declarations will be in breach of the Code of Integrity under Rule 175 (1) (i) (h) of the General Financial Rules for which a bidder or its successors can be debarred for up to two years

as per Rule 151 (iii) of the General Financial Rules along with such other actions as may be permissible under law.

Technical Bids will be opened at the scheduled due date & time. No further intimation will be sent in this regard. The schedule for price bid opening shown is only indicative. Price bids will only be opened in the case of parties who have been techno-commercially accepted, the details of which will be communicated at a later stage.

**GOVERNMENT OF INDIA
DEPARTMENT OF SPACE
VIKRAM SARABHAI SPACE CENTRE (VSSC)
THIRUVANANTHAPURAM**

Tender for Glass reactores for production hub-10L,30L and 50L

Bids to be submitted online

Tender No.: VSSC/PURCHASE UNIT III (SPRE)/VS202000097301 dated 17-08-2021

A. Tender Details

Tender No :	VSSC/PURCHASE UNIT III (SPRE)/VS202000097301
Tender Date :	17-08-2021
Tender Classification:	GOODS
Purchase Entity :	PURCHASE UNIT III (SPRE)
Centre :	VIKRAM SARABHAI SPACE CENTRE (VSSC)

Procurement of Glass reactores for production hub-10L,30L and 50L

This tender is proposed as a DOMESTIC PUBLIC TENDER. This tender is restricted only to Class-I and Class-II Local Suppliers as defined under DPIIT Order dtd 04/06/2020- Preference to Make in India Order-2017 Revision. Non-Local Suppliers need not quote.

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151 (iii) of the General Financial Rules along with such other actions as may be permissible under law. Technical Bids will be opened at the scheduled due date & time. No further intimation will be sent in this regard. The schedule for price bid opening shown is only indicative. Price bids will only be opened in the case of parties who have been techno-commercially accepted, the details of which will be communicated at a later stage.

A.1 Tender Schedule

Bid Submission Start Date : **17-08-2021 16:00**

Bid Clarification Due Date : **30-08-2021 12:00**

Bid Submission Due Date : **21-09-2021 14:00**

Bid Opening Date : **21-09-2021 14:01**

Price Bid Opening Date : **07-10-2021 14:00**

B. Tender Attachments

Technical Write-up/Drawings

Document : Reactors- Specifications and General conditions

Instructions To Vendors

2. Instructions to Vendors

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2. Last minute clarification on tenders will not be entertained.
3. This tender is proposed as a DOMESTIC PUBLIC TENDER. This tender is restricted only to Class-I and Class-II Local Suppliers as defined under DPIIT Order dtd 04/06/2020- Preference to Make in India Order-2017 Revision. Non-Local Suppliers need not quote.
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C. Bid Templates

C.1 Technical Bid - Glass reactores for production hub-10L,30L and 50L

1. GLASS DISTILLATION REACTOR-Double walled glass reactor of capacity 10L

Item specifications for GLASS DISTILLATION REACTOR

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Double-walled Glass reactor of 10L capacity-03 Nos.		-		
2	I. System shall consist of following sub-systems		-		
3	1.Frame kit		-		
4	2. Vessel kit		-		
5	3. Jacketed vessel lid		-		
6	4. Lid blanking kit (all ports except central port)		-		
7	5. Overhead stirrer		-		
8	6. Vertical Reflux kit		-		
9	7. Baffle set		-		
10	8. Oil circulation pipes and oil drain manifold kit		-		
11	9. Safety device - Pressure relief valve		-		
12	II. Design basis: The reactor system shall be designed to operate under the following process conditions.		-		
13	a) Duty	Batch process	Yes / No / Explain		

14	b) Operating temperature	+235 0C (max.) / -25 0C (min.)	Yes / No / Explain		
15	c) Operating pressure (vacuum)	Full Vacuum (-760 mm Hg) (Min.) to 0.5 bar (g). (Max.)	Yes / No / Explain		
16	III. System Description:		-		
17	1. Reactor flask capacity	10 L	Yes / No / Explain		
18	2. Vessel shape	torri spherical	Yes / No / Explain		
19	3. Reactor flask shall be made of Glass only. Shall be of double walled reactor. Fluid shall be circulated using single fluid heating / cooling circulator and should be operated in the temperature range - 25 °C to +235 °C.		-		
20	4. The agitator assembly shall be made of SS with PTFE liner or full PTFE (party has to specify the material of construction and shape of the stirrer) with variable speed controller	should be able to mix thoroughly the reaction mixture of viscosity ranging from 5000 cP to 1,00,000 cP.	Yes / No / Explain		
21	5. Suitable motor and gear box of reputed make shall be provided with the agitator assembly. Brand and model of agitator assesmbly to be provided.		-		
22	6. Pressure Sensor should be provided for vacuum indication (Range: - 0.5 to +0.5 bar) at appropriate location		-		
23	7. Temperature indicators (Sensor - RTD type, Range: - 25 to 235 °C) should be provided at appropriate locations to monitor the process parameters.	Redundancy liquid temperature sensor shall be included in the reactor vessel for measurement of the liquid temperature.	Yes / No / Explain		

24	8. Provision for nitrogen bubbling through the reaction mixture with suitable vent provision shall be provided.		-		
25	9. Over pressure relief valve shall be incorporated in the system.		-		
26	10. All the MOC coming in contact with process medium (both liquid and vapor) and the operating knobs of the valves including the skid mounted structure of the system shall be only borosilicate glass and PTFE.		-		
27	11. Condenser of suitable design to be provided. Party has to specify the design		-		
28	12. Ball valves, drain valves, vent valves etc are to be provided. Party has to specify the type and number of valves and their exact location in the unit		-		
29	13. Reactor flask shall be mounted on a frame with durable wheels combined with levelling feet.		-		
30	IV. Features of the sub-systems		-		
31	1. Frame kit		-		
32	Frame kit should include Base Frame, Stirrer seal and guide, Flange seal and location ring		-		
33	The reactors frame should be strong to hold reactors from 10 litre to 50 litres interchangeable.		-		
34	Party has to specify the MOC and design of the reactor frame		-		

35	The frames should have aluminium extruded panel on two sides to the support the reactor Clamp.		-		
36	The frames should be interchangeable for 10L, 30L and 50L reactors.		-		
37	There should be a bottom load-based spring mechanism to support the reactors with variable capacity.		-		
38	Two different clamps to be provided to have large opening of the reactor and should be compatible with standard DN235 and DN300 specs.		-		
39	The frame should have an easy lift mechanism for the stirrer motor for changing of stirrer, cleaning etc.		-		
40	The frame should be mounted on castor wheels with lockable arrangement.		-		
41	The Frame should have provision for mounting the reflux and distillation systems.		-		
42	2. Vessel kit:		-		
43	1. It should include reaction vessel of 10L capacity , BOV, RTD, PTFE anchor stirrer and frame support cartridges		-		
44	Double walled torri spherical flask of 10L capacity		-		
45	Minimum stirred volume - 10.0 % of the total reactor volume.		-		
46	Discharge valve in the bottom (flush open bottom)		-		

47	Stirrer shall be made of SS with PTFE liner or full PTFE and should immerse to nearly 10% of the total reactor volume.		-		
48	Temperature indicators (with RTD sensors) to measure the temperature of the contents in the flask (i.e liquid temperature) with suitable thermowells made of Borosilicate glass.		-		
49	RTD's shall be made with SS sheath material cover and suitable head mounted transmitter.		-		
50	1. Specifications of RTD for temperature measurement:		-		
51	a. Sensor type :	Pt-100 (RTD)	Yes / No / Explain		
52	b. Measuring range:	-25° to 235 0C	Yes / No / Explain		
53	c. Accuracy:	0.1°C	Yes / No / Explain		
54	d. Unit of measurement:	Degree Celsius	Yes / No / Explain		
55	e. Indicator:	display of temperature should be in the Software in the computer. Provisions should be there for indicating the temperature of reaction bath and reaction medium.	Yes / No / Explain		
56	f. All sensors shall be provided with suitable glass thermowell and no sensor should be directly exposed to process media.		-		
57	g. Shall be of reputed make. Party has to specify the brand and model of the item.		-		

58	3. Jacketed Vessel Lid		-		
59	The vessel lid should include		-		
60	1. 2 Nos. of DN 60 large ports (one for reflux condenser, and the other for charging powders)		-		
61	2. 2 Nos. of B19 ports and one B34 port (for inserting Glass thermowell with suitable liquid (For inserting RTD to measure liquid temperature when filled up to 10% of the total volume) and pressure sensors)		-		
62	3. 2 Nos. of GL45 port for inserting baffle		-		
63	4. One centre port for stirrer.		-		
64	5. N2 purging port		-		
65	4. Lid Blanking Kit (all ports except central port)		-		
66	It should include stoppers for all Lid ports of appropriate size, excluding the stirrer port		-		
67	5. Overhead stirrer		-		
68	Party has to specify the RPM capability of the stirrer to ensure effective mixing of reaction medium having viscosity ranging from 5000 cP to 1,00,000 cP		-		

69	Party should provide suitable stirrer of variable speed (VFD) to adjust the speed of the stirrer with features such as double bear housing, seal housing, and single acting dry mechanical seal of reputed make		-		
70	All metal components used for double bearing housing, seal housing etc., should be of SS 316L		-		
71	Stirrer motor should be of IKA/Heidolph/CAT make.		-		
72	Stirrer shall be made of SS with PTFE liner or full PTFE		-		
73	Motor should be flame proof		-		
74	Party should provide the motor ratings such as HP, RPM , Power details etc.		-		
75	6. Vertical Reflux kit		-		
76	The reflux kit should consist of double walled coiled condenser with 3500 cm2 cooling area		-		
77	The condenser and reflux kit should be DN 60 compatible and held by quick release clamp and O-ring.		-		
78	7. Baffle set		-		
79	A pair of baffles made of PTFE should be supplied		-		
80	The depth of the baffles should cover 2/3rd of the vessel from the top		-		
81	The baffles should fit on either side of stirrer		-		

82	Party should provide the design of the baffles.		-		
83	8. Oil circulation pipes and oil drain manifold kit		-		
84	Oil circulation pipes as a pack of 2, each with minimum 3 meter length should be provided		-		
85	MOC should be compatible with the circulating fluid.		-		
86	It should be capable of withstanding temperature from - 25 °C to +235°C		-		
87	Oil pipes of suitable diameter for connecting to the thermostat as well as to the reactor should be provided		-		
88	Party should provide oil drain manifold kit with required hoses		-		
89	9. Party should provide bottom outlet assembly with RTD for the 10% volume requirement		-		
90	10. Party should provide dropping funnel /pressure equalising funnel of minimum 1 L capacity		-		
91	11. Pressure relief valve:		-		
92	Temperature range: -25°C to +235°C.		-		
93	Connections should be supplied to enable fitment to suitable lid port		-		
94	12. Software and PC based control system		-		
95	The control system should be PC based with software and the hardware connected directly to the PC via USB or RS232.		-		

96	All the various reaction parameters like pH, Temperature, Vacuum, Pressure, flow rates of reagent addition, total cumulative volume added etc should be visible on software.		-		
97	The software should have built in safety features: The software should have built in PID controls: built in case of temperature overshoot or any parameters override like addition of reagents, pH maintenance, etc		-		
98	The software should be capable of setting the limits of accuracy (for e.g. +/- 2 deg for a set temperature)		-		
99	All the safety parameters like shut down of the equipment or low value emergency sign should be able to be programmed depending on the reaction parameters		-		
100	13. Party should supply of all required cables, installation of all equipments and commissioning		-		

2. GLASS DISTILLATION REACTOR-triple walled glass reactor of 10L capacity (vacuum jacketed)

Item specifications for GLASS DISTILLATION REACTOR

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Triple-walled Glass reactor of 10L capacity-01 No.		-		
2	I. System shall consist of following sub-systems		-		

3	1.Frame kit		-		
4	2. Vacuum jacketed vessel kit		-		
5	3. Jacketed vessel lid		-		
6	4. Lid blanking kit (all ports except central port)		-		
7	5. Overhead stirrer		-		
8	6. Vertical Reflux kit		-		
9	7. Baffle set		-		
10	8. Oil circulation pipes and oil drain manifold kit		-		
11	9. Safety device - Pressure relief valve		-		
12	II. Design basis: The reactor system shall be designed to operate under the following process conditions.		-		
13	a) Duty	Batch process	Yes / No / Explain		
14	b) Operating temperature	+235 °C (max.) / -25 °C (min.)	Yes / No / Explain		
15	c) Operating pressure (vacuum)	Full Vacuum (-760 mm Hg) (Min.) to 0.5 bar (g). (Max.)	Yes / No / Explain		
16	III. System Description:		-		
17	1. Reactor flask capacity	10 L	Yes / No / Explain		
18	2. Vessel shape	torri spherical	Yes / No / Explain		

19	3. Reactor flask shall be made of Glass only. Shall be of triple walled reactor. Fluid shall be circulated using single fluid heating / cooling circulator and should be operated in the temperature range - 25 °C to +235 °C.		-		
20	4. The agitator assembly shall be made of SS with PTFE liner or full PTFE (party has to specify the material of construction and shape of the stirrer) with variable speed controller	should be able to mix thoroughly the reaction mixture of viscosity ranging from 5000 cP to 1,00,000 cP.	Yes / No / Explain		
21	5. Suitable motor and gear box of reputed make shall be provided with the agitator assembly. Brand and model of agitator assesmbly to be provided.		-		
22	6. Pressure Sensor should be provided for vacuum indication (Range: - 0.5 to +0.5 bar) at appropriate location		-		
23	7. Temperature indicators (Sensor - RTD type, Range: - 25 to 235 °C) should be provided at appropriate locations to monitor the process parameters.	Redundancy liquid temperature sensor shall be included in the reactor vessel for measurement of the liquid temperature.	Yes / No / Explain		
24	8. Provision for nitrogen bubbling through the reaction mixture with suitable vent provision shall be provided.		-		
25	9. Over pressure relief valve shall be incorporated in the system.		-		

