

Table I-5. Electron configurations of transition metal cations in octahedral coordination

# of 3d electrons	Cation			High Spin		Low Spin	
	z=2	z=3	z=4	t <sub>2g</sub>	e <sub>g</sub>	t <sub>2g</sub>	e <sub>g</sub>
1		Ti	V	↑		↑	
2	Ti	V	Cr	↑ ↑		↑ ↑	
3	V	Cr	Mn	↑ ↑ ↑		↑ ↑ ↑	
4	Cr	Mn		↑ ↑ ↑ ↑	↑	↑ ↓ ↑ ↑	
5	Mn	Fe		↑ ↑ ↑ ↑ ↑	↑ ↑	↑ ↓ ↑ ↓ ↑ ↑	
6	Fe	Co	Ni	↑ ↓ ↑ ↑ ↑	↑ ↑ ↑	↑ ↓ ↑ ↓ ↑ ↓ ↑ ↓	
7	Co	Ni		↑ ↓ ↑ ↓ ↑ ↑	↑ ↑ ↑	↑ ↓ ↑ ↓ ↑ ↓ ↑ ↓ ↑ ↓	↑
8	Ni			↑ ↓ ↑ ↓ ↑ ↓ ↑ ↓	↑ ↑ ↑	↑ ↓ ↑ ↓ ↑ ↓ ↑ ↓ ↑ ↓	↑ ↑
9	Cu			↑ ↓ ↑ ↓ ↑ ↓ ↑ ↓	↑ ↓ ↑ ↑	↑ ↓ ↑ ↓ ↑ ↓ ↑ ↓ ↑ ↓	↑ ↓ ↑
10	Zn	Ga	Ge	↑ ↓ ↑ ↓ ↑ ↓ ↑ ↓	↑ ↓ ↑ ↓	↑ ↓ ↑ ↓ ↑ ↓ ↑ ↓	↑ ↓ ↑ ↓