

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

**Tender for Supply of conformal coating materials for space  
application**

**Bids to be submitted online**

**Tender No.: VSSC/PURCHASE UNIT II (AVN)/VS202100311101 dated 12-10-2021**

## **A. Tender Details**

Tender No : **VSSC/PURCHASE UNIT II (AVN)/VS202100311101**

Tender Date : **12-10-2021**

Tender Classification: **GOODS**

Purchase Entity : **PURCHASE UNIT II (AVN)**

Centre : **VIKRAM SARABHAI SPACE CENTRE (VSSC)**

## **Procurement of Supply of conformal coating materials for space application**

Procurement of Supply of conformal coating materials for space application

### **A.1 Tender Schedule**

Bid Submission Start Date : **07-10-2021 15:00**

Bid Clarification Due Date : **08-11-2021 11:00**

Bid Submission Due Date : **12-11-2021 10:30**

Bid Opening Date : **12-11-2021 11:00**

Price Bid Opening Date : **22-11-2021 11:00**

## **B. Tender Attachments**

NA

### **Instructions To Vendors**

#### **1. PROFORMA FOR INSTRUCTIONS TO TENDERERS AND TERMS AND CONDITIONS OF TENDER**

1. c The term Purchase Order shall mean the communication signed on behalf of the Purchaser by an Officer duly authorised intimating the acceptance on behalf of the Purchaser on the terms and conditions mentioned or referred to in the said communication accepting the tender or offer of the Contractor for supply of stores or plant, machinery or equipment or part thereof.

#### **2. Liquidated Damages**

The Delivery Date mentioning in the Contract or Order will be the essence of the Contract. You shall strictly adhere to the delivery schedule mentioned in your quotation. Please confirm acceptance of LD clause and that you will strictly adhere to the delivery schedule.

#### **3. Arbitration**

In the event of any disputes, differences or claims arising out of or relating to the interpretation and application of the Contract, such disputes or differences or claims shall be settled amicably by mutual consultations of the good Offices of the respective Parties and recognizing their mutual interests attempt to reach a solution satisfactory to both the parties. If such a resolution is not possible, within 30 days from the date of receipt of written notice of the existence of such disputes, then the unresolved disputes or differences or claims shall be referred to the Sole Arbitrator appointed by the Parties by mutual consent in accordance with the rules and procedures of Arbitration and Conciliation Amendment Act 2015 as amended from time to time. The arbitration shall be conducted in Bengaluru in the Arbitration and Conciliation Centre Bengaluru, Domestic and International, as per its rules and regulations. The expenses for the Arbitration shall be shared equally or as may be determined by the Arbitrator. The considered and written decision of the Arbitrator shall be final and binding between the Parties. The applicable language for Arbitration shall be English only. Work under the Contract shall be continued by the CONTRACTOR during the pendency of arbitration proceedings, without prejudice to a final adjustment in accordance with the decision of the Arbitrator unless otherwise directed in writing by the DEPARTMENT or unless the matter is such that the works cannot be possibly continued until the decision whether final or interim of the Arbitrator is obtained.

#### **4. Force Majeure**

Neither the Purchaser nor the Contractor shall be considered default of the performance of their obligations under this contract if such performance is prevented or delayed for any causes beyond the reasonable control of the parties to the contract affected, such as Acts of God, war, riots, civil

commotion, illegal strikes, legal lockouts, epidemics, fire accidents, floods, earthquakes, proclamation or regulation or ordinance of any Government thereof, provided notice in writing of any such cause with necessary proof that the obligation under the contract is thereby affected or prevented or delayed, is given within 14 days from the happening of the event. As soon as the cause of force majeure has ceased to exist, the party whose ability to perform his obligation has been affected shall notify the other party of the actual delay that has occurred due to such force majeure conditions.

#### 5. FOREIGN VENDORS ARE NOT PERMITTED TO QUOTE

a. Only Class I and Class II Local suppliers as per Make in India Policy are eligible to participate in the bid

b. The percentage of local content should be specifically mentioned in the offer, without which it will be summarily rejected.

c. Preference will be given to Class I Local supplier and in their absence, Class II Local supplier will be considered.

6. Preference will be given to those tenders offering supplies from ready stocks and on the basis of FOR destination or delivery at site.

#### 7. REJECTED STORES

Rejected stores will remain at destination at the Contractors risk and responsibility. If instructions for their disposal are not received from the Contractor within a period of 14 days from the date of receipt of the advice of rejection, the purchaser or his representative has, at his discretion, the right to scrap or sell or consign the rejected stores to Contractors address at the Contractors entire risk and expense, freight being payable by the Contractor at actuals.

8. The term Stores shall mean what the Contractor agrees to supply under the Contract as specified in the Purchase Order including erection of plants & machinery and subsequent testing, should such a condition is included in the Purchase Order.

9. SECURITY DEPOSIT Wherever, the Purchase Order value is Rs. 5.00 Lakhs or more, on acceptance of the tender, the Contractor shall, at the option of the Purchaser and within the period specified by him, deposit with him, in cash or in any other form as the Purchaser may determine, security deposit not exceeding three percent of the value of the Contract as the Purchaser shall specify. If the Contractor is called upon by the Purchaser to deposit, Security and the Contractor fails to provide the security within the period specified, such failure shall constitute a breach of the Contract, and the Purchaser shall be entitled to make other arrangements for the repurchase of the stores Contracted at the risk of the Contractor in terms of Sub-Clause ii and iii of clause regarding Delivery. b hereof and or to recover from the Contractor, damages arising from such cancellation.

10. Sales Tax and or other duties or levies legally leviable and intended to be claimed should be mentioned in the price bid template. If nothing is mentioned, then it will be presumed that the rate

quoted is inclusive of all taxes and duties.

