turned on, the heating would be sufficient to raise the temperature above the melting point of zinc. With the recorder operating, the power supply was turned on with the variac at this preset value. The temperature of the sample increased quite rapidly and linearly with time. As the sample melted, the latent heat showed up on this curve as a somewhat constant temperature for a short time. The sample was melted two or three times at each pressure increment in order to assure that the point observed was the true melting point, confirming it by repetition. Pressure increments of 500 psi oil pressure were taken. This corresponds to 7000 atmospheres.

It is not possible to get melting points much below 1000 psi oil pressure because the gaskets are not formed until about 600 psi and, if the sample is heated before the gaskets are fully formed, it will blow out. It was necessary in all the runs made to extrapolate the curves obtained from 1000 psi to 1 psi. In zinc the extrapolation put the melting temperature exactly on the point where it should melt at 1 atmosphere.

Results:

Three runs of zinc have been averaged together and plotted. This curve can be seen in Figure 6. The temperature increases smoothly from 419.5 degrees centigrade at 1 atmosphere to 670 degrees centigrade at 105,000 atmospheres. There were no visible transition points.

Butuzov, Ponyatovskii, and Shakhovskoi[7] have measured the melting temperature of zinc up to pressures of 30,000 kg/cm^2. In this range the melting point of zinc increased 129°C. Their point, at 30,000 kg/cm^2, is 8.0% higher than the same point obtained herein.