08. INORGANIC AND MINERALOGICAL CRYSTALLOGRAPHY

08.2-53 SYNTHESSES AND CRYSTAL STRUCTURES OF ANILINUM \( \beta \)-OCTAOLYBDATES.


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Anilinium \( \beta \)-octaolylbdates have been prepared in acidic aqueous solutions (\( \rho H=2.5 \)) through:

\[
\text{MoO}_3 + B \rightarrow (\text{BH}_4)^+ \text{MoO}_2\text{O}_2^- \]

\( B = \text{aniline} \) (i), N-methylaniline (ii), N,N-dimethylaniline (iii), N-ethylaniline (iv) and N,N-diethylaniline (v).

Single crystals of all these compounds have been obtained.

Crystal data for (i) are: (C\(_6\)H\(_5\)N)\(_4\) MoO\(_2\text{O}_2\). \( a = 10.007(1) \), \( b = 8.014(2) \), \( c = 14.049(3) \) \( \text{\AA} \).

The preparation of phosphorus condensed into chains via sharing RuP\(_6\) octahedra

\( \text{Ru}_2\text{P}_{10} \quad \text{(1)} \quad \mu_{\text{As}} \quad \text{sp}^3 \text{d hybrid (II)} \)

Ru-P \(_6\) octahedra are well characterized (B.Aronsson, T.Lundström, and S.Rundquist: Anilinium fl-octaolylbdates.

In the binary system Ru-P, the compounds Ru\(_3\)P, Ru\(_5\)P and Ru\(_6\)P are well characterized. B.Aronsson, T.Lundström and S.Rundquist: Borides, Silicides and Phosphides, Münch, London (1965): N.Jestechno and D.J.Braun, Acta Crystallogr. B 33, 3401 (1977)). The preparation of phosphorus rich transition metal phosphides as syntheses for ternary superconducting compounds yields from tin melt the new compound Ru\(_6\)P.

Crystal structure determination: single crystal, 4-circle diffractometer, 1107 hkl, R=5.94, space group P1, \( a = 95.2(1) \text{\AA} \), \( b = 831.3(3) \text{\AA} \), \( c = 586.6(3) \text{\AA} \), \( \alpha = 112.35(4)^\circ \), \( \beta = 101.41(4)^\circ \), \( \gamma = 98.19(5)^\circ \).

Thermal decomposition of (i) occurs in three steps, the final product being MoO\(_3\).

Crystal structures of (ii), (iii), (iv) and (v) are in process.

08.2-54 CRYSTAL STRUCTURE OF RUTHENIUM TRIPHOSPHIDE

By N.Hile and G.G. von Schnering, MPPK,Stuttgart, FRG.

In the binary system Ru-P, the compounds Ru\(_3\)P, Ru\(_5\)P, Ru\(_6\)P, and Ru\(_7\)P are well characterized. B.Aronsson, T.Lundström and S.Rundquist: Borides, Silicides and Phosphides, Münch, London (1965): N.Jestechno and D.J.Braun, Acta Crystallogr. B 33, 3401 (1977)). The preparation of phosphorus rich transition metal phosphides as syntheses for ternary superconducting compounds yields from tin melt the new compound Ru\(_6\)P.

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The thermal decomposition of (i) occurs in three steps, the final product being MoO\(_3\).

Crystal structures of (ii), (iii), (iv) and (v) are in process.

08.2-55 THE CRYSTAL STRUCTURE OF THE TECHNETIUM POLYARSENIDE \( \text{Te}_2\text{As}_3 \).

By L.D. Dessau and W. J. Jeffrey, Inorganisch-Chemisches Institut, Universität Münster, D-4400 Münster, West Germany.

The crystal structure of the new compound \( \text{Te}_2\text{As}_3 \) has been determined from single crystal X ray data. It has triclinic symmetry, space group P1. The lattice constants were refined from Guinier powder data: \( a = 6.375(2) \ \text{\AA} \), \( b = 6.312(2) \ \text{\AA} \), \( c = 8.019(3) \ \text{\AA} \), \( \alpha = 95.70(2)^\circ \), \( \beta = 104.28(2)^\circ \), \( \gamma = 95.44(2)^\circ \), \( V = 5297 \ \text{\AA}^3 \), \( Z = 1 \).

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