

PERSPECTIVES

Concerning tetrahedrites: How much to lump and how far to split?

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ABSTRACT

Currently, there are two related but distinct approaches to the classification of minerals. The traditional time-independent classification uses rules specified by the IMA-CNMNC that can carefully split mineral species but may elide valuable information about their formation. In contrast, an emerging time-dependent classification appears to be able to add to our knowledge about planetary evolution yet may lump minerals into broadly defined kinds even if important distinctions should be made. An examination of the tetrahedrite group provides valuable insights on both approaches. As newly redefined by Biagioni et al. (2020), the generalized tetrahedrite formula $[A_6(B_4C_2)D_4Y_{12}Z_1]$ has six sites that can accommodate substitutions, and a systematic splitting of all possibilities could lead to more than 200 unique species. In contrast, applying guidelines for lumping, largely as suggested by Hazen et al. (2022), could lead to a single kind. Deciding how much to lump and how far to split may ultimately depend on the intentions of the observer.

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