

Coordination Chemistry Part II

Class B.Sc-IIIYear

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INTRODUCTION:

- According to periodic table elements have been divided into four blocks namely s, p, d & f-blocks.
- The s & p block elements are called as Representative elements and d & f-block elements are called Transition elements & Inner transition elements.

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- **Definition:-**The d-block elements are the elements in which the last electron enters in the d-orbital of the penultimate shell i.e. $(n-1)$ d orbital where n is the outer most shell.

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- E.g.:- Ti_{22} Titanium has electronic configuration $1s^2 2s^2 3s^2 3p^6 4s^2 3d^2$
- The outer most shell is $n=4$ & electrons are added in $(n-1)$ d i.e. 3d-orbitals.

General Characteristics of d-Block Elements

- They have Great tendency to Form Stable Complex Compounds
- They have High Melting and Boiling points
- Generally they forms colored compounds

General Characteristics of d-Block Elements

- They are good conductors of Heat and Electricity
- They Show variable oxidation states.
- All the transition metals having hard, and possess high densities
- They form alloys very readily.
- They and some of their compounds show catalytic properties
- The most of the transition metals are paramagnetic.

s-Block

H

He

Li	Be
Na	Mg
K	Ca
Rb	Sr
Cs	Ba
Fr	Ra

d-Block

Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn
Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd
La*	Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg
Ac**	Rf	Db	Sg	Bh	Hs	Mt	Uun	Uuu	Uub

p-Block

B	C	N	O	F	Ne
Al	Si	P	S	Cl	Ar
Ga	Ge	As	Se	Br	Kr
In	Sn	Sb	Te	I	Xe
Tl	Pb	Bi	Po	At	Rn
	Uuq				

f-Block

*	Ce	Pr	Nd	Pm	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu
**	Th	Pa	U	Np	Pu	Am	Cm	Bk	Cf	Es	Fm	Md	No	Lr