## 11. TERMS AND CONDITIONS OF TENDER

12. TEST CERTIFICATE Wherever required, test certificates should be sent along with the despatch documents.

13. The Purchaser reserves the right to place order on the successful tenderer for additional quantity up to 25percent of the quantity offered by them at the rates quoted.

14. The authority of the person signing the tender, if called for, should be produced.

15. The purchaser shall be under no obligation to accept the lowest or any tender and reserves the right of acceptance of the whole or any part of the tender or portions of the quantity offered and the tenderers shall supply the same at the rates quoted.

16. PRICES Tender offering firm prices will be preferred. Where a price variation clause is insisted upon by a tenderer, quotation with a reasonable ceiling should be submitted. Such offers should invariably be supported by the base price taken into account at the time of tendering and also the formula for any such variations.

17. a Your offer should be valid for 90 days from the date of opening of the tender.

b Prices are required to be quoted according to the units indicated in the annexed tender form. When quotations are given in terms of units other than those specified in the tender form, relationship between the two sets of units must be furnished.

18. a All available technical literature, catalogues and other data in support of the specifications and details of the items should be furnished along with the offer.

b Samples, if called for, should be submitted free of all charges by the tenderer and the Purchaser shall not be responsible for any loss or damage thereof due to any reason whatsoever. In the event of nonacceptance of tender, the tenderer will have to remove the samples at his own expense.

c Approximate net and gross weight of the items offered shall be indicated in your offer. If dimensional details are available the same should also be indicated in your offer.

d Specifications: Stores offered should strictly confirm to our specifications. Deviations, if any, should be clearly indicated by the tenderer in his quotation. The tenderer should also indicate the Make or Type number of the stores offered and provide catalogues, technical literature and samples, wherever necessary, along with the quotations. Test Certificates, wherever necessary, should be forwarded along with supplies. Wherever options have been called for in our specifications, the tenderer should address all such options. Wherever specifically mentioned by us, the tenderer could suggest changes to specifications with appropriate response for the same.

19. The tenderer should supply along with his tender, the name of his bankers as well as the latest Income Tax clearance certificate duly countersigned by the Income Tax Officer of the Circle concerned under the seal of his office, if required by the Purchaser.

20. The term Contractor shall mean, the person, firm or company with whom or with which the order for the supply of Stores is placed and shall be deemed to include the Contractors successors, representative, heirs, executors and administrators unless excluded by the Contract.

21. The term Purchaser shall mean the President of India or his successors or assigns.

22. a All available technical literature, catalogues and other data in support of the specifications and details of the items should be furnished along with the offer.

b Samples, if called for, should be submitted free of all charges by the tenderer and the Purchaser shall not be responsible for any loss or damage thereof due to any reason whatsoever. In the event of nonacceptance of tender, the tenderer will have to remove the samples at his own expense.

c Approximate net and gross weight of the items offered shall be indicated in your offer. If dimensional details are available the same should also be indicated in your offer.

d Specifications Stores offered should strictly confirm to our specifications. Deviations, if any, should be clearly indicated by the tenderer in his quotation. The tenderer should also indicate the Make and Type number of the stores offered and provide catalogues, technical literature and samples, wherever necessary, along with the quotations. Test Certificates, wherever necessary, should be forwarded along with supplies. Wherever options have been called for in our specifications, the tenderer should address all such options. Wherever specifically mentioned by us, the tenderer could suggest changes to specifications with appropriate response for the same.

### 23. ACCEPTANCE OF STORES

a The stores shall be tendered by the Contractor for inspection at such places as may be specified by the purchaser at the Contractors own risk, expense and cost.

b It is expressly agreed that the acceptance of the stores Contracted for, is subject to final approval by the purchaser, whose decision shall be final.

c If, in the opinion of the purchaser, all or any of the stores do not meet the performance or quality requirements specified in the Purchase Order, they may be either rejected or accepted at a price to be fixed by the purchaser and his decision as to rejection and the prices to be fixed shall be final and binding on the Contractor.

d If the whole or any part of the stores supplied are rejected in accordance with Clause No. c above, the purchaser shall be at liberty, with or without notice to the Contractor, to purchase in the open market at the expense of the Contractor stores meeting the necessary performance and quality Contracted for in place of those rejected, provided that either the purchase, or the agreement to purchase, from another supplier is made within six months from the date of rejection of the stores as aforesaid.

24. As a Government of India Department, this office is exempted from payment of Octroi and similar local levies. Tenderers shall ensure that necessary Exemption Certificates are obtained by them from the Purchase Officer concerned to avoid any payment of such levies.

25. DESPATCH The Contractor is responsible for obtaining a clear receipt from the Transport Authorities specifying the goods despatched. The consignment should be despatched with clear Railway Receipt or Lorry Receipt. If sent in any other mode, it shall be at the risk of the Contractor. Purchaser will take no responsibility for short deliveries or wrong supply of goods when the same are booked on said to contain basis. Purchaser shall pay for only such stores as are actually received by them in accordance with the Contract.

## 26. GUARANTEE AND REPLACEMENT

a The Contractor shall guarantee that the stores supplied shall comply fully with the specifications laid down, for material, workmanship and performance.

b For a period of twelve months after the acceptance of the stores, if any defects are discovered therein or any defects therein found to have developed under proper use, arising from faulty stores design or workmanship, the Contractor shall remedy such defects at his own cost provided he is called upon to do so within a period of 14 months from the date of acceptance thereof by the purchaser who shall state in writing in what respect the stores or any part thereof are faulty.

c If, in the opinion of the purchaser, it becomes necessary to replace or renew any defective stores such replacement or renewal shall be made by the Contractor free of all costs to the purchaser, provided the notice informing the Contractor of the defect is given by the purchaser in this regard within the said period of 14 months from the date of acceptance thereof.

