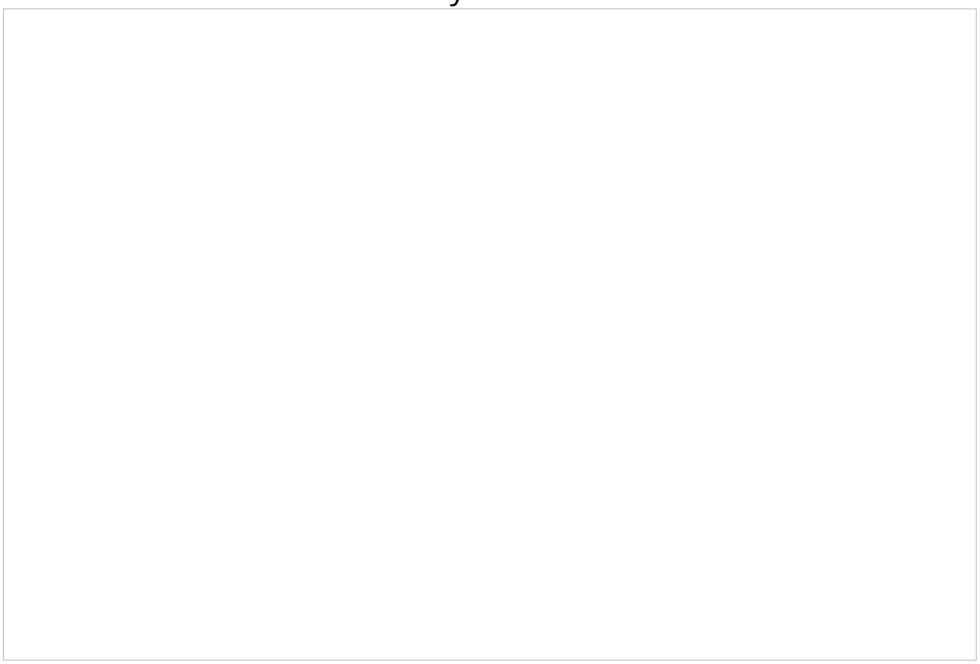
150 years of the Periodic Table

The **United Nations** has designated **2019** as the **International Year of the Periodic Table (IYPT2019)** to commemorate the **150th anniversary** of the establishment of the **Periodic Table of Chemical Elements** by **Dmitri Ivanovich Mendeleev** on **17th February 1869**.



- The International Year **aims to recognize the importance of the Periodic Table of Chemical Elements as one of the most important and influential achievements in modern science** reflecting the essence not only of chemistry but also of physics, biology and other basic sciences disciplines.
- The initiative for IYPT2019 is supported by the **International Union of Pure Applied Chemistry (IUPAC)** in partnership with other science-related organization.
- **Mendeleev** was **not the first one to create a table of elements**. Earliest of such efforts was due to the father of modern chemistry, **Antoine Lavoisier in 1789** who classified them in terms of their properties.

  John Newlands introduced the **concept of octaves in chemistry**, wherein properties repeat for every eighth element.
- In comparison to the modern periodic table, **Mendeleev's periodic table was**

designed in the order of increasing atomic weight while the **modern periodic table is designed according to increasing atomic number**.

Important Facts about Periodic Table

- There are **118 confirmed elements in the periodic table**. Among those, **90 elements can be found in nature**, others are strictly man-made. **Technetium** was the **first man-made element.**
- **Hydrogen** is the **lightest element** with its **atomic weight 1**. **Uranium** is the **heaviest element** with an atomic **weight of 238**.
- Helium, neon, argon, krypton, xenon, and radon are known as the Noble Gases as they were believed to be unreactive. But recent studies have shown reactive compounds of xenon, krypton, and radon.
- The **IUPAC** is **responsible for maintaining the periodic table**.
- Most of the elements on the periodic table are metals (almost 75 percent).
- Different forms of pure elements are called **allotropes**. For example, diamond, graphite, buckminsterfullerene, and amorphous carbon are allotropes of Carbon.
- The only **two elements** that are **liquid in room temperature** are **mercury** and **bromine**.

The International Union of Pure and Applied Chemistry (IUPAC)

- IUPAC is the **world authority on chemical nomenclature and terminology**, including the naming of new elements in the periodic table; on standardized methods for measurement; and on atomic weights etc.
- A neutral and objective scientific organization, IUPAC was **established in 1919 by academic and industrial chemists who shared a common goal** – to unite a fragmented, global chemistry community for the advancement of the chemical sciences via collaboration and the free exchange of scientific information.
- **Four new elements discovered in 2015** have been named by the International Union of Pure and Applied Chemistry (IUPAC).
    - These are **Nihonium (113Nh)**, **Moscovium (115Mo)**, **Tennessine (117Te**) and **Oganesson (118Og)**.
    - Of these elements, **Nh-278** is **highly radioactive** with a very short half-life of 0.24 milliseconds.