



## Surat Diamond Bourse

**For Prelims:** Surat Diamond Bourse, Major Diamond Producing Countries, [Lab-Grown Diamonds](#), Chemical vapor deposition method, Customs duty on imported seeds for Lab Grown Diamonds.

**For Mains:** Diamond Industry in India, Production Methods of Lab Grown Diamonds.

[Source: TH](#)

### Why in News?

Recently, the **Indian Prime Minister** inaugurated the **Surat Diamond Bourse (SDB)** in Gujarat, marking a significant development in the **diamond** and jewelry industry.

- The SDB stands as the **world's largest office complex**. It aims to relocate the diamond trading hub from Mumbai to Surat, **leveraging Surat's diamond cutting and polishing expertise**.

### What is the Status of the Diamond Industry in India?

- **About Diamond:** A diamond is a rare, naturally occurring mineral made up of pure carbon. The word diamond comes from the Greek word Adamas, which means **indestructible**.
  - Diamond occurs in two types of deposits, **primarily in igneous rocks of basic or ultrabasic composition** and in alluvial deposits derived from the primary sources.
- **Major Diamond Producing Countries:** Russia, Botswana, Canada, South Africa, Democratic Republic of the Congo.
  - Russia is the world's largest producer of rough diamonds, mining nearly 42 million carats in 2022.

### Note

Recently, the [G7](#) group of countries have announced direct import restrictions on Russian-origin diamonds from January 2024 and **diamonds processed by third countries like India from March 2024**, which has raised major concerns for the Indian gems and jewelry trade and diamond processing industry.

- However, **Lab grown diamonds** are gaining traction for their eco-friendly nature.
- **Diamond Industry in India:** India is the world's largest cutting and polishing center for diamonds, accounting for over 90% of polished diamond manufacturing globally.
  - According to Indian Minerals Yearbook 2019, diamond fields of India are grouped into four regions:
    - **Central Indian tract of Madhya Pradesh**, comprising Panna belt.
    - **South Indian tract of Andhra Pradesh**, comprising parts of Anantapur, Kadapa, Guntur, Krishna, Mahabubnagar and Kurnool districts.
    - **Behradin-Kodavali area in Raipur district** and Tokapal, Dugapal, etc. areas in

Bastar district of Chhattisgarh.

- **Eastern Indian tract mostly of Odisha**, lying between Mahanadi and Godavari valleys.
- In 2022, India ranks first among the top exporters in **cut & polished diamonds**.