26	10. All the MOC coming in contact with process medium (both liquid and vapor) and the operating knobs of the valves including the skid mounted structure of the system shall be only borosilicate glass and PTFE.		-		
27	11. Condenser of suitable design to be provided. Party has to specify the design		-		
28	12. Ball valves, drain valves, vent valves etc are to be provided. Party has to specify the type and number of valves and their exact location in the unit		-		
29	13. Reactor flask shall be mounted on a frame with durable wheels combined with levelling feet.		-		
30	IV. Features of the sub-systems		-		
31	1. Frame kit		-		
32	Frame kit should include Base Frame, Stirrer seal and guide, Flange seal and location ring		-		
33	The reactors frame should be strong to hold reactors from 10 litre to 50 litres interchangeable.		-		
34	Party has to specify the MOC and design of the reactor frame		-		
35	The frames should have aluminium extruded panel on two sides to the support the reactor Clamp.		-		
36	The frames should be interchangeable for 10L, 30L and 50L reactors.		-		

37	There should be a bottom load-based spring mechanism to support the reactors with variable capacity.		-		
38	Two different clamps to be provided to have large opening of the reactor and should be compatible with standard DN235 and DN300 specs.		-		
39	The frame should have an easy lift mechanism for the stirrer motor for changing of stirrer, cleaning etc.		-		
40	The frame should be mounted on castor wheels with lockable arrangement.		-		
41	The Frame should have provision for mounting the reflux and distillation systems.		-		
42	2. Vessel kit:		-		
43	1. It should include reaction vessel of 10L capacity , BOV, RTD, PTFE anchor stirrer and frame support cartridges		-		
44	Triple walled torri spherical flask of 10L capacity		-		
45	Minimum stirred volume - 10.0 % of the total reactor volume.		-		
46	Discharge valve in the bottom (flush open bottom)		-		
47	Stirrer shall be made of SS with PTFE liner or full PTFE and should immerse to nearly 10% of the total reactor volume.		-		

48	Temperature indicators (with RTD sensors) to measure the temperature of the contents in the flask (i.e liquid temperature) with suitable thermowells made of Borosilicate glass.		-		
49	RTD's shall be made with SS sheath material cover and suitable head mounted transmitter.		-		
50	1. Specifications of RTD for temperature measurement:		-		
51	a. Sensor type :	Pt-100 (RTD)	Yes / No / Explain		
52	b. Measuring range:	-25° to 235 °C	Yes / No / Explain		
53	c. Accuracy:	0.1°C	Yes / No / Explain		
54	d. Unit of measurement:	Degree Celsius	Yes / No / Explain		
55	e. Indicator:	display of temperature should be in the Software in the computer. Provisions should be there for indicating the temperature of reaction bath and reaction medium.	Yes / No / Explain		
56	f. All sensors shall be provided with suitable glass thermowell and no sensor should be directly exposed to process media.		-		
57	g. Shall be of reputed make. Party has to specify the brand and model of the item.		-		
58	3. Jacketed Vessel Lid		-		
59	The vessel lid should include		-		

60	1. 2 Nos. of DN 60 large ports (one for reflux condenser, and the other for charging powders)		-		
61	2. 2 Nos. of B19 ports and one B34 port (for inserting Glass thermowell with suitable liquid (For inserting RTD to measure liquid temperature when filled up to 10% of the total volume) and pressure sensors)		-		
62	3. 2 Nos. of GL45 port for inserting baffle		-		
63	4. One centre port for stirrer.		-		
64	5. N2 purging port		-		
65	4. Lid Blanking Kit (all ports except central port)		-		
66	It should include stoppers for all Lid ports of appropriate size, excluding the stirrer port		-		
67	5. Overhead stirrer		-		
68	Party has to specify the RPM capability of the stirrer to ensure effective mixing of reaction medium having viscosity ranging from 5000 cP to 1,00,000 cP		-		
69	Party should provide suitable stirrer of variable speed (VFD) to adjust the speed of the stirrer with features such as double bear housing, seal housing, and single acting dry mechanical seal of reputed make		-		

70	All metal components used for double bearing housing, seal housing etc., should be of SS 316L		-		
71	Stirrer motor should be of IKA/Heidolph/CAT make.		-		
72	Stirrer shall be made of SS with PTFE liner or full PTFE		-		
73	Motor should be flame proof		-		
74	Party should provide the motor ratings such as HP, RPM , Power details etc.		-		
75	6. Vertical Reflux kit		-		
76	The reflux kit should consist of double walled coiled condenser with 3500 cm2 cooling area		-		
77	The condenser and reflux kit should be DN 60 compatible and held by quick release clamp and O-ring.		-		
78	7. Baffle set		-		
79	A pair of baffles made of PTFE should be supplied		-		
80	The depth of the baffles should cover 2/3rd of the vessel from the top		-		
81	The baffles should fit on either side of stirrer		-		
82	Party should provide the design of the baffles.		-		
83	8. Oil circulation pipes and oil drain manifold kit		-		
84	Oil circulation pipes as a pack of 2, each with minimum 3 meter length should be provided		-		

85	MOC should be compatible with the circulating fluid.		-		
86	It should be capable of withstanding temperature from -25 °C to +235°C		-		
87	Oil pipes of suitable diameter for connecting to the thermostat as well as to the reactor should be provided		-		
88	Party should provide oil drain manifold kit with required hoses		-		
89	9. Party should provide bottom outlet assembly with RTD for the 10% volume requirement		-		
90	10. Party should provide dropping funnel /pressure equalising funnel of minimum 1 L capacity		-		
91	11. Pressure relief valve: PRV should be set to open at 200mBar(g).		-		
92	Temperature range: -25°C to +235°C.		-		
93	Connections should be supplied to enable fitment to suitable lid port		-		
94	12. Software and PC based control system		-		
95	The control system should be PC based with software and the hardware connected directly to the PC via USB or RS232.		-		
96	All the various reaction parameters like pH, Temperature, Vacuum, Pressure, flow rates of reagent addition, total cumulative volume added etc should be visible on software.		-		

97	The software should have built in safety features: The software should have built in PID controls: built in case of temperature overshoot or any parameters override like addition of reagents, pH maintenance, etc		-		
98	The software should be capable of setting the limits of accuracy (for e.g. +/- 2 deg for a set temperature)		-		
99	All the safety parameters like shut down of the equipment or low value emergency sign should be able to be programmed depending on the reaction parameters		-		
100	13. Party should supply of all required cables, installation of all equipments and commissioning		-		

3. GLASS DISTILLATION REACTOR -Double walled glass reactor of capacity 30L

Item specifications for GLASS DISTILLATION REACTOR

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Double-walled Glass reactor of 30L capacity-01 Nos.		-		
2	I. System shall consist of following sub-systems		-		
3	1.Frame kit		-		
4	2. Vessel kit		-		
5	3. Jacketed vessel lid		-		
6	4. Lid blanking kit (all ports except central port)		-		

7	5. Overhead stirrer		-		
8	6. Vertical Reflux kit		-		
9	7. Baffle set		-		
10	8. Oil circulation pipes and oil drain manifold kit		-		
11	9. Safety device - Pressure relief valve		-		
12	II. Design basis: The reactor system shall be designed to operate under the following process conditions.		-		
13	a) Duty	Batch process	Yes / No / Explain		
14	b) Operating temperature	+235 0C (max.) / -25 0C (min.)	Yes / No / Explain		
15	c) Operating pressure (vacuum)	Full Vacuum (-760 mm Hg) (Min.) to 0.5 bar (g). (Max.)	Yes / No / Explain		
16	III. System Description:		-		
17	1. Reactor flask capacity	30 L	Yes / No / Explain		
18	2. Vessel shape	torri spherical	Yes / No / Explain		
19	3. Reactor flask shall be made of Glass only. Shall be of double walled reactor. Fluid shall be circulated using single fluid heating / cooling circulator and should be operated in the temperature range - 25 °C to +235 °C.		-		
20	4. The agitator assembly shall be made of SS with PTFE liner or full PTFE (party has to specify the material of construction and shape of the stirrer) with variable speed controller	should be able to mix thoroughly the reaction mixture of viscosity ranging from 5000 cP to 1,00,000 cP.	Yes / No / Explain		

21	5. Suitable motor and gear box of reputed make shall be provided with the agitator assembly. Brand and model of agitator assembly to be provided.		-		
22	6. Pressure Sensor should be provided for vacuum indication (Range: - 0.5 to +0.5 bar) at appropriate location		-		
23	7. Temperature indicators (Sensor - RTD type, Range: - 25 to 235 °C) should be provided at appropriate locations to monitor the process parameters.	Redundancy liquid temperature sensor shall be included in the reactor vessel for measurement of the liquid temperature.	Yes / No / Explain		
24	8. Provision for nitrogen bubbling through the reaction mixture with suitable vent provision shall be provided.		-		
25	9. Over pressure relief valve shall be incorporated in the system.		-		
26	10. All the MOC coming in contact with process medium (both liquid and vapor) and the operating knobs of the valves including the skid mounted structure of the system shall be only borosilicate glass and PTFE.		-		
27	11. Condenser of suitable design to be provided. Party has to specify the design		-		
28	12. Ball valves, drain valves, vent valves etc are to be provided. Party has to specify the type and number of valves and their exact location in the unit		-		

29	13. Reactor flask shall be mounted on a frame with durable wheels combined with levelling feet.		-		
30	IV. Features of the sub-systems		-		
31	1. Frame kit		-		
32	Frame kit should include Base Frame, Stirrer seal and guide, Flange seal and location ring		-		
33	The reactors frame should be strong to hold reactors from 10 litre to 50 litres interchangeable.		-		
34	Party has to specify the MOC and design of the reactor frame		-		
35	The frames should have aluminium extruded panel on two sides to the support the reactor Clamp.		-		
36	The frames should be interchangeable for 10L, 30L and 50L reactors.		-		
37	There should be a bottom load-based spring mechanism to support the reactors with variable capacity.		-		
38	Two different clamps to be provided to have large opening of the reactor and should be compatible with standard DN235 and DN300 specs.		-		
39	The frame should have an easy lift mechanism for the stirrer motor for changing of stirrer, cleaning etc.		-		
40	The frame should be mounted on castor wheels with lockable arrangement.		-		

41	The Frame should have provision for mounting the reflux and distillation systems.		-		
42	2. Vessel kit:		-		
43	1. It should include reaction vessel of 30L capacity, BOV, RTD, PTFE anchor stirrer and frame support cartridges		-		
44	Double walled torri spherical flask of 30L capacity		-		
45	Minimum stirred volume - 10.0 % of the total reactor volume.		-		
46	Discharge valve in the bottom (flush open bottom)		-		
47	Stirrer shall be made of SS with PTFE liner or full PTFE and should immerse to nearly 10% of the total reactor volume.		-		
48	Temperature indicators (with RTD sensors) to measure the temperature of the contents in the flask (i.e liquid temperature) with suitable thermowells made of Borosilicate glass.		-		
49	RTD's shall be made with SS sheath material cover and suitable head mounted transmitter.		-		
50	1. Specifications of RTD for temperature measurement:		-		
51	a. Sensor type :	Pt-100 (RTD)	Yes / No / Explain		
52	b. Measuring range:	-25° to 235 0C	Yes / No / Explain		
53	c. Accuracy:	0.1°C	Yes / No / Explain		

54	d. Unit of measurement:	Degree Celsius	Yes / No / Explain		
55	e. Indicator:	display of temperature should be in the Software in the computer. Provisions should be there for indicating the temperature of reaction bath and reaction medium.	Yes / No / Explain		
56	f. All sensors shall be provided with suitable glass thermowell and no sensor should be directly exposed to process media.		-		
57	g. Shall be of reputed make. Party has to specify the brand and model of the item.		-		
58	3. Jacketed Vessel Lid		-		
59	The vessel lid should include		-		
60	1. 2 Nos. of DN 60 large ports (one for reflux condenser, and the other for charging powders)		-		
61	2. 2 Nos. of B19 ports and one B34 port (for inserting Glass thermowell with suitable liquid (For inserting RTD to measure liquid temperature when filled up to 10% of the total volume) and pressure sensors)		-		
62	3. 2 Nos. of GL45 port for inserting baffle		-		
63	4. One centre port for stirrer.		-		
64	5. N2 purging port		-		
65	4. Lid Blanking Kit (all ports except central port)		-		

66	It should include stoppers for all Lid ports of appropriate size, excluding the stirrer port		-		
67	5. Overhead stirrer		-		
68	Party has to specify the RPM capability of the stirrer to ensure effective mixing of reaction medium having viscosity ranging from 5000 cP to 1,00,000 cP		-		
69	Party should provide suitable stirrer of variable speed (VFD) to adjust the speed of the stirrer with features such as double bearing housing, seal housing, and single acting dry mechanical seal of reputed make		-		
70	All metal components used for double bearing housing, seal housing etc., should be of SS 316L		-		
71	Stirrer motor should be of IKA/Heidolph/CAT make.		-		
72	Stirrer shall be made of SS with PTFE liner or full PTFE		-		
73	Motor should be flame proof		-		
74	Party should provide the motor ratings such as HP, RPM , Power details etc.		-		
75	6. Vertical Reflux kit		-		
76	The reflux kit should consist of double walled coiled condenser with 3500 cm2 cooling area		-		

