GOVERNMENT OF INDIA

MINISTRY OF CHEMICALS AND FERTILIZERS

DEPARTMENT OF CHEMICALS AND PETROCHEMICALS

LOK SABHA

UNSTARRED QUESTION No. 1045

ANSWERED ON- 25/07/2025

UPGRADATION OF CHEMICAL INDUSTRY

1045 SHRI. K E PRAKASH:

Will the MINISTER OF CHEMICALS AND FERTILIZERS be pleased to state:

(a) the reasons for the continued import dependency in the chemical industry despite India's stated potential to emerge as a global leader in the sector; and

(b) the specific initiatives undertaken by the Government to promote research and development (R&D) support, global value chain integration support, technological upgradation, and process efficiency in the chemical industry of the country, particularly for Micro, Small and Medium Enterprises (MSMEs), to reduce such dependency and enhance global competitiveness?

ANSWER

THE MINISTER OF STATE IN THE MINISTRY OF CHEMICALS AND FERTILIZERS

(SMT. ANUPRIYA PATEL)

(a) The reasons for continued import dependency in the chemical sector are:

a. Feedstock and raw material constraints.
b. Technology and innovation gap.

(b) The Government has taken following measures to promote research and development (R&D) support, global value chain integration support, technological upgradation, and process efficiency in the Chemical industry of the country, including MSMEs:

1. **Centre of Excellences (CoEs):**

With the objective of promoting research and development efforts in the chemical and petrochemical sector to develop new molecules and technologies, the Department has formulated a scheme for setting up of Centres of Excellence. The objective is to provide Grants-in-Aid to educational and research institutions to improve existing technology and promote development of new applications of polymers, chemicals and plastics. The emphasis of the Scheme is on modernisation and upgradation of existing manufacturing processes as well as improving the quality of products. Under the scheme, the Government of India provides financial support upto 50 per cent of the total project cost subject to an

upper limit of Rs. 5 crores. So far, 18 CoEs have been approved under the Scheme. The CoEs are undertaking pioneering research in their chosen fields. These CoEs includes IITs, CSIR Laboratories, CIPET etc.

2. **Council of Scientific and industrial Research (CSIR)**

Council of Scientific and Industrial Research (CSIR), through its six constituent laboratories, is playing a key role in strengthening India's Chemical industry by supporting R&D, technological upgradation, and process efficiency. It actively engages with start-ups and MSMEs by offering technical support. CSIR has developed several import-reducing technologies, including those for medical-grade oxygen, biodiesel, renewable bio-methane, and eco-friendly processing systems. It is also undertaking research initiatives in the fields of specialty chemicals, battery recycling, corrosion protection, and crop protection technologies, while exploring AI-driven industrial solutions and carbon capture technologies. CSIR also conducts regular workshops and outreach programs to connect with industry stakeholders and address key challenges like climate change, energy security, and supply chain disruptions.

3. **Department of Biotechnology:**

The Department of Biotechnology has introduced the BioE3 Policy (Biotechnology for Economy, Environment & Employment) to promote high- performance bio-manufacturing. As part of this initiative, the Department has called for Proposals to support R&D in sustainable bio-manufacturing within the chemical sector. The call focuses on bio-manufacturing of bio-based chemicals, biopolymers, and active pharmaceutical ingredients (APIs) using production strains, and encourages participation from academia, start-ups, industry, and collaborative partnerships between these stakeholders. Proposals have been invited with the goal of advancing innovation and commercialization in the sector.

4. **Ministry of MSME:**

The Ministry of Micro, Small and Medium Enterprises (MSMEs) runs several schemes and programs aimed at boosting research and development (R&D), integrating MSMEs into global value chains, encouraging technological advancement, and enhancing process efficiency, especially within the chemical sector.

As part of the MSME Champions Scheme, 3 key components are:

- MSME Innovative (Incubation, Design &IPR) Scheme: Supports R&D and innovation.
- MSME Competitive (LEAN) Manufacturing Scheme: Promotes productivity and quality improvements through lean practices (eliminating waste and maximizing value).
- MSME Sustainable (ZED) Zero Effect Zero Defect - Certification Scheme: Encourages sustainable manufacturing and quality enhancement.

Additionally, the Ministry is implementing:

- MSE Scheme for Promotion and Investment in Circular Economy (MSE- SPICE): Supports initiatives aligned with the circular economy.
- Micro and Small Enterprises — Growth Innovation and Technology (MSE-GIFT) Scheme: Aims to drive technological upgrades and improve process efficiency in MSMEs, including those operating in the chemical industry.

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