d Should the Contractor fail to rectify the defects, the purchaser shall have the right to reject or repair or replace at the cost of the Contractor the whole or any portion of the defective stores.

e The decision of the Purchaser notwithstanding any prior approval or acceptance or inspection thereof on behalf of the Purchaser, as to whether or not the Stores supplied by the Contractor are defective or any defect has developed within the said period of 12 months or any other period or as to whether the nature of defects requires renewal or replacement, shall be final, conclusive and binding on the Contractor.

f To fulfill guarantee conditions outlined in a to e above, the Contractor shall, at the option of the Purchaser, furnish a Bank Guarantee as prescribed by the Purchaser

27. PACKING FORWARDING AND INSURANCE The Contractor will be held responsible for the stores being sufficiently and properly packed for transport by rail, road, sea or air to withstand transit hazards and ensure safe arrival at the destination. The packing and marking of packages shall be done by and at the expense of the Contractor. The purchaser will not pay separately for transit insurance, all risks in transit being exclusively of the Contractor and the Purchaser shall pay only for such stores as are actually received in good condition in accordance with the Contract.

## 2. Conditions for BIDDER FROM A COUNTRY WHICH SHARES LAND BORDER WITH INDIA

1. Any bidder from a country which shares a land border with India will be eligible to bid in this tender, only if the bidder is registered with the Competent Authority.

Competent Authority for the purpose of registration shall be the Registration Committee constituted by the Department for Promotion of Industry and Internal Trade (DPIIT).

2.

Validity of Registration: Registration should be valid at the time of submission of bids and should be valid at the time of placement of order.

3. Any false declaration and non-compliance of the above would be a ground for immediate rejection of offer or termination of the contract and further legal action in accordance with the laws.



## C. Bid Templates

### C.1 Technical Bid - Supply of conformal coating materials for space application

#### 1. Supply of adhesive / sealant for filleting (Transparent)

##### Item specifications for Supply of adhesive / sealant for filleting (Transparent)

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Scope 1	Party shall supply transparent adhesive sealant suitable to fill in and around the free space area of components or small units in PCBs for space applications.	Yes / No / Explain		
2	Scope 2	It shall be one part, translucent with flowability, flame resistant, IPC - CC - 830 and MIL - A - 46146 tested and qualified.	Yes / No / Explain		
3	Type	One part translucent adhesive (Mandatory)	Yes / No / Explain		
4	Make	To be specified (Mandatory)	Yes / No / Explain		
5	Part no.	To be specified (Mandatory)	Yes / No / Explain		
6	Country of origin	To be specified (Mandatory)	Yes / No / Explain		
7	Packing	90 mL tube preferred. Other packings to be specified (Mandatory)	Yes / No / Explain		
8	Composition	Polydimethyl siloxane based (Mandatory)	Yes / No / Explain		
9	Standards applicable	Shall be as per MIL 460580C (Mandatory)	Yes / No / Explain		
10	Colour	Clear to slightly hazy smooth viscous liquid (Mandatory)	Yes / No / Explain		

11	Viscosity	34,200 ± 300 cP	Yes / No / Explain		
12	Curing mode	Room temperature (Mandatory)	Yes / No / Explain		
13	Tack free time	Between 110 & 120 minutes at 25 degree celsius (Mandatory)	Yes / No / Explain		
14	Flow property	To flow fill and self level on the PWB (Mandatory)	Yes / No / Explain		
15	Application	To protect electric components, rigid and flexible PCB from corrosion or moisture.	Yes / No / Explain		
16	Specific gravity of cured sample	1.05 ± 0.01	Yes / No / Explain		
17	Non volatile content	95 % (Mandatory)	Yes / No / Explain		
18	Tensile strength of cured sample	430 ± 10 Psi (Mandatory)	Yes / No / Explain		
19	Elongation of cured sample	420 ± 10 % (Mandatory)	Yes / No / Explain		
20	Hardness	30 Shore A	Yes / No / Explain		
21	Dielectric strength	15 ± 2 kV/mm (Mandatory)	Yes / No / Explain		
22	Volume resistivity	2 x 10 <sup>14</sup>	Yes / No / Explain		
23	Dielectric constant at 100kHz	2.5 (Mandatory)	Yes / No / Explain		
24	Dissipation factor at 100kHz	0.002 (Mandatory)	Yes / No / Explain		
25	Mode of application on PWB	Shall be suitable for applying on printed wired board using brush / flow / needle	Yes / No / Explain		
26	TML of cured sample	Shall be < 1 %	Yes / No / Explain		
27	CVCM of cured sample	Shall be < 0.1 %	Yes / No / Explain		
28	Shelf life	1year (minimum)	Yes / No / Explain		
29	Operating temperature	Shall be suitable for temperatures from -45 to + 200 degree celsius	Yes / No / Explain		

30	Customer list	Party shall share the list of customers in India for the quoted items for aerospace application along with the quote. (Mandatory)	Yes / No / Explain		
31	Acceptance criteria	Satisfactory evaluation at customer,s place for aerospace application will be one of the criteria for accepting the technical quote. (Mandatory)	Yes / No / Explain		

## 2. Supply of adhesive sealant for filleting (Clear and nonflowing)

### Item specifications for Supply of adhesive sealant for filleting (Clear and nonflowing)

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Scope 1	Party shall supply clear adhesive sealant suitable to fill in and around the free space area of components or small units in PCBs for space applications.	Yes / No / Explain		
2	Scope 2	It shall be one part, clear, non flowing, with high tensile strength, elongation and MIL-A -46146 Group II tested and qualified.	Yes / No / Explain		
3	Type	One part polydimethyl siloxane based adhesive (Mandatory)	Yes / No / Explain		
4	Make	To be specified (Mandatory)	Yes / No / Explain		
5	Part no.	To be specified (Mandatory)	Yes / No / Explain		
6	Country of origin	To be specified (Mandatory)	Yes / No / Explain		
7	Packing	90 mL tube preferred. Other packings to be specified. (Mandatory)	Yes / No / Explain		

