

Oxidation Numbers and Atom/Ions for d block (periods 4, 5, 6)

n	Ox.#	Group 3	Group 4	Group 5	Group 6	Group 7	Group 8	Group 9	Group 10	Group 11	Group 12
4	-4				*		*				
	-3			*		*		*			
	-2		*		*	*	*	*	*	*	*
	-1		*	*	*	*	*	*	*		
	0	(21) scandium	(22) titanium	(23) vanadium	(24) chromium	(25) manganese	(26) iron	(27) cobalt	(28) nickel	(29) copper	(30) zinc
	1	*	*	*	*	*	*	*	*	copper(I)	*
	2	*	*	*	*	manganese(II)	iron(II)	cobalt(II)	nickel(II)	copper(II)	zinc
	3	scandium(III)	*	*	chromium(III)	*	iron(III)	cobalt(III)	*	*	
	4		titanium(IV)	vanadium(IV)	*	manganese(IV)	*	*	*	*	
	5			vanadium(V)	*	*	*	*			
	6				chromate, dichromate	manganate	*				
	7					permanganate	*				
5	-4				*		*				
	-3			*		*		*			
	-2		*		*	*	*			*	*
	-1			*	*	*		*		*	
	0	(39) yttrium	(40) zirconium	(41) niobium	(42) molybdenum	(43) technetium	(44) ruthenium	(45) rhodium	(46) palladium	(47) silver	(48) cadmium
	1	*	*	*	*	*	*	*	*	silver	
	2	*	*	*	*	*	*	*	palladium(II)	*	*
	3	*	*	*	*	*	*	*	*	*	
	4		*	*	*	*	*	*	palladium(IV)		
	5			*	*	*	*	*			
	6				*	*	*	*			
	7					*	*				
	8						*				
6	-4				*		*				
	-3			*		*		*	*	*	
	-2		*		*	*	*	*	*	*	*
	-1			*	*	*	*	*	*	*	
	0	(71) lutetium	(72) hafnium	(73) tantalum	(74) tungsten	(75) rhenium	76 (osmium)	(77) iridium	(78) platinum	(79) gold	(80) mercury
	1		*	*	*	*	*	*	*	gold(I)	mercury(I), Hg ₂ ²⁺
	2	*	*	*	*	*	*	*	platinum(II)	*	mercury(II), Hg ²⁺
	3	*	*	*	*	*	*	*	*	gold(III)	
	4		*	*	*	*	*	*	platinum(IV)	*	

	5			*	*	*	*	*	*	*	
	6				*	*	*	*	*	*	
	7					*	*	*			
	8						*	*			
	9							*			

Rev. -, WEV, 12-15-2024, * indicates oxidation state reported by Wikipedia, but maybe not common.