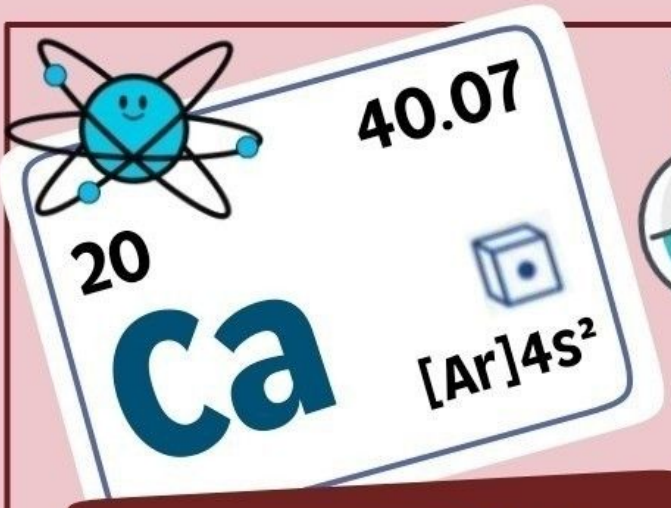


CALCIUM

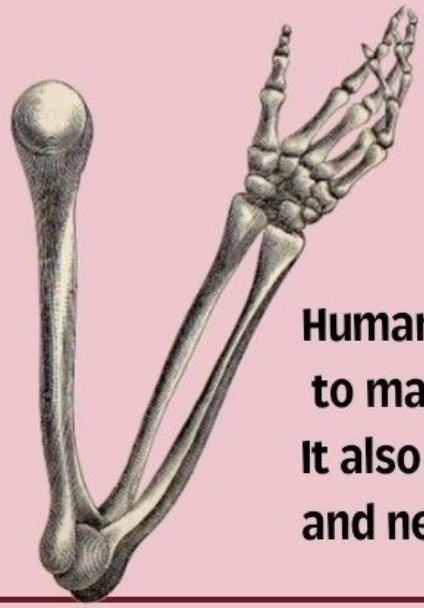
Discovery

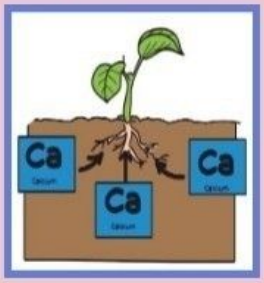
Calcium was named after the Latin term calx meaning lime, and is a reactive silvery metallic element found in Group 2 of the periodic table. It was first isolated in 1808 in England when Sir Humphry Davy electrolyzed a mixture of lime and mercuric oxide.

Biological Importance

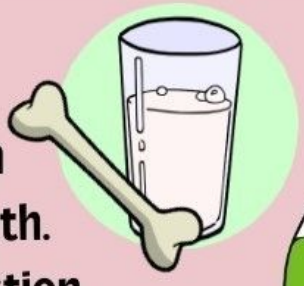
The exoskeletons of mollusks called Sea-shells are made up of calcium carbonate.

It plays a significant role in the metabolism of nitrogen in plants. Absence of this mineral in the plants affects the size and number of chloroplasts.

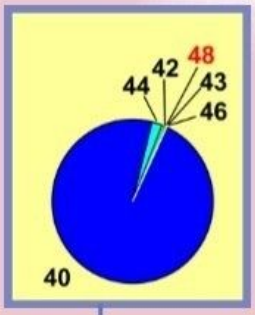




Human body also needs calcium to make healthy bones and teeth. It also supports muscle contraction and nervous functions.



Isotopes



Natural calcium is comprised of six isotopes: 40Ca, 42Ca, 43Ca, 44Ca, 46Ca, and 48Ca.

Five stable and nineteen radioactive isotopes exist ranging from 34Ca to 57Ca.

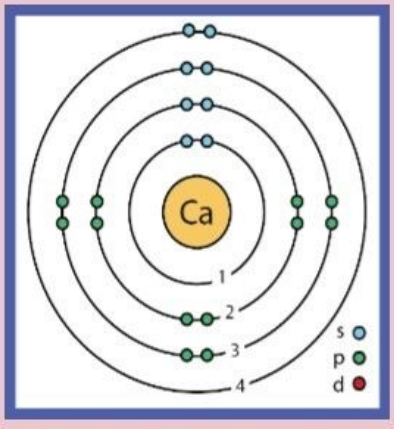
Pratisruti Karmakar (XIIC)

Properties

PHYSICAL

Melting Point	1115 K
Boiling Point	1757 K
Density	1.55 g/cm³
Heat of Fusion	8.54 kJ/mol
Heat of Vaporisation	154.7 kJ/mol

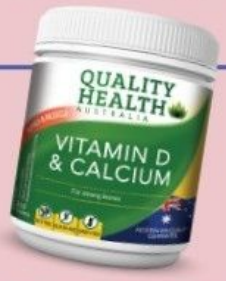
Calcium



Bohr Model

CHEMICAL

The chemistry of calcium is that of a heavy alkaline earth metal. For example, calcium spontaneously reacts with water more quickly than magnesium and less quickly than strontium to produce calcium hydroxide and hydrogen gas. It also reacts with the oxygen and nitrogen in the air to form calcium oxide and calcium nitride. When finely divided, it spontaneously burns in air to produce the nitride. In bulk, calcium is less reactive: it quickly forms a hydration coating in moist air, but below 30% relative humidity it may be stored at room temperature.



Uses

Calcium compounds have many industrial uses, it is heavily utilized in cement, steel, paper industries, making of disinfectants and also is a component of many food supplements.

By Pratisruti Karmakar (XIIC)