CLASSIFICATION OF ELEMENTS AND PERIODICITY IN PROPERTIES NOMENCLATURE OF ELEMENTS WITH ATOMIC NUMBERS > 100

NAMING THE ELEMENTS

Every element has been given a definite name and· for covenience a nick name which in chemical language is called a symbol. When a new element is discovered, the discoverer usually gets the opportunity to suggest a name for the element, which is then approved by The International Union of Pure and Applied Chemistry-IUPAC. Symbols have been derived either by taking the first alphabet of the name of the element or by taking the first alphabet and one more alphabet from the name of the element (for example, C for carbon; N for nitrogen; 0 for oxygen; Ca for calcium; Al for aluminium, etc.) but there are quite number of elements for which the derivation of the symbol is not quite so obvious. for example, Na for sodium; Pb for lead; Ag for silver; Fe for iron, etc. Such anomalies occur because of the way, the elements were originally named. Some of the elements were given names in other languages such as Latin, German, etc. Of all the elements on the periodic table, C, s, Fe, Cu, As, Ag, Sn, Sb, Au, Hg, Ph and Bi were known to ancient civilization's so the date of their 'discovery' is not known. Of these, Fe, Cu, Ag, Sn, Sb, Au, Hg and Pb are the abbreviations for the Latin name's forum, cuprum, argentum, sternum, stibium, aurum, hydrargyrum and plumber.

Nomenclature of Elements with Atomic Numbers> 100

The elements coming after uranium which do not exist naturally, are named transuranic or transhumanism elements. The elements with Z 104-116 and 118 have been reported recently and are called transactinide's super-heavy elements. These are synthetic, i.e., man-made elements. The production of synthetic elements requires binuclear reactions between two positive nuclei that must be fused together against the force of electrical repulsion. Nuclear accelerators are used for this' purpose. There are currently two major groups working on producing super-every element, one in California, USA and the other at Dubna near Moscow, Russia. By convention, the workers who discover ·a new element have the right to name it. However, in recent years, on account of competitive spirit disputes have arisen over. the names of the newly discovered elements. For example, both American and Russian scientists claimed credit for the discovery of the' element 104. The Americans named it Rutherfordium whereas Russians named it Kurchatovium. To avoid such problems, the IUPAC suggested that until the discovery of the new element is proved and its name is officially recognized, a systematic nomenclature based on the atomic number of the element be followed. The following are' the points of the nomenclature of the element having atomic numbers> 100.

1. The names are derived by using the numerical roots for' three digits in the atomic number of the element and adding the ending -ium:
   The roots for the numbers are:

Digit	Name	Abbreviation
0	nil	n
1	un	u
2	bi	b

3	tri	t
4	quad	q
5	pent	p
6	hex	h
7	sept	s
8	oct	o
9	enn	e

2. In certain cases the names are shortened. For example, 'barium' and 'tritium are shortened to 'ium' and' 'trump' and 'ennui' .is shortened' to 'ennui'. ' ,

3. The symbol for the elements made up from the first letters from the roots which make up the names. The mixture of Latin arid Greek roots has been chosen to ensure that the symbols are all different.

IUPAC Nomenclature for the Super Heavy-Elements		
Atomic number	Name of the element	Symbol
101	$\frac{Un}{1}-\frac{\text{nil}}{0}-\frac{\text{un}}{1}-\text{ium}$	(Unu)
102	$\frac{Un}{1}-\frac{nil}{n}-\frac{bi}{2}-um$	(Unb)
103	$\frac{Un}{1}-\frac{\text{nil}}{0}-\frac{tri}{3}-\text{um}$	(Unt)
104	$\frac{Un}{1}-\frac{\text{nil}}{0}-\frac{\text{quad}}{4}-\text{ium}$	(Unq)
105		(Unp)
106		(Unh)
107		(Uns)
108		(Uno)
109		(Une)

110		(Uun)
111	$\frac{\text{Un}}{1}-\frac{\text{un}}{1}-\frac{\text{nu}}{1}-\text{ium}$	(Uuu)
112	$\frac{Un}{1}-\frac{un}{1}-\frac{bi}{2}-um$	(Uub)
113	$\frac{Un}{1}-\frac{\text{un}}{1}-\frac{\text{tri}}{3}-\text{um}$	(Uut)
114	$\frac{\text{Un}}{1}-\frac{\text{un}}{1}-\frac{\text{quad}}{4}-\text{ium}$	(Uuq)
115	$\frac{\text{Un}}{1}-\frac{\text{un}}{1}-\frac{\text{pent}}{5}-\text{ium}$	(Uup)
116	$\frac{Un}{1}-\frac{un}{1}-\frac{\text{hex}}{6}-ium$	(Uuh)
118	$\frac{Un}{1}-\frac{\text{un}}{1}-\frac{oct}{8}-ium$	(Uuo)
120	$\frac{\text{Un}}{1}-\frac{bi}{2}-\frac{\text{nil}}{0}-ium$	(Ubn)

Nomenclature of Elements with Atomic Number above 100			
Atomic number	**Name on the basis of atomic number (Temporary)**	**Official IUPAC name (Permanent)**	**Symbol**
101	Unnilunium	Mendelevium	Md
102	Unnilbium	Nobelium	No
103	Unniltrium	Lawrencium	Lx
104	Unnilquadium	Rutherfordium	Rf
105	Unnilpentium	Dubnium	Db
106	Urunilhexium	Seaborgium	Sg
107	Unnilseptium	Bohrium	Bh

108	Unniloctium	Hassium	Is
109	Unnilennium	Meitnerium	Mit
110	Ununnilium	Darmstadtium	Ds
111	Unununium	Rontgenium	Rg
112	Ununbium*	-	-
113	Ununtrium *	-	-
114	Unumquadium *	-	-
115	Unumpentium*	-	-
116	Ununhexium *	-	-
118	Unumoctium *	-	-