Table 3. Powder pattern for In_3Te_4 (CuKα *radiation*)

	d (Å)		Rel. *I*			d (Å)		Rel. *I*	
hk·l	obs.	calc.	obs.	calc.	*hk·l*	obs.	calc.	obs.	calc.
00·3	13·5	13·53	*VW*	60	12·17	1·205	1·203	*VW*	32
00·6	6·78	6·79	*VVW*	20	11·30	1·142	1·142	*VVW*	23
00·9	4·50	4·51	*VW*	65	02·31	1·066	1·068	*W–M**	24
00·12	3·386	3·382	*VW*	71	22·0		1·065		42
10·7	3·093	3·110	*VVS*	1250	11·33		1·065		1
01·8	3·006	2·992	*VW*	39	30·21	1·039	1·037	*VW*	11
10·10	2·729	2·732	*W*	76	03·21		1·037		11
01·14	2·272	2·278	*M–S*	342	22·9		1·036		5
11·0	2·128	2·128	*S*	463	13·7	1·008	1·008	*W–M*	65
11·3	2·098	2·109	*W*	35	11·36	0·9955	0·9963	*W**	18
10·16		2·097		65	30·24		0·9945		34
01·17	2·003	2·004	*W–M*	97	03·24		0·9945		34
00·21	1·934	1·932	*W–M*	34	31·14	0·9648	0·9649	*W*	40
11·9		1·935		37	21·31	0·9554	0·9544	*W*	40
10·19	1·860	1·848	*VVW*	15	10·43	0·9127	0·9143	*VW**	12
11·12	1·800	1·801	*VW*	32	31·20		0·9136		5
20·5		1·797		6	40·7		0·9109		30
02·7	1·754	1·756	*M–S*	215	30·30		0·9100		6
00·24	1·691	1·691	*VW*	33	03·30		0·9100		6
01·23	1·587	1·591	*VW*	35	00·45	0·9021	0·9018	*VW**	3
20·14	1·555	1·555	*W–M*	93	22·24		0·9011		32
20·17	1·458	1·459	*VW*	32	04·14	0·8785	0·8789	*VW**	19
11·21	1·431	1·431	*W*	69	12·38	0·8491	0·8478	*W**	38
21·7	1·355	1·354	*M–S*	166	01·47	0·8388	0·8407	*M**	24
00·30		1·353		5	02·43		0·8402		27
10·28		1·349		10	04·20		0·8396		3
12·14	1·255	1·256	*W–M*	83	32·7		0·8375		69
10·31	1·231	1·234	*M**	38	22·30		0·8368		14
00·33		1·230		3	23·14	0·8130	0·8125	*W**	54
30·0		1·229		66	13·31	0·8064	0·8062	*M**	60
11·27		1·228		8	41·0		0·8051		105

* Broad line.

the powder photograph. The lattice constants determined from the powder photograph (CuKα radiation) are $a = 4{\cdot}26 \pm 0{\cdot}01$, $c = 40{\cdot}6 \pm 0{\cdot}1$ Å or in the rhombohedral description $\alpha = 13{\cdot}7_5$ Å, $\alpha = 17{\cdot}8_0°$. The powder pattern indexed on the hexagonal basis is given in Table 3. Shown also are qualitatively estimated intensities and those calculated* from

$$I_{rel} = p|F|^2 \times 10^{-5} L{\cdot}P$$

where p is the multiplicity, F, the structure factor and $L{\cdot}P$ the Lorentz-polarization factor. The positional parameters were those obtained from the single crystal analysis, and because the program* allows only individual isotropic temperature factors, In(1) and Te(2) were assigned values of 0·5 Å^2 and In(2) and Te(1) values of 1·0 Å^2.†

When this pressure-induced In_3Te_4 phase was heated at 200°C in an evacuated sealed fused silica tube for 67 hr, it decomposed into a mixture of the atmospheric pressure In_2Te_3 phase and an NaCl-type phase with composition (determined from the

* The program used was originally derived by TREUTING[20] for the IBM 704 and modified for the IBM 7094 by N. V. Vaughan and A. R. Storm.

† Differences in vibration amplitudes of the atoms were indicated by the results from the single crystal analysis.