

At. No.	Name	Formula	Species Type	Central VE's before bonds	Total VE's after bonds	ED's	Type of Hybrid	σ bonds	π bonds	Central LP's	Outer Bonds & LP's	Model	Electron Geometry	Molecular Geometry	Molar Mass
1	Hydron, Proton, Hydrogen ion	H ⁺	ion	1	0	0	NA	0	0	0	0	A	spherical	spherical	1.008
1	Hydride ion	H ⁻	ion	1	2	2	s	0	0	1	0	A	spherical	spherical	1.008
2	Dihelium ion	He ₂ ⁺	ion	2	3	2	s	1	0	0.5	0	AX	linear	linear	8.005
3	Lithium ion	Li ⁺	ion	1	0	0	NA	0	0	0	0	A	spherical	spherical	6.94
4	Beryllium ion	Be ²⁺	ion	2	0	0	NA	0	0	0	0	A	spherical	spherical	9.0122
5	Orthoborate ion	BO ₃ ³⁻	ion	3	24	3	sp ²	3	0	0	6	AX ₃	trigonal planar	trigonal planar	58.81
5	Tetrafluoroborate ion	BF ₄ ⁻	ion	3	32	4	sp ³	4	0	0	12	AX ₄	tetrahedral	tetrahedral	86.8
5	Fluoroboric acid	H ₂ O ⁺ BF ₄ ⁻	ion												87.81
6	Carbide ion	C ⁴⁻	ion	4	8	4	sp ³	0	0	4	0	A	tetrahedral	spherical	12.011
6	Cyanide ion	CN ⁻	ion	4	10	2	sp	1	2	1	1	AXE	linear	linear	26.018
6	Cyanate ion	CNO ⁻	ion	4	16	2	sp	2	2	0	4	AX ₂	linear	linear	42.018
6	Carbonate ion	CO ₃ ²⁻	ion	4	24	3	sp ²	3	1	0	8	AX ₃	trigonal planar	trigonal planar	60.008
6	Peroxy carbonate ion	CO ₄ ²⁻	ion	4	30	3	sp ²	3	1	0	11	AX ₃	trigonal planar	trigonal planar	76.01
6	Hydrogen carbonate ion	HCO ₃ ⁻	ion	4	24	3	sp ²	3	1	0	16	AX ₃	trigonal planar	trigonal planar	61.0168
6	Oxalate ion	C ₂ O ₄ ²⁻	ion	4	34	4	sp ²	5	2	0	10	AX ₃	trigonal planar (2 centers)	trigonal planar (2 centers)	88.018
7	Nitride ion	N ³⁻	ion	5	8	4	sp ³	0	0	4	0	A	tetrahedral	spherical	14.007
7	Nitrite ion	NO ₂ ⁻	ion	5	18	3	sp ²	2	1	1	5	AX ₂ E	trigonal planar	bent	46.005
7	Hyponitrite ion	N ₂ O ₂ ²⁻	ion	5	24	3	sp ²	2	1	1	8	AXE	trigonal planar (2 centers)	bent	60.012
7	Azide ion	N ₃ ⁻	ion	5	16	2	sp	2	2	0	4	AX ₂	linear	linear	42.021
7	Nitrate ion	NO ₃ ⁻	ion	5	24	3	sp ²	3	1	0	8	AX ₃	trigonal planar	trigonal planar	62.004
7	Peroxynitrate ion	NO ₄ ⁻	ion	5	30	3	sp ²	3	1	0	11	AX ₃	trigonal planar	trigonal planar	78.004
7	Ammonium ion	NH ₄ ⁺	ion	5	8	4	sp ³	4	0	0	0	AX ₄	tetrahedral	tetrahedral	18.039
8	Oxide ion	O ²⁻	ion	6	8	4	sp ³	0	0	4	0	A	tetrahedral	spherical	15.999
8	Hydroxide ion	OH ⁻	ion	6	8	4	sp ³	1	0	3	0	AXE ₃	tetrahedral	linear	17.007
8	Peroxide ion	O ₂ ²⁻	ion	6	14	4	sp ²	1	0	3	3	AXE ₃	tetrahedral	linear	31.998
8	Hydronium ion	H ₃ O ⁺	ion	6	8	4	sp ³	3	0	1	0	AX ₃ E	tetrahedral	trigonal pyramidal	19.023
9	Fluoride ion	F ⁻	ion	7	8	4	sp ³	0	0	4	0	A	tetrahedral	spherical	18.998
14	Silicide ion	Si ⁴⁻	ion	4	4	4	sp ³	0	0	4	0.5	A	tetrahedral	spherical	28.085
15	Phosphide ion	P ³⁻	ion	5	8	4	sp ³	0	0	1 & 3*0.5	0	A	tetrahedral	spherical	30.974
15	Phosphorus dichloride ion	PCl ₂ ⁻	ion	5	20	4	sp ³	2	0	2	8	AX ₂ E ₂	tetrahedral	bent	101.874
15	Phosphite ion	PO ₃ ³⁻	ion	5	26	4	sp ³	3	1	1	8	AX ₃ E	tetrahedral	trigonal pyramidal	79.981
15	Peroxyphosphate ion	PO ₄ ²⁻	ion	5	38	4	sp ³ d	4	1	0	14	AX ₄	tetrahedral	tetrahedral	112.992
15	Phosphate ion	PO ₄ ³⁻	ion	5	32	4	sp ³	4	4	0	8	AX ₄	tetrahedral	tetrahedral	94.9714
16	Sulfide ion	S ²⁻	ion	6	8	4	sp ³	0	0	4	0	A	tetrahedral	spherical	32.06