8	Composition	Poly dimethyl siloxane based (Mandatory)	Yes / No / Explain		
9	Standards applicable	MIL-A-46146 Group II (Mandatory)	Yes / No / Explain		
10	Colour	Clear (Mandatory)	Yes / No / Explain		
11	Curing mode	Room temperature (Mandatory)	Yes / No / Explain		
12	Tack free time	Between 60 & 65 minutes at 25 degree celsius (Mandatory)	Yes / No / Explain		
13	Application	Shall be applicable for assembly of components on PWBs	Yes / No / Explain		
14	Flow rate - slump	0.09 ± 0.01 in (Mandatory)	Yes / No / Explain		
15	Extrusion rate	75 ± 4 g/min (Mandatory)	Yes / No / Explain		
16	Specific gravity of cured sample	1.10 ± 0.01	Yes / No / Explain		
17	Non volatile content	95 % (Mandatory)	Yes / No / Explain		
18	Tensile strength of cured sample	860 ± 10 Psi	Yes / No / Explain		
19	Elongation of cured sample	620 ± 10%	Yes / No / Explain		
20	Hardness	40 Shore A	Yes / No / Explain		
21	Dielectric strength	485 ± 5 volts/mil	Yes / No / Explain		
22	Volume resistivity	4 x 10 <sup>14</sup> ohm - cm	Yes / No / Explain		
23	Dielectric constant at 100kHz	2.5	Yes / No / Explain		
24	Dissipation factor at 100kHz	0.0002	Yes / No / Explain		
25	Mode of application on PWB	Shall be suitable for automated and manual mode using needle.	Yes / No / Explain		
26	Operating temperature	Shall be suitable for temperatures from -45 to + 200 degree celsius	Yes / No / Explain		

27	TML of cured sample	Shall be < 1 %	Yes / No / Explain		
28	CVCM of cured sample	Shall be < 0.1 %	Yes / No / Explain		
29	Shelf life	1 year (minimum)	Yes / No / Explain		
30	Customer list	Party shall share the list of customers in India for the quoted items for aerospace application along with the quote. (Mandatory)	Yes / No / Explain		
31	Acceptance criteria	Satisfactory evaluation at customers place for aerospace application will be one of the criteria for accepting the technical quote. (Mandatory)	Yes / No / Explain		

### 3. Supply of adhesive sealant for filleting (Grey color and nonflowing)

#### Item specifications for Supply of adhesive sealant for filleting (Grey color and nonflowing)

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Scope 1	Party shall supply grey coloured adhesive sealant suitable to fill in and around the free space area of components or small units in PCBs for space applications.	Yes / No / Explain		
2	Scope 2	It shall be one part, grey coloured, non flowing, with thermal stability, high tensile strength, elongation and MIL-A -46146 Group II/III TY I tested and qualified.	Yes / No / Explain		
3	Type	One part, polydimethyl siloxane based adhesive (Mandatory)	Yes / No / Explain		
4	Make	To be specified (Mandatory)	Yes / No / Explain		

5	Part no.	To be specified (Mandatory)	Yes / No / Explain		
6	Country of origin	To be specified (Mandatory)	Yes / No / Explain		
7	Packing	90 mL tube preferred. Other packings to be preferred (Mandatory)	Yes / No / Explain		
8	Standards applicable	MIL-A-46146 Group II / III (TY1) (Mandatory)	Yes / No / Explain		
9	Curing mode	Room temperature (Mandatory)	Yes / No / Explain		
10	Tack free time	Between 75 & 80 minutes at 25 degree celsius (Mandatory)	Yes / No / Explain		
11	Application	Shall be applied over assembled components on PWBs, sealing in and around wired and electrical leads and adding mechanical stability to individual components.	Yes / No / Explain		
12	Flow rate - slump	0.09 ± 0.02 in (Mandatory)	Yes / No / Explain		
13	Extrusion rate	120 ± 5 g/min (Mandatory)	Yes / No / Explain		
14	Specific gravity of cured sample	1.10 ± 0.1 (Mandatory)	Yes / No / Explain		
15	Non volatile content	95 % (Mandatory)	Yes / No / Explain		
16	Tensile strength of cured sample	1030 ± 10 Psi (Mandatory)	Yes / No / Explain		
17	Elongation of cured sample	675 ± 10 %	Yes / No / Explain		
18	Hardness	50 Shore A	Yes / No / Explain		
19	Mode of application on PWB	Shall be suitable for automated and manual mode using needle.	Yes / No / Explain		
20	Operating temperature	Shall be suitable for temperatures from -45 to + 200 degree celsius	Yes / No / Explain		

21	TML of cured sample	Shall be < 1 %	Yes / No / Explain		
22	CVCM of cured sample	Shall be < 0.1 %	Yes / No / Explain		
23	Shelf life	1 year (minimum)	Yes / No / Explain		
24	Customer list	Party shall share the list of customers in India who uses the quoted items for aerospace application along with the quote. (Mandatory)	Yes / No / Explain		
25	Acceptance criteria	Satisfactory evaluation at customer,s place for aerospace application will be one of the criteria for accepting the technical quote. (Mandatory)	Yes / No / Explain		

#### 4. Supply of fast curing transparent polyurethane conformal coating material

##### Item specifications for Supply of fast curing transparent polyurethane conformal coating material

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Scope 1	Party shall supply polyurethane material suitable for providing electrical and moisture barrier protection for thin film applications on electronic components and PWBs.	Yes / No / Explain		
2	Scope 2	It shall be two part, transparent, flexible coating material with hydrolytic stability, good abrasion resistance, flourescent under UV lighting and MIL-I-46058C tested and qualified.	Yes / No / Explain		
3	Type	Two-component, polyurethane based (Mandatory)	Yes / No / Explain		

