

Table 1
Products obtained with the use of non-crystalline Ge.

Pressure (kbar)	Temperature (°C)	Run time (h)	Product after quenching
<i>High density</i>			
40	25	96	no change
80	25	96	no change
40	200	150	no change
80	200	72	no change
80	200	96	Ge IV + slight Ge I + non-crystalline Ge
106	200	24	no change
68	330	24	no change
<i>Average density</i>			
50	400	24	Ge I
70	25	53	Ge I
70	200	24	Ge I + Ge III
90	25	24	Ge I + Ge III and Ge IV
90	300	24	Ge I + Ge III
100	100	53	Ge I + Ge III
100	200	53	Ge I + Ge III + Ge IV
120	25	24	Ge I + Ge III
120	200	24	Ge I + Ge III + Ge IV
140	25	53	Ge III + Ge I
<i>Low density</i>			
40	25	96	Starting material + small growth Ge I
40	200	96	Ge I
80	25	96	Ge I
80	200	96	Ge III + Ge I

centration was found beyond that formed by the grinding process prior to the runs. The non-crystalline nature persists even after treatment at 106 kbar, 200°C for 24 h, or after treatment at 68 kbar, 300°C for 24 h. The phase Ge IV was encountered in certain run products but was not consistent in its appearance.

4. Discussion

The present results on low and average density non-crystalline Ge are in essential agreement. These results are also generally consistent with earlier work [2,3,6-8] on crystalline and non-crystalline Ge in the low-pressure region.

Ge IV is known to be very slow in forming and previously at least 48 h were required for it to form from crystalline Ge. The present experiments, although being of the same duration or somewhat longer, did not utilize the special dry-ice quenching technique. Perhaps partly for this reason and partly for the fact that any crystal-