

## **Manufacturing of EDB Propellant ERAS-TI-2000**

Extruded Double Base (EDB) Motor demands high burn rate EDB propellant. The Propellant needs to meet the following requirements:-

- (i) High burn rate.
- (ii) High Mechanical Properties suitable for free standing grain.
- (iii) Smokeless exhaust.
- (iv) Low Pressure exponent values in high pressure range.
- (v) Suitable for operation in temperature of range of -20° C to +55° C.

HEMRL has developed EDB Propellant to meet the requirement of enhanced ranges. A unique combination of ballistic modifiers and processing methodology was used to achieve the high burn rate and desired ballistic properties.

NC-NG based high burn rate EDB propellant composition was developed in order to meet the required pressure time & thrust time profile. Processing and validation method of this EDB motor propellant is different from regular EDB & composite propellant processing technology.

The EDB propellant processing technology has been fully established and validated in static and flight trials. All the development activities such as establishment of Double Base EDB Propellant composition, Processing technology, ballistic performance evaluation trials, dynamic trials and range table validation trials have been successfully completed. All the QRs have been met in the trials.

Developed technology is at par with globally available technology. All the raw materials and equipment required for processing of EDB propellant ERAS-TI-2000 are available indigenously. The propellant manufacturing technology is now mature & ready for transfer to industry partner.

1. Interested Companies/industries are requested to apply against this EoI to the following address:-

**To,  
The Director,  
High Energy Materials Research Laboratory (HEMRL)  
Sutarwadi, Pune-411 021  
Email- director.hemrl@gov.in**

2. A copy of interest may be sent to the following address without any attachment:-

**To,  
The Director,  
Directorate of Industry Interface & Technology Management (DIITM)  
Room No. 447, DRDO Bhawan Rajaji Marg, New Delhi-110 011  
Email-diiitm.hqr@gov.in**

**List of Support documents to be attached with EoI:-**

- (a) Memorandum and Articles of Association (Should be incorporated as per Indian Companies Act, as amended time to time).
- (b) Certificates of registration as a manufacturing unit, if any.
- (c) Audited Balance Sheet for the preceding three years.
- (d) Income Tax returns for the preceding three year period.
- (e) Details of shareholding/ownership pattern especially foreign partners/shareholders, foreign employees, directors, etc. The company must adhere to the prevailing Govt of India policies and regulations on Foreign Direct Investment (FDI)/ DIPP norms as applicable.
- (f) Annual budget for R&D during last three years.
- (g) Numbers and details of IPR or patents, etc., held by the company.
- (h) Number of technically or professionally qualified personnel.
- (i) Record of past performance (e.g., Supply orders executed against of Ministry of Defence orders, Public Sectors and Paramilitary Forces, if any).
- (j) Availability of adequate infrastructure (List of machines and their production capacities) and technical expertise.
- (k) List of Testing and Support equipments.
- (l) ISO/ ISI certification or any other certification.
- (m) Relevant clearances form the authorities/ ministries (if any).
- (n) Capacity and capability to undertake developmental work and to accept attendant financial and commercial risks.
- (o) Capacity/capability to market the product through the marketing network, sales and service network, reliability to maintain confidentiality.
- (p) PESO and DPIIT license for explosive handling if ToT is for high energy Material, explosives, propellants, and component/ system dealing with it etc.
- (q) Under taking form company seeking ToT that none of its Directors, Independent Directors, non-executive Directors, Key management personnel are involved in any corrupt practices, unfair means and illegal activities.
- (r) Details of the industries license for Defence manufacturing be provided by the industry seeking ToTs.