77	The condenser and reflux kit should be DN 60 compatible and held by quick release clamp and O-ring.		-		
78	7. Baffle set		-		
79	A pair of baffles made of PTFE should be supplied		-		
80	The depth of the baffles should cover 2/3rd of the vessel from the top		-		
81	The baffles should fit on either side of stirrer		-		
82	Party should provide the design of the baffles.		-		
83	8. Oil circulation pipes and oil drain manifold kit		-		
84	Oil circulation pipes as a pack of 2, each with minimum 3 meter length should be provided		-		
85	MOC should be compatible with the circulating fluid.		-		
86	It should be capable of withstanding temperature from - 25 °C to +235°C		-		
87	Oil pipes of suitable diameter for connecting to the thermostat as well as to the reactor should be provided		-		
88	Party should provide oil drain manifold kit with required hoses		-		
89	9. Party should provide bottom outlet assembly with RTD for the 10% volume requirement		-		
90	10. Party should provide dropping funnel /pressure equalising funnel of minimum 1 L capacity		-		

91	11. Pressure relief valve: PRV should be set to open at 200mBar(g).		-		
92	Temperature range: -25°C to +235°C.		-		
93	Connections should be supplied to enable fitment to suitable lid port		-		
94	12. Software and PC based control system		-		
95	The control system should be PC based with software and the hardware connected directly to the PC via USB or RS232.		-		
96	All the various reaction parameters like pH, Temperature, Vacuum, Pressure, flow rates of reagent addition, total cumulative volume added etc should be visible on software.		-		
97	The software should have built in safety features: The software should have built in PID controls: built in case of temperature overshoot or any parameters override like addition of reagents, pH maintenance, etc		-		
98	The software should be capable of setting the limits of accuracy (for e.g. +/- 2 deg for a set temperature)		-		
99	All the safety parameters like shut down of the equipment or low value emergency sign should be able to be programmed depending on the reaction parameters		-		

100	13. Party should supply of all required cables, installation of all equipments and commissioning		-		
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4. GLASS DISTILLATION REACTOR- Double walled glass reactor of capacity 50L

Item specifications for GLASS DISTILLATION REACTOR

Sl No	Specification	Value	Compliance	Offered Specification	Remark
1	Double-walled Glass reactor of 50L capacity-01 No.		-		
2	General features of the glass reactors		-		
3	I. System shall consist of following sub-systems		-		
4	1.Frame kit		-		
5	2. Vessel kit		-		
6	3. Jacketed vessel lid		-		
7	4. Lid blanking kit (all ports except central port)		-		
8	5. Overhead stirrer		-		
9	6. Vertical Reflux kit		-		
10	7. Baffle set		-		
11	8. Oil circulation pipes and oil drain manifold kit		-		
12	9. Safety device - Pressure relief valve		-		
13	II. Design basis: The reactor system shall be designed to operate under the following process conditions.		-		
14	a) Duty	Batch process	Yes / No / Explain		

15	b) Operating temperature	+235 °C (max.) / -25 °C (min.)	Yes / No / Explain		
16	c) Operating pressure (vacuum)	Full Vacuum (-760 mm Hg) (Min.) to 0.5 bar (g). (Max.)	Yes / No / Explain		
17	III. System Description:		-		
18	1. Reactor flask capacity	50 L	Yes / No / Explain		
19	2. Vessel shape	torri spherical	Yes / No / Explain		
20	3. Reactor flask shall be made of Glass only. Shall be of double walled reactor. Fluid shall be circulated using single fluid heating / cooling circulator and should be operated in the temperature range - 25 °C to +235 °C.		-		
21	4. The agitator assembly shall be made of SS with PTFE liner or full PTFE (party has to specify the material of construction and shape of the stirrer) with variable speed controller	should be able to mix thoroughly the reaction mixture of viscosity ranging from 5000 cP to 1,00,000 cP.	Yes / No / Explain		
22	5. Suitable motor and gear box of reputed make shall be provided with the agitator assembly. Brand and model of agitator assesmbly to be provided.		-		
23	6. Pressure Sensor should be provided for vacuum indication (Range: - 0.5 to +0.5 bar) at appropriate location		-		
24	7. Temperature indicators (Sensor - RTD type, Range: - 25 to 235 °C) should be provided at appropriate locations to monitor the process parameters.	Redundancy liquid temperature sensor shall be included in the reactor vessel for measurement of the liquid temperature.	Yes / No / Explain		

25	8. Provision for nitrogen bubbling through the reaction mixture with suitable vent provision shall be provided.		-		
26	9. Over pressure relief valve shall be incorporated in the system.		-		
27	10. All the MOC coming in contact with process medium (both liquid and vapor) and the operating knobs of the valves including the skid mounted structure of the system shall be only borosilicate glass and PTFE.		-		
28	11. Condenser of suitable design to be provided. Party has to specify the design		-		
29	12. Ball valves, drain valves, vent valves etc are to be provided. Party has to specify the type and number of valves and their exact location in the unit		-		
30	13. Reactor flask shall be mounted on a frame with durable wheels combined with levelling feet.		-		
31	IV. Features of the sub-systems		-		
32	1. Frame kit		-		
33	Frame kit should include Base Frame, Stirrer seal and guide, Flange seal and location ring		-		
34	The reactors frame should be strong to hold reactors from 10 litre to 50 litres interchangeable.		-		
35	Party has to specify the MOC and design of the reactor frame		-		

36	The frames should have aluminium extruded panel on two sides to the support the reactor Clamp.		-		
37	The frames should be interchangeable for 10L, 30L and 50L reactors.		-		
38	There should be a bottom load-based spring mechanism to support the reactors with variable capacity.		-		
39	The frame should have an easy lift mechanism for the stirrer motor for changing of stirrer, cleaning etc.		-		
40	The frame should be mounted on castor wheels with lockable arrangement.		-		
41	The Frame should have provision for mounting the reflux and distillation systems.		-		
42	2. Vessel kit:		-		
43	1. It should include reaction vessel of 50L capacity , BOV, RTD, PTFE anchor stirrer and frame support cartridges		-		
44	Features		-		
45	Double walled torri spherical flask of 50L capacity		-		
46	Minimum stirred volume - 10.0 % of the total reactor volume.		-		
47	Discharge valve in the bottom (flush open bottom)		-		

48	Stirrer shall be made of SS with PTFE liner or full PTFE and should immerse to nearly 10% of the total reactor volume.		-		
49	Temperature indicators (with RTD sensors) to measure the temperature of the contents in the flask (i.e liquid temperature) with suitable thermowells made of Borosilicate glass.		-		
50	RTD's shall be made with SS sheath material cover and suitable head mounted transmitter.		-		
51	1. Specifications of RTD for temperature measurement:		-		
52	a. Sensor type :	Pt-100 (RTD)	Yes / No / Explain		
53	b. Measuring range:	-25° to 235 0C	Yes / No / Explain		
54	c. Accuracy:	0.1°C	Yes / No / Explain		
55	d. Unit of measurement:	Degree Celsius	Yes / No / Explain		
56	e. Indicator:	display of temperature should be in the Software in the computer. Provisions should be there for indicating the temperature of reaction bath and reaction medium.	Yes / No / Explain		
57	f. All sensors shall be provided with suitable glass thermowell and no sensor should be directly exposed to process media.		-		
58	g. Shall be of reputed make. Party has to specify the brand and model of the item.		-		

59	3. Jacketed Vessel Lid		-		
60	The vessel lid should include		-		
61	1. 2 Nos. of DN 60 large ports (one for reflux condenser, and the other for charging powders)		-		
62	2. 2 Nos. of B19 ports and one B34 port (for inserting Glass thermowell with suitable liquid (For inserting RTD to measure liquid temperature when filled up to 10% of the total volume) and pressure sensors)		-		
63	3. 2 Nos. of GL45 port for inserting baffle		-		
64	4. One centre port for stirrer.		-		
65	5. N2 purging port		-		
66	4. Lid Blanking Kit (all ports except central port)		-		
67	It should include stoppers for all Lid ports of appropriate size, excluding the stirrer port		-		
68	5. Overhead stirrer		-		
69	Party has to specify the RPM capability of the stirrer to ensure effective mixing of reaction medium having viscosity ranging from 5000 cP to 1,00,000 cP		-		

70	Party should provide suitable stirrer of variable speed (VFD) to adjust the speed of the stirrer with features such as double bear housing, seal housing, and single acting dry mechanical seal of reputed make		-		
71	All metal components used for double bearing housing, seal housing etc., should be of SS 316L		-		
72	Stirrer motor should be of IKA/Heidolph/CAT make.		-		
73	Motor should be flame proof		-		
74	6. Vertical Reflux kit		-		
75	The reflux kit should consist of double walled coiled condenser with 3500 cm2 cooling area		-		
76	7. Baffle set		-		
77	The baffles should fit on either side of stirrer		-		
78	Party should provide the design of the baffles.		-		
79	Party should provide the motor ratings such as HP, RPM , Power details etc		-		
80	The condenser and reflux kit should be DN 60 compatible and held by quick release clamp and O-ring.		-		
81	A pair of baffles made of PTFE should be supplied		-		
82	The depth of the baffles should cover 2/3rd of the vessel from the top		-		

83	8.Oil circulation pipes and oil drain manifold kit		-		
84	Oil circulation pipes as a pack of 2, each with minimum 3 meter length should be provided		-		
85	MOC should be compatible with the circulating fluid.		-		
86	It should be capable of withstanding temperature from - 25 °C to +235°C		-		
87	Oil pipes of suitable diameter for connecting to the thermostat as well as to the reactor should be provided		-		
88	Party should provide oil drain manifold kit with required hoses		-		
89	9.Party should provide bottom outlet assembly with RTD for the 10% volume requirement		-		
90	10.Party should provide dropping funnel /pressure equalising funnel of minimum 1 L capacity		-		
91	11.Pressure relief valve:		-		
92	Temperature range: -25°C to +235°C.		-		
93	Connections should be supplied to enable fitment to suitable lid port		-		
94	12.Software and PC based control system		-		
95	The control system should be PC based with software and the hardware connected directly to the PC via USB or RS232.		-		

96	All the various reaction parameters like pH, Temperature, Vacuum, Pressure, flow rates of reagent addition, total cumulative volume added etc should be visible on software.		-		
97	The software should have built in safety features: The software should have built in PID controls: built in case of temperature overshoot or any parameters override like addition of reagents, pH maintenance, etc		-		
98	The software should be capable of setting the limits of accuracy (for e.g. +/- 2 deg for a set temperature)		-		
99	All the safety parameters like shut down of the equipment or low value emergency sign should be able to be programmed depending on the reaction parameters		-		
100	Party should supply of all required cables, installation of all equipments and commissioning		-		

5. FLUID CIRCULATORS-Single fluid heating/cooling circulators for 10L reactors

Item specifications for FLUID CIRCULATORS

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Single fluid heating /cooling circulator for 10L reactor systems Operating temperature range: - 25 °C min. to 235 °C max. (make: Huber/Julabo or equivalent)	Detailed specifications attached as excel file	Yes / No / Explain		

2	Description	Specifications	Yes / No / Explain		
3	Operating temperature range	-25 to +235 °C	Yes / No / Explain		
4	Temperature stability at -10°C	0.01 K	Yes / No / Explain		
5	Temperature set point / display	5,7" colour, Touch screen	Yes / No / Explain		
6	Resolution of display	0.01 K	Yes / No / Explain		
7	Internal temperature sensor	Pt100	Yes / No / Explain		
8	Sensor external connection	Pt100	Yes / No / Explain		
9	Interface digital	Ethernet, USB (Host u. Device), RS232	Yes / No / Explain		
10	Digital input	ECS ONE	Yes / No / Explain		
11	Digital output	POKO ONE	Yes / No / Explain		
12	Alarm message	optic, acoustic, relay	Yes / No / Explain		
13	Safety classification	Class III / FL	Yes / No / Explain		
14	Heating power	3 kW	Yes / No / Explain		
15	Cooling power (with Thermooil) at 200°C	2.5 kW (min)	Yes / No / Explain		
16	Cooling power (with Thermooil) at 100°C	2.5 kW (min)	Yes / No / Explain		
17	Cooling power (with Thermooil) at 20°C	2.5 kW (min)	Yes / No / Explain		
18	Cooling power (with Ethanol)at 0°C	1.5 kW (min)	Yes / No / Explain		
19	Cooling power (with Ethanol)at -20°C	0.8 kW (min)	Yes / No / Explain		
20	Refrigeration machine	air-cooled, CFC- and HCFC-free Refrigerant	Yes / No / Explain		
21	Circulation pump max. delivery	55 l/min	Yes / No / Explain		

22	Circulation pump max. delivery pressure	0.9 bar	Yes / No / Explain		
23	Filling capacity expansion tank	12 l	Yes / No / Explain		
24	Overall dimensions (WxDxH)	450 (±20)x 550 (±10)x 1200 ((±10) mm	Yes / No / Explain		
25	Power supply	(3 Phase) 400V 3~50Hz	Yes / No / Explain		
26	Degree of Protection	IP20	Yes / No / Explain		
27	max ambient temperature	40 °C	Yes / No / Explain		
28	Fluid to be handled	Required quantity of silicone oil/other suitable oil capable of withstanding operating temperature from -25 to 235°C shall be provided by the party.	Yes / No / Explain		
29	External circulation	Party has to provide hose of appropriate dimensions and adaptors for it for facilitating external circulation of the coolant.	Yes / No / Explain		
30	Circulator Manifold Set to enable 2 reactor Systems to be connected to one circulator	Party should provide 2-way header and 2 ball valves on output from circulator; 2-way header on input to circulator; Temperature range of ball valves: -25°C to +235°C	Yes / No / Explain		
31	Details of the specifications		-		
32	1. Hydraulically sealed Refrigerated Heating Circulator with air-cooled refrigerating unit.		-		
33	2. Evaporator and housing should be made of SS 304.		-		
34	3. Should be provided with atmospheric open expansion tank and optical level indicator.		-		