## What are Lab-Grown Diamonds?

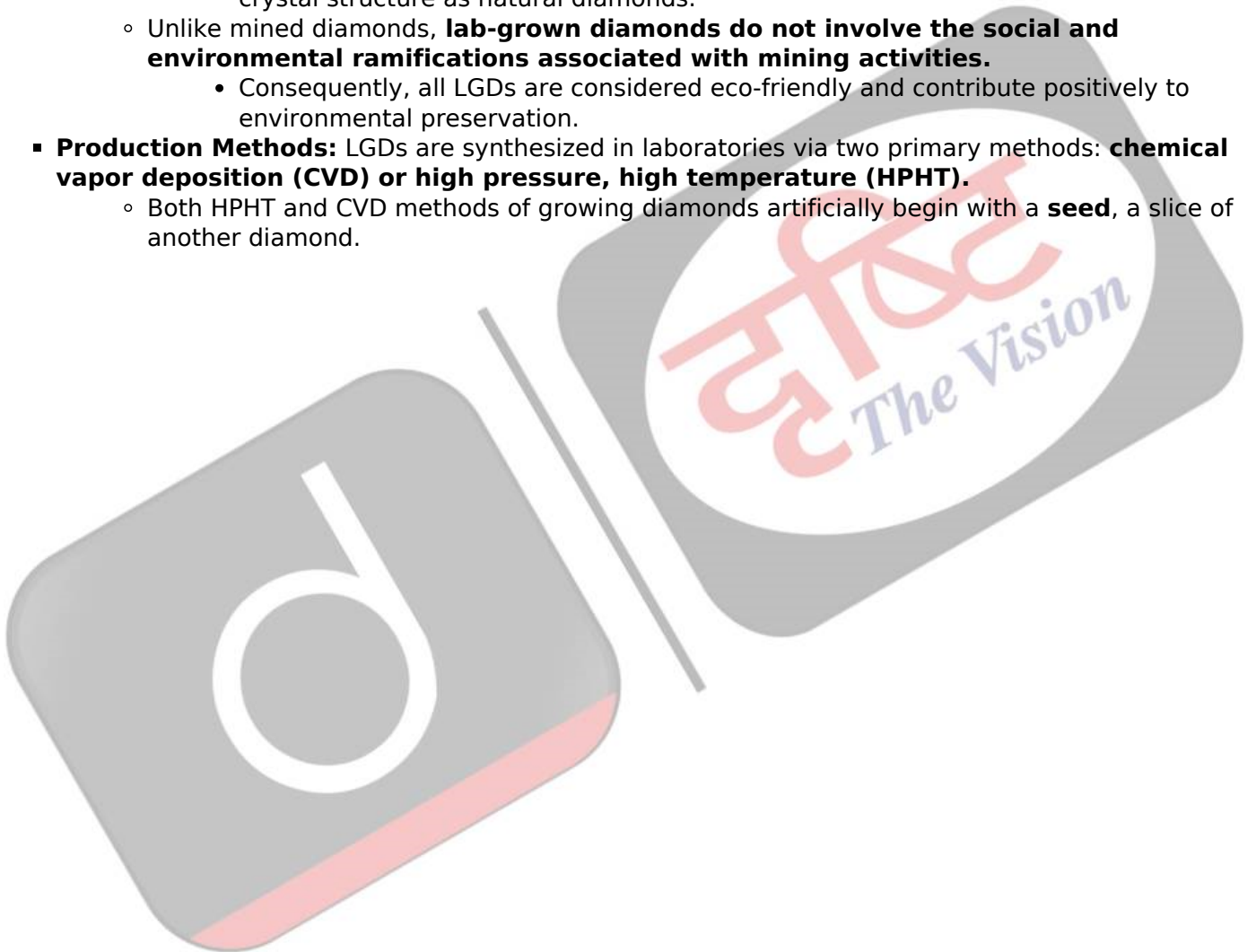
### ▪ About:


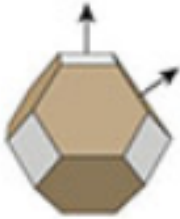

- Lab-grown diamonds (LGDs) are diamonds that are grown in a laboratory using advanced technology.
  - They are also known as **cultured, synthetic, man-made, or artisan-created diamonds**.
- Natural diamonds form deep within the Earth over an extensive period, often up to three billion years, under extreme pressure and high temperatures.
  - LGDs have essentially the same chemical, optical and physical properties and crystal structure as natural diamonds.
- Unlike mined diamonds, **lab-grown diamonds do not involve the social and environmental ramifications associated with mining activities**.
  - Consequently, all LGDs are considered eco-friendly and contribute positively to environmental preservation.

### ▪ Production Methods: LGDs are synthesized in laboratories via two primary methods: **chemical vapor deposition (CVD) or high pressure, high temperature (HPHT)**.

- Both HPHT and CVD methods of growing diamonds artificially begin with a **seed**, a slice of another diamond.

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Growth Process	Typical Growth Morphology
Natural	 <p><b>Shape:</b> Octahedron</p> <p><b>Growth:</b> 8 directions</p>
High Pressure, High Temperature (HPHT)	 <p><b>Shape:</b> Cuboctahedron</p> <p><b>Growth:</b> 14 directions</p>
Chemical Vapor Deposition (CVD)	 <p><b>Shape:</b> Cube</p> <p><b>Growth:</b> 1 direction</p>

- **Market Share in India:** India, known as a significant hub for diamond cutting and polishing, has experienced a notable surge in export earnings due to the increasing global demand for LGDs.
  - However, their current share in the overall diamond industry stands at **2-3%**.
  - To improve the share, In **Budget 2023-24**, the Union Finance Minister announced **elimination of Customs duty on imported seeds** used in the manufacturing process of rough LGDs.