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News: Gallium and Germanium

- China has recently announced that it will impose export controls on gallium and germanium, which are essential for semiconductor manufacturing, starting from August 1, 2023.
- This action is seen as a response to export controls implemented by the United States, Japan, and the Netherlands, who express national security concerns and accuse China of military use and human rights violations.
- China denies these allegations, asserting that its export controls aim to safeguard global industrial and supply chain stability, without singling out any country.

Gallium

- Gallium is a soft, silvery-white metal that is liquid near room temperature.
- Gallium is the element with 31st atomic number in periodic table.
- It is not found as a free element and is only present in small quantities in certain minerals, such as zinc ores and bauxite.
- Gallium is used to make gallium arsenide, which is a core substrate for semiconductors.

- It is utilized in the production of semiconductor wafers, integrated circuits, mobile and satellite communications (in chipsets), and LEDs (in displays).
- Gallium also finds applications in automotive and lighting industries, as well as in sensors for avionic, space, and defense systems.

Germanium

- Germanium is the 32nd element in periodic table.
- It is a lustrous, hard, silvery-white semi-metal with a crystal structure similar to a diamond.
- Germanium is used in various electronic and optical applications.
- It is commonly used in fiber-optic cables and infrared imaging devices.
- Germanium enhances the ability to operate weapon systems in harsh conditions.
- It is also used in solar cells due to its heat resistance and higher energy conversion efficiency.