Crystal data for magnesium–tin (IV) double sulphate. By R. Perret, Laboratoire de Recherches sur la Réactivité des Solides associé au C.N.R.S., Faculté des Sciences Mirande, 21000 Dijon, France and P. Couchot, Laboratoire de Chimie Physique, Faculté des Sciences 32, rue Mégevand, 25000 Besançon, France

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Magnesium–tin (IV) double sulphate, MgSn(SO₄)₃, is rhombohedral, space group R₃. Unit cell dimensions are \( a = 8.922 \pm 0.003 \) Å, \( \alpha = 55° 17' \pm 6' \). Powder diffraction data are given.

Origin of specimens

Powdered samples were prepared by precipitation obtained heating a sulphuric solution of stannous chloride and magnesium sulphate at 250°C (Patel, 1953).

Chemical characterization

Chemical formula: MgSn(SO₄)₃ M.W. 431.2
Calculated (%) SO₄²⁻: 66.83 Mg: 5.64 Sn: 27.53
Found (%) SO₄²⁻: 66.7 Mg: 5.7 Sn: 27.5

Cell data

Rhombohedral cell; space group R₃
\[
\begin{align*}
\alpha &= 8.922 \pm 0.003 \text{ Å} \\
\alpha &= 55° 17' \pm 6' \\
V &= 447 \text{ Å}³ \\
D_m &= 3.20 \text{ g cm}^{-3}.
\end{align*}
\]

Powder data

Diffractograms were recorded with a standard diffractometer and Cu Kα radiation (\( \lambda = 1.5405 \) Å) was used. Powder diffraction data are given in Table 1.

Table 1. Powder diffraction data

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<th>( d_{\text{calc}} )</th>
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Isomorphous compounds

M¹¹Sn(SO₄)₃ with M¹¹ = Mn, Co, Ni, Zn, Cd. For details of Fe₂(SO₄)₃ see Kokkoros. (1965).

References