

Supplementary Read-Me File: Instructions for Supplementary Table 1

An evolutionary system of mineralogy, Part VIII: The evolution of metamorphic minerals

SHAUNNA M. MORRISON, ANIRUDH PRABHU, AND ROBERT M. HAZEN

Supplementary Table 1 is an xlsx file that records information related to 1215 IMA-approved mineral species plus unapproved *Fe-dolomite*, *olivine*, *phengite*, *plagioclase*, and *silicate glass*, and the corresponding 755 root mineral kinds, proposed to occur in metamorphic rocks. Mineral species are listed in Rows 3 to 1222. The table is arranged alphabetically according to the root mineral kind name.

Column A gives the name of the 1215 species approved by the IMA-CNMNC plus *Fe-dolomite*, *olivine*, *phengite*, *plagioclase*, and *silicate glass*, while column L provides the chemical formula and column K lists the number of essential elements in each species.

Column B gives the corresponding name to the 755 “root mineral kinds,” as detailed in the article. In most instances, the name of the root mineral kind is an italicized IMA-approved mineral name (e.g., the root mineral kind *aenigmatite* corresponds exactly to the mineral species *aenigmatite*). In 26 instances **highlighted in blue**, we adopt the IMA-approved root name without suffix as the root mineral name for groups of two or more closely-related species; thus, *chabazite* is the root mineral name for the four species *chabazite*-Ca, *chabazite*-K, *chabazite*-Mg, and *chabazite*-Na. In 18 instances **highlighted in yellow** (*androsite*, *apophyllite*, *biotite*, *chlorite*, *ellestadite*, *hogbomite*, *hornblende*, *kspars*, *leakeite*, *melilite*, *orthoenstatite*, *Os-Ru alloy*, *Pd-Pt-Rh alloy*, *scapolite*, *serpentine*, *taaffeite*, *tourmaline*, and *wolframite*), we employ an unapproved mineral kind name for a group of closely-related IMA-approved mineral species; thus, *tourmaline* is the root mineral kind name for 18 IMA-approved species in the *tourmaline* group.

Columns C through J represent 8 major types of metamorphic rocks: XEN = pyrometamorphic alteration of xenoliths; CON = contact thermal alteration; BAM = metamorphism of Ba-Mn deposits; OPH = ophiolite; HPM = high-pressure metamorphism; REG = regional metamorphism; MET = mantle metasomatism; SHE = shear metamorphism. Under each of these columns a “1” indicates that the corresponding mineral has been identified from that host lithology. Note that these 8 columns correspond to paragenetic modes 9, 31, 32, 38, 39, 40, 41, and 43 in Hazen and Morrison (2022) on the paragenetic modes of minerals (as indicated in Row 1). The matrix elements highlighted in red indicate revisions to the Supplementary Table 1 of Hazen and Morrison (2022), based on new information from this survey of metamorphic minerals.

Row 2 of Columns C through J provide the total number of species recorded for each of the 8 major metamorphic rock groups.

Reference:

Hazen, R.M., and Morrison, S.M. (2022) On the paragenetic modes of minerals: A mineral evolution perspective. *American Mineralogist*, 107, 1262-1287.