

MLX plots for Titanium, Zirconium and Hafnium

Titanium		Electron Number E.N.										
Valency		8	9	10	11	12	13	14	15	16	17	18
0		TiL ₂	TiL ₃	TiL ₄	TiL ₅	TiL ₆	TiL ₇					
1		TiLX	TiL ₂ X	TiL ₃ X	TiL ₄ X	TiL ₅ X	TiL ₆ X					
2		TiLX ₂	TiL ₂ X ₂	TiL ₃ X ₂	TiL ₄ X ₂	TiL ₅ X ₂	TiL ₆ X ₂					
3		TiX ₃	TiLX ₃	TiL ₂ X ₃	TiL ₃ X ₃	TiL ₄ X ₃	TiL ₅ X ₃					
4		TiX ₄	TiLX ₄	TiL ₂ X ₄	TiL ₃ X ₄	TiL ₄ X ₄	TiL ₅ X ₄					

Zirconium		Electron Number E.N.										
Valency		8	9	10	11	12	13	14	15	16	17	18
0		ZrL ₂	ZrL ₃	ZrL ₄	ZrL ₅	ZrL ₆	ZrL ₇					
1		ZrLX	ZrL ₂ X	ZrL ₃ X	ZrL ₄ X	ZrL ₅ X	ZrL ₆ X					
2		ZrLX ₂	ZrL ₂ X ₂	ZrL ₃ X ₂	ZrL ₄ X ₂	ZrL ₅ X ₂	ZrL ₆ X ₂					
3		ZrX ₃	ZrLX ₃	ZrL ₂ X ₃	ZrL ₃ X ₃	ZrL ₄ X ₃	ZrL ₅ X ₃					
4		ZrX ₄	ZrLX ₄	ZrL ₂ X ₄	ZrL ₃ X ₄	ZrL ₄ X ₄	ZrL ₅ X ₄					

Hafnium		Electron Number E.N.										
Valency		8	9	10	11	12	13	14	15	16	17	18
0		HfL ₂	HfL ₃	HfL ₄	HfL ₅	HfL ₆	HfL ₇					
1		HfLX	HfL ₂ X	HfL ₃ X	HfL ₄ X	HfL ₅ X	HfL ₆ X					
2		HfLX ₂	HfL ₂ X ₂	HfL ₃ X ₂	HfL ₄ X ₂	HfL ₅ X ₂	HfL ₆ X ₂					
3		HfX ₃	HfLX ₃	HfL ₂ X ₃	HfL ₃ X ₃	HfL ₄ X ₃	HfL ₅ X ₃					
4		HfX ₄	HfLX ₄	HfL ₂ X ₄	HfL ₃ X ₄	HfL ₄ X ₄	HfL ₅ X ₄					

MLX plots for Vanadium, Niobium and Tantalum

Vanadium

		Electron Number E.N.								
		11	12	13	14	15	16	17	18	19
V a l e n c y N u m b e r V. N.	0	VL 3	VL 4	VL 5	VL 6	VL 7				
	1	VL 2 X	VL 3 X	VL 4 X	VL 5 X	VL 6 X				
	2	VL 2 X 2	VL 3 X 2	VL 4 X 2	VL 5 X 2	VL 6 X 2				
	3	VLX 3	VL 2 X 3	VL 3 X 3	VL 4 X 3	VL 5 X 3				
	4	VLX 4	VL 2 X 4	VL 3 X 4	VL 4 X 4	VL 5 X 4				
5	VX 5	VLX 5	VL 2 X 5	VL 3 X 5	VL 4 X 5					

Niobium

		Electron Number E.N.								
		11	12	13	14	15	16	17	18	19
V a l e n c y N u m b e r V. N.	0	NbL 3	NbL 4	NbL 5	NbL 6	NbL 7				
	1	NbL 2 X	NbL 3 X	NbL 4 X	NbL 5 X	NbL 6 X				
	2	NbL 2 X 2	NbL 3 X 2	NbL 4 X 2	NbL 5 X 2	NbL 6 X 2				
	3	NbLX 3	NbL 2 X 3	NbL 3 X 3	NbL 4 X 3	NbL 5 X 3				
	4	NbLX 4	NbL 2 X 4	NbL 3 X 4	NbL 4 X 4	NbL 5 X 4				
5	NbX 5	NbLX 5	NbL 2 X 5	NbL 3 X 5	NbL 4 X 5					

