The phase diagrams of Tb-Bi have been obtained. A peritectic reaction develops as a result of bismuth addition, the transformation temperature of terbium being lowered by 18 °C. Eutectic reactions occur at 17 at.%Bi and 1090 °C, and at more than 99 at.%Bi and 269 °C. There are four compounds in the system: Tb$_5$Bi$_3$, Tb$_4$Bi$_3$, TbBi, and TbBi$_2$, resulting from peritectic reactions at 1480, 1570, 1770 and 720 °C. While TbBi melts congruently at 1920 °C. Tb$_5$Bi$_3$ and TbBi were observed to exhibit transformation.

**Key words:** Terbium; Bismuth; Phase Diagram; Alloy.