



Fig. 1. Axonometric projections of crystalline phases synthesized in BaO-SiO₂-H₂O system. a) 5BaO · 4SiO₂ · 1.2H₂O (phase A); b) phase B; c) BaSi₂O₅; d) Ba₂Si₃O₈; P₂₁/c orientation.

Phase C. Composition unknown; thin, transparent acicular crystals.

BaSi₂O₅. Occurs in nature as the mineral sanbornite; colorless, transparent tabular crystals. Figure 1b shows the axonometric projection of a BaSi₂O₅ crystal using the same orientation as Douglass [9]. Faces defined by well-developed {001} pinacoid, which must be considered to result from a laminar structure with [Si₄O₁₀]_∞ networks parallel to the (001) face [9]. A subordinate role is played by {012}, {110}, {103}, and {105} rhombic prisms and a second pinacoid.

Ba₂Si₃O₈. Composition established from data in literature [13, 14]. Monoclinic system. Lattice constants: $a = 12.476 \pm 0.004$, $c = 13.962 \pm 0.005$, $b = 4.688 \pm 0.003$ Å, $\beta = 93^\circ 37' \pm 3'$; $Z = 4$. Fedorov group $C_{2h}^5 = P2_1/c$. Flat rhomboid crystals. External faceting defined by combinations of many rhombic prisms ({122}, {122}, {011}, {021}, {012}, {031}, {051}, {056}, and {456}); {010} pinacoid not observed in all crystals (Fig. 1d).

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