4	Make	To be specified (Mandatory)	Yes / No / Explain		
5	Part no.	To be specified (Mandatory)	Yes / No / Explain		
6	Country of origin	To be specified (Mandatory)	Yes / No / Explain		
7	Packing	1.0 kg tin preferred. Other packings to be specified (Mandatory)	Yes / No / Explain		
8	Curing mode	Room temperature (Mandatory)	Yes / No / Explain		
9	Curing time	5 - 7 days at 25 degree celsius (Mandatory)	Yes / No / Explain		
10	Tack free time	5 - 6 hrs at 25 degree celsius (Mandatory)	Yes / No / Explain		
11	Viscosity of mixed sample	80 -100 cP (Mandatory)	Yes / No / Explain		
12	Flash point of mixed sample	160 degree celsius (Mandatory)	Yes / No / Explain		
13	Hydrolytic stability	No change for 120 days at 85 degree celsius (minimum) when tested as per MIL-I-46058C	Yes / No / Explain		
14	Thermal shock	No degradation when subjected to thermal shock as per MIL-STD-810B at temperatures of - 65OC to +125 degree celsius (Mandatory)	Yes / No / Explain		
15	Dielectric strength	3000 volts/mil as per ASTM D149 (Mandatory)	Yes / No / Explain		
16	Volume resistivity	> 1.1 x 10 <sup>16</sup> ohm-cm (Mandatory)	Yes / No / Explain		
17	Surface resistivity	> 5.5 x 10 <sup>14</sup> ohms/sq.	Yes / No / Explain		
18	Dielectric constant at 1 MHZ	3.0	Yes / No / Explain		
19	Dissipation factor at 1 MHZ	0.2	Yes / No / Explain		
20	Mode of application on PWB	Shall be suitable for applying spraying, dipping or brushing.	Yes / No / Explain		



21	TML of cured sample	Shall be < 1 %	Yes / No / Explain		
22	CVCM of cured sample	Shall be < 0.1 %	Yes / No / Explain		
23	Shelf life	1 year (minimum)	Yes / No / Explain		
24	Operating temperature	Shall be suitable to operate from ambient to 130 degree celsius after coating.	Yes / No / Explain		
25	Customer list	Party shall share the list of customers in India who uses the quoted items for aerospace application along with the quote. (Mandatory)	Yes / No / Explain		
26	Acceptance criteria	Satisfactory evaluation at customers place for aerospace application will be one of the criteria for accepting the technical quote. (Mandatory)	Yes / No / Explain		

## 5. Supply of translucent silicone resin solution for conformal coating

### Item specifications for Supply of translucent silicone resin solution for conformal coating

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Scope 1	Party shall supply the silicone resin solution suitable to provide protective coating for rigid and flexible circuit boards and PWBs for space applications. .	Yes / No / Explain		
2	Scope 2	It shall be one part, room temperature curing, solvent - borne resin solution with medium viscosity with firm, abrasion resistant surface after cure and MIL- I-46058C tested and qualified	Yes / No / Explain		

3	Type	One part translucent solvent - borne resin coating (Mandatory)	Yes / No / Explain		
4	Make	To be specified (Mandatory)	Yes / No / Explain		
5	Part no.	To be specified (Mandatory)	Yes / No / Explain		
6	Country of origin	To be specified (Mandatory)	Yes / No / Explain		
7	Packing	3.5 kg can preferred. Other packings to be specified (Mandatory)	Yes / No / Explain		
8	Viscosity	950 ± 20 cP	Yes / No / Explain		
9	Curing mode	Room temperature (Mandatory)	Yes / No / Explain		
10	Tack free time	Between 5 & 10 minutes at 25 degree celsius (Mandatory)	Yes / No / Explain		
11	Application	To apply as protective coating for rigid and flexible circuit boards and PWBs for providing toughness and abrasion resistance.	Yes / No / Explain		
12	Specific gravity of cured sample	1.10 ± 0.02 (Mandatory)	Yes / No / Explain		
13	Non volatile content	70 % (Mandatory)	Yes / No / Explain		
14	Hardness	75 Shore A	Yes / No / Explain		
15	Dielectric strength	15 ± 2 kV/mm	Yes / No / Explain		
16	Volume resistivity	4 x 10 <sup>13</sup> ohm - cm	Yes / No / Explain		
17	Dielectric constant at 100kHz	2.7	Yes / No / Explain		
18	Dissipation factor at 100kHz	0.0002 (Mandatory)	Yes / No / Explain		
19	Mode of application on PWB	Shall be suitable for spray / dip applications and by applying using brush or self flow.	Yes / No / Explain		
20	TML of cured sample	Shall be < 1 %	Yes / No / Explain		

21	CVCM of cured sample	Shall be < 0.1 %	Yes / No / Explain		
22	Shelf life	3 years (minimum)	Yes / No / Explain		
23	Customer list	Party shall share the list of customers in India who uses the quoted items for aerospace application along with the quote. (Mandatory)	Yes / No / Explain		
24	Acceptance criteria	Satisfactory evaluation at customers place for aerospace application will be one of the criteria for accepting the technical quote. (Mandatory)	Yes / No / Explain		

#### 6. Supply of thermally conductive black epoxy encapsulant with suitable catalyst

#### Item specifications for Supply of thermally conductive black epoxy encapsulant with suitable catalyst

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Scope 1	Party shall supply black epoxy encapsulant suitable for encapsulation of sensors, thermistors, etc on PWBs for launch vehicle application that are exposed to thermal shock and require heat dissipation.	Yes / No / Explain		

