

Table 4. Powder pattern for  $\text{In}_2\text{Te}_3$  specimen subjected to 29 kbar and 760°C

| Rel.<br>$I_{\text{obs}}$ | $d_{\text{obs}}$<br>(Å) | $\text{In}_3\text{Te}_4$ -type |              | $\text{Bi}_2\text{Te}_3$ -type |              |
|--------------------------|-------------------------|--------------------------------|--------------|--------------------------------|--------------|
|                          |                         | $d_{\text{calc}}$<br>(Å)       | $hk \cdot l$ | $d_{\text{calc}}$<br>(Å)       | $hk \cdot l$ |
| 23                       | 4.82*                   |                                |              |                                |              |
| 11                       | 4.685*                  |                                |              |                                |              |
| 9                        | 4.538                   | 4.533                          | 00.9         |                                |              |
| 5                        | 3.722*                  |                                |              |                                |              |
| 3                        | 3.655                   |                                |              | 3.661                          | 10.1         |
| 12                       | 3.579                   |                                |              | 3.585                          | 01.2         |
| 6                        | 3.399                   | 3.400                          | 00.12        |                                |              |
| 22                       | 3.365                   | 3.366                          | 01.5         |                                |              |
| 283                      | 3.136                   | 3.120                          | 10.7         | 3.136                          | 01.5         |
| 12                       | 2.999                   | 2.992                          | 01.8         |                                |              |
| 7                        | 2.906*                  |                                |              |                                |              |
| 9                        | 2.757                   | 2.739                          | 10.10        | 2.784                          | 10.7         |
| 4                        | 2.627                   |                                |              | 2.617                          | 01.8         |
| 70                       | 2.313                   |                                |              | 2.312                          | 10.10        |
| 26                       | 2.292                   | 2.288                          | 01.14        |                                |              |
| 13                       | 2.167                   |                                |              | 2.178                          | 01.11        |
| 100                      | 2.133                   | 2.133                          | 11.0         | 2.133                          | 11.0         |
| 19                       | 1.994                   | 2.013                          | 01.17        |                                |              |
| 18                       | 1.977                   |                                |              | 1.977                          | 00.15        |
| 16                       | 1.944                   | 1.943                          | 00.21        | 1.941                          | 10.13        |
| 8                        | 1.853                   | 1.855                          | 10.19        |                                |              |
| 37                       | 1.763                   | 1.761                          | 02.7         | 1.764                          | 20.5         |
| 16                       | 1.681                   | 1.683                          | 02.10        |                                |              |
| 16                       | 1.566                   |                                |              | 1.567                          | 02.10        |
| 13                       | 1.448                   |                                |              | 1.450                          | 11.15        |
| 6                        | 1.436                   | 1.436                          | 11.21        | 1.436                          | 02.13        |
|                          |                         | 1.360                          | 00.30        |                                |              |
| 25                       | 1.358                   | 1.358                          | 21.7         | 1.359                          | 12.5         |
|                          |                         | 1.356                          | 10.28        |                                |              |
| 4                        | 1.332                   | 1.329                          | 11.24        |                                |              |
| 6                        | 1.305                   |                                |              | 1.307                          | 12.8         |
|                          |                         |                                |              | 1.304                          | 11.18        |
| 8                        | 1.262                   | 1.259                          | 12.14        | 1.263                          | 21.10        |
| 9                        | 1.239                   | 1.240                          | 10.31        | 1.240                          | 12.11        |
|                          |                         | 1.231                          | 30.0         |                                |              |
| 21                       | 1.229                   | 1.227                          | 30.3         | 1.231                          | 30.0         |
|                          |                         | 1.225                          | 21.16        |                                |              |

\* Unidentified.

melted at 760°C. (About 60 per cent of the specimen became superconducting at 1.3–0.97°K.) The pattern (Table 4) contains four unidentified lines which are rather weak and shows the presence of both the  $\text{In}_3\text{Te}_4$  and  $\text{In}_2\text{Te}_3$  pressure-induced phases.\* The observed relative intensities given in

\* Calculations of spacings in Table 4 are based on the hexagonal lattice constants  $a = 4.266$ ,  $c = 40.8$  Å for the  $\text{In}_3\text{Te}_4$  phase and  $a = 4.266$ ,  $c = 29.65$  Å for the  $\text{In}_2\text{Te}_3$  phase.

Table 4 probably suffer from preferred orientation as the crystallites of all the pressure-induced phases, including the NaCl-type, tend to grow along (110) directions.

*Acknowledgements*—We wish to thank R. G. MAINES for assistance with preparation of specimens and high pressure experiments, G. P. ESPINOSA for assistance with the X-ray powder diffractometer work and J. L. BERNSTEIN for assistance with some of the crystallographic calculations.

1. GELLER  
Appl
2. GELLER  
13,
3. KLEM  
219
4. KENNEDY  
Phy
5. SHAW  
120
6. GOOD  
(195)
7. SCHULTZ  
46,
8. KETTEL  
POL
9. GELLER  
(195)
10. HÄGG  
913
11. BLOEM
21. INUZU