ZINC

Attempts similar to those used in the runs on lead were used in an effort to detect the melting point of zinc; however, it was found that the resistance of zinc did not change enough upon melting to cause this sudden change in I^2R heating. Consequently, no change in the temperature at melting could be seen, as was observed when using the sample geometry for lead.

Several other methods of detection and sample geometry were tried to no avail. After some time, however, a satisfactory method was found which yielded some very good and apparently accurate results; that is, no temperature correction was necessary as in lead. The thermocouple measured the exact temperature at which the sample melted, and the strip-chart recorded it.

Sample Geometry:

The above method employed detecting the latent heat of melting in the sample as it was allowed to heat and cool rather rapidly. The sample was not used as its own heater in this case but, instead, was heated indirectly. Figure 6 shows the components of the sample. In this case, the zinc was enclosed in a boron nitride (BN) tube with BN plugs in the end, so that the zinc was completely enclosed in BN. The thermocouple wires ran straight through the BN and the zinc, so the thermocouple junction was in the center of the zinc sample. This assembly was placed in the hole in the tetrahedron and heated by two tantalum strips running along the side of the BN tube. With the end pieces replaced, including the steel end tabs, the current could now pass