

Manufacturing of Dual Thrust Extruded Double Base Propellant Grain No. ULP-2-TI260-Grooved

HEMRL has developed Dual Thrust Extruded Double Base (EDB) propellant for Precision Guided Missile and the propellant has performed successfully as per requirement in static, dynamic and number of flight trials. The desired pressure-time and thrust-time profile and missile maximum range is achieved using a Dual Thrust EDB propellant grain of high energy and high burn rate which was achieved by using special burn rate modifiers in the EDB propellant formulation. The propellant performance was meeting all the ballistic requirements.

Technology for manufacture of dual thrust EDB propellant is different from conventional extruded double base (EDB) propellant and composite propellant processing. The propellant has unique characteristics of low temperature and pressure sensitivities. This ensures minimum variation in propellant performance over wide range of temperature conditions. These unique properties are coupled with good mechanical properties suitable for free standing grain and smokeless exhaust. These properties can be achieved by manufacturing process optimized by HEMRL.

The propellant composition has been established by HEMRL using indigenously available ingredients and special burn rate modifiers. After development trials and successful validation, propellant development has been completed. The manufacturing of dual thrust EDB propellant involves various steps like NC-NG paste preparation, kneading, rolling, extrusion, annealing, maturation followed by machining and inhibition processes which were established by HEMRL during development.

Now, the EDB propellant developed by HEMRL is ready for TOT by manufacturing/production agencies.

Contact Details

Interested companies/industries are requested to apply against this EOI to following address:-

To, (with attachments)

Director

High Energy Materials Research Laboratory (HEMRL)

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Copy to: - (without attachments)

The Director

Directorate of Industry Interface & Technology Management (DIITM)

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- (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.