

Author's Accepted Manuscript

An Excel spreadsheet to classify chemical analyses of amphiboles following the IMA 2012 recommendations

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www.elsevier.com/locate/cageo

PII: S0098-3004(13)00251-3
DOI: <http://dx.doi.org/10.1016/j.cageo.2013.09.011>
Reference: CAGEO3268

To appear in: *Computers & Geosciences*

Cite this article as: Andrew J. Locock, An Excel spreadsheet to classify chemical analyses of amphiboles following the IMA 2012 recommendations, *Computers & Geosciences*, <http://dx.doi.org/10.1016/j.cageo.2013.09.011>

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8
9 **Abstract**

10 A Microsoft Excel spreadsheet has been programmed to assist with classification of chemical
11 analyses of orthorhombic and monoclinic amphiboles following the 2012 nomenclature
12 recommended by the International Mineralogical Association. The spreadsheet is intended for
13 use only with compositional data (wt% oxides and halogens, rather than atomic proportions) and
14 provides options for the estimation of $\text{Fe}^{3+}/\Sigma\text{Fe}$ and $\text{Mn}^{3+}/\Sigma\text{Mn}$ ratios and OH content. Various
15 cation normalization schemes can be automatically or manually selected. For each analysis, the
16 output includes the group, subgroup (or B-occupancy for the oxo-amphiboles), and species name
17 including any mandatory chemical prefixes, along with a formula based on 24 anions. The
18 formula results can be exported in a form suitable for the AMPH2012 program. Prefixes related
19 to space groups (proto-) and suffixes ($-P2_1/m$) are not assigned in the spreadsheet. Large data sets
20 (up to 200 analyses at a time) can be accommodated by the spreadsheet, which is accompanied
21 by results calculated for more than 650 amphibole analyses taken from the literature.

22
23 *Keywords:* amphibole, electron microprobe, Excel, guidelines, nomenclature, spreadsheet

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