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Genthelvite from Itapitangui
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GENTHELVITE FROM ITAPITANGUI, SÃO PAULO, BRASIL

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Genthelvite, $Be_3Zn_4(SiO_4)_3S$, cubic, is a rare mineral of the helvite group, which also includes helvite $Be_3Mn_4(SiO_4)_3S$ and danalite, $Be_3Fe_4(SiO_4)_3S$. Genthelvite forms solid solution with danalite, but not with helvite (Dunn, 1976). Natural occurrences of genthelvite are restricted to highly fractionated alkaline to peralkaline granites and syenites or to their associated pegmatites, and also in greisens and skarns. The extremely high "chalcophilicity" of Zn explains, in part, why genthelvite is such a rare mineral (Burt, 1988). The first Brazilian occurrence of genthelvite was first described in 1988. A new occurrence of genthelvite in Brazil is here described from a peralkaline granitic body, in Itapitangui, southern São Paulo state. Only two millimetric genthelvite crystals were found, in riebeckite- mesopertite- quartz granite. The macroscopic color is intense pink, similar to typical rhodonite and rhodochrosite, but with yellowish- brown spots of intemperic manganese oxide. The luster is vitreous and the hardness is between 6 and 7. One crystal displayed a striated face, possibly tetrahedral, and another vicinal face with intense luster. Some weak reflections seem to indicate a poor octahedral cleavage. The tetrahedral habit may also be deduced from the triangular shapes seen in thin section.

Refractive index measured with checked Cargille immersion liquids in white light, by the method of the Becke line was 1.741(1). The determination of specific gravity was impeded by the small crystal dimensions and association with manganese oxide. The best obtained value was 3.55. EDS analysis showed the expected presence of S, Si, Zn, Fe and Mn. Secondary electron images exhibited homogeneous distribution of Zn and Fe with maximum concentration of Zn. The cell parameter a=8.131(2), calculated from X-ray powder diffraction data, together with the refractive index was used in the diagrams of Vlasov to estimate the approximate composition: genthelvite 78%, danalite 14%, helvite 14%.