35	4.Thermostat should be atmospherically sealed and should be able to be located below or above the level of the application.		-		
36	5.Should have TFT touch screen display, USB and network connections, an integrated technical glossary and multiple-language support		-		
37	6.Should provide convenient navigation system with easily remembered icons and menu categories which are colour sorted to make routine work simpler.		-		
38	7.Should provide self optimising internal and cascade control, selectable temperature control mode (Internal/Process), programmer with minimum 6 programs (max. 100 steps), ramp function (linear and non-linear)		-		
39	8. Should provide 5 point calibration, scalable graphic display, favourites menu, display resolution 0.01 K, integrated technical glossary, 2nd set point, user menus (Administrator level), calendar start, wallpaper selection etc.		-		
40	9.Shall be sturdy, strong, compact and single skid mounted.		-		
41	10. Body of the unit shall be spray painted with anti-corrosive paint.		-		

6. FLUID CIRCULATORS-Single fluid heating/cooling circulators for 30 and 50L reactors

Item specifications for FLUID CIRCULATORS

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Hydraulically sealed Refrigerated Heating Circulator with air-cooled refrigerating unit.		-		
2	Evaporator and housing should be made of SS 304.		-		
3	Thermostat should be atmospherically sealed and should be able to be located below or above the level of the application.		-		
4	Should have TFT touch screen display, USB and network connections, an integrated technical glossary and multiple-language support		-		
5	Should provide self optimising internal and cascade control, selectable temperature control mode (Internal/Process), programmer with minimum 6 programs (max. 100 steps), ramp function (linear and non-linear)		-		
6	Shall be sturdy, strong, compact and single skid mounted.		-		
7	Should be provided with atmospheric open expansion tank and optical level indicator.		-		
8	Should provide convenient navigation system with easily remembered icons and menu categories which are colour sorted to make routine work simpler.		-		

9	5 point calibration, scalable graphic display, favourites menu, display resolution 0.01 K, integrated technical glossary, 2nd set point, user menus (Administrator level), calendar start, wallpaper selection etc.		-		
10	Body of the unit shall be spray painted with anti-corrosive paint.		-		
11	Description	Specifications	Yes / No / Explain		
12	Operating temperature range	-25 to +235 °C	Yes / No / Explain		
13	Temperature stability at -10°C	0.01 K	Yes / No / Explain		
14	Temperature set point / display	5,7" colour, Touch screen	Yes / No / Explain		
15	Resolution of display	0.01 K	Yes / No / Explain		
16	Internal temperature sensor	Pt100	Yes / No / Explain		
17	Sensor external connection	Pt100	Yes / No / Explain		
18	Interface digital	Ethernet, USB (Host u. Device), RS232	Yes / No / Explain		
19	Digital input	ECS ONE	Yes / No / Explain		
20	Digital output	POKO ONE	Yes / No / Explain		
21	Alarm message	optic, acoustic, relay	Yes / No / Explain		
22	Safety classification	Class III / FL	Yes / No / Explain		
23	Heating power	3 kW	Yes / No / Explain		
24	Cooling power (with Thermooil) at 200°C	2.5 kW (min)	Yes / No / Explain		
25	Cooling power (with Thermooil) at 100°C	2.5 kW (min)	Yes / No / Explain		

26	Cooling power (with Thermooil) at 20°C	2.5 kW (min)	Yes / No / Explain		
27	Cooling power (with Ethanol)at 0°C	1.5 kW (min)	Yes / No / Explain		
28	Cooling power (with Ethanol)at -20°C	0.8 kW (min)	Yes / No / Explain		
29	Refrigeration machine	air-cooled, CFC- and HCFC-free Refrigerant	Yes / No / Explain		
30	Circulation pump max. delivery	55 l/min	Yes / No / Explain		
31	Circulation pump max. delivery pressure	0.9 bar	Yes / No / Explain		
32	Filling capacity expansion tank	12 l	Yes / No / Explain		
33	Overall dimensions (WxDxH)	450 (±20)x 550 (±10)x 1200 ((±10) mm	Yes / No / Explain		
34	Power supply	(3 Phase) 400V 3~ 50Hz	Yes / No / Explain		
35	Degree of Protection	IP20	Yes / No / Explain		
36	max ambient temperature	40 °C	Yes / No / Explain		
37	Fluid to be handled	Required quantity of silicone oil/other suitable oil capable of withstanding operating temperature from -25 to 235°C shall be provided by the party.	Yes / No / Explain		
38	External circulation	Party has to provide hose of appropriate dimensions and adaptors for it for facilitating external circulation of the coolant.	Yes / No / Explain		
39	Circulator Manifold Set to enable 2 reactor Systems to be connected to one circulator	Party should provide 2-way header and 2 ball valves on output from circulator; 2-way header on input to circulator; Temperature range of ball valves: -25°C to +235°C	Yes / No / Explain		

7. RECIRCULATING CHILLER-chiller for condensers of 10L reactor

Item specifications for RECIRCULATING CHILLER

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Chiller for condensers of 10L reactors - 1 No. (make: Huber/Julabo or equivalent)	Attached as excel file	Yes / No / Explain		
2	Description	Specifications	Yes / No / Explain		
3	Operating temperature range	-25 to +30 °C	Yes / No / Explain		
4	Temperature set point / display	Digital	Yes / No / Explain		
5	Resolution of display	0.1 K	Yes / No / Explain		
6	Temperature stability at -10°C	0.5 K	Yes / No / Explain		
7	Internal temperature sensor	Pt100	Yes / No / Explain		
8	Alarm message	optic, acoustic	Yes / No / Explain		
9	Safety classification	Class I / NFL	Yes / No / Explain		
10	Cooling power at 15 °C	2.5 kW (min)	Yes / No / Explain		
11	Cooling power at 0°C	2 kW (min)	Yes / No / Explain		
12	Cooling power at -10°C	1.2 kW (min)	Yes / No / Explain		
13	Refrigeration machine	air-cooled, CFC- and HCFC-free refrigerant	Yes / No / Explain		
14	Circulation pump	Immersion pump	Yes / No / Explain		
15	Circulation pump max. delivery	29 l/min	Yes / No / Explain		
16	Circulation at 0.5 bar	21 l/min	Yes / No / Explain		
17	Max. delivery pressure	1.0 bar	Yes / No / Explain		

18	Min. filling capacity	3.8 l	Yes / No / Explain		
19	Expansion tank	1.7 l	Yes / No / Explain		
20	Overall dimensions WxDxH	450 (±20)x 600 (±10)x750 (±10) mm	Yes / No / Explain		
21	Sound pressure level	+/- 4 dB(A) 64 dB(A)	Yes / No / Explain		
22	Power supply requirement	230V, single phase, 50Hz	Yes / No / Explain		
23	Degree of Protection	IP20	Yes / No / Explain		
24	Max. ambient temperature	40 °C	Yes / No / Explain		
25	Fluid to be handled	Required quantity of circulating fluid which is compatible with contact parts should provided by the party.	Yes / No / Explain		
26	1. Chiller should be provided with air-cooled refrigerating unit and circulation pump.		-		
27	2. Evaporator (cooler), tank and housing should be of SS 304 and pump should be made of industrial plastic material.		-		
28	3. Should have digital temperature display and level indicator with sight glass.		-		
29	4. Large, bright OLED display		-		
30	5. Simple operation with menu navigation		-		
31	6. Simultaneous display of set point, internal temperature, Tmin and Tmax		-		
32	7. USB (Device) and RS232 interfaces		-		
33	8. Autostart function for power failure		-		

34	Safety Interlocks:		-		
35	The following safety interlocks shall be provided in the system		-		
36	Digital temperature controller		-		
37	Chilled coolant flow failure trip		-		
38	Cooling water to condenser flow failure trip		-		
39	Compressor over load trip		-		
40	Anti freeze thermostat, digital and mechanical type		-		

8. RECIRCULATING CHILLER- chiller for 30L and 50L reactors

Item specifications for RECIRCULATING CHILLER

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Chiller for condensers of 30L & 50L reactors -1 no. (make: Huber/Julabo or equivalent)	Attached as excel file	Yes / No / Explain		
2	Description	Specifications	Yes / No / Explain		
3	Operating temperature range	-25 to +30 °C	Yes / No / Explain		
4	Temperature set point / display	Digital	Yes / No / Explain		
5	Resolution of display	0.1 K	Yes / No / Explain		
6	Temperature stability at -10°C	0.5 K	Yes / No / Explain		
7	Internal temperature sensor	Pt100	Yes / No / Explain		
8	Alarm message	optic, acoustic	Yes / No / Explain		

9	Safety classification	Class I / NFL	Yes / No / Explain		
10	Cooling power at 15 °C	2.5 kW (min)	Yes / No / Explain		
11	Cooling power at 0°C	2 kW (min)	Yes / No / Explain		
12	Cooling power at -10°C	1.2 kW (min)	Yes / No / Explain		
13	Refrigeration machine	air-cooled, CFC- and HCFC-free refrigerant	Yes / No / Explain		
14	Circulation pump	Immersion pump	Yes / No / Explain		
15	Circulation pump max. delivery	29 l/min	Yes / No / Explain		
16	Circulation at 0.5 bar	21 l/min	Yes / No / Explain		
17	Max. delivery pressure	1.0 bar	Yes / No / Explain		
18	Min. filling capacity	3.8 l	Yes / No / Explain		
19	Expansion tank	1.7 l	Yes / No / Explain		
20	Overall dimensions WxDxH	450 (±20)x 600 (±10)x750 (±10) mm	Yes / No / Explain		
21	Sound pressure level	+/- 4 dB(A) 64 dB(A)	Yes / No / Explain		
22	Power supply requirement	230V, single phase, 50Hz	Yes / No / Explain		
23	Degree of Protection	IP20	Yes / No / Explain		
24	Max. ambient temperature	40 °C	Yes / No / Explain		
25	Fluid to be handled	Required quantity of circulating fluid which is compatible with contact parts should be provided by the party.	Yes / No / Explain		
26	1. Chiller should be provided with air-cooled refrigerating unit and circulation pump.		-		

27	2. Evaporator (cooler), tank and housing should be of SS 304 and pump should be made of industrial plastic material.		-		
28	3. Should have digital temperature display and level indicator with sight glass.		-		
29	4. Large, bright OLED display		-		
30	5. Simple operation with menu navigation		-		
31	6. Simultaneous display of set point, internal temperature, Tmin and Tmax		-		
32	7. USB (Device) and RS232 interfaces		-		
33	8. Autostart function for power failure		-		
34	Safety Interlocks:		-		
35	The following safety interlocks shall be provided in the system		-		
36	Digital temperature controller		-		
37	Chilled coolant flow failure trip		-		
38	Cooling water to condenser flow failure trip		-		
39	Compressor over load trip		-		
40	Anti freeze thermostat, digital and mechanical type		-		

9. SOFTWARE- software, PC and printer for 10L reactors

Item specifications for SOFTWARE

Sl No	Specification	Value	Compliance	Offered Specification	Remark
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1	Software, PC, printer and PC based control system that can simultaneously operate 4 different 10 L reactor units with suitable licenses on a single PC	Attached	Yes / No / Explain		
2	General Features		-		
3	The control system of all reactors should be PC based with software and the hardware connected directly to the PC via USB or RS232.		-		
4	All the various reaction parameters like pH, Temperature, Vacuum, Pressure, flow rates of reagent addition, total cumulative volume added etc should be visible on software.		-		
5	The software should have built in safety features: The software should have built in PID controls: built in case of temperature overshoot or any parameters override like addition of reagents, pH maintenance, etc		-		
6	The software should be capable of setting the limits of accuracy (for e.g. +/- 2 deg for a set temperature)		-		
7	All the safety parameters like shut down of the equipment or low value emergency sign should be able to be programmed depending on the reaction parameters		-		

8	Software supplied along with the PC shall be supported with the PC and shall be guaranteed to continue the service during warranty and AMC periods.		-		
9	Any changes or updation during these periods (warranty and AMC periods), should be borne by the party at free of cost.		-		
10	Computer: specs		-		
11	Suitable computer of make (Dell/HP/Lenovo) that shall be loaded with the software should be provided, with the following features. The PC and software shall be mutually compatible		-		
12	Component	specifications	Yes / No / Explain		
13	CPU	Minimum: 3.5GHz+IntelPentium Quad Core compatible	Yes / No / Explain		
14	Memory	Minimum: 16 GB	Yes / No / Explain		
15	Operating System	Windows 10 Professional (64bit) or better/latest available at the time of installation that is compatible with the reactor software system.	Yes / No / Explain		
16	Display Resolution	SuperVGA1920x1080 or better. Video Card:24-bit or 32-bit with atleast 64MB of video memory.	Yes / No / Explain		
17	Native USB Ports	Minimum 4 USB ports should be provided	Yes / No / Explain		

18	USB Cables	Shielded USB Cables with minimum 5 meters in length from PC to device should be provided.	Yes / No / Explain		
19	Anti-Virus	Compatible with the programme software should be provided	Yes / No / Explain		
20	Party should provide the latest version of hardware/software available at the time of supply. The hardware and software should be compatible and the reactor system shall be able to be operated using the hardware and software supplied		-		
21	PC printer: A colour laser printer with automatic duplex capability shall be supplied along with the PC.		-		

10. SOFTWARE-software and PC for 30L and 50L reactors

Item specifications for SOFTWARE

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Software, PC, printer and PC based control system that can simultaneously operate 1 No. of 30L reactor and 1 No. of 50L reactor unit with suitable licenses on a single PC	Attached	Yes / No / Explain		
2	General Features		-		
3	The control system of all reactors should be PC based with software and the hardware connected directly to the PC via USB or RS232.		-		