Tantalum

		Electron Number E.N.								
		11	12	13	14	15	16	17	18	19
V a l e n c y N u m b e r V. N.	0	TaL 3	TaL 4	TaL 5	TaL 6	TaL 7				
	1	TaL 2 X	TaL 3 X	TaL 4 X	TaL 5 X	TaL 6 X				
	2	TaL 2 X 2	TaL 3 X 2	TaL 4 X 2	TaL 5 X 2	TaL 6 X 2				
	3	TaLX 3	TaL 2 X 3	TaL 3 X 3	TaL 4 X 3	TaL 5 X 3				
	4	TaLX 4	TaL 2 X 4	TaL 3 X 4	TaL 4 X 4	TaL 5 X 4				
5	TaX 5	TaLX 5	TaL 2 X 5	TaL 3 X 5	TaL 4 X 5					

MLX Plots for Chromium, Molybdenum and Tungsten

Chromium

		Electron Number, E.N.						
		12	13	14	15	16	17	18
V a l e n c y N u m b e r V. N.	0	CrL ₃		CrL ₄		CrL ₅		CrL ₆
	1		CrL ₃ X		CrL ₄ X		CrL ₅ X	
	2	CrL ₂ X ₂		CrL ₃ X ₂		CrL ₄ X ₂		CrL ₅ X ₂
	3		CrL ₂ X ₃		CrL ₃ X ₃		CrL ₄ X ₃	
	4	CrLX ₄		CrL ₂ X ₄		CrL ₃ X ₄		CrL ₄ X ₄
	5		CrLX ₅		CrL ₂ X ₅		CrL ₃ X ₅	
6	CrX ₆		CrLX ₆		CrL ₂ X ₆		CrL ₃ X ₆	

Molybdenum

		Electron Number, E.N.						
		12	13	14	15	16	17	18
V a l e n c y N u m b e r V. N.	0	MoL ₃		MoL ₄		MoL ₅		MoL ₆
	1		MoL ₃ X		MoL ₄ X		MoL ₅ X	
	2	MoL ₂ X ₂		MoL ₃ X ₂		MoL ₄ X ₂		MoL ₅ X ₂
	3		MoL ₂ X ₃		MoL ₃ X ₃		MoL ₄ X ₃	
	4	MoLX ₄		MoL ₂ X ₄		MoL ₃ X ₄		MoL ₄ X ₄
	5		MoLX ₅		MoL ₂ X ₅		MoL ₃ X ₅	
6	MoX ₆		MoLX ₆		MoL ₂ X ₆		MoL ₃ X ₆	

Tungsten

		Electron Number, E.N.						
		12	13	14	15	16	17	18
V a l e n c y N u m b e r V. N.	0	WL ₃		WL ₄		WL ₅		WL ₆
	1		WL ₃ X		WL ₄ X		WL ₅ X	
	2	WL ₂ X ₂		WL ₃ X ₂		WL ₄ X ₂		WL ₅ X ₂
	3		WL ₂ X ₃		WL ₃ X ₃		WL ₄ X ₃	
	4	WLX ₄		WL ₂ X ₄		WL ₃ X ₄		WL ₄ X ₄
	5		WLX ₅		WL ₂ X ₅		WL ₃ X ₅	
6	WX ₆		WLX ₆		WL ₂ X ₆		WL ₃ X ₆	

MLX plots for Manganese, Technetium and Rhenium

Manganese Electron Number E.N.

		11	12	13	14	15	16	17	18	19
V a l e n c y N u m b e r V. N.	0	MnL 2	MnL 3	MnL 4	MnL 5	MnL 6				
	1	MnL 2X	MnL 3X	MnL 4X	MnL 5X					
	2	MnLX 2	MnL 2X 2	MnL 3X 2	MnL 4X 2	MnL 5X 2				
	3	MnLX 3	MnL 2X 3	MnL 3X 3	MnL 4X 3					
	4	MnX 4	MnLX 4	MnL 2X 4	MnL 3X 4	MnL 4X 4				
	5	MnX 5	MnLX 5	MnL 2X 5	MnL 3X 5					
	6	MnX 6	MnLX 6	MnL 2X 6	MnL 3X 6					
7	MnX 7	MnLX 7	MnL 2X 7							

