

*American Mineralogist, Volume 100, pages 1620–1623, 2015*

**SPECIAL COLLECTION: APATITE: A COMMON MINERAL, UNCOMMONLY VERSATILE**

**Technical Note: Calculation of stoichiometry from EMP data for apatite and other phases  
with mixing on monovalent anion sites†**

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**ABSTRACT**

A new method is presented for calculating the chemical formula for apatite, and any other mineral that features mixing between halogens and hydroxyl ions on monovalent anion sites, from electron microprobe data that omit H<sub>2</sub>O determination. It removes errors of up to 4% in stoichiometric calculations that occur for apatite when an incorrect normalization is used. The method also provides an estimate of OH content and uncertainty that can be included in chemical analysis totals.

**Keywords:** Apatite, stoichiometry, electron microprobe analysis, site mixing