of the structures: 16*L* (14 2); 48*R* (10 6)$_3$; 48*R* (13 3)$_3$; 48*R* (8 4 2 2)$_3$. The crystal 193 *S*61 contained the polytypes: 16*L* (5 3 3 5) and 16*L* (3 3 2 2 3 3).

X-ray oscillation photographs about the *c* axis of the crystals were taken; Cu *K* radiation was used with a collimator diameter of 0·1 mm. The (10.*l*) columns of these photographs are shown in Fig. 1. The photographs labelled 16*L* (14 2) and 48*R* (10 6)$_3$ are of two nearby regions with a cubic region in between. This cubic region was also included in the two photographs and its characteristic spots are easily seen between those of the polytypes.

The identification of the polytypes was carried out by comparing the observed intensity order of the (10.*l*) spots with those calculated for all possible Zhdanov sequences of the family 16*L*–48*R*. A description of the procedure of identification is given in detail by Mardix *et al.* (1967). The observed and calculated spot intensities of the (10.*l*) column of the polytypes are given in Table 1.

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Unit-cell dimensions of ammonium cadmium chloride and potassium cadmium chloride.

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More accurate determinations of unit-cell dimensions of isomorphous $4NH_4Cl.CdCl_2$ and $4KCl.CdCl_2$, space group $R\bar{3}m$, gave $a = 8{\cdot}842 \pm 0{\cdot}005$ Å, $\alpha = 88°48' \pm 10'$ and $a = 8{\cdot}601 \pm 0{\cdot}001$ Å, $\alpha = 89°57 \pm 5'$ respectively.

Ammonium cadmium chloride, $4NH_4Cl.CdCl_2$, and potassium cadmium chloride, $4KCl.CdCl_2$, are isomorphous and the unit-cell data for these rhombohedral crystals, space group $R\bar{3}m$, are given as in Table 1.

Table 1. *Unit-cell data*

	$4NH_4Cl.CdCl_2$*	$4KCl.CdCl_2$†
a	8·91 Å	8·57 Å
α	88°54′	~90°
Density (calculated)	1·878 g.cm^{-3}	2·59 g.cm^{-3}
Density (measured)	1·930 ± 0·001 g.cm^{-3}	not stated

* *Structure Reports* (1947–1948).
† *Structure Reports* (1945–1946).

In these data, the a and α values had large and unstated margins of error. For the ammonium compound, it was mentioned that the value $a = 8{\cdot}91$ Å was uncertain and that with the measured density the value of $a = 8{\cdot}79$ Å was calculated.

As a consequence of our interest in the structure of such compounds, the unit-cell measurements were carried out by employing normal-beam, zero-layer, Weissenberg photographs about the a axis, using Cu $K\alpha$ radiation. The camera had been calibrated by a sodium chloride powder pattern as a check of systematic errors. Utilizing about 15 high-angle reflexions, $\theta > 63°$, which were all α doublets, starting values were obtained for the reciprocal quantities, a^* and α^*, by considering the relationships $(\sin^2\theta \pm \sin^2\bar{\theta})$, where θ and $\bar{\theta}$ refer to the reflexions $0kl$ and $0\bar{k}l$ respectively. With these starting values the corrections for random errors of measurements were obtained by a least-squares calculation (Whittaker & Robinson, 1929). The final lattice parameters together with their probable errors are given in Table 2.

Table 2. *Unit-cell data* (*present work*)

	$4NH_4Cl.CdCl_2$	$4KCl.CdCl_2$
a	8·842 ± 0·005 Å	8·601 ± 0·001 Å
α	88°48′ ± 10′	89°57′ ± 5′
Density (calculated)	1·923 g.cm^{-3}	2·581 g.cm^{-3}

The present values account for some of the high-angle reflexions which would not occur for the earlier unit-cell parameters and the density agreement is also improved.

Detailed structure investigations are likely to be very delayed. One of us (SKM) would like to acknowledge gratefully the award of a scholarship by the Government of India.

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