

Electron configuration of transition metals

Na	Mg	d-block									
K	Ca	Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn
$4s^1 3d^0$	$4s^2 3d^0$	$4s^2 3d^1$	$4s^2 3d^2$	$4s^2 3d^3$	$4s^1 3d^5$	$4s^2 3d^5$	$4s^2 3d^6$	$4s^2 3d^7$	$4s^2 3d^8$	$4s^1 3d^{10}$	$4s^2 3d^{10}$

Transition metals
form ions with incompletely filled d-orbital

Positive ions are all $4s^0$

All remaining electrons go into 3d

Sc^{3+}	Ti^{2+}	V^{4+}	Cr^{3+}	Mn^{2+}	Fe^{2+}	Co^{2+}	Ni^{2+}	Cu^+	Zn^{2+}
$4s^0 3d^0$	$4s^0 3d^2$	$4s^0 3d^1$	$4s^0 3d^3$	$4s^0 3d^5$	$4s^0 3d^6$	$4s^0 3d^7$	$4s^0 3d^8$	$4s^0 3d^{10}$	$4s^0 3d^{10}$
	Ti^{4+}	V^{5+}	Cr^{6+}	Mn^{7+}	Fe^{3+}	Co^{3+}	Ni^{3+}	Cu^{2+}	
	$4s^0 3d^0$	$4s^0 3d^0$	$4s^0 3d^0$	$4s^0 3d^0$	$4s^0 3d^5$	$4s^0 3d^6$	$4s^0 3d^7$	$4s^0 3d^9$	