

parameter, quickly led to an  $R$  of 0.023 for 1624 reflections recovered from SUP 44753. (Eight entries in SUP 44753 were illegible.) Difference maps then clearly indicated the positions of all the H atoms except those on the  $\text{NH}_3$  group N(5), which were represented by a ring of essentially uniform electron density ( $0.3 \text{ e } \text{Å}^{-3}$ ). This group was modeled by six half-weight H atoms; the remaining H atoms were placed in idealized positions (C–H, 0.96; N–H, 0.90 Å) and not further adjusted. The total number of parameters was 104 (compared with 171 for the earlier,  $Pna2_1$ , model). Final full-matrix refinement led to an  $R$  of 0.019 with a maximum shift/ $\sigma$  value of 0.03. The  $Pnma$  coordinates are given in Table 1.\*

There are small but highly significant (in terms of the e.s.d.'s) changes in a number of the bond lengths (see Table 2). The largest changes involve the bridging C–N groups, which appeared to show wide ranges of Ni–C, Cd–N and C–N distances in the  $Pna2_1$  description but are entirely regular now. The atoms of these C–N groups were the only ones that needed to be modeled as structurally distinct pairs in the  $Pna2_1$  description; because of the very large correlations within each pair [the two atoms of a pair, such as N(1) and N(3), are in fact indistinguishable, as shown by the  $Pnma$  refinement], these atoms showed large e.s.d.'s in all coordinates (HU, Table 2) and even larger displacements from their true positions. For the remaining atoms, which lie on mirror planes in the  $Pnma$  description and hence were modeled as single atoms in  $Pna2_1$ , the near-singularities involved the out-of-plane coordinates  $z$ ; accordingly, the e.s.d.'s of their  $z$  coordinates, but not of  $x$  and  $y$ , are large (see HU, Table 2) and the reported values of  $z$  are perturbed. These out-of-plane perturbations do not have large effects on the bond lengths; however, other details of the structure are affected. For example, in the  $Pna2_1$  description, atom C(8) of the pyridine ring appears to be highly pyramidal, lying 0.23 Å from the plane of its three neighbors; in the revised  $Pnma$  description the pyridine ring is, as expected, planar (by symmetry).

The earlier authors do not indicate why they selected space group  $Pna2_1$  rather than  $Pnma$ ; both carry the same systematic absences. The irregular distances involving the C–N groups, the non-planarity of the pyridine ring, and the

\* Lists of anisotropic  $U_{ij}$  values and coordinates for the H atoms have been deposited with the British Library Document Supply Centre as Supplementary Publication No. SUP 51446 (2 pp.). Copies may be obtained through The Executive Secretary, International Union of Crystallography, 5 Abbey Square, Chester CH1 2HU, England.

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**Cubic structure of sodium calcium germanate  $\text{Na}_{3.70}\text{Ca}_{1.15}\text{Ge}_3\text{O}_9$ . Erratum.** By FUMITO NISHI, *Saitama Institute of Technology, 1690 Fusaiji, Okabe, Saitama 369-02, Japan*, and YOSHIO TAKÉUCHI, *Department of Earth Sciences, Nihon University, 3-25-40 Sakurajousui, Setagaya-ku, Tokyo 156, Japan*

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#### Abstract

A printer's error is corrected. In Table 1 of the paper by Nishi & Takéuchi [*Acta Cryst.* (1988), **C44**, 1867–1869] the

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Table 1. *Coordinates* ( $\times 10^5$ ) and  $U_{eq}$  values ( $\text{Å}^2 \times 10^4$ ), space group  $Pnma$

|        | $x$         | $y$        | $z$        | $U_{eq}^*$ |
|--------|-------------|------------|------------|------------|
| Ni     | 26345 (3)   | –25000     | 23981 (3)  | 197 (1)    |
| Cd     | 1365 (2)    | 25000      | 16036 (2)  | 181 (1)    |
| N(1,3) | 13578 (16)  | 2942 (31)  | 14903 (17) | 323 (5)    |
| N(2,4) | –10826 (16) | 3023 (30)  | 17126 (18) | 333 (5)    |
| N(5)   | –62 (27)    | 25000      | –880 (24)  | 319 (7)    |
| N(6)   | 3847 (23)   | 25000      | 33238 (22) | 282 (6)    |
| N(7)   | –12589 (28) | 25000      | 37677 (28) | 510 (11)   |
| C(1,3) | 18532 (17)  | –7782 (33) | 18187 (18) | 245 (5)    |
| C(2,4) | 34209 (18)  | –7707 (33) | 29673 (18) | 252 (5)    |
| C(5)   | 13549 (31)  | 25000      | 35840 (30) | 375 (9)    |
| C(6)   | 16645 (38)  | 25000      | 45376 (37) | 604 (14)   |
| C(7)   | 9448 (46)   | 25000      | 52695 (34) | 675 (18)   |
| C(8)   | –260 (42)   | 25000      | 50507 (33) | 484 (12)   |
| C(9)   | –2963 (31)  | 25000      | 40421 (28) | 332 (8)    |
| C(10)  | –8200 (52)  | 25000      | 58303 (40) | 788 (19)   |

$$* U_{eq} = \frac{1}{3} \sum_i \sum_j |U_{ij}(a_i^* a_j^*)|.$$

Table 2. *Bond lengths* (Å) from the  $Pnma$  (this investigation) and the  $Pna2_1$  (Hökelek & Ülkü, 1988) refinements

| Bond          | $Pnma$    | $Pna2_1$               |
|---------------|-----------|------------------------|
| Ni–C(1,3)     | 1.863 (2) | 1.877 (16), 1.860 (14) |
| –C(2,4)       | 1.866 (2) | 1.835 (15), 1.903 (16) |
| Cd–N(1,3)     | 2.366 (2) | 2.392 (16), 2.351 (14) |
| –N(2,4)       | 2.360 (2) | 2.308 (13), 2.417 (17) |
| –N(5)         | 2.310 (3) | 2.317 (6)              |
| –N(6)         | 2.365 (3) | 2.365 (4)              |
| N(1,3)–C(1,3) | 1.150 (3) | 1.125 (20), 1.162 (18) |
| N(2,4)–C(2,4) | 1.146 (3) | 1.205 (25), 1.077 (25) |
| N(6)–C(5)     | 1.360 (5) | 1.350 (9)              |
| –C(9)         | 1.344 (5) | 1.362 (7)              |
| C(5)–C(6)     | 1.364 (7) | 1.383 (9)              |
| C(6)–C(7)     | 1.393 (7) | 1.363 (12)             |
| C(7)–C(8)     | 1.347 (7) | 1.427 (15)             |
| C(8)–C(9)     | 1.420 (6) | 1.407 (10)             |
| –C(10)        | 1.510 (8) | 1.527 (14)             |
| C(9)–N(7)     | 1.355 (6) | 1.343 (8)              |

peculiar e.s.d.'s resulting from the  $Pna2_1$  refinement might well have suggested that the space group was incorrect. In any event, workers should be continually alert to the problem of assigning the correct space group, and to the dangers of an incorrect assignment.

I thank W. P. Schaefer for helpful comments.

#### Reference

HÖKELEK, T. & ÜLKÜ, D. (1988). *Acta Cryst.* **C44**, 832–834.

$y$  coordinate of O(4) is illegible. It should read 2196 (6).

All relevant information is contained in the *Abstract*.

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