

Table 4.1. Mean atomic numbers of minerals, in alphabetical order

Mineral	Mean Z	Mineral	Mean Z
Albite	10.7	Ilmenite	19.0
Almandine	15.6	Jadeite	10.7
Analcite	10.5	Kaolinite	10.4
Andalusite	10.7	Kyanite	10.7
Andradite	15.8	Lepidolite	11.1
Anglesite	59.4	Leucite	12.1
Anhydrite	13.4	Magnesite	9.4
Anorthite	11.9	Magnetite	21.0
Apatite	14.1	Malachite	18.6
Apophyllite	24.2	Monazite	38.7
Aragonite	12.4	Montecellite	13.8
Arfvedsonite	14.2	Mullite	11.1
Argentite	43.0	Muscovite	11.1
Arsenopyrite	27.3	Orthoclase	11.9
Baddeleyite	31.7	Pentlandite	22.9
Barite	37.3	Periclase	10.4
Benitoite	26.8	Perovskite	16.5
Bismuthinite	70.5	Platinum	78.0
Borax	7.7	Pyrite	20.7
Bornite	25.3	Pyrope	10.7
Brookite	16.4	Pyrrhotite	22.2
Calcite	12.4	Quartz	10.8
Cassiterite	41.1	Rhodochrosite	15.9
Celestine	23.7	Riebeckite	15.0
Celsian	27.2	Rutile	16.4
Cerussite	65.3	Serpentine	10.3
Chalcocite	26.4	Siderite	16.5
Chalcopyrite	23.5	Sillimanite	10.7
Chromite	19.9	Sodalite	11.1
Clinocllore	10.2	Spessartine	15.2
Cobaltite	27.6	Sphalerite	25.4
Columbite	24.6	Spinel	10.6
Copper	29.0	Spodumene	10.0
Corundum	10.7	Stibnite	41.1
Cuprite	26.7	Strontianite	25.6
Enstatite	10.7	Tantalite	65.4
Fayalite	18.7	Tephroite	17.2
Ferrosilite	16.9	Tetrahedrite	32.5
Fluorite	14.7	Titanite	14.7
Forsterite	10.6	Topaz	10.6
Galena	73.2	Ulvospinel	20.0
Glaucophane	10.6	Uraninite	82.0
Gold	79.0	Uvarovite	15.3
Graphite	6.0	Willemite	24.6
Grossular	12.9	Witherite	41.3
Gypsum	12.4	Wollastonite	13.6
Haematite	20.6	Xenotime	24.2
Hercynite	15.3	Zircon	24.8
Humite	10.4	Zoisite	10.0

Table 4.2. *Minerals in order of mean atomic number*

Mean Z	Mineral	Mean Z	Mineral
6.0	Graphite	16.4	Brookite
7.7	Borax	16.4	Rutile
9.4	Magnesite	16.5	Perovskite
10.0	Zoisite	16.5	Siderite
10.0	Spodumene	16.9	Ferrosilite
10.2	Clinochlore	17.2	Tephroite
10.3	Serpentine	18.6	Malachite
10.4	Humite	18.7	Fayalite
10.4	Kaolinite	19.0	Ilmenite
10.4	Periclase	19.9	Chromite
10.5	Analcite	20.0	Ulvospinel
10.6	Forsterite	20.6	Haematite
10.6	Glaucophane	20.7	Pyrite
10.6	Spinel	21.0	Magnetite
10.6	Topaz	22.2	Pyrrhotite
10.7	Albite	22.9	Pentlandite
10.7	Andalusite	23.5	Chalcopyrite
10.7	Corundum	23.7	Celestine
10.7	Enstatite	24.2	Apophyllite
10.7	Jadeite	24.2	Xenotime
10.7	Kyanite	24.6	Columbite
10.7	Pyrope	24.6	Willemite
10.7	Sillimanite	24.8	Zircon
10.8	Quartz	25.3	Bornite
11.1	Lepidolite	25.4	Sphalerite
11.1	Mullite	25.6	Strontianite
11.1	Muscovite	26.4	Chalcocite
11.1	Sodalite	26.7	Cuprite
11.9	Anorthite	26.8	Benitoite
11.9	Orthoclase	27.2	Celsian
12.1	Leucite	27.3	Arsenopyrite
12.4	Aragonite	27.6	Cobaltite
12.4	Calcite	29.0	Copper
12.4	Gypsum	31.7	Baddeleyite
12.9	Grossular	32.5	Tetrahedrite
13.4	Anhydrite	37.3	Barite
13.6	Wollastonite	38.7	Monazite
13.8	Montecellite	41.1	Cassiterite
14.1	Apatite	41.1	Stibnite
14.2	Arfvedsonite	41.3	Witherite
14.7	Fluorite	43.0	Argentite
14.7	Titanite	59.4	Anglesite
15.0	Riebeckite	65.3	Cerussite
15.2	Spessartine	65.4	Tantalite
15.3	Hercynite	70.5	Bismuthinite
15.3	Uvarovite	73.2	Galena
15.6	Almandine	78.0	Platinum
15.8	Andradite	79.0	Gold
15.9	Rhodochrosite	82.0	Uraninite