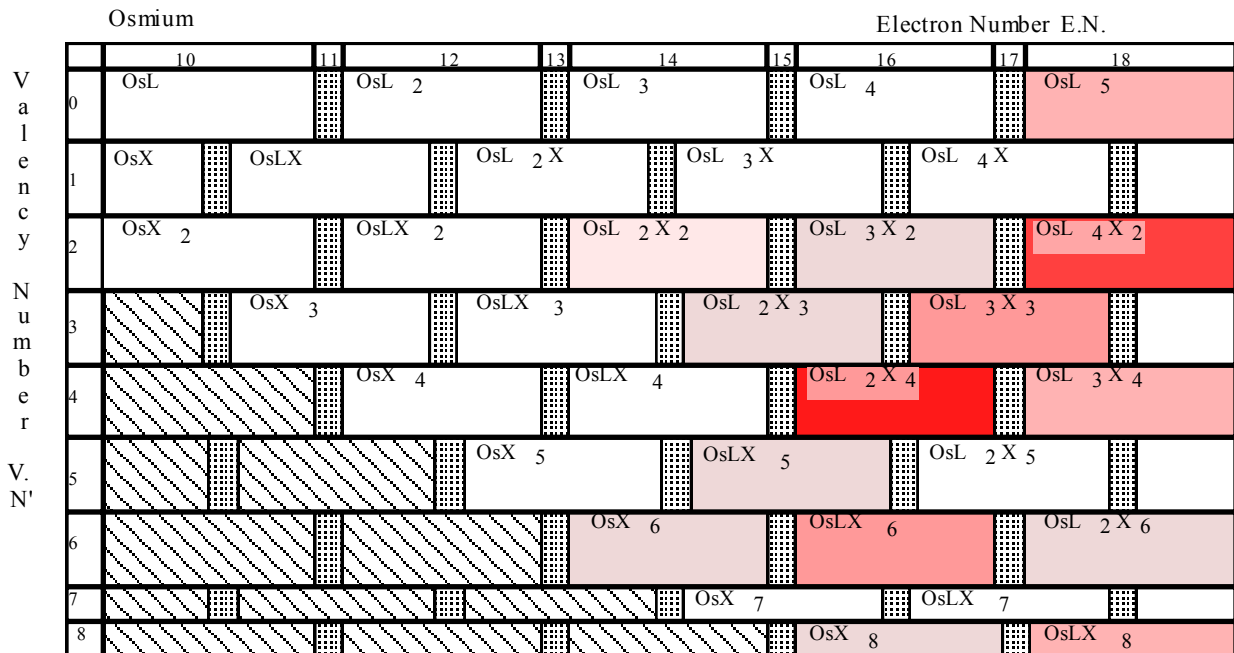
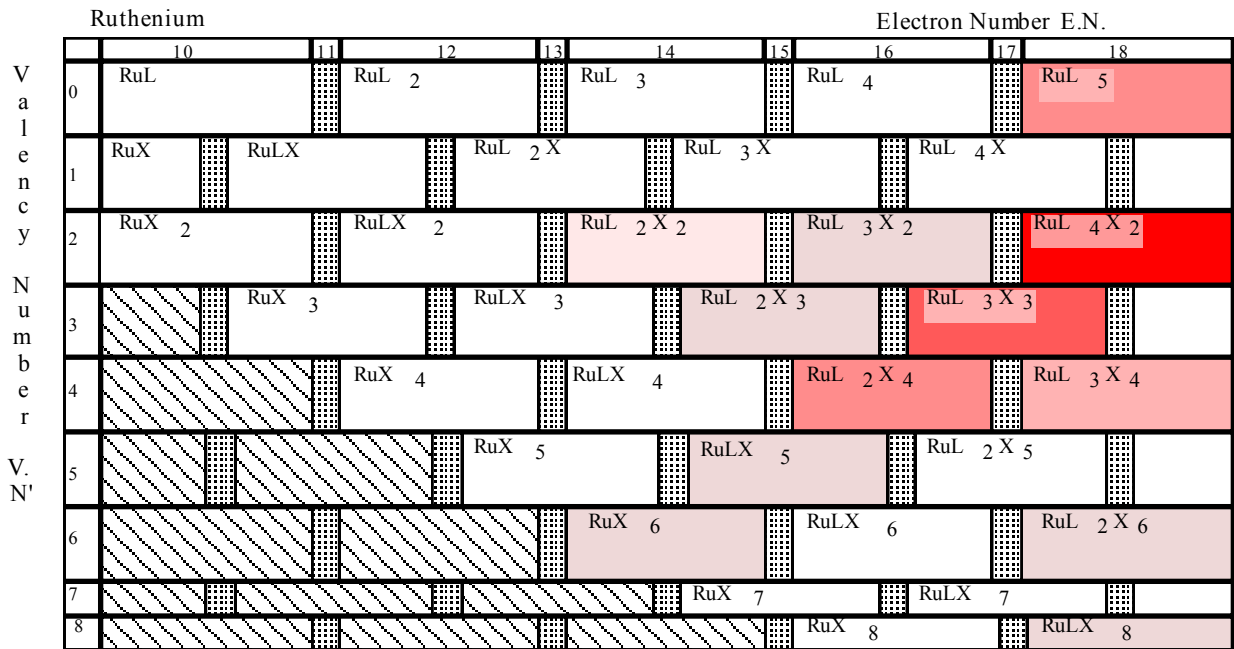
