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Single-crystal and powder data for lead fluorophosphate. By L. K. WALFORD, *Physics Department, Southern Illinois University, Edwardsville, Illinois, U.S.A.*

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Lead fluorophosphate, $PbPO_3F$, with diffraction symbol *mmmPbn*-, $a=6{\cdot}951\pm0{\cdot}015$, $b=8{\cdot}521\pm0{\cdot}012$, $c=5{\cdot}470\pm0{\cdot}010$ Å, is probably isostructural with $PbSO_4$ and $BaSO_4$, $H2$ type.

The structure of lead sulphate ($PbSO_4$, anglesite) is $H2$ type orthorhombic, *Pbnm*, $Z=4$ (James & Wood, 1925; Basche & Mark, 1926). The present work on $PbPO_3F$ was undertaken to determine the relation between the two structures. Crystals of $PbPO_3F$ were donated by Dr D.G. Rands of the Chemistry Department.

Weissenberg and oscillation photographs and filtered Mo $K\alpha$ radiation were used to obtain approximate cell dimensions from which high angle spots on oscillation photographs could be indexed. Position measurements of these spots were then used to calculate more accurate cell dimensions, with which lines on the powder photograph were indexed. The following systematic absences were observed: $h+l$ odd for $h0l$ reflections and k odd for $0kl$ reflections. These absences are consistent with the space groups $Pbn2_1$ [equivalent to $Pna2_1$ (C_{2v}^9, no. 33)] and *Pbnm* [equivalent to *Pnma* (D_{2h}^{16}, no. 62)].

The cell dimensions were also calculated from powder data obtained from a 114·6 mm diameter powder camera with the film mounted in the Straumanis arrangement using filtered Cu $K\alpha$ radiation ($\lambda=1{\cdot}5418$ Å). No film shrinkage or absorption correction was made, owing to the scarcity of high angle lines. However, powder data for ammonium chloride indicated a film expansion during processing of only one part in 10^4 which is less than the standard deviation in the cell dimensions. The values obtained were:

$a=6{\cdot}951\pm0{\cdot}015$, $b=8{\cdot}521\pm0{\cdot}012$, $c=5{\cdot}470\pm0{\cdot}010$ Å.

The density was measured by the displacement method to be $6{\cdot}15\pm0{\cdot}15$ g.cm^{-3} which agrees with the calculated density of 6·24 g.cm^{-3} within experimental error.

Since the unit cell of lead sulphate was given as: $a=6{\cdot}93$, $b=8{\cdot}45$, $c=5{\cdot}38$ Å, and powder photographs of the two substances were similar, it is concluded that the structure of lead fluorophosphate is probably the same as that of lead sulphate.

Bengtsson (1941) has reached the same conclusion for the corresponding barium compounds, although he mentions also the existence of a monoclinic form of $BaPO_3F$. In the present work no indication of a monoclinic form has been found.

References

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Notes and News

Announcements and other items of crystallographic interest will be published under this heading at the discretion of the Editorial Board. The notes (in duplicate) should be sent to the General Secretary of the International Union of Crystallography (G. Boom, Laboratorium voor Technische Natuurkunde der Rijksuniversiteit, Westersingel 34, *Groningen, The Netherlands). Publication of an item in a particular issue cannot be guaranteed unless the draft is received* 8 *weeks before the date of publication.*

Summer School on methods of determination of OD-structures

A Summer School on methods of determination of OD-structures will be organized by the Institut für Strukturforschung of the Deutsche Akademie der Wissenschaften zu Berlin, and will be held 10–23 September 1967 at Johanngeorgenstadt, Erzgebirge, Germany (DDR).

The Summer School is meant as a continuation of the Summer School on OD-structures which was held in August 1965 (Berlin-Adlershof). Those wishing to attend the second Summer School without having attended the first one are requested to familiarize themselves with the subject matter covered at that time by consulting the booklet *Lehrgang über OD-Strukturen* (Berlin: Akademie-Verlag, 1966).

The aim of the School is to give the participants a practical knowledge of special Patterson and Fourier methods applicable to OD-structures and of difficulties to be expected in the determination of such structures.

The participants will be accommodated, and the lectures will be given, in a hostel belonging to the Technical University of Dresden.

The fee, including board and lodging and transport between Dresden and Johanngeorgenstadt will be approximately 300 MDN (about £30 sterling), but a few free places might be available. Early registration is advisable as the number of participants is limited.

Registration forms and further information may be obtained from the Secretary, Institut für Strukturforschung, Rudower Chaussee 5, 1199 Berlin-Adlershof, Germany (DDR).

The official language will depend on the requirements of the participants.