2	Scope 2	It shall be two part, room temperature curing encapsulant with low coefficient of thermal expansion, electrical insulation, thermal shock resistant and thermal conductivity properties. The catalyst shall be room temperature curing, epoxy hardener with physical strength, low viscosity, and good chemical resistance properties.	Yes / No / Explain		
3	Type	Two part epoxy based encapsulant (Mandatory)	Yes / No / Explain		
4	Make	To be specified (Mandatory)	Yes / No / Explain		
5	Part no.	To be specified (Mandatory)	Yes / No / Explain		
6	Country of origin	To be specified (Mandatory)	Yes / No / Explain		
7	Packing	1.0 kg tin preferred. Other packings to be specified (Mandatory)	Yes / No / Explain		
8	Curing mode	Room temperature (Mandatory)	Yes / No / Explain		
9	Curing time with catalyst	16 - 24 hrs at 25 degree celsius (Mandatory)	Yes / No / Explain		
10	Application	The thermally conductive encapsulant shall be suitable for components that are exposed to thermal shock and requires heat dissipation.	Yes / No / Explain		
11	Dielectric strength of cured sample	> 14.0 kV/mm (Mandatory)	Yes / No / Explain		
12	Flash point	90 degree celsius (Mandatory)	Yes / No / Explain		
13	Hardness	> 95 Shore D	Yes / No / Explain		
14	Thermal conductivity	>1.2 W/mK (Mandatory)	Yes / No / Explain		

15	Viscosity	58000 ± 2000 (Mandatory)	Yes / No / Explain		
16	Volume resistivity	1 x 10 <sup>15</sup> ohm - cm	Yes / No / Explain		
17	Operating temperature	Shall be suitable for temperatures from - 40 to + 130 degree celsius. (Mandatory)	Yes / No / Explain		
18	TML of cured sample	Shall be < 1 %	Yes / No / Explain		
19	CVCM of cured sample	Shall be < 0.1 %	Yes / No / Explain		
20	Shelf life	1 year (minimum)	Yes / No / Explain		
21	Customer list	Party shall share the list of customers in India who uses the quoted items for aerospace application along with the quote. (Mandatory)	Yes / No / Explain		
22	Acceptance criteria	Satisfactory evaluation at customers place for aerospace application will be one of the criteria for accepting the technical quote. (Mandatory)	Yes / No / Explain		

## 7. Supply of thermally conductive blue epoxy encapsulant with suitable catalyst

### Item specifications for Supply of thermally conductive blue epoxy encapsulant with suitable catalyst

Sl No	Specification	Value	Compliance	Offered Specification	Remark
1	Scope 1	Party shall supply blue epoxy encapsulant suitable for encapsulation of sensors, thermistors, etc on PWBs for launch vehicle application that are exposed to thermal shock and require heat dissipation.	Yes / No / Explain		

2	Scope 2	It shall be two part, room temperature curing encapsulant with low coefficient of thermal expansion, electrical insulation, thermal shock resistant and thermal conductivity properties. The catalyst shall be a room temperature curing, epoxy hardener with physical strength, low viscosity and chemical resistance properties.	Yes / No / Explain		
3	Type	Two part epoxy encapsulant (Mandatory)	Yes / No / Explain		
4	Make	To be specified (Mandatory)	Yes / No / Explain		
5	Part no.	To be specified (Mandatory)	Yes / No / Explain		
6	Country of origin	To be specified (Mandatory)	Yes / No / Explain		
7	Packing	1.0 kg tin preferred. Other packings to be specified (Mandatory)	Yes / No / Explain		
8	Curing mode	Room temperature (Mandatory)	Yes / No / Explain		
9	Curing time with catalyst	16 - 24 hrs at 25 degree celsius (Mandatory)	Yes / No / Explain		
10	Application	Shall be thermally conductive encapsulant suitable for components that are exposed to thermal shock and need heat dissipation.	Yes / No / Explain		
11	Dielectric strength of cured sample	> 14.0 kV/mm (Mandatory)	Yes / No / Explain		
12	Flash point	90 degree celsius (Mandatory)	Yes / No / Explain		
13	Hardness	> 95 Shore D	Yes / No / Explain		
14	Thermal conductivity	> 1.2 W/mK (Mandatory)	Yes / No / Explain		

15	Viscosity	58000 ± 2000 (Mandatory)	Yes / No / Explain		
16	Volume resistivity	1 x 10 <sup>15</sup> ohm - cm	Yes / No / Explain		
17	Operating temperature	Shall be suitable for temperatures from - 40 to + 130 degree celsius	Yes / No / Explain		
18	TML of cured sample	Shall be < 1 %	Yes / No / Explain		
19	CVCM of cured sample	Shall be < 0.1 %	Yes / No / Explain		
20	Shelf life	1 year (minimum)	Yes / No / Explain		
21	Customer list	Party shall share the list of customers in India who uses the quoted items for aerospace application along with the quote. (Mandatory)	Yes / No / Explain		
22	Acceptance criteria	Satisfactory evaluation at customer,s place for aerospace application will be one of the criteria for accepting the technical quote. (Mandatory)	Yes / No / Explain		

### 8. Supply of silicone rubber based material for mould making (red color)

#### Item specifications for Supply of silicone rubber based material for mould making (red color)

Sl No	Specification	Value	Compliance	Offered Specification	Remark
1	Scope 1	Party shall supply red coloured mold making rubber base material suitable for electronic potting and encapsulating applications of PWBs for space applications.	Yes / No / Explain		

