

6.4: Radius

Radius

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Atomic Radius

Atom	Atomic No.	Atomic Radius (pm)
H	1	37
He	2	31
Li	3	157
Be	4	112
B	5	86
C	6	77
N	7	74
O	8	74
F	9	72
Ne	10	68
Na	11	191
Mg	12	160
Al	13	143
Si	14	117
P	15	110
S	16	104
Cl	17	99
Ar	18	91
K	19	235
Ca	20	197
Sc	21	164
Ti	22	147
V	23	135
Cr	24	129
Mn	25	137
Fe	26	126
Co	27	125
Ni	28	125
Cu	29	126
Zn	30	137

Atom	Atomic No.	Atomic Radius (pm)
Ga	31	153
Ge	32	130.5
As	33	121
Se	34	117
Br	35	114
Kr	36	108
Rb	37	250
Sr	38	215
Y	39	182
Zr	40	160
Nb	41	147
Mo	42	140
Tc	43	135
Ru	44	134
Rh	45	134
Pd	46	137
Ag	47	144
Cd	48	152
In	49	167
Sn	50	149
Sb	51	151
Te	52	137
I	53	133
Xe	54	126
Cs	55	272
Ba	56	224
La	57	188
Ce	58	182
Pr	59	181
Nd	60	180
Pm	61	179
Sm	62	179
Eu	63	206
Gd	64	178

Atom	Atomic No.	Atomic Radius (pm)
Tb	65	177
Dy	66	176
Ho	67	175
Er	68	174
Tm	69	173
Yb	70	194
Lu	71	172
Hf	72	159
Ta	73	147
W	74	141
Re	75	137
Os	76	135
Ir	77	136
Pt	78	139
Au	79	144
Hg	80	155
Tl	81	171
Pb	82	175
Bi	83	182
Po	84	174
At	85	166
Rn	86	159
Fr	87	
Ra	88	
Ac	89	
Th	90	180
Pa	91	163
U	92	156
Np	93	156
Pu	94	164
Am	95	173
Cm	96	155
Bk	97	170
Cf	98	

Atom	Atomic No.	Atomic Radius (pm)
Es	99	
Fm	100	
Md	101	
No	102	
Lr	103	

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Ionic Radius

Ion Species	Atomic No.	Ionic Radius (pm)
H +1	1	
He	2	
Li +1	3	90
Be +2	4	59
B +3	5	41
C +4	6	30
N -3	7	
N +3	7	30
N +5	7	27
O -2	8	126
F -1	9	119
F +7	9	22
Ne	10	
Na +1	11	116
Mg +2	12	86
Al +3	13	67.5
Si +4	14	54
P +3	15	58
P +5	15	52
S -2	16	170
S +4	16	51
S +6	16	43
Cl -1	17	167
Cl +5	17	
Cl +7	17	41

Ion Species	Atomic No.	Ionic Radius (pm)
Ar	18	
K +1	19	152
Ca +2	20	114
Sc +3	21	88.5
Ti +2	22	100
Ti +3	22	81
Ti +4	22	74.5
V +2	23	93
V +3	23	78
V +4	23	72
V +5	23	68
Cr +2	24	94
Cr +3	24	75.5
Cr +4	24	69
Cr +5	24	63
Cr +6	24	58
Mn +2	25	97
Mn +3	25	78.5
Mn +4	25	67
Mn +5	25	
Mn +6	25	
Mn +7	25	60
Fe +2	26	92
Fe +3	26	78.5
Fe +4	26	72.5
Fe +6	26	
Co +2	27	88.5
Co +3	27	75
Co +4	27	67
Ni +2	28	83
Ni +3	28	74
Ni +4	28	62
Cu +1	29	91
Cu +2	29	87

