

Sulphur

Prelims: Current events of national and international importance | Science and Technology

Why in News?

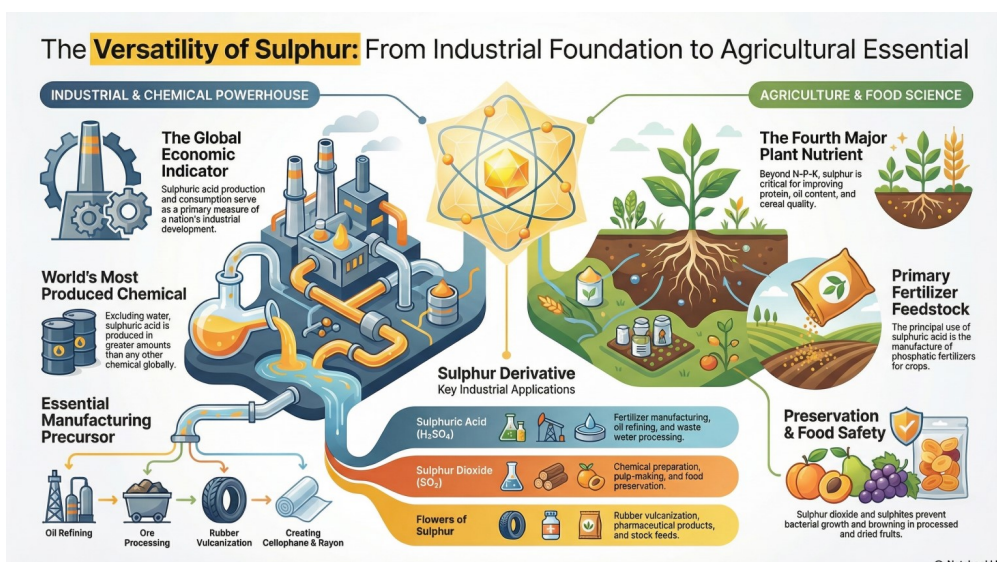
The West Asia conflict has disrupted Indian supply chains, especially for critical raw materials like sulphur.

- **Matter** - Sulphur
- **Symbol** - S
- **Atomic number** - 16
- **Atomic mass** - 32.07 u
- **Common Isotope** - Sulfur-32 and Sulfur-34
- **Type** - Non-metallic chemical element.
- **Occurrence** - Found as native sulphur, sulphates, and sulphides.
- **Source** - Most elemental sulphur is recovered as a co-product from oil and gas production.
- **Property** - *Yellow crystalline solid* in native form; combines with most elements except noble gases.
- **Domestic production** - Top Producers - Odisha, Kerala, and Haryana.
- Mainly from petroleum refineries as by-product recovery.
- **Global production** - Dominated by China, the U.S., Russia, and the Middle East.



Uses of Sulphur

Sulphuric Acid Production	Fertiliser Role	Industrial Applications
<ul style="list-style-type: none"> • King of acid. • Most important industrial use; indicator of industrial development. • Applications - Ore processing, fertiliser manufacturing, oil refining, wastewater treatment, chemical synthesis. 	<ul style="list-style-type: none"> • Essential for <i>phosphatic fertilisers</i>. • Improves protein & oil in seeds, cereal quality, copra marketability, tobacco leaf quality, nutritive value of forage crops. 	<ul style="list-style-type: none"> • Rubber vulcanisation (durability, elasticity). • Detergents, fungicides, dyestuffs. • Paper bleaching, food preservation (sulphites). • Photography fixing agents (sodium/ammonium thiosulphate). • Sulphur lamps - efficient full-spectrum lighting. • Eco-efficient concrete binder - alternative to Portland cement



Quick Facts

- Sulphur is 16th most abundant element in Earth's crust.
- Recognised as the 4th essential crop nutrient (N, P, K, S).
- The presence of sulphur on the Moon's South Pole (Chandrayaan-3) discovery.
- Largest source of Sulphur emissions fossil-fuel-based power plants.
- Flue Gas Desulfurization (FGD) - A process in thermal power plants that removes sulphur dioxide from exhaust gases using an alkaline sorbent such as limestone.
- Hydrodesulphurisation (HDS) - A catalytic process used in petroleum refining to remove sulphur from fuels by reacting them with hydrogen.

Reference

[Indian Express | Sulphur](#)



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