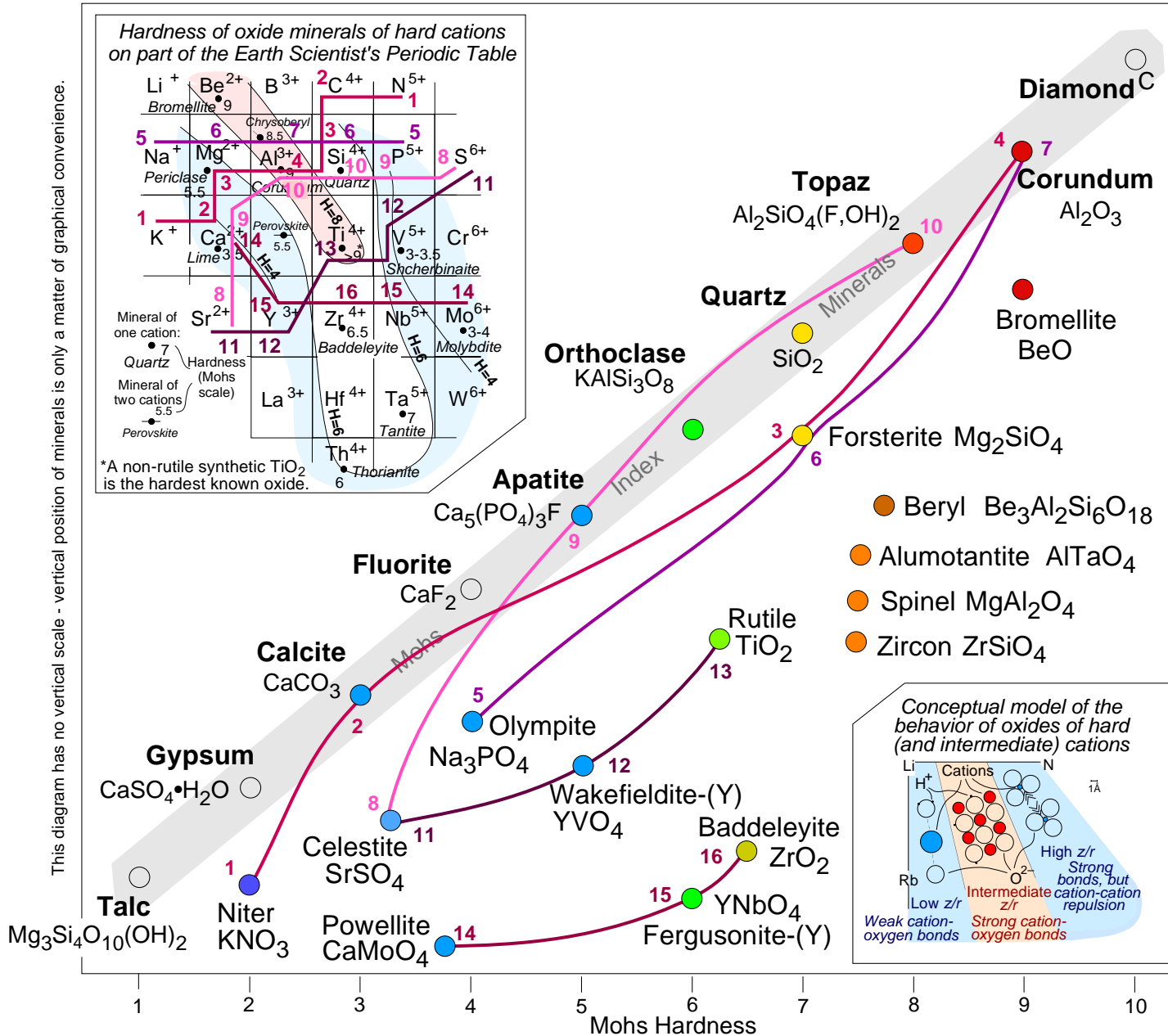


Hardness of minerals Vb: variation among oxides and oxysalts



The previous page in this series, "Hardness of minerals Va", pointed out that hardness of oxides shows the same trend as that of melting temperature and solubility when plotted on a periodic table: the greatest values fall in a fairway from Be²⁺ to Zr⁴⁺. This page extends that thought to the oxysalt minerals like carbonates and molybdates: the farther the ions of these minerals fall from that central pink fairway in the periodic table, the softer they are. This page uses, at upper left, five different shades of purple to show five transects across the periodic table. The hardnesses of the corresponding minerals are linked with purple curves across the heart of the page. In every case, the mineral from farthest off the fairway (e.g., niter with K⁺ and NO₃⁻, labeled #1) is the softest, and the mineral with components nearest the central fairway is the hardest. Note also that the oxides and oxysalts shown with H>7 contain only cations from that central fairway.

Hardness data are from Nickel, E.H., and Nichols, M.C., 1991, *Mineral Reference Manual*: New York, Van Nostrand Reinhold, 250 p. Insets are from Railsback's *Earth Scientist's Periodic Table of the Elements and Their Ions*.