4	All the various reaction parameters like pH, Temperature, Vacuum, Pressure, flow rates of reagent addition, total cumulative volume added etc should be visible on software.		-		
5	The software should have built in safety features: The software should have built in PID controls: built in case of temperature overshoot or any parameters override like addition of reagents, pH maintenance, etc		-		
6	The software should be capable of setting the limits of accuracy (for e.g. +/- 2 deg for a set temperature)		-		
7	All the safety parameters like shut down of the equipment or low value emergency sign should be able to be programmed depending on the reaction parameters		-		
8	Software supplied along with the PC shall be supported with the PC and shall be guaranteed to continue the service during warranty and AMC periods.		-		
9	Any changes or updation during these periods (warranty and AMC periods), should be borne by the party at free of cost.		-		
10	Computer: specs		-		

11	Suitable computer of make (Dell/HP/Lenovo) that shall be loaded with the software should be provided, with the following features. The PC and software shall be mutually compatible		-		
12	Component	specifications	Yes / No / Explain		
13	CPU	Minimum: 3.5GHz+IntelPentium Quad Core compatible	Yes / No / Explain		
14	Memory	Minimum: 16 GB	Yes / No / Explain		
15	Operating System	Windows 10 Professional (64bit) or better/latest available at the time of installation that is compatible with the reactor software system.	Yes / No / Explain		
16	Display Resolution	SuperVGA1920x1080 or better. Video Card:24-bit or 32-bit with atleast 64MB of video memory.	Yes / No / Explain		
17	Native USB Ports	Minimum 4 USB ports should be provided	Yes / No / Explain		
18	USB Cables	Shielded USB Cables with minimum 5 meters in length from PC to device should be provided.	Yes / No / Explain		
19	Anti-Virus	Compatible with the programme software should be provided	Yes / No / Explain		
20	Party should provide the latest version of hardware/software available at the time of supply. The hardware and software should be compatible and the reactor system shall be able to be operated using the hardware and software supplied		-		

11. SPARES- spares for 3 years of maintenance free operation for all the reactors, heating/cooling circulators and chillers

Item specifications for SPARES

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Spares for 3 years of maintenance free operation for all the reactors, Single fluid heating cooling circulators and chillers	Attached	Yes / No / Explain		
2	Party has to list essential spare parts and separate quote for the spares for each of the following items		-		
3	a) 10L –double walled reactors-3 Nos.		-		
4	b) 10L –triple walled reactors-1 No.		-		
5	c) 30L –double walled reactor-1 No.		-		
6	d)50L –double walled reactor-1 No.		-		
7	e)Single fluid heating cooling circulator for 10L reactors-1 no.		-		
8	f) Single fluid heating cooling circulator for 30L & 50L reactors-1 No.		-		

9	g) Chiller for Condensers of 10L reactors- 1 No		-		
10	h) Chiller for Condenser of 30L & 50L reactors-1 No.		-		

Common Specifications (Applicable for all items)

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	The following standards shall be met:		-		
2	BS EN 1595:1997 General rules for design, manufacturing and testing, compatibility and interchangeability.		-		
3	BS EN 12585: 1999 Glass plant, pipeline components and fittings.		-		
4	Glass quality:		-		
5	All the glass process equipment, pipeline and components shall be fabricated from 3.3 expansion borosilicate glass from SCHOTT DURAN.		-		

6	Interconnecting process pipelines and valves of appropriate sizing for the complete system shall be provided.		-		
7	Interconnection of the reactor with Single fluid heating / cooling circulator and chiller is under the scope of the party only.		-		
8	All the inner /contact parts of the valve shall be of PTFE. Valves shall be designed as screw type and robust to ensure easy operation. Shall be fully corrosion resistant and chemically inert.		-		
9	MOC of the valves including the operating knobs shall be strictly of SS 316L coated with PTFE/ Boro silicate glass only.		-		
10	This needs to be strictly ensured, since in case of any leak or explosion the material should not react with the system components.		-		

11	Reinforced plastic coupling flanges (highly corrosion resistant), adaptor flanges, PTFE gaskets, SS nuts and bolts, and SS compression springs shall be provided for the entire system wherever required.		-		
12	All glass process equipments and vessels should be provided with suitable sized nozzles as per the process equipments.		-		
13	Spare nozzles shall be provided / coupled with matching glass enclosures wherever necessary and feasible.		-		
14	Appropriate nozzles shall be provided for the installation of monitoring instruments / sensors.		-		
15	The coupling flanges shall be tightened using suitably designed compression springs in order to compensate for linear changes due to the temperature effects.		-		

16	Party shall clearly spell out type and size of connection provided in each vessel in their offer including the length of glass thermowell provided for each RTD's.		-		
17	All the sensors shall have valid calibration certificates provided from the NABL accredited labs.		-		
18	Party shall provide material compliance certificate (BSG / SS 316L etc.,) for each of the components.		-		
19	Party has to mention brand/make of all the major parts		-		
20	Prior approval: Party has to obtain the approval from VSSC by submitting the following details before commencement of the fabrication.		-		
21	Detailed schematic drawing / P&ID of the entire setup with exact sizing and dimensions with floor plan.		-		

22	Design details of the reactor including the assembling / structural aspects of the reactor set-up.		-		
23	All the units such as valves, sub systems (Safety devices, reactor flask, agitator, Motor, Reflux system, condensers etc.) shall be labelled in the P&ID with material of construction / thickness etc.		-		
24	Makes specified shall be strictly adhered to.		-		
25	Floor area: Party shall ensure minimum space while designing the system. Dimensions of each reactor assembly should not exceed 1.3 m (L) x 1.0 m (B) x 2.5 (H). Dimensions of each system with operating weight shall be provided.		-		

26	Pre-Delivery Inspection / Site inspection, testing and acceptance: The entire system shall be inspected at Party's site, prior to dispatch with trial synthesis proposed by VSSC.		-		
27	The entire set-up will be accepted after testing at the site for operation of the heating system along with sensors in programmed mode of heating through PID controller with satisfactory performance of entire system.		-		
28	Performance demonstration / Training:		-		
29	Party has to assemble the entire system at our site and demonstrate the performance by conducting trial processing of three batches of chemicals envisaged at VSSC site for final clearance of payment.		-		
30	Training shall be imparted to the VSSC personnel.		-		

31	Party has to ensure to assemble all the systems on a skid mounted structure with least minimum floor area.		-		
32	All the items has to be properly packed during shipment with proper warning labels and loading instructions such that the same is received at the site without breakage.		-		
33	Party has to assemble the entire system at VSSC and demonstrate the performance once again for final payment. Any broken / damaged items / glass wares during transit has to be replaced without additional payment.		-		
34	Party has to provide the break up cost of the each system / component along with the bill of materials with quantity/ Packing and forwarding charges / Commissioning charges etc.		-		

35	Party has to quote for spare parts to ensure 3 years of maintenance free operation. Break-up cost of the spares also to be provided.		-		
36	Party has to offer minimum warranty period of 2 years from date of commissioning of the reactor at site.		-		
37	Party has to provide AMC for a minimum period of 5 years from date of expiry of warranty period. AMC conditions with break-up cost details shall be provided. Quote for AMC should be given along with the offer.		-		
38	Party should provide technical support for minimum 10 years		-		
39	Party has to duly fill and submit the compliance matrix provided along with the offer, without any fail. Party has to bring out deviations if any, in the compliance matrix strictly		-		

40	Documents: The following documents shall be submitted along with the supply		-		
41	1. P&ID of the process system (All the sub systems shall be clearly identified, and labels /tags shall be provided). P&ID should include each and every part of the system, without fail.		-		
42	2. General arrangement and dimensional drawings		-		
43	3. Detailed parts list and bill of materials.		-		
44	4. Test and final inspection reports.		-		
45	5. Manual and warranty certificates for all the equipments such as motors, VFD, mechanical seal system, controllers, indicators and process set up.		-		
46	• Delivery Schedule: Party shall provide schedule for		-		
47	o Submission of the design drawings from date of the release of the P.O.		-		

48	o Period for pre-delivery inspection from date of approval of design drawings for fabrication.		-		
49	o Dispatch: Schedule for dispatch of the item after final dispatch clearance from VSSC.		-		
50	o Installation and commissioning : Schedule for installation and commissioning of the item at VSSC, from date of receipt of the item.		-		
51	. Party has to adhere to the time schedule given in the offer strictly.		-		
52	. Party has to submit minimum 3 PO's where the similar work has been executed with contact details.		-		
53	. Party has to quote the item, "FOR VSSC, TRIVANDRUM".		-		

Supporting Documents required from Vendor

1. P&ID of the process system (All the sub systems shall be clearly identified, and labels /tags shall be provided). P&ID should include each and every part of the system, without fail.

2. General arrangement and dimensional drawings

3. Detailed parts list and bill of materials.

4. Test and final inspection reports.

5. Manual and warranty certificates for all the equipments such as motors, VFD, mechanical seal system, controllers, indicators and process set up.

6. Brochures/Catalogues of company with details

7. Unpriced Bid showing the split up of main equipment, accessories, essential spares as applicable

8. Detailed Techno commercial offer(without price details)

9. Unpriced AMC Quote in Split-up format for each year required.

10. Unpriced list of essential/ optional spares for 5 years maintenance.

11. Declaration regarding the percentage of local content (or value addition) in the item offered.

12. Detailed Compliance Matrix vis-a-vis the item specification in tenders.

13. Additional Documents from Vendor.

5 additional documents can be uploaded by the vendor

C.2 Commercial Terms / Bid

Sl. No.	Description	Compliance	Vendor Terms
1	Delivery by 31-12-2021. Completion of installation, commissioning and demonstration of operation by 15-02-2022	Yes / No / Explain	
2	Specified in the document attached	Yes / No / Explain	
3	The Class-I & II local supplier should provide a Self Certification along with your offer in PDF format indicating that the item offered meets the minimum local content as called for in the tender as mentioned above and provide the % of local content along with details of the location(s) at which the local value addition is made. In case of two part tenders, it is mandatory to indicate compliance to MLC(minimum local content) in technical bid itself. Confirm attachment of Self declaration along with the offer.	Yes / No / Explain	
4	PO Ordering Address with Name and Contact Details of Sales Person concerned (e-mail and phone number).	Yes / No / Explain	
5	Any Other Terms	Yes / No / Explain	
6	Taxes and other costs, if any . [Note: VSSC is a Public Funded Research Institution under the administrative control of Department of Space and is eligible for partial exemption of IGST @5% vide Notfn No. 45/2017, 47/2017 dt 14.11.2017 respectively. Necessary IGST EXEMPTION CERTIFICATE shall be issued.]	Yes / No / Explain	
7	Security Deposit (Applicable if Offer Value is Rs. 5 Lakhs or above. MSME/NSIC Units are NOT EXEMPTED from the payment of SD. Bank Guarantee @ 3% of Order Value valid till 60 days from the date of supply to be submitted. Mandatory compliance required. Only Government Bodies/PSUs/PSEs can submit Indemnity Bond in lieu of BG. In the event of non-performance of contractual obligations, SD will be forfeited).	Yes / No / Explain	

8	Delivery Terms.	Yes / No / Explain	
9	Delivery Period	Yes / No / Explain	
10	Liquidated Damages (Applicable beyond the delivery period mentioned in this tender @ 0.5% per week or part thereof on the undelivered portion subject to a maximum of 10% of the contract value. Mandatory compliance required).	Yes / No / Explain	
11	Warranty	Yes / No / Explain	
12	Performance Bank Guarantee (PBG) Bank Guarantee @ 3% of Order Value valid till the completion of warranty period plus 2 months claim period to be submitted. Mandatory compliance required. Only Government Bodies/PSUs/PSEs can submit Indemnity Bond in lieu of BG. In the event of non-performance of warranty obligations, PBG will be forfeited).	Yes / No / Explain	
13	Payment Term: (Our Default payment term: For indigenous orders: 100% within 30 days after receipt and acceptance of item at our site. For import cases: 100% by Sight Draft with Bank Charges to respective accounts. NOTE: CONSEQUENT TO COVID 19 PANDEMIC AND AS PER EXTANT GUIDELINES FROM DEPARTMENT OF SPACE, NO ADVANCE PAYMENT IS PAYABLE TO THIS TENDER).	Yes / No / Explain	
14	Definitions: A supplier or service provider, whose goods, services or works offered for procurement, has local content: a) Equal to or more than 50% : Class-I local supplier. b) More than 20% but less than 50% : Class-II local supplier. c) Less than or equal to 20% : Non-local supplier. Mention your category.	Yes / No / Explain	

15	Local content means the amount of value added in India (i.e. indigenous items/services added in the offered products/services/works) be the total value of the item offered (excluding net domestic indirect taxes) minus the value of imported content in the item (including all customs duties/IGST) as a proportion of the total value (excluding net domestic indirect taxes), in percent. Indicate extent of Minimum Local Content in offered product/service and location of such value additions.	Yes / No / Explain	
16	validity	Yes / No / Explain	
17	Acceptance to provide Non-Comprehensive AMC for a period of 5 years after the completion of warranty period. AMC cost shall only be mentioned in the specific slot in price bid.	Yes / No / Explain	
18	List of essential spares for the trouble free operation of the equipment to be uploaded (without price details). Details of optional spares may also be provided (without price details).	Yes / No / Explain	
19	Kindly ensure that NO DOCUMENTS WITH PRICE DETAILS ARE UPLOADED. Price shall only be mentioned in the price bid. Uploaded documents with price details shall summarily be rejected.	Yes / No / Explain	
20	Ensure you are a Class-I Local Supplier/ Class-II Local Supplier. The offer shall be in INR only. Bids from foreign OEMs and offer on High Sea Sales basis are not allowed. Please mention the category of the bidder.	Yes / No / Explain	
21	In the price bid, please ensure that you have mentioned the cost of Spares only once. If the price is mentioned above in the price bid, you shall not mention the price below.	Yes / No / Explain	

