

The Terbium-Bismuth Alloy System

M. N. Abdusalyamova and O. I. Rachmatov

The Institute of Chemistry of Tajik Academy of Science,
Aini St. 299/2, 734063 Dushanbe, Tajikistan

Reprint requests to Prof. M. N. A.;
Fax: 992372210404; E-mail: dali@ac.tajik.net

*Paper presented at the NATO Advanced Study Institute,
May 4–14, 2001 (Kas, Turkey)*

Z. Naturforsch. **57a**, 101–102 (2002);
received December 12, 2001

The phase diagrams of Tb-Bi has 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: Tb₅Bi₃, Tb₄Bi₃, TbBi, and TbBi₂, resulting from peritectic reactions at 1480, 1570, 1770 and 720°C. While TbBi melts congruently at 1920°C. Tb₅Bi₃ and TbBi were observed to exhibit transformation.

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