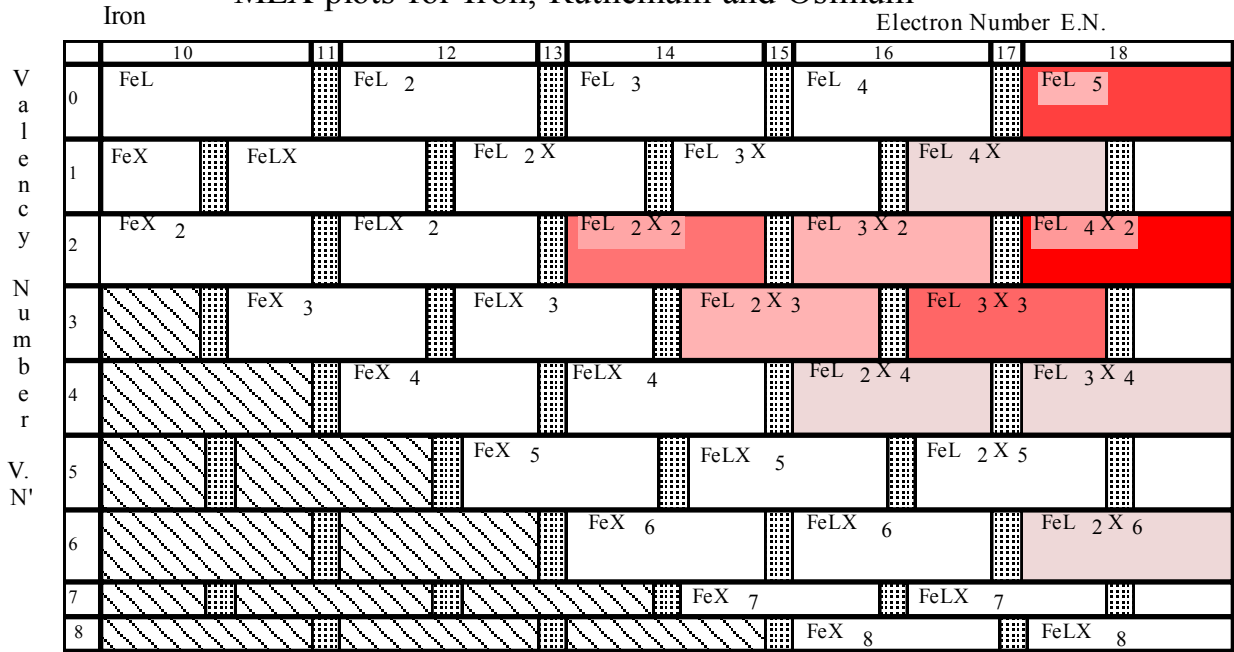
Technetium Electron Number E.N.

