

भारत सरकार
GOVERNMENT OF INDIA

अंतरिक्ष विभाग
DEPARTMENT OF SPACE

द्रव नोदन प्रणाली केंद्र/LIQUID PROPULSION SYSTEMS CENTRE
तिरुवनंतपुरम/THIRUVANANTHAPURAM - 695 547



अभिरुचि की अभिव्यंजना(ईओआई) / EXPRESSION OF INTEREST (EOI)

भारत के राष्ट्रपति के लिए तथा उनकी ओर से वरि. प्रधान, क्रय व भंडार, द्रव नोदन प्रणाली केंद्र (एलपीएससी), तिरुवनंतपुरम सीयू-एजी ब्रेज़ फ़ॉइल का विकास ईओआई सं: TM24 2024040388 01 के तहत अभिरुचि की अभिव्यंजना (ईओआई) आमंत्रित करते हैं।

For and on behalf of the President of India, the Head Purchase & Stores, Liquid Propulsion Systems Centre (LPSC), Thiruvananthapuram hereby calls for Expression of Interest (EOI) vide EOI.No.:TM24 2024040388 01 for Development of CU-AG Braze Foil.

उपर्युक्त ईओआई का विवरण संलग्नक के रूप में संलग्न किया है।

Details of EOI as mentioned above are enclosed as Annexure

इच्छुक विक्रेता अपनी अभिरुचि की अभिव्यंजना दिनांक 15.04.2025 को 14.30 बजे से पहले अपने ईओआई प्रस्तुत करें।

Interested vendors may submit their EOI on or before 15.04.2025 at 14.30 hrs.

(Sd)

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18/3/25

प्रधान, क्रय व भंडार

Head, Purchase & Stores

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12/3/25

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12/3

General Terms and Conditions for Expression of Interest:

1. This call for Expression of Interest (EOI) is to invite reputed manufacturers to express their interest to enable LPSC, Valiamala to consider these firms for issue of formal tenders.
2. EOI shall include the full history of the company, financial status, past experience, major tasks undertaken in the Aerospace/Aviation and other precision industries in similar areas, technical manpower availability with their competence etc.
3. On receipt of your EOI, technical discussions will be held with shortlisted vendors who are prima facie considered technically suitable for the supply of the equipment. Based on the discussion so held, one or more acceptable solutions shall be decided upon. Detailed technical specification and evaluation criterion will be generated for each technical solution. In the second stage, techno-commercial bids will be invited from the shortlisted vendors on two part bid basis. The final selection will be based upon the technical evaluation matrix and the financial bid.
4. This call for EOI does not carry with it any guarantee for allotment of work.
5. Interested vendors may submit their Expression of Interest quoting the reference number as 'EOI No. TM24 2024040388 01' and description as 'Development of CU-AG Braze foil' in an envelope so as to reach LPSC on or before 15.04.2025 at 14.30 hrs to the following address:

**Head, Purchase & Stores
Liquid Propulsion Systems Centre
Valiamala, Thiruvananthapuram – 695 547
Kerala, India**
6. Technical details and conditions, Chemical composition of braze alloy and Check list are as per Annexure attached. You may fill and submit check list along with EOI.

EXPRESSION OF INTEREST FOR DEVELOPMENT AND SUPPLY OF COPPER SILVER BASED BRAZE FOILS FOR SPACE APPLICATION

1. Introduction

Liquid Propulsion Systems Centre, Valiamala, Thiruvananthapuram, India is established under the Indian Space Research Organization for the design and development of liquid rocket engines and stages for its Launch Vehicles and Spacecrafts. As part of indigenization, the centre intends to develop four types of copper silver based braze foils. Attention of reputed Indian partners is drawn for the development and supply of copper-silver braze foils as per applicable standards.

2. Brief Scope

The scope envisages the indigenization of the following four types of Copper Silver based (Cu-Ag) braze foils which includes raw material procurement, development of processes & technology, realisation of billets, rolling into braze foils, characterization and testing. Chemical Composition of braze Alloy is attached as annexure I.

