Short Communications

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Crystal data for 2,9-dimethyl-1,10-phenanthrolin.

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2,9-Dimethyl-1,10-phenanthrolin is tetragonal, with $a=14{\cdot}25$ and $c=22{\cdot}15$ Å. The space group is $I4_1/a$.

As a part of our interest in compounds closely related to phenanthrene we have examined crystals of 2,9-dimethyl-1,10-phenanthrolin, $C_{14}H_{12}N_2$. Plate-like crystals of irregular hexagonal shape were produced by slow evaporation from a solution in ether at room temperature. Under a polarizing microscope one of the extinction directions was found to be parallel to one of the two longer edges of the crystal. Cell constants were determined from oscillation and Weissenberg photographs (zero and upper level) about the *a* and *c* axes, with Cu $K\alpha$ radiation. The density was measured by flotation.

Crystal data:

Tetragonal,

$a=b=14{\cdot}25$ and $c=22{\cdot}15$ Å;

sixteen formula units per unit cell.

$d_{calc}=1{\cdot}23$ g.cm^{-3} and $d_{obs}=1{\cdot}27$ g.cm^{-3}.

Refractive indices: 1·65 along the *c* axis and 1·73 along the *a* and *b* axes.

Absent spectra:

$hkl: h+k+l\neq 2n$; $hk0: h, (k)\neq 2n$ and $00l: l\neq 4n$.

Hence the space-group is $I4_1/a$.

No further work on this compound is contemplated.

The author would like to thank Dr B. S. Basak, Professor of Physics, Presidency College for his valuable assistance.

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A refinement of the crystal structure of α″-Cd_3As_2.

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α″-Cd_3As_2 which is stable in the temperature range 405–940 °C can occasionally be obtained at room temperature. The crystal structure of α″-Cd_3As_2 corresponds to that described by Stackelberg & Paulus (1935, *Z. phys. Chem.* B**28**, 427) for Cd_3As_2. Atomic parameters of α″-Cd_3As_2 have been refined.

Pure cadmium arsenide undergoes a number of phase transitions at high temperatures (Węglowski & Łukaszewicz, 1968; Trzebiatowski, Królicki & Żdanowicz, 1968), forming the phases labelled α, α′, α″ and β. The crystal structure of the room temperature form, α-Cd_3As_2, has been recently determined by Steigmann & Goodyear (1968). It was shown by Węglowski & Łukaszewicz (1968) that α″-Cd_3As_2, stable in the temperature interval 405–940 °C, has a lattice cell

Table 1. *Atomic parameters*

Origin at $\bar{4}$ *m* 2. Standard deviations are given in brackets.

	Equipoint	*x*	*y*	*z*	*B*
As(1)	4(*c*)	0	0	0·2494 (23)	0·61 (60) Å^2
As(2)	4(*d*)	0	½	0·2594 (38)	0·51 (65)
As(3)	8(*f*)	0·2534 (15)	0·2534 (15)	0	0·77 (33)
Cd(1)	8(*g*)	0	0·2127 (20)	0·1003 (12)	0·61 (28)
Cd(2)	8(*g*)	0	0·2786 (21)	0·3791 (15)	1·51 (33)
Cd(3)	8(*g*)	0	0·2558 (30)	0·6408 (16)	2·61 (41)