



This chart shows the 109 currently known and officially named elements that comprise the Periodic Table (IUPAC 1997). Each element is represented visually by an image produced for the "109" visual elements project.

The Periodic Table is an arrangement of all known elements in order of increasing atomic number. The Periodic Table fits all the elements, with their widely diverse physical and chemical properties, into a logical pattern. There are eighteen vertical columns in the table which divide the elements into groups. Elements within a group have closely related physical properties. Horizontal rows of the elements, in order of their increasing mass and are called series or periods. Properties of elements change in a systematic way through a period.

Atomic Number

In the top left hand corner of each element is the atomic number, equal to the number of protons in the nucleus.

Relative Atomic Mass

On the grey bar below the letter symbol for each element is the relative atomic mass. This is the IUPAC recommended value of the relative atomic mass (more correctly described as Standard Atomic Weight), which is determined as the ratio of the average mass of the various isotopic forms of an element to one-twelfth of the mass of a carbon-12 atom in its ground state. Where the number is in brackets it indicates that all isotopes of the element are unstable, i.e. radioactive.

Electrons

The vertical column of numbers to the left of each element's symbol indicates the number of electrons in each "electron shell" of the element's atom. Similar properties reappear where the elements have similar outer electron configurations.



109 is a visual arts and science collaborative project supported by the Royal Society of Chemistry which aims to explore and reflect upon the diversity of elements that comprise matter in as unique and innovative manner as possible. All the images displayed in this wall chart, together with screensavers, postcards and chemical data for each element can be viewed on the 109 web site, hosted by chemsoc.

Visit the most striking periodic table on the web at www.chemsoc.org/109elements



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