

Inner transition elements (Lanthanides, Actinides)

Elements having general formula $(n-2)f^{1-14}(n-1)d^{1-0}ns^2$

are called inner transition elements where n is equal to 6 or 7. If $n=6$, 4f series i.e. lanthanides is called while $n=7$, 4f series i.e. Actinides is called.

4f Series Ce_{58} Lanthanides Lu_{71}

4f series Th_{90} Actinides Lr_{103}

If last electron fill in $(n-1)d$, elements are called transition elements and if last electron fill in $(n-2)f$ orbital, elements are called inner transition elements.

Lanthanides:— Elements having general formula $4f^{1-14}5d^{1-0}6s^2$ are called 4f series of elements and as it is started after Lanthanide elements, it is called Lanthanide. They are Ce_{58} to Lu_{71} , i.e. fourteen elements. Last electrons fill in the 4f orbital and hence it called 4f series of inner transition elements. They are ~~found~~ found on earths (oxides) as rare minerals and so they are also called rare earth metal but some of

These elements are found abundant in earth crust than Au and Ag.

Position in the periodic table \rightarrow Lanthanides as electronic configuration $4f^{1-14} 5d^{1 \text{ or } 0} 6s^2$

and actinides of electronic configuration $5f^{1-14} 6d^{1 \text{ or } 0} 7s^2$, started after element Lanthanides and actinides and have unique phenomenon from other elements of periodic table, they are kept at

the bottom of the periodic table in two horizontal rows of fourteen elements each

Lanthanides Ce_{58} $\xrightarrow{14 \text{ elements}}$ Lu_{71}

Actinides Th_{90} $\xrightarrow{14 \text{ elements}}$ Lr_{103}

Generally they exhibit radioactivity.