C.3 Price Bid

Sl. No.	Item	Quantity	Unit Price	Currency	Total Price	Remark
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1	GLASS DISTILLATIO N REACTOR- Double walled glass reactor of capacity 10L	3.00 Nos.		-		
2	GLASS DISTILLATIO N REACTOR- triple walled glass reactor of 10L capacity (vacuum jacketed)	1.00 Nos.		-		
3	GLASS DISTILLATIO N REACTOR -Double walled glass reactor of capacity 30L	1.00 Nos.		-		
4	GLASS DISTILLATIO N REACTOR- Double walled glass reactor of capacity 50L	1.00 Nos.		-		
5	FLUID CIRCULATO RS-Single fluid heating/cool ing circulators for 10L reactors	1.00 Nos.		-		
6	FLUID CIRCULATO RS-Single fluid heating/cool ing circulators for 30 and 50L reactors	1.00 Nos.		-		
7	RECIRCULA TING CHILLER- chiller for condensers of 10L reactor	1.00 Nos.		-		

8	RECIRCULATING CHILLER-chiller for 30L and 50L reactors	1.00 Nos.		-		
9	SOFTWARE-software, PC and printer for 10L reactors	1.00 Nos.		-		
10	SOFTWARE-software and PC for 30L and 50L reactors	1.00 Nos.		-		
11	SPARES-spares for 3 years of maintenance free operation for all the reactors, heating/cooling circulators and chillers	1.00 Lot		-		

Common charges (Applicable for all items)

Annual Maintenance Contract Charges	
Optional Spares Cost (lumpsum)	
Any Other Charges	
Essential Spares Cost (lumpsum)	
Packing and Forwarding Charges	
Freight charge	
Installation & Commissioning Charges	

Tender Details

Tender No : **VS202100121401**

Tender Date : **24-08-2021**

Purchase Entity : **PURCHASE UNIT III (SPRE)**

Centre : **VSSC**

Procurement of Supply, installation and commissioning of SS304 grade Nitrogen lines, Air lines and Vacuum lines with guages along with its accessories

This tender is proposed as a DOMESTIC PUBLIC TENDER. This tender is restricted only to Class-I and Class-II Local Suppliers as defined under DPIIT Order dtd 04/06/2020- Preference to Make in India Order-2017 Revision. Non-Local Suppliers need not quote.

Foreign OEMs/Agents quoting on behalf of Foreign OEMs are not permitted to quote. High Sea Sales Quotes not permitted. The bids shall be in INR only.

Tenderers are advised NOT TO UPLOAD any documents revealing the price of the main equipment, accessories, spares or AMC. They are however, requested to upload UNPRICED BIDS (i.e. Price details masked) showing appropriate break-up of components of main equipment, individual accessories and spares as desired.

This is a TWO-PART tender i.e. Techno-Commercial Bid (Part-I) and Price Bid (Part-II) shall be submitted separately. All technical and commercial terms and conditions shall be furnished in the Techno-Commercial Bid while price shall be indicated only in the Price Bid. Uploading price details anywhere else other than the price-bid shall lead to unconditional rejection of the tender. Please make note of the same.

Purchase preference to eligible vendors are applicable as per extant notifications issued by the Government of India.

The Class-I/Class-II Local suppliers, at the time of submitting their offer, shall also indicate percentage of local content and provide self-certification that the item (s) offered meets the local content requirement for Class-I/Class-II Local Suppliers as the case may be. They shall also give details of location (s) at which the local value addition is made.

In cases if the item(s) offered exceed Rs. 10 Crores, the Class-I/Class-II Local Suppliers shall provide a Certificate from the statutory auditor or cost auditor of the company (in case of companies) or from a practicing cost accountant or practicing chartered accountant (in respect of suppliers other than companies) giving the percentage of local content.

False Declarations will be in breach of the Code of Integrity under Rule 175 (1) (i) (h) of the

General Financial Rules for which a bidder or its successors can be debarred for up to two years as per Rule 151 (iii) of the General Financial Rules along with such other actions as may be permissible under law.

Technical Bids will be opened at the scheduled due date & time. No further intimation will be sent in this regard. The schedule for price bid opening shown is only indicative. Price bids will only be opened in the case of parties who have been techno-commercially accepted, the details of which will be communicated at a later stage.

**GOVERNMENT OF INDIA
DEPARTMENT OF SPACE
VIKRAM SARABHAI SPACE CENTRE (VSSC)
THIRUVANANTHAPURAM**

**Tender for Supply, installation and commissioning of SS304 grade
Nitrogen lines, Air lines and Vacuum lines with gauges along with its
accessories**

Bids to be submitted online

Tender No.: VSSC/PURCHASE UNIT III (SPRE)/VS202100121401 dated 24-08-2021

A. Tender Details

Tender No :	VSSC/PURCHASE UNIT III (SPRE)/VS202100121401
Tender Date :	24-08-2021
Tender Classification:	GOODS
Purchase Entity :	PURCHASE UNIT III (SPRE)
Centre :	VIKRAM SARABHAI SPACE CENTRE (VSSC)

Procurement of Supply, installation and commissioning of SS304 grade Nitrogen lines, Air lines and Vacuum lines with guages along with its accessories

This tender is proposed as a DOMESTIC PUBLIC TENDER. This tender is restricted only to Class-I and Class-II Local Suppliers as defined under DPIIT Order dtd 04/06/2020- Preference to Make in India Order-2017 Revision. Non-Local Suppliers need not quote.

Foreign OEMs/Agents quoting on behalf of Foreign OEMs are not permitted to quote. High Sea Sales Quotes not permitted. The bids shall be in INR only.

Tenderers are advised NOT TO UPLOAD any documents revealing the price of the main equipment, accessories, spares or AMC. They are however, requested to upload UNPRICED BIDS (i.e. Price details masked) showing appropriate break-up of components of main equipment, individual accessories and spares as desired.

This is a TWO-PART tender i.e. Techno-Commercial Bid (Part-I) and Price Bid (Part-II) shall be submitted separately. All technical and commercial terms and conditions shall be furnished in the Techno-Commercial Bid while price shall be indicated only in the Price Bid. Uploading price details anywhere else other than the price-bid shall lead to unconditional rejection of the tender. Please make note of the same.

Purchase preference to eligible vendors are applicable as per extant notifications issued by the Government of India.

The Class-I/Class-II Local suppliers, at the time of submitting their offer, shall also indicate percentage of local content and provide self-certification that the item (s) offered meets the local content requirement for Class-I/Class-II Local Suppliers as the case may be. They shall also give details of location (s) at which the local value addition is made.

In cases if the item(s) offered exceed Rs. 10 Crores, the Class-I/Class-II Local Suppliers shall provide a Certificate from the statutory auditor or cost auditor of the company (in case of companies) or from a practicing cost accountant or practicing chartered accountant (in respect of suppliers other than companies) giving the percentage of local content.

False Declarations will be in breach of the Code of Integrity under Rule 175 (1) (i) (h) of the General

Financial Rules for which a bidder or its successors can be debarred for up to two years as per Rule 151 (iii) of the General Financial Rules along with such other actions as may be permissible under law. Technical Bids will be opened at the scheduled due date & time. No further intimation will be sent in this regard. The schedule for price bid opening shown is only indicative. Price bids will only be opened in the case of parties who have been techno-commercially accepted, the details of which will be communicated at a later stage.

A.1 Tender Schedule

Bid Submission Start Date : **24-08-2021 16:00**

Bid Clarification Due Date : **16-09-2021 17:00**

Bid Submission Due Date : **28-09-2021 14:00**

Bid Opening Date : **28-09-2021 14:01**

Price Bid Opening Date : **12-10-2021 14:00**

B. Tender Attachments

Technical Write-up/Drawings

Document : ANNEXURE 1

Instructions To Vendors

2. Instructions to Vendors

1. This is an E Tender. Hence Postal/Fax/Email tenders will not be accepted.
2. Last minute clarification on tenders will not be entertained.
3. This is the Tender for the Supply, installation and commissioning of SS304 grade Nitrogen lines, Air lines and Vacuum lines with guages along with its accessories.
4. This tender is proposed as a DOMESTIC PUBLIC TENDER. This tender is restricted only to Class-I and Class-II Local Suppliers as defined under DPIIT Order dtd 04/06/2020- Preference to Make in India Order-2017 Revision. Non-Local Suppliers need not quote.
5. Foreign OEMs/Agents quoting on behalf of Foreign OEMs are not permitted to quote. High Sea Sales Quotes not permitted. The bids shall be in INR only.
6. Tenderers are advised NOT TO UPLOAD any documents revealing the price of the main equipment, accessories, spares or AMC. They are however, requested to upload UNPRICED BIDS (i.e. Price details masked) showing appropriate break-up of components of main equipment, individual accessories and spares as desired.
7. This is a TWO-PART tender i.e. Techno-Commercial Bid (Part-I) and Price Bid (Part-II) shall be submitted separately. All technical and commercial terms and conditions shall be furnished in the Techno-Commercial Bid while price shall be indicated only in the Price Bid. Uploading price details anywhere else other than the price-bid shall lead to unconditional rejection of the tender. Please make note of the same.
8. Purchase preference to eligible vendors are applicable as per extant notifications issued by the Government of India.
9. The Class-I/Class-II Local suppliers, at the time of submitting their offer, shall also indicate percentage of local content and provide self-certification that the item (s) offered meets the local

content requirement for Class-I/Class-II Local Suppliers as the case may be. They shall also give details of location (s) at which the local value addition is made.

10. In cases if the item(s) offered exceed Rs. 10 Crores, the Class-I/Class-II Local Suppliers shall provide a Certificate from the statutory auditor or cost auditor of the company (in case of companies) or from a practicing cost accountant or practicing chartered accountant (in respect of suppliers other than companies) giving the percentage of local content.

11. False Declarations will be in breach of the Code of Integrity under Rule 175 (1) (i) (h) of the General Financial Rules for which a bidder or its successors can be debarred for up to two years as per Rule 151 (iii) of the General Financial Rules along with such other actions as may be permissible under law.

12. Technical Bids will be opened at the scheduled due date & time. No further intimation will be sent in this regard. The schedule for price bid opening shown is only indicative. Price bids will only be opened in the case of parties who have been techno-commercially accepted, the details of which will be communicated at a later stage.

C. Bid Templates

C.1 Technical Bid - Supply, installation and commissioning of SS304 grade Nitrogen lines, Air lines and Vacuum lines with guages along with its accessories

1. NITROGEN LINES

Item specifications for NITROGEN

Sl No	Specification	Value	Compliance	Offered Specification	Remark
1	Description of the work	Supply installation and commissioning of SS304 Nitrogen lines along with guages and its accessories as per the technical specifications, quantities, terms and conditions and drawing as per Annexure-1	Yes / No / Explain		

2. Vacuum System: Vacuum lines

Item specifications for Vacuum System

Sl No	Specification	Value	Compliance	Offered Specification	Remark
1	Description of the work	Supply installation and commissioning of SS304 Vacuum lines along with guages and its accessories as per the technical specifications, quantities, Terms and conditions and drawing as per Annexure-1	Yes / No / Explain		

3. AIR INTAKE HOSE: Air lines

Item specifications for AIR INTAKE HOSE

Sl No	Specification	Value	Compliance	Offered Specification	Remark
1	Description of the work	Supply installation and commissioning of SS304 Air lines along with guages and its accessories as per the technical specifications, quantities, Terms and conditions and drawing as per Annexure-1	Yes / No / Explain		

Common Specifications (Applicable for all items)

Sl No	Specification	Value	Compliance	Offered Specification	Remark
1	Supply, installation and commissioning of nitrogen, air and vacuum lines along with guages and related accessories	As per the detailed technical specifications, quantities, Terms and conditions and drawing as per annexure -1	Yes / No / Explain		

Supporting Documents required from Vendor

1. A separate compliance statement should be provided by the vendor for their compliance to the terms and conditions attached as annexure1

2. Brochures/Catalogues of company with details

3. Detailed Techno commercial offer(without price details)

4. Declaration regarding the percentage of local content (or value addition) in the item offered.

5. Detailed Compliance Matrix vis-a-vis the item specification in tenders.

6. Additional Documents from Vendor.

5 additional documents can be uploaded by the vendor

C.2 Commercial Terms / Bid

Sl. No.	Description	Compliance	Vendor Terms
1	As per the Annexure 1 attached under DOCUMENTS	Yes / No / Explain	
2	The Class-I & II local supplier should provide a Self Certification along with your offer in PDF format indicating that the item offered meets the minimum local content as called for in the tender as mentioned above and provide the % of local content along with details of the location(s) at which the local value addition is made. In case of two part tenders, it is mandatory to indicate compliance to MLC(minimum local content) in technical bid itself. Confirm attachment of Self declaration along with the offer.	Yes / No / Explain	
3	PO Ordering Address with Name and Contact Details of Sales Person concerned (e-mail and phone number).	Yes / No / Explain	
4	Any Other Terms	Yes / No / Explain	
5	Taxes and other costs, if any . [Note: VSSC is a Public Funded Research Institution under the administrative control of Department of Space and is eligible for partial exemption of IGST @5% vide Notfn No. 45/2017, 47/2017 dt 14.11.2017 respectively. Necessary IGST EXEMPTION CERTIFICATE shall be issued.]	Yes / No / Explain	
6	Security Deposit (Applicable if Offer Value is Rs. 5 Lakhs or above. MSME/NSIC Units are NOT EXEMPTED from the payment of SD. Bank Guarantee @ 3% of Order Value valid till 60 days from the date of supply to be submitted. Mandatory compliance required. Only Government Bodies/PSUs/PSEs can submit Indentity Bond in lieu of BG. In the event of non-performance of contractual obligations, SD will be forfeited).	Yes / No / Explain	
7	Delivery Terms.	Yes / No / Explain	
8	Delivery Period	Yes / No / Explain	

