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## Tetrahydroxosulfatotrimagnesium Octahydrate, $2\text{Mg}(\text{OH})_2 \cdot \text{MgSO}_4 \cdot 8\text{H}_2\text{O}$

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### Abstract

Magnesium hydroxosulfate ( $2\text{Mg}(\text{OH})_2 \cdot \text{MgSO}_4 \cdot 8\text{H}_2\text{O}$ ) was synthesized. The compound was studied by chemical, thermal, and X-ray powder diffraction analyses, as well as by microscopy and IR spectroscopy. The structure of its crystals was suggested and the unit cell parameters were determined: monoclinic space group Pm,  $a = 1884.7 \pm 0.4$  pm,  $b = 1093.5 \pm 0.4$  pm,  $c = 1143.0 \pm 0.4$  pm,  $\beta = 95.44 \pm 0.05^\circ$ ,  $Z = 4$ ,  $d_{\text{calc}} = 2.162$  g/cm<sup>3</sup>,  $d_{\text{obs}} = 2.152$  g/cm<sup>3</sup>. The crystal-chemical formula is  $[\text{Mg}_3(\text{OH})_4(\text{H}_2\text{O})_5] \infty \cdot \text{SO}_4 \cdot 3\text{H}_2\text{O}$ .

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