2	Scope 2	It shall be two part, room temperature vulcanising silicone rubber material with low mixed viscosity, heat stability, adjustable cure times and high hardness. The catalyst shall be room temperature curable.	Yes / No / Explain		
3	Type	Two-part RTV silicone rubber base (Mandatory)	Yes / No / Explain		
4	Colour of base	Red (Mandatory)	Yes / No / Explain		
5	Working time of the catalysed mixture	50 - 70 mins (Mandatory)	Yes / No / Explain		
6	Demold time of catalysed mixture	7 - 9 hrs (Mandatory)	Yes / No / Explain		
7	Make	To be specified (Mandatory)	Yes / No / Explain		
8	Part no.	To be specified (Mandatory)	Yes / No / Explain		
9	Country of origin	To be specified (Mandatory)	Yes / No / Explain		
10	Packing	1LB tin preferred. Other packings to be specified (Mandatory)	Yes / No / Explain		
11	Curing mode	Room temperature (Mandatory)	Yes / No / Explain		
12	Curing type	Condensation cure	Yes / No / Explain		
13	Viscosity	280 ± 10 Poise at 25 degree celsius	Yes / No / Explain		
14	Specific gravity at 250C	1.45 ± 0.05	Yes / No / Explain		
15	Tensile strength	580 ± 10 Psi	Yes / No / Explain		
16	Elongation	125 ± 5 %	Yes / No / Explain		
17	Hardness	55 ± 2 shore A	Yes / No / Explain		
18	Dielectric constant at 100kHz	3.7	Yes / No / Explain		



19	Dissipation factor at 100kHz	0.003	Yes / No / Explain		
20	Dielectric strength	>400 volts/mil	Yes / No / Explain		
21	Volume resistivity (ohms-cm)	> 3.45 x 10 <sup>14</sup>	Yes / No / Explain		
22	Application	Shall be applicable for electronic potting and encapsulation	Yes / No / Explain		
23	TML of cured sample	Shall be < 1 %	Yes / No / Explain		
24	CVCM of cured sample	Shall be < 0.1 %	Yes / No / Explain		
25	Shelf life	1 year (minimum)	Yes / No / Explain		
26	Operating temperature	Shall be suitable for temperatures from - 55 to + 300 degree celsius	Yes / No / Explain		
27	Customer list	Party shall share the list of customers in India for the quoted items for aerospace application along with the quote. (Mandatory)	Yes / No / Explain		
28	Acceptance criteria	Satisfactory evaluation at customers place for aerospace application will be one of the criteria for accepting the technical quote. (Mandatory)	Yes / No / Explain		

## 9. Catalyst for thermally conductive encapsulant material

### Item specifications for Catalyst for thermally conductive encapsulant material

SI No	Specification	Value	Compliance	Offered Specification	Remark
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1	Scope 1	Party shall supply catalyst suitable for black/blue epoxy encapsulant suitable for encapsulation of sensors, thermistors, etc on PWBs for launch vehicle application that are exposed to thermal shock and require heat dissipation.	Yes / No / Explain		
2	Catalyst type	Modified aliphatic amine (Mandatory)	Yes / No / Explain		
3	Composition	Epoxy (Mandatory)	Yes / No / Explain		
4	Colour	Suitable for black and blue encapsulation	Yes / No / Explain		
5	Make	To be specified (Mandatory)	Yes / No / Explain		
6	Part no.	To be specified (Mandatory)	Yes / No / Explain		
7	Country of origin	To be specified (Mandatory)	Yes / No / Explain		
8	Packing	100 mL amber coloured bottle preferred. Other packings to be specified (Mandatory)	Yes / No / Explain		
9	Application	It shall be a suitable hardening agent for black and blue epoxy encapsulation	Yes / No / Explain		
10	Curing mode	Room temperature (Mandatory)	Yes / No / Explain		
11	Curing time	16 - 24 hrs at room temperature (Mandatory)	Yes / No / Explain		
12	Working life (100 g at 25 degree celsius)	45 minutes (minimum) (Mandatory)	Yes / No / Explain		
13	TML of cured sample	Shall be < 1 %	Yes / No / Explain		
14	CVCM of cured sample	Shall be < 0.1 %	Yes / No / Explain		
15	Shelf life	1 year (minimum)	Yes / No / Explain		

16	Acceptance criteria	Satisfactory evaluation at customers place for aerospace application will be one of the criteria for accepting the technical quote. (Mandatory)	Yes / No / Explain		
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## 10. Catalyst for silicone rubber based mould making material

### Item specifications for Catalyst for silicone rubber based mould making material

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Scope	Party shall supply catalyst suitable for silicone rubber based mould making material used for electronic potting and encapsulating applications of PWBs for space applications.	Yes / No / Explain		
2	Make	To be specified (Mandatory)	Yes / No / Explain		
3	Part no.	To be specified (Mandatory)	Yes / No / Explain		
4	Country of origin	To be specified (Mandatory)	Yes / No / Explain		
5	Packing	45 g tube preferred. Other packings to be specified (Mandatory)	Yes / No / Explain		
6	Curing mode	Room temperature (Mandatory)	Yes / No / Explain		
7	Specific gravity	1.0 ± 0.2 at 25 degree celsius	Yes / No / Explain		
8	Flash point	100 degree celsius	Yes / No / Explain		
9	TML of cured sample	Shall be < 1 %	Yes / No / Explain		
10	CVCM of cured sample	Shall be < 0.1 %	Yes / No / Explain		
11	Shelf life	1 year (minimum)	Yes / No / Explain		

12	Customer list	Party shall share the list of customers in India who uses the quoted items for aerospace application along with the quote. (Mandatory)	Yes / No / Explain		
13	Acceptance criteria	Satisfactory evaluation at customers place for aerospace application will be one of the criteria for accepting the technical quote. (Mandatory)	Yes / No / Explain		

### Common Specifications (Applicable for all items)

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Technical data sheet and material safety data sheet	Party shall provide technical data sheet and material safety data sheet of all quoted items along with the quote	Yes / No / Explain		
2	Certificate of conformance (COC)	Party shall provide COC along with the items	Yes / No / Explain		
3	Supply and date of manufacturing	All items shall be shipped within 3 months of date of manufacturing	Yes / No / Explain		
4	Sample for testing at VSSC	One each tube of all items shall be provided to VSSC for evaluation and technical acceptance, if desired prior to opening of price bid.	Yes / No / Explain		
5	Acceptance of items	All items will be accepted after test and evaluation for the specifications as per the tender document. Deviation if any from the specified values will cause rejection of the item and party shall replace it at party's expense.	Yes / No / Explain		