9	Liquidated Damages (Applicable beyond the delivery period mentioned in this tender @ 0.5% per week or part thereof on the undelivered portion subject to a maximum of 10% of the contract value. Mandatory compliance required).	Yes / No / Explain	
10	Payment Term: (Our Default payment term: For indigenous orders: 100% within 30 days after receipt and acceptance of item at our site. For import cases: 100% by Sight Draft with Bank Charges to respective accounts. NOTE: CONSEQUENT TO COVID 19 PANDEMIC AND AS PER EXTANT GUIDELINES FROM DEPARTMENT OF SPACE, NO ADVANCE PAYMENT IS PAYABLE TO THIS TENDER).	Yes / No / Explain	
11	Definitions: A supplier or service provider, whose goods, services or works offered for procurement, has local content: a) Equal to or more than 50% : Class-I local supplier. b) More than 20% but less than 50% : Class-II local supplier. c) Less than or equal to 20% : Non-local supplier. Mention your category.	Yes / No / Explain	
12	Local content means the amount of value added in India (i.e. indigenous items/services added in the offered products/services/works) be the total value of the item offered (excluding net domestic indirect taxes) minus the value of imported content in the item (including all customs duties/IGST) as a proportion of the total value (excluding net domestic indirect taxes), in percent. Indicate extent of Minimum Local Content in offered product/service and location of such value additions.	Yes / No / Explain	
13	Kindly ensure that NO DOCUMENTS WITH PRICE DETAILS ARE UPLOADED. Price shall only be mentioned in the price bid. Uploaded documents with price details shall summarily be rejected.	Yes / No / Explain	
14	Ensure you are a Class-I Local Supplier/ Class-II Local Supplier. The offer shall be in INR only. Bids from foreign OEMs and offer on High Sea Sales basis are not allowed. Please mention the category of the bidder.	Yes / No / Explain	

C.3 Price Bid

Sl. No.	Item	Quantity	Unit Price	Currency	Total Price	Remark
1	NITROGEN LINES	1.00 Lumsm		-		
2	Vacuum System: Vacuum lines	1.00 Lumsm		-		
3	AIR INTAKE HOSE: Air lines	1.00 Lumsm		-		

Common charges (Applicable for all items)

P&F Charges	
Freight charge	
Installation Charges	
Documentation & Hadnling charges	
Other Charges (If any)	

**GOVERNMENT OF INDIA
DEPARTMENT OF SPACE
VIKRAM SARABHAI SPACE CENTRE (VSSC)
THIRUVANANTHAPURAM**

Tender for Electrolyte

Bids to be submitted online

Tender No.: VSSC/PURCHASE UNIT III (SPRE)/VS202100363601 dated 30-08-2021

A. Tender Details

Tender No :	VSSC/PURCHASE UNIT III (SPRE)/VS202100363601
Tender Date :	30-08-2021
Tender Classification:	GOODS
Purchase Entity :	PURCHASE UNIT III (SPRE)
Centre :	VIKRAM SARABHAI SPACE CENTRE (VSSC)

Procurement of Electrolyte

This Tender is for the procurement of Electrolyte

This tender is proposed as a DOMESTIC PUBLIC TENDER. This tender is restricted only to Class-I and Class-II Local Suppliers as defined under DPIIT Order dtd 04/06/2020- Preference to Make in India Order-2017 Revision. Non-Local Suppliers need not quote.

Foreign OEMs/Agents quoting on behalf of Foreign OEMs are not permitted to quote. High Sea Sales Quotes not permitted. The bids shall be in INR only.

Tenderers are advised NOT TO UPLOAD any documents revealing the price of the main equipment, accessories, spares or AMC. They are however, requested to upload UNPRICED BIDS (i.e. Price details masked) showing appropriate break-up of components of main equipment, individual accessories and spares as desired.

This is a TWO-PART tender i.e. Techno-Commercial Bid (Part-I) and Price Bid (Part-II) shall be submitted separately. All technical and commercial terms and conditions shall be furnished in the Techno-Commercial Bid while price shall be indicated only in the Price Bid. Uploading price details anywhere else other than the price-bid shall lead to unconditional rejection of the tender. Please make note of the same.

Purchase preference to eligible vendors are applicable as per extant notifications issued by the Government of India.

The Class-I/Class-II Local suppliers, at the time of submitting their offer, shall also indicate percentage of local content and provide self-certification that the item (s) offered meets the local content requirement for Class-I/Class-II Local Suppliers as the case may be. They shall also give details of location (s) at which the local value addition is made.

In cases if the item(s) offered exceed Rs. 10 Crores, the Class-I/Class-II Local Suppliers shall provide a Certificate from the statutory auditor or cost auditor of the company (in case of companies) or from a practicing cost accountant or practicing chartered accountant (in respect of suppliers other than companies) giving the percentage of local content.

False Declarations will be in breach of the Code of Integrity under Rule 175 (1) (i) (h) of the General

Financial Rules for which a bidder or its successors can be debarred for up to two years as per Rule 151 (iii) of the General Financial Rules along with such other actions as may be permissible under law. Technical Bids will be opened at the scheduled due date & time. No further intimation will be sent in this regard. The schedule for price bid opening shown is only indicative. Price bids will only be opened in the case of parties who have been techno-commercially accepted, the details of which will be communicated at a later stage.

A.1 Tender Schedule

Bid Submission Start Date : **30-08-2021 12:00**

Bid Clarification Due Date : **08-09-2021 12:00**

Bid Submission Due Date : **30-09-2021 14:00**

Bid Opening Date : **30-09-2021 14:01**

Price Bid Opening Date : **07-10-2021 14:00**

B. Tender Attachments

NA

Instructions To Vendors

1. This tender is proposed as a DOMESTIC PUBLIC TENDER. This tender is restricted only to Class-I and Class-II Local Suppliers as defined under DPIIT Order dtd 04/06/2020- Preference to Make in India Order-2017 Revision. Non-Local Suppliers need not quote.
2. Foreign OEMs/Agents quoting on behalf of Foreign OEMs are not permitted to quote. High Sea Sales Quotes not permitted. The bids shall be in INR only.
3. Tenderers are advised NOT TO UPLOAD any documents revealing the price of the main equipment, accessories, spares or AMC. They are however, requested to upload UNPRICED BIDS (i.e. Price details masked) showing appropriate break-up of components of main equipment, individual accessories and spares as desired.
4. This is a TWO-PART tender i.e. Techno-Commercial Bid (Part-I) and Price Bid (Part-II) shall be submitted separately. All technical and commercial terms and conditions shall be furnished in the Techno-Commercial Bid while price shall be indicated only in the Price Bid. Uploading price details anywhere else other than the price-bid shall lead to unconditional rejection of the tender. Please make note of the same.
5. Purchase preference to eligible vendors are applicable as per extant notifications issued by the Government of India.
6. The Class-I/Class-II Local suppliers, at the time of submitting their offer, shall also indicate percentage of local content and provide self-certification that the item (s) offered meets the local content requirement for Class-I/Class-II Local Suppliers as the case may be. They shall also give details of location (s) at which the local value addition is made.
7. In cases if the item(s) offered exceed Rs. 10 Crores, the Class-I/Class-II Local Suppliers shall provide a Certificate from the statutory auditor or cost auditor of the company (in case of companies) or from a practicing cost accountant or practicing chartered accountant (in respect of suppliers other than companies) giving the percentage of local content.
8. False Declarations will be in breach of the Code of Integrity under Rule 175 (1) (i) (h) of the General Financial Rules for which a bidder or its successors can be debarred for up to two years as per Rule 151 (iii) of the General Financial Rules along with such other actions as may be permissible under law.

9. Technical Bids will be opened at the scheduled due date & time. No further intimation will be sent in this regard. The schedule for price bid opening shown is only indicative. Price bids will only be opened in the case of parties who have been techno-commercially accepted, the details of which will be communicated at a later stage.

10. Instructions to Vendors

1. This is an E Tender. Hence Postal/Fax/Email tenders will not be accepted.
2. Last minute clarification on tenders will not be entertained.

C. Bid Templates

C.1 Technical Bid - Electrolyte

1. BATTERY MATERIALS

Electrolyte-1

Item specifications for BATTERY MATERIALS

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Composition	1.2 M LiPF ₆ in EC/EMC/MP (20:20:60 vol%)+4 wt % FEC	Yes / No / Explain		
2	LiPF ₆ (weight%)	15.1	Yes / No / Explain		
3	Ethylene Carbonate (weight%)	21	Yes / No / Explain		
4	Ethyl Methyl Carbonate (weight%)	16.1	Yes / No / Explain		
5	Methyl Propionate (weight%)	43.8	Yes / No / Explain		
6	Fluoroethylene carbonate (weight%)	4	Yes / No / Explain		
7	Moisture (ppm)	<20	Yes / No / Explain		
8	Hydrofluoric acid (ppm)	<20	Yes / No / Explain		
9	Packing	1 kg	Yes / No / Explain		

2. BATTERY MATERIALS

Electrolyte-2

Item specifications for BATTERY MATERIALS

SI No	Specification	Value	Compliance	Offered Specification	Remark
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1	Composition	1.0 M LiPF6 in EC/EMC/MP (20:20:60 vol%)+1 wt % VC	Yes / No / Explain		
2	LiPF6 (weight %)	13.3	Yes / No / Explain		
3	Ethylene Carbonate (weight %)	22.2	Yes / No / Explain		
4	Ethyl Methyl Carbonate (weight %)	17.1	Yes / No / Explain		
5	Methyl Propionate (weight %)	46.4	Yes / No / Explain		
6	Vinylene Carbonate (weight %)	1	Yes / No / Explain		
7	Moisture (ppm)	<20	Yes / No / Explain		
8	Hydrofluoric acid (ppm)	<20	Yes / No / Explain		
9	Packing	1 kg	Yes / No / Explain		

3. BATTERY MATERIALS

Electrolyte-3

Item specifications for BATTERY MATERIALS

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Composition	1.0 M LiPF6 in EC/DMC (3:7 vol%)+2 wt % FEC+1 wt%VC	Yes / No / Explain		
2	LiPF6 (weight %)	11.7	Yes / No / Explain		
3	Ethylene Carbonate (weight %)	29.4	Yes / No / Explain		
4	Dimethyl Carbonate (weight %)	55.9	Yes / No / Explain		
5	Vinylene Carbonate (weight %)	1.0	Yes / No / Explain		
6	Fluoroethylene Carbonate (weight %)	2.0	Yes / No / Explain		

7	Moisture (ppm)	<20	Yes / No / Explain		
8	Hydrofluoric acid (ppm)	<20	Yes / No / Explain		
9	Packing	1 kg	Yes / No / Explain		

Supporting Documents required from Vendor

1. Brochures/Catalogues of company with details

2. Detailed Techno commercial offer (without price details)

3. Party has to supply 200 g of sample electrolyte for analysis at our end without which the offer will not be accepted

4. Party has to submit the specification sheet of the materials

5. Declaration regarding the percentage of local content (or value addition) in the item offered.

6. Detailed Compliance Matrix vis-a-vis the item specification in tenders.

7. Additional Documents from Vendor.

5 additional documents can be uploaded by the vendor

C.2 Commercial Terms / Bid

Sl. No.	Description	Compliance	Vendor Terms
1	The material should be properly packed to avoid moisture ingress	Yes / No / Explain	
2	Taxes and other costs, if any . [Note: VSSC is a Public Funded Research Institution under the administrative control of Department of Space and is eligible for partial exemption of IGST @5% vide Notfn No. 45/2017, 47/2017 dt 14.11.2017 respectively. Necessary IGST EXEMPTION CERTIFICATE shall be issued.]	Yes / No / Explain	
3	Security Deposit (Applicable if Offer Value is Rs. 5 Lakhs or above. MSME/NSIC Units are NOT EXEMPTED from the payment of SD. Bank Guarantee @ 3% of Order Value valid till 60 days from the date of supply to be submitted. Mandatory compliance required. Only Government Bodies/PSUs/PSEs can submit Indemnity Bond in lieu of BG. In the event of non-performance of contractual obligations, SD will be forfeited).	Yes / No / Explain	
4	Delivery Terms.	Yes / No / Explain	
5	Delivery Period	Yes / No / Explain	
6	Liquidated Damages (Applicable beyond the delivery period mentioned in this tender @ 0.5% per week or part thereof on the undelivered portion subject to a maximum of 10% of the contract value. Mandatory compliance required).	Yes / No / Explain	
7	Payment Term: (Our Default payment term: For indigenous orders: 100% within 30 days after receipt and acceptance of item at our site. For import cases: 100% by Sight Draft with Bank Charges to respective accounts. NOTE: CONSEQUENT TO COVID 19 PANDEMIC AND AS PER EXISTANT GUIDELINES FROM DEPARTMENT OF SPACE, NO ADVANCE PAYMENT IS PAYABLE TO THIS TENDER).	Yes / No / Explain	