16	Thiocyanate ion	CNS ⁻	ion	6	16	2	sp	2	2	0	4	AX ₂	linear	linear	58.08
16	Sulfite ion	SO ₃ ²⁻	ion	6	26	4	sp ³	3	1	1	9	AX ₃ E	tetrahedral	trigonal pyramidal	80.066
16	Sulfate ion	SO ₄ ²⁻	ion	6	32	4	sp ³	4	2	0	10	AX ₄	tetrahedral	tetrahedral	96.06
16	Chlorosulfate ion	SO ₃ Cl ⁻	ion	6	32	4	sp ³	4	2	0	10	AX ₄	tetrahedral	tetrahedral	115.51
16	Methyl sulfonate ion	CH ₃ SO ₃ ⁻	ion	6	32	4	sp ³	4	2	0	10	AX ₄	tetrahedral	tetrahedral	95.09
16	Peroxy monosulfate ion	SO ₅ ²⁻	ion	6	38	4	sp ³ d	4	2	0	13	AX ₄	tetrahedral	tetrahedral	112.06
17	Chloride ion	Cl ⁻	ion	7	8	4	sp ³	0	0	4	0	A	tetrahedral	spherical	35.45
17	Hypochlorite ion	ClO ⁻	ion	7	14	4	sp ³	1	0	3	3	AXE ₃	tetrahedral	linear	51.45
17	Chlorite ion	ClO ₂ ⁻	ion	7	20	4	sp ³	2	0	2	6	AX ₂ E ₂	tetrahedral	bent	67.452
17	Chlorate ion	ClO ₃ ⁻	ion	7	26	4	sp ³	3	0	1	9	AX ₃ E	tetrahedral	trigonal pyramidal	83.4512
17	Perchlorate ion	ClO ₄ ⁻	ion	7	32	4	sp ³	4	0	0	12	AX ₄	tetrahedral	tetrahedral	99.45
24	Chromate ion	CrO ₄ ²⁻	ion	6	32	4	sp ³	4	2	0	10	AX ₄	tetrahedral	tetrahedral	115.994
24	Dichromate ion	Cr ₂ O ₇ ²⁻	ion	6	56	4	sp ³	8	4	0	16	AX ₄	tetrahedral (2 centers)	tetrahedral (2 centers)	215.988
25	Manganate ion	MnO ₄ ²⁻	ion	7	32	4	sp ³	4	2	0	10	AX ₄	tetrahedral	tetrahedral	102.935
25	Permanganate ion	MnO ₄ ⁻	ion	7	32	4	sp ³	4	3	0	9	AX ₄	tetrahedral	tetrahedral	118.934
33	Arsenide ion	As ³⁻	ion	5	8	4	sp ³	0	0	1 & 3*0.5	0	A	tetrahedral	spherical	74.922
33	Arsenite ion	AsO ₃ ³⁻	ion	5	26	4	sp ³	3	1	1	8	AX ₃ E	tetrahedral	trigonal pyramidal	122.919
33	Arsenate ion	AsO ₄ ³⁻	ion	5	32	4	sp ³	4	4	0	8	AX ₄	tetrahedral	tetrahedral	138.918
34	Selenide ion	Se ²⁻	ion	6	8	4	sp ³	0	0	4	0	AX ₄	tetrahedral	tetrahedral	78.971
34	Selenite ion	SeO ₃ ²⁻	ion	6	26	4	sp ³	3	1	1	9	AX ₃ E	tetrahedral	trigonal pyramidal	126.9584
34	Selenate ion	SeO ₄ ²⁻	ion	6	32	4	sp ³	4	2	0	10	AX ₄	tetrahedral	tetrahedral	142.9574
35	Bromide ion	Br ⁻	ion	7	8	4	sp ³	0	0	4	0	A	tetrahedral	spherical	79.904
35	Bromine difluoride ion	BrF ₂ ⁻	ion	7	22	5	sp ³ d	2	0	3	6	AX ₂ E ₂	trigonal bipyramidal	bent	117.9
35	Tribromide ion	Br ₃ ⁻	ion	7	22	5	sp ³ d	2	0	3	6	AX ₂ E ₂	trigonal bipyramidal	bent	239.712
52	Telluride ion	Te ²⁻	ion	6	8	4	sp ³	0	0	4	0	A	tetrahedral	spherical	127.6
52	Tellurite ion	TeO ₃ ²⁻	ion	6	26	4	sp ³	3	1	1	9	AX ₃ E	tetrahedral	trigonal pyramidal	175.6
52	Tellurate ion	TeO ₄ ²⁻	ion	6	32	4	sp ³	4	2	0	10	AX ₄	tetrahedral	tetrahedral	191.6
53	Iodide ion	I ⁻	ion	7	8	4	sp ³	0	0	4	0	A	tetrahedral	spherical	126.904
53	Hypoiodite ion	IO ⁻	ion	7	14	4	sp ³	1	0	3	3	AXE ₃	tetrahedral	linear	142.903
53	Iodite ion	IO ₂ ⁻	ion	7	20	4	sp ³	2	0	2	6	AX ₂ E ₂	tetrahedral	bent	158.9
53	Triiodide ion	I ₃ ⁻	ion	7	22	5	sp ³ d	2	0	3	9	AX ₂ E ₂	trigonal bipyramidal	linear	380.712
53	Iodate ion	IO ₃ ⁻	ion	7	26	4	sp ³	3	0	1	9	AX ₃ E	tetrahedral	trigonal pyramidal	174.902
53	Periodate ion	IO ₄ ⁻	ion	7	32	4	sp ³	4	0	0	12	AX ₄	tetrahedral	tetrahedral	189.9
53	Periodate ion	IO ₆ ⁵⁻	ion	7	48	6	sp ³ d ₂	6	1	0	17	AX ₆	octagonal	octagonal	222.9