### Supporting Documents required from Vendor

#### 1. COC sample

## **2. Material Safety data sheets**

## **3. Technial data sheets**

5 additional documents can be uploaded by the vendor

## C.2 Commercial Terms / Bid

Sl. No.	Description	Compliance	Vendor Terms
1	All items shall be supplied in original packing of the manufacturer. Repacked items will not be accepted. COC for each batch shall be supplied along with the item.	Yes / No / Explain	
2	I have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India; I certify that this bidder is not from such a country or, if from such a country, has been registered with the Competent Authority. I hereby certify that this bidder fulfills all requirements in this regard and is eligible to be considered.	Yes / No / Explain	
3	P & F charges, if any, please mention percentage.	Yes / No / Explain	
4	Installation Charges, if any	Yes / No / Explain	
5	Freight charges, if any. If yes, please mention the percentage	Yes / No / Explain	
6	PO ordering address in full with Contact Persons Name, E-mail id, Phone No. [also attach your Quotation in PDF format without prices details].	Yes / No / Explain	
7	You should update the address of your Principle/ agent [ if applicable] in the new E procurement portal immediately.	Yes / No / Explain	
8	Foreign vendors are not permitted to quote 1. Only Class -I and Class-II Local suppliers as per make in India policy are eligible to participate in the bid. 2. The percentage of local content should be specifically mentioned in the offer, without which will be summarily rejected 3. Preference will be given to Class-I Local Supplier and in their absence, class-II Local supplier will be considered.	Yes / No / Explain	

9	Taxes and other costs, if any. [Please Specify the rates]. Note: All Tax invoices issued by Suppliers / Service Providers on or after July 01, 2017 shall invariably bear their GST registration number (GSTIN) and the applicable GST rates. In the absence of which, the invoices shall not be processed for payment.	Yes / No / Explain	
10	VSSC is a Public Funded Research Institution under the administrative control of Department of Space and is eligible for partial exemption of IGST @ 5% against IGST CONCESSIONAL CERTIFICATE.	Yes / No / Explain	
11	Delivery Terms [Normal delivery terms - FOR Destination (for Indigenous cases)].	Yes / No / Explain	
12	Delivery Period [Please Specify the period, LD Clause applicable]	Yes / No / Explain	
13	Payment [Within 30 days after receipt and acceptance for indigenous cases].	Yes / No / Explain	
14	Quote Validity: Minimum 180 days [for Two Part Tender] from the date of Tender opening.	Yes / No / Explain	
15	Liquidated Damages @ 0.5% per week subject to maximum of 10% of order value is applicable beyond the promised delivery schedule.	Yes / No / Explain	
16	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.	Yes / No / Explain	

17	<p>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. Tenderers are advised NOT TO UPLOAD any documents revealing the price of the main equipment, accessories, spares or AMC in technical &amp; Commercial bid. They are however, requested to upload UNPRICED BIDS (i.e. Price details masked) showing appropriate breakup of components of main equipment, individual accessories and spares as desired.</p>	Yes / No / Explain	
18	<p>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.</p>	Yes / No / Explain	
19	<p>The vendor have to compulsorily submit the compliance statement online otherwise their offer will not be considered for further evaluation. Before entering the compliance statement, vendors are advised to refer the detailed specification provided.</p>	Yes / No / Explain	
20	<p>The Technical Specification/ Drawing/ Product Catalogues/ Works Carried by vendor/ Make offered etc. as a single PDF file without any financial details has to be uploaded online mode by the vendor.</p>	Yes / No / Explain	



21	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.	Yes / No / Explain	
22	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.	Yes / No / Explain	
23	If any of the bidders submit any forged or false documents along with the Tender, such tenders will be summarily rejected and such bidders will be blacklisted for all future tenders.	Yes / No / Explain	
24	Security Deposit: Successful Tenderer shall submit Security Deposit equivalent to 3% of the order value valid for a period of 60 days beyond the date for completion of the Purchase Order shall be furnished. This security deposit is collected towards the performance of the Contract. The said Security Deposit shall be submitted either in the form of Bank Guarantee or Fixed Deposit receipts from Nationalised/Scheduled Banks. [Mandatory. Otherwise offer will not be considered for evaluation]. No exemption is applicable for MSE vendors from submission of Security Deposit.	Yes / No / Explain	
25	Any other terms	Yes / No / Explain	

### C.3 Price Bid

Sl. No.	Item	Quantity	Unit Price	Currency	Total Price	Remark
1	Supply of adhesive / sealant for filleting (Transparent)	240.00 Nos.		-		
2	Supply of adhesive sealant for filleting (Clear and nonflowing)	60.00 Nos.		-		
3	Supply of adhesive sealant for filleting (Grey color and nonflowing)	24.00 Nos.		-		
4	Supply of fast curing transparent polyurethane conformal coating material	10.00 Nos.		-		
5	Supply of translucent silicone resin solution for conformal coating	10.00 Nos.		-		
6	Supply of thermally conductive black epoxy encapsulant with suitable catalyst	12.00 Nos.		-		
7	Supply of thermally conductive blue epoxy encapsulant with suitable catalyst	12.00 Nos.		-		
8	Supply of silicone rubber based material for mould making (red color)	48.00 Nos.		-		
9	Catalyst for thermally conductive encapsulant material	10.00 Nos.		-		

10	Catalyst for silicone rubber based mould making material	25.00 Nos.		-		
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**Common charges (Applicable for all items)**

<b>Customs Duty</b>	
<b>IGST</b>	