8	<p>Definitions: A supplier or service provider, whose goods, services or works offered for procurement, has local content:</p> <p>a) Equal to or more than 50% : Class-I local supplier.</p> <p>b) More than 20% but less than 50% : Class-II local supplier.</p> <p>c) Less than or equal to 20% : Non-local supplier.</p> <p>Mention your category.</p>	Yes / No / Explain	
9	<p>Local content means the amount of value added in India (i.e. indigenous items/services added in the offered products/services/works) be the total value of the item offered (excluding net domestic indirect taxes) minus the value of imported content in the item (including all customs duties/IGST) as a proportion of the total value (excluding net domestic indirect taxes), in percent. Indicate extent of Minimum Local Content in offered product/service and location of such value additions.</p>	Yes / No / Explain	
10	<p>The Class-I & II local supplier should provide a Self Certification along with your offer in PDF format indicating that the item offered meets the minimum local content as called for in the tender as mentioned above and provide the % of local content along with details of the location(s) at which the local value addition is made. In case of two part tenders, it is mandatory to indicate compliance to MLC(minimum local content) in technical bid itself. Confirm attachment of Self declaration along with the offer.</p>	Yes / No / Explain	
11	<p>PO Placement Address (with Name and Contact Details of sales person concerned).</p>	Yes / No / Explain	
12	<p>Any Other Terms</p>	Yes / No / Explain	

C.3 Price Bid

Sl. No.	Item	Quantity	Unit Price	Currency	Total Price	Remark
1	BATTERY MATERIALS Electrolyte-1	5.00 KG		-		
2	BATTERY MATERIALS Electrolyte-2	5.00 KG		-		

3	BATTERY MATERIALS Electrolyte-3	5.00 KG		-		
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Common charges (Applicable for all items)

P&F Charges	
Freight charge	
Documentation & Hadnling charges	
Other Charges (If any)	

**GOVERNMENT OF INDIA
DEPARTMENT OF SPACE
VIKRAM SARABHAI SPACE CENTRE (VSSC)
THIRUVANANTHAPURAM**

Tender for Single sided FEP coated Polyimide Tape

Bids to be submitted online

Tender No.: VSSC/PURCHASE UNIT III (SPRE)/VS202100349301 dated 25-08-2021

A. Tender Details

Tender No :	VSSC/PURCHASE UNIT III (SPRE)/VS202100349301
Tender Date :	25-08-2021
Tender Classification:	GOODS
Purchase Entity :	PURCHASE UNIT III (SPRE)
Centre :	VIKRAM SARABHAI SPACE CENTRE (VSSC)

Procurement of Single sided FEP coated Polyimide Tape

This Tender is for the procurement of Single sided FEP coated Polyimide Tape

This tender is proposed as a DOMESTIC PUBLIC TENDER. This tender is restricted only to Class-I and Class-II Local Suppliers as defined under DPIIT Order dtd 04/06/2020- Preference to Make in India Order-2017 Revision. Non-Local Suppliers need not quote.

Foreign OEMs/Agents quoting on behalf of Foreign OEMs are not permitted to quote. High Sea Sales Quotes not permitted. The bids shall be in INR only.

Tenderers are advised NOT TO UPLOAD any documents revealing the price of the main equipment, accessories, spares or AMC. They are however, requested to upload UNPRICED BIDS (i.e. Price details masked) showing appropriate break-up of components of main equipment, individual accessories and spares as desired.

This is a TWO-PART tender i.e. Techno-Commercial Bid (Part-I) and Price Bid (Part-II) shall be submitted separately. All technical and commercial terms and conditions shall be furnished in the Techno-Commercial Bid while price shall be indicated only in the Price Bid. Uploading price details anywhere else other than the price-bid shall lead to unconditional rejection of the tender. Please make note of the same.

Purchase preference to eligible vendors are applicable as per extant notifications issued by the Government of India.

The Class-I/Class-II Local suppliers, at the time of submitting their offer, shall also indicate percentage of local content and provide self-certification that the item (s) offered meets the local content requirement for Class-I/Class-II Local Suppliers as the case may be. They shall also give details of location (s) at which the local value addition is made.

In cases if the item(s) offered exceed Rs. 10 Crores, the Class-I/Class-II Local Suppliers shall provide a Certificate from the statutory auditor or cost auditor of the company (in case of companies) or from a practicing cost accountant or practicing chartered accountant (in respect of suppliers other than companies) giving the percentage of local content.

False Declarations will be in breach of the Code of Integrity under Rule 175 (1) (i) (h) of the General

Financial Rules for which a bidder or its successors can be debarred for up to two years as per Rule 151 (iii) of the General Financial Rules along with such other actions as may be permissible under law. Technical Bids will be opened at the scheduled due date & time. No further intimation will be sent in this regard. The schedule for price bid opening shown is only indicative. Price bids will only be opened in the case of parties who have been techno-commercially accepted, the details of which will be communicated at a later stage.

A.1 Tender Schedule

Bid Submission Start Date : **25-08-2021 16:00**

Bid Clarification Due Date : **13-09-2021 11:00**

Bid Submission Due Date : **07-10-2021 14:00**

Bid Opening Date : **07-10-2021 14:01**

Price Bid Opening Date : **21-10-2021 14:00**

B. Tender Attachments

NA

Instructions To Vendors

1. Instructions to Vendors

1. This is an E Tender. Hence Postal/Fax/Email tenders will not be accepted.
2. Last minute clarification on tenders will not be entertained.
2. This tender is proposed as a DOMESTIC PUBLIC TENDER. This tender is restricted only to Class-I and Class-II Local Suppliers as defined under DPIIT Order dtd 04/06/2020- Preference to Make in India Order-2017 Revision. Non-Local Suppliers need not quote.
3. Foreign OEMs/Agents quoting on behalf of Foreign OEMs are not permitted to quote. High Sea Sales Quotes not permitted. The bids shall be in INR only.
4. Tenderers are advised NOT TO UPLOAD any documents revealing the price of the main equipment, accessories, spares or AMC. They are however, requested to upload UNPRICED BIDS (i.e. Price details masked) showing appropriate break-up of components of main equipment, individual accessories and spares as desired.
5. This is a TWO-PART tender i.e. Techno-Commercial Bid (Part-I) and Price Bid (Part-II) shall be submitted separately. All technical and commercial terms and conditions shall be furnished in the Techno-Commercial Bid while price shall be indicated only in the Price Bid. Uploading price details anywhere else other than the price-bid shall lead to unconditional rejection of the tender. Please make note of the same.
6. Purchase preference to eligible vendors are applicable as per extant notifications issued by the Government of India.
7. The Class-I/Class-II Local suppliers, at the time of submitting their offer, shall also indicate percentage of local content and provide self-certification that the item (s) offered meets the local content requirement for Class-I/Class-II Local Suppliers as the case may be. They shall also give details of location (s) at which the local value addition is made.
8. In cases if the item(s) offered exceed Rs. 10 Crores, the Class-I/Class-II Local Suppliers shall provide a Certificate from the statutory auditor or cost auditor of the company (in case of companies) or

from a practicing cost accountant or practicing chartered accountant (in respect of suppliers other than companies) giving the percentage of local content.

9. False Declarations will be in breach of the Code of Integrity under Rule 175 (1) (i) (h) of the General Financial Rules for which a bidder or its successors can be debarred for up to two years as per Rule 151 (iii) of the General Financial Rules along with such other actions as may be permissible under law.

10. Technical Bids will be opened at the scheduled due date & time. No further intimation will be sent in this regard. The schedule for price bid opening shown is only indicative. Price bids will only be opened in the case of parties who have been techno-commercially accepted, the details of which will be communicated at a later stage.

C. Bid Templates

C.1 Technical Bid - Single sided FEP coated Polyimide Tape

1. FEP COATED POLYIMIDE TAPES

Item specifications for FEP COATED POLYIMIDE TAPES

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Film Width	25+/-2mm	Yes / No / Explain		
2	Film Thickness	37.5+/-5micron	Yes / No / Explain		
3	Ultimate Tensile Strength @ 23 Deg C	162 MPa	Yes / No / Explain		
4	Ultimate Tensile Strength @ 200 Deg C	89 MPa	Yes / No / Explain		
5	Yield point at 3% at 23 Deg C	49 MPa	Yes / No / Explain		
6	Yield point at 3% at 200 Deg C	43 MPa	Yes / No / Explain		
7	Stress at 5 % elongation at 23 Deg C	65 MPa	Yes / No / Explain		
8	Stress at 5 % elongation at 200 Deg C	41 MPa	Yes / No / Explain		
9	Ultimate elongation , % at 23 Deg C	70 %	Yes / No / Explain		
10	Ultimate elongation , % at 200 Deg C	75 %	Yes / No / Explain		
11	Tensile modulus, at 23 Deg C	2.28 GPa	Yes / No / Explain		
12	Tensile modulus, at 200 Deg C	1.14 GPa	Yes / No / Explain		
13	Impact strength at 23 Deg C, Ncm	68.6	Yes / No / Explain		
14	Tear Strength, Initial Graves, N	1.5	Yes / No / Explain		

15	Tear strength, propogating Elmendorf, N	16.3	Yes / No / Explain		
16	Polyimide, wt %	57	Yes / No / Explain		
17	FEP, wt %	43	Yes / No / Explain		
18	Density, g/cc	1.67	Yes / No / Explain		
19	Moisture absorption, % at 23 deg C at 50 % RH	0.8	Yes / No / Explain		
20	Moisture absorption, % at 23 Deg C at 98 % RH	1.7	Yes / No / Explain		
21	Water vapour permeability, (g/(m ² .24h))	9.6	Yes / No / Explain		
22	Roll ID	76mm	Yes / No / Explain		
23	Roll OD	241mm	Yes / No / Explain		

Supporting Documents required from Vendor

1. Certificate of ASTM D 5213 (type 2, item A) requirements
2. Certificate of analysis for the properties mentioned in the indent
3. Brochures/Catalogues of company with details
4. Detailed Techno commercial offer (without price details)
5. Declaration regarding the percentage of local content (or value addition) in the item offered.
6. Detailed Compliance Matrix vis-a-vis the item specification in tenders.
7. Additional Documents from Vendor.

5 additional documents can be uploaded by the vendor

C.2 Commercial Terms / Bid

Sl. No.	Description	Compliance	Vendor Terms
1	Polyimide Tapes should meet ASTM D5213 (type 2, item A) requirements. Party has to provide the certificate also	Yes / No / Explain	
2	Polyimide tapes to be supplied must be of Indian make.	Yes / No / Explain	
3	Sample of 500 g must be supplied at the time of technical bid submission. Sample will be tested at VSSC. The parties will be accepted for price bid submission only if the properties of the sample tape are meeting.	Yes / No / Explain	
4	Taxes and other costs, if any . [Note: VSSC is a Public Funded Research Institution under the administrative control of Department of Space and is eligible for partial exemption of IGST @5% vide Notfn No. 45/2017, 47/2017 dt 14.11.2017 respectively. Necessary IGST EXEMPTION CERTIFICATE shall be issued.]	Yes / No / Explain	
5	Security Deposit (Applicable if Offer Value is Rs. 5 Lakhs or above. MSME/NSIC Units are NOT EXEMPTED from the payment of SD. Bank Guarantee @ 3% of Order Value valid till 60 days from the date of supply to be submitted. Mandatory compliance required. Only Government Bodies/PSUs/PSEs can submit Indentity Bond in lieu of BG. In the event of non-performance of contractual obligations, SD will be forfeited).	Yes / No / Explain	
6	Delivery Terms.	Yes / No / Explain	
7	Delivery Period	Yes / No / Explain	
8	Liquidated Damages (Applicable beyond the delivery period mentioned in this tender @ 0.5% per week or part thereof on the undelivered portion subject to a maximum of 10% of the contract value. Mandatory compliance required).	Yes / No / Explain	
9	Warranty	Yes / No / Explain	

10	<p>Payment Term: (Our Defalut payment term: For indigenous orders: 100% within 30 days after receipt and acceptance of item at our site. For import cases: 100% by Sight Draft with Bank Charges to respective accounts. NOTE: CONSEQUENT TO COVID 19 PANDEMIC AND AS PER EXTANT GUIDELINES FROM DEPARTMENT OF SPACE, NO ADVANCE PAYMENT IS PAYABLE TO THIS TENDER).</p>	Yes / No / Explain	
11	<p>Definitions: A supplier or service provider, whose goods, services or works offered for procurement, has local content: a)Equal to or more than 50% : Class-I local supplier. b)More than 20% but less than 50% : Class-II local supplier. c)Less than or equal to 20% : Non-local supplier. Mention your category.</p>	Yes / No / Explain	
12	<p>Local content means the amount of value added in India (i.e. indigenous items/services added in the offered products/services/works) be the total value of the item offered (excluding net domestic indirect taxes) minus the value of imported content in the item (including all customs duties/IGST) as a proportion of the total value (excluding net domestic indirect taxes), in percent. Indicate extent of Minimum Local Content in offered product/service and location of such value additions.</p>	Yes / No / Explain	
13	<p>The Class-I & II local supplier should provide a Self Certification along with your offer in PDF format indicating that the item offered meets the minimum local content as called for in the tender as mentioned above and provide the % of local content along with details of the location(s) at which the local value addition is made. In case of two part tenders, it is mandatory to indicate compliance to MLC(minimum local content) in technical bid itself. Confirm attachment of Self declaration along with the offer.</p>	Yes / No / Explain	
14	<p>PO Placement Address (with Name and Contact Details of sales person concerned).</p>	Yes / No / Explain	
15	<p>Any Other Terms</p>	Yes / No / Explain	

16	Prices are to be revealed in the Price-Bid template only. Kindly ensure that PDF documents uploaded donot reveal price of the item. CONFIRM	Yes / No / Explain	
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C.3 Price Bid

Sl. No.	Item	Quantity	Unit Price	Currency	Total Price	Remark
1	FEP COATED POLYIMIDE TAPES	50.00 KG		-		

Common charges (Applicable for all items)

P&F Charges	
Freight charge	
Documentation & Hadnling charges	
Other Charges (If any)	