CRYSTAL STRUCTURES OF SOME POTENTYALLY NEW MINERALS OF THE EUDIALYTE GROUP

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Eudialyte minerals are characterized by very unusual substititions. It is necessary to work out a new criteria of systematic for this minerals. All members have close structural motive (*a*~14Å, *c*~30Å) but they distinguish in some «key» sites. Crystal structures of ten new members of the eudialyte family have been studied by X-ray single-crystal diffraction. Some of them can be regarded as potentially new minerals:

- Mineral with very low content of FeO and Fe_2O_3 (0.5 wt%). Two close sites near the «Fe-square» statistically accommodate five-folded Nb, Ti, Fe and Na.
- Ti-rich mineral (6.3 wt% TiO_2) is characterized by doubled *c*-parameter (~61Å). In this structure Ti atoms replace half of Zr atoms in an orderly fashion.
- Hyperzirconium mineral (16.7 wt% ZrO_2). Zr is distributed over two positions – in usual octahedra and in semioctahedra close «Fe-square».
- Two minerals with very low content of Ca atoms. In one of them Ca up to 65% is replaced with Mn (50%) and REE. In another sample Ca atoms substitute for dominating Mn in one independent octahedron and Na in the other. In both of these structures the ordered substitution causes a dissymmetrysation from space group R3m (R-3m) to space group R3.
- Hypercalcium representative (~15.6 wt% CaO). Ca atoms are distributed on the usual octahedra of six-folded rings but the excess of them fully occupy one of the Na sites.
- Fe,Cl-analogue of kentbrooksite.
- Sr,Fe,Cl-analogue of kentbrooksite.
- Two hydrated minerals with 30% substitution of Na atoms for oxonium in one of them and 80% in the other.