Sl. No.	Braze foil	Envisaged Size (mm)	Applicable standards
1	ΠCp 37.5	0.30 x W x L	TY 48-1-337-90/ GOST 19738-74/ GOST 19739-74
2	ΠCp 5.5	0.15 x W x L	Ty 48-1-372-89
3	ΠCp M068	0.30 x W x L	GOST 19739-74
4	ΠCp 70	0.15 x W x L	GOST 19739-74

The VENDOR shall ultimately be responsible for

- Procurement of raw materials as per international standards.
- Development of process parameters & technology for melting of each braze alloy.
- Realisation of billets and rolling into braze foil.
- Characterization and testing of braze foil.

Supply conditions: The braze foil shall be supplied in cold rolled and descaled condition. Surface of foil shall be uniform in quality, and free from foreign material, internal and external imperfections.

3. Mode of operation of tender

In the first stage the companies have to respond to this Expression of Interest giving all details sought for above. **No price is to be quoted now.**

3.1. EOI Process:

- LPSC is releasing the EOI to invite responses from potential bidders who would indigenise the braze foils.
- The interested Parties can submit the responses to the EOI within **four weeks**.

- On successful completion of EOI process, the technically qualified bidders would be shortlisted, based on the 'Qualification Criteria' and would be notified.
- LPSC would visit the facility if required before short listing the vendors.

3.2. RFP Process:

- LPSC would issue the Request for Proposal (RFP) to the technically qualified bidders under EOI
- RFP would be a limited tender document that would outline:
 - Scope of work
 - Technical requirements
- PO will be released by LPSC with the selected bidder for undertaking indigenisation

4. Qualification Criteria

- 4.1. The vendor should be capable of indigenisation of the above mentioned braze foils. Details of the similar braze foils realised (copper silver based) shall be submitted including master alloy details , melting & rolling methodology, chemical composition with gas content, solidus and liquidus temperature, microstructure of foil.
- 4.2. The vendor should have essential facilities for melting and processing. Details of melting, rolling and heat treatment facilities shall be provided.
- 4.3. Proof of experience in the field for 5 years immediately preceding Mar 2025.
- 4.4. Company profile and website address.
- 4.5. List of customers to whom similar alloy have been supplied.
- 4.6. Bids with partial solution will be rejected.

Chemical Composition of braze Alloy

1. IICp 37.5 braze alloy

Ag	Zn	Mn	Pb	Fe	Bi	Pb+Fe+Bi	Cu
37.5±0.5	5.5±0.5	8.2±0.3	0.05 max.	0.1 max	0.005 max	0.15 max	Balance

2. IICp 5.5 braze alloy

Ag	Ni	Mn	B	Si	C	Pb	Al	Total impurity	Cu
5-6	10-11	15-17	0.30 max	0.30-0.80	0.40 max	0.02 max	0.025 max	0.50 max	Balance

3. IICpMO68 braze alloy

Ag	Sn	Pb	Fe	Bi	Pb+Fe+Bi	Cu
68±0.5	5±0.5	0.005 max	0.15 max	0.005 max	0.15 max	Balance

4. IICp 70 braze alloy

Ag	Cu	Pb	Fe	Bi	Pb + Fe + Bi	Zn
70±0.5	26±0.5	0.10 max	0.15 max	0.005 max	0.20 max	Balance

Gas content (O, H, N) of the braze foils shall be measured and reported

CHECK LIST

Sl. No.	Description	Compliance yes/no	Remark
1	The vendor should be capable of indigenisation of the ПCp 37.5, ПCp 5.5, ПCp M068 and ПCp 70 braze foils. Party should study the chemistry and submit the feasibility.		
2	Details of the similar braze foils realised (copper silver based) shall be submitted including details of master alloy, melting, rolling methodology, achieved chemical composition with gas content.		
3	Party should have in-house facility to evaluate chemical composition, gas content and microstructure of alloys		
4	Party should have capability to evaluate solidus and liquidus temperature of alloy		
5	Party should have essential facilities for melting and processing of proposed alloys including rolling and heat treatment.		
6	Party should propose melting, rolling and heat treatment methodology for proposed alloys.		
7	Proof of experience in the field for 5 years immediately preceding Mar 2025.		
8	Details of company profile and website address shall be provided.		
9	Details of list of customers to whom similar alloy have been supplied shall be provided.		