

V. CHEMICAL AND PHYSICAL PROPERTIES OF THE RARE EARTH DIANTIMONIDES

The chemical and physical properties of the LaSb₂ type and high pressure orthorhombic rare earth diantimonides are very similar. All the diantimonides are silver-grey, metallic substances whose different phases could not be identified by visual inspection. X ray powder diffraction patterns were required for identification of all runs. Even for the runs where no reaction occurred the products were very similar in appearance to the reacted samples. The product compounds were opaque and quite brittle.

Densities were determined on samples run in Mo tubes. Five or six runs were made and the samples carefully removed from the Mo tubes. From 0.25 to 0.35 gram of material was used and densities were made in a pycnometer with anisole as the fluid displaced. Taking 0.2 milligram as the weighing error the densities had a precision of ± 2 per cent. Accuracy of the densities was uncertain since the purity of the samples was unknown and the metallographic studies indicated some reactants were still present after the synthesis runs. However, the measured densities correlate quite well with the values published by Wang and Steinfink on pure LaSb₂ type compounds (1). Experimental