

Standardisation of polytype suffixes

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THE Commission on New Minerals and Mineral Names (CNMMN) of the International Mineralogical Association has published guidelines on a number of matters dealing with mineralogical nomenclature, including polytype nomenclature (e.g. Nickel and Mandarino, 1988). In essence, polytypes are distinguished by alphanumeric symbols appended to the root name and joined to it by a hyphen. The numeric part of the symbol represents the layering periodicity, and the alphabetic part, rendered in italic print, represents the crystallographic system. For example, wurtzite-4*H* is a hexagonal wurtzite polytype with a periodicity of 4 times the *c*-dimension of the wurtzite parent.

Prior to the publication of these guidelines, various other polytype symbols had been used in the mineralogical literature and, in an effort to standardise polytype nomenclature, members of the CNMMN decided that previous usage should be brought into conformity with current practice, which follows recommendations of the International Union of Crystallography (Guinier et al., 1984). Polytype names in the literature that require changing are as follows:

Original Name	Present Name	References
Anandite-2 <i>Or</i>	Anandite-2 <i>O</i>	Filut et al. (1985)
Gageite-1 <i>Tc</i>	Gageite-1 <i>A</i>	Ferraris et al. (1987)
Hilgardite-1 <i>Tc</i>	Hilgardite-1 <i>O</i>	Ghose (1985)
Hilgardite-3 <i>Tc</i>	Hilgardite-1 <i>A</i>	Ghose (1985)
Pyrophyllite-1 <i>Tc</i>	Pyrophyllite-1 <i>O</i>	Wardle & Brindley (1972)
Sapphirine-1 <i>Tc</i>	Sapphirine-1 <i>A</i>	Merlino (1973)
Tyretskite-1 <i>Tc</i>	Tyretskite-1 <i>A</i>	Ghose (1985)
Wollastonite-1 <i>T</i>	Wollastonite-1 <i>A</i>	Henmi et al. (1978)
Wollastonite-3 <i>T</i>	Wollastonite-3 <i>A</i>	Henmi et al. (1983)
Wollastonite-4 <i>T</i>	Wollastonite-4 <i>A</i>	Henmi et al. (1983)
Wollastonite-5 <i>T</i>	Wollastonite-5 <i>A</i>	Henmi et al. (1983)
Wollastonite-7 <i>T</i>	Wollastonite-7 <i>A</i>	Henmi et al. (1978)

It is quite likely that the mineralogical literature contains additional examples of polytype symbols that do not confirm to the recommended usage. Such names should also be revised to bring them into conformity. The recommended alphabetic symbols are as follows: cubic, *C*; hexagonal, *H*; rhombohedral, *R*; trigonal, *T*; tetragonal, *Q* (for quadratic); orthorhombic, *O*; monoclinic, *M*; and triclinic, *A* (for anorthic).

References

- Ferraris, G., Mellini, M. and Merlino, S. (1987) Electron-diffraction and electron-microscopy study of balangeroite and gageite: Crystal structures, polytypism, and fibre texture. *Am. Mineral.*, **72**, 382–91.
- Filut, M. A., Rule, A. C. and Bailey, S. W. (1985) Crystal structure refinement of anandite-2*Or*, a barium- and sulfur-bearing trictahedral mica. *Ibid.*, **70**, 1298–1308.
- Ghose, S. (1985). A new nomenclature for the borate minerals in the hilgardite (Ca₂B₅O₉Cl.H₂O)-tyretskite (Ca₂B₅O₉OH.H₂O) group. *Ibid.*, **70**, 636–7.
- Guinier, A., et al. (1984) Nomenclature of polytype structures. Report of the International Union of Crystallography Ad-Hoc Committee on the Nomenclature of Disordered, Modulated and Polytype Structures. *Acta Crystallogr.*, **A40**, 399–404.
- Henmi, C., Kusachi, I., Kawahara, A. and Henmi, K. (1978) 7*T* wollastonite from Fuka, Okayama Prefecture. *Mineral. J.*, **9**, 169–81.
- Henmi, C., Kawahara, A., Henmi, K., Kusachi, I. and Takeuchi, Y. (1983) The 3*T*, 4*T* and 5*T* polytypes of wollastonite from Kushiro, Hiroshima Prefecture, Japan. *Am. Mineral.*, **68**, 156–63.
- Merlino, S. (1973) Polymorphism in sapphirine. *Contrib. Mineral. Petrol.*, **41**, 23–29.
- Nickel, E. H. and Mandarino, J. A. (1988) Procedures involving the IMA Commission on New Minerals and Mineral Names, and guidelines on mineral nomenclature. *Mineral Mag.*, **52**, 275–92 (also published in other mineralogical journals).
- Wardle, R. and Brindley, G. W. (1972) The crystal structures of pyrophyllite, 1*Tc*, and of its dehydroxylate. *Am. Mineral.*, **57**, 732–50.

[Manuscript received 12 May 1993]