

Vorläufige Mitteilungen — Preliminary notices

Unit cell and space group of gaylussite, $\text{CaCO}_3 \cdot \text{Na}_2\text{CO}_3 \cdot 5\text{H}_2\text{O}$

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The space group and unit cell of gaylussite have been determined from crystals from Searles Lake, California. Zero, first, and second levels of the a^*b^* and the a^*c^* nets were photographed with the Buerger precession camera. These patterns, along with morphological crystal-class information, have led to an unequivocal determination of the space group. The aspect of the space group reported here is in keeping with the selection of the morphological axes as reported by PALACHE *et al.*¹ A very small crystal, $0.26 \times 0.16 \times 0.16$ mm, was chosen for the determination of the unit-cell constants so as to maximize accuracy. Calibration of the camera with an equally small quartz crystal indicates that the errors of the cell dimensions do not exceed 0.3%, and the angle β is accurate to 5 minutes of arc. The new data are: Space group, $I2/a$; unit-cell dimensions:

$$a = 11.59 \text{ \AA}, \quad b = 7.77 \text{ \AA}, \quad c = 11.19 \text{ \AA}, \quad \beta = 101^\circ 55';$$

$$a:b:c = 1.4916:1:1.4401; \text{ density} = 1.995 \text{ (calculated);}$$

$$Z = 4 \text{ CaCO}_3 \cdot \text{Na}_2\text{CO}_3 \cdot 5\text{H}_2\text{O}.$$

Morphological measurements¹: $\beta = 101^\circ 33'$; $a:b:c = 1.4897:1:1.4441$;
density = 1.991

L. D. OSHIGANOVA² reports: (a , not given), $b = 7.2 \text{ \AA}$, $c = 10.6 \text{ \AA}$,
 $\beta = 103^\circ 15'$; $a:b:c = 1.4340:1:1.479$.

Further x-ray structure work is planned.

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¹ CHARLES PALACHE *et al.*, The system of mineralogy. John Wiley and Sons, New York, 1951, p. 234.

² L. D. OSHIGANOVA, [Gaylussite crystals from the Kulunda Steppe.] Zapiski Vsesojuzn. mineral. Obsč. (Ber. UdSSR.-min. Ges.) 82 (1953) 220–224 [Russian; Abstract in Zentralblatt für Mineralogie 1954, 133–134].