Ion Species	Atomic No.	Ionic Radius (pm)
Cu +3	29	68
Zn +2	30	88
Ga +3	31	76
Ge +2	32	87
Ge +4	32	67
As +3	33	72
As +5	33	60
Se -2	34	184
Se +4	34	64
Se +6	34	56
Br -1	35	182
Br +3	35	
Br +5	35	
Br +7	35	53
Kr	36	
Rb +1	37	166
Sr +2	38	132
Y +3	39	104
Zr +4	40	86
Nb +3	41	86
Nb +4	41	82
Nb +5	41	78
Mo +3	42	83
Mo +4	42	79
Mo +5	42	75
Mo +6	42	73
Tc +4	43	78.5
Tc +5	43	74
Tc +7	43	70
Ru +3	44	82
Ru +4	44	76
Ru +5	44	70.5
Ru +7	44	
Ru +8	44	

Ion Species	Atomic No.	Ionic Radius (pm)
Rh +3	45	80.5
Rh +4	45	74
Rh +5	45	69
Pd +1	46	
Pd +2	46	100
Pd +3	46	90
Pd +4	46	75.5
Ag +1	47	129
Ag +2	47	108
Ag +3	47	89
Cd +2	48	109
In +3	49	94
Sn +4	50	83
Sb +3	51	90
Sb +5	51	74
Te -2	52	207
Te +4	52	111
Te +6	52	70
I -1	53	206
I +5	53	
I +7	53	67
Xe +8	54	62
Cs +1	55	181
Ba +2	56	149
La +3	57	117.2
Ce +3	58	115
Ce +4	58	101
Pr +3	59	113
Pr +4	59	99
Nd +2	60	
Nd +3	60	112.3
Pm +3	61	111
Sm +2	62	
Sm +3	62	109.8

Ion Species	Atomic No.	Ionic Radius (pm)
Eu +2	63	131
Eu +3	63	108.7
Gd +3	64	107.8
Tb +3	65	106.3
Tb +4	65	90
Dy +2	66	121
Dy +3	66	105.2
Ho +3	67	104.1
Er +3	68	103
Tm +2	69	117
Tm +3	69	102
Yb +2	70	116
Yb +3	70	100.8
Lu +3	71	100.1
Hf +4	72	85
Ta +3	73	86
Ta +4	73	82
Ta +5	73	78
W +4	74	80
W +5	74	76
W +6	74	74
Re +4	75	77
Re +5	75	72
Re +6	75	69
Re +7	75	67
Os +4	76	77
Os +5	76	71.5
Os +6	76	68.5
Os +7	76	66.5
Os +8	76	
Ir +3	77	82
Ir +4	77	76.5
Ir +5	77	71
Pt +2	78	94

Ion Species	Atomic No.	Ionic Radius (pm)
Pt +4	78	76.5
Pt +5	78	71
Au +1	79	151
Au +3	79	99
Au +5	79	71
Hg +1	80	133
Hg +2	80	116
Tl +1	81	164
Tl +3	81	102.5
Pb +2	82	133
Pb +4	82	91.5
Bi +3	83	117
Bi +5	83	90
Po +4	84	108
Po +6	84	81
At +7	85	76
Rn	86	
Fr +1	87	194
Ra +2	88	
Ac+3	89	126
Th +4	90	108
Pa +3	91	118
Pa +4	91	104
Pa +5	91	92
U +3	92	116.5
U +4	92	103
U +5	92	90
U +6	92	87
Np +2	93	124
Np +3	93	115
Np +4	93	101
Np +5	93	89
Np +6	93	86
Np +7	93	85

Ion Species	Atomic No.	Ionic Radius (pm)
Pu +3	94	114
Pu +4	94	100
Pu +5	94	88
Pu +6	94	85
Am +2	95	
Am +3	95	111.5
Am +4	95	99
Cm +3	96	111
Cm +4	96	99
Bk +3	97	110
Bk +4	97	97
Cf +3	98	109
Cf +4	98	96.1
Es	99	
Fm	100	
Md	101	
No +2	102	124
Lr	103	

Shannon, R. D. Acta Cryst. 1976, A32, 751-767.

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