		11	12	13	14	15	16	17	18	19
V a l e n c y N u m b e r V. N.	0	TcL 2	TcL 3	TcL 4	TcL 5	TcL 6				
	1	TcL 2X	TcL 3X	TcL 4X	TcL 5X					
	2	TcLX 2	TcL 2X 2	TcL 3X 2	TcL 4X 2	TcL 5X 2				
	3	TcLX 3	TcL 2X 3	TcL 3X 3	TcL 4X 3					
	4	TcX 4	TcLX 4	TcL 2X 4	TcL 3X 4	TcL 4X 4				
	5	TcX 5	TcLX 5	TcL 2X 5	TcL 3X 5					
	6	TcX 6	TcLX 6	TcL 2X 6	TcL 3X 6					
7	TcX 7	TcLX 7	TcL 2X 7							

Rhenium Electron Number E.N.

		11	12	13	14	15	16	17	18	19
V a l e n c y N u m b e r V. N.	0	ReL 2	ReL 3	ReL 4	ReL 5	ReL 6				
	1	ReL 2X	ReL 3X	ReL 4X	ReL 5X					
	2	ReLX 2	ReL 2X 2	ReL 3X 2	ReL 4X 2	ReL 5X 2				
	3	ReLX 3	ReL 2X 3	ReL 3X 3	ReL 4X 3					
	4	ReX 4	ReLX 4	ReL 2X 4	ReL 3X 4	ReL 4X 4				
	5	ReX 5	ReLX 5	ReL 2X 5	ReL 3X 5					
	6	ReX 6	ReLX 6	ReL 2X 6	ReL 3X 6					
7	ReX 7	ReLX 7	ReL 2X 7							

MLX plots for Iron, Ruthenium and Osmium



MLX plots for Cobalt, Rhodium and Iridium

Cobalt Electron Number E.N.

	11	12	13	14	15	16	17	18	19
Valency Number	0	CoL	CoL 2	CoL 3	CoL 4	CoL 5			
	1	CoLX	CoL 2X	CoL 3X	CoL 4X				
	2	CoX 2	CoLX 2	CoL 2X 2	CoL 3X 2	CoL 4X 2			
	3	CoX 3	CoLX 3	CoL 2X 3	CoL 3X 3				
	4	CoX 4	CoLX 4	CoL 2X 4	CoL 3X 4				
	5	CoX 5	CoLX 5	CoL 2X 5					
6	CoX 6	CoLX 6	CoL 2X 6						

Rhodium Electron Number E.N.

	11	12	13	14	15	16	17	18	19
Valency Number	0	RhL	RhL 2	RhL 3	RhL 4	RhL 5			
	1	RhLX	RhL 2X	RhL 3X	RhL 4X				
	2	RhX 2	RhLX 2	RhL 2X 2	RhL 3X 2	RhL 4X 2			
	3	RhX 3	RhLX 3	RhL 2X 3	RhL 3X 3				
	4	RhX 4	RhLX 4	RhL 2X 4	RhL 3X 4				
	5	RhX 5	RhLX 5	RhL 2X 5					
6	RhX 6	RhLX 6	RhL 2X 6						

Iridium Electron Number E.N.

	11	12	13	14	15	16	17	18	19
Valency Number	0	IrL	IrL 2	IrL 3	IrL 4	IrL 5			
	1	IrLX	IrL 2X	IrL 3X	IrL 4X				
	2	IrX 2	IrLX 2	IrL 2X 2	IrL 3X 2	IrL 4X 2			
	3	IrX 3	IrLX 3	IrL 2X 3	IrL 3X 3				
	4	IrX 4	IrLX 4	IrL 2X 4	IrL 3X 4				
	5	IrX 5	IrLX 5	IrL 2X 5					
	6	IrX 6	IrLX 6	IrL 2X 6					
7						Ir(PR ₃) ₃ H ₇			

MLX plots for Nickel, Palladium and Platinum

Nickel Electron Number E.N.

	12	13	14	15	16	17	18	19	20
Valency	NiL		NiL 2		NiL 3		NiL 4		NiL 5
Number	NiX	NiLX		NiL 2X		NiL 3X		NiL 4X	
V.N.	NiX 2		NiLX 2		NiL 2X 2		NiL 3X 2		NiL 4X 2
		NiX 3		NiLX 3		NiL 2X 3		NiL 3X 3	
		NiX 4		NiLX 4		NiL 2X 4		NiL 3X 4	
		NiX 5		NiLX 5		NiL 2X 5			
		NiX 6		NiLX 6		NiL 2X 6			

Palladium Electron Number E.N.

	12	13	14	15	16	17	18	19	20
Valency	PdL		PdL 2		PdL 3		PdL 4		PdL 5
Number	PdX	PdLX		PdL 2X		PdL 3X		PdL 4X	
V.N.	PdX 2		PdLX 2		PdL 2X 2		PdL 3X 2		PdL 4X 2
		PdX 3		PdLX 3		PdL 2X 3		PdL 3X 3	
		PdX 4		PdLX 4		PdL 2X 4		PdL 3X 4	
		PdX 5		PdLX 5		PdL 2X 5			
		PdX 6		PdLX 6		PdL 2X 6			

Platinum Electron Number E.N.

	12	13	14	15	16	17	18	19	20
Valency	PtL		PtL 2		PtL 3		PtL 4		PtL 5
Number	PtX	PtLX		PtL 2X		PtL 3X		PtL 4X	
V.N.	PtX 2		PtLX 2		PtL 2X 2		PtL 3X 2		PtL 4X 2
		PtX 3		PtLX 3		PtL 2X 3		PtL 3X 3	
		PtX 4		PtLX 4		PtL 2X 4		PtL 3X 4	
		PtX 5		PtLX 5		PtL 2X 5			
		PtX 6		PtLX 6		PtL 2X 6			