

VII. X RAY DIFFRACTION STUDIES

All runs in the reaction product studies were analyzed by the Debye-Sherrer or powder diffraction method. The samples were ground between two polished tungsten carbide surfaces and loaded in a 0.5 mm glass capillary. Diffraction patterns were obtained on a 143 mm Debye-Sherrer camera with a General Electric CA-7 copper X ray tube using 1.5 to 2 hours exposure. The best films were read on a General Electric Fluoroline illuminator and d values were calculated on the IBM 7040 computer.

The LaSb₂ type patterns were indexed by comparing them to the NdSb₂ indexing given by Wang (25). Several additional lines were indexed by comparing observed d values with calculated d_{hkl} values using the structure factors given for NdSb₂ by Wang and Steinfink (1). The structure factors allowed the selection of the proper d values for the LaSb₂ type structure from the list of possible d values calculated from the lattice parameters and Miller indices. Lattice parameters were calculated by a least squares fit of the observed d values and the assigned Miller indices. The X ray diffraction data and Miller indices of the LaSb₂ type compounds are given in Table 10 in the Appendix.