

substance: boron compounds with lanthanides
property: properties of lanthanide borides of the type MB₂₅

YB₂₅

Structure: monoclinic

Space group: I121, I1m1 or I12/m1

lattice parameters

(in Å)

<i>a</i>	8.2842(3)	<i>T</i> = 300 K	X-ray diffraction	97T
<i>b</i>	10.3203(3)			
<i>c</i>	5.8570(2)			
β	90.402(3)°			

TbB₂₅

Structure: monoclinic (isostructural to YB₂₅) [99M].

Space group: I112, I11m, or I112/m [99M].

Curie-Weiss behavior of the magnetic susceptibility [99M].

lattice parameters

(in Å)

<i>a</i>	5.8570(2)	<i>T</i> = 300 K	X-ray diffraction	99M
<i>b</i>	8.2842(3)			
<i>c</i>	10.3203(3)			
γ	90.402(3)°			

Curie-Weiss parameters of the magnetic susceptibility

($\chi = (C1 + C2/(T-\Theta))$)

C1	0.0015 cm ³ / mol Tb	χ in CGS-emu	99M
C2	11.24 cm ³ K/ mol Tb		
Θ	-1.52 K	<i>T</i> < 5 K	
<i>p</i> _{eff}	9.48μ _B /Tb atom		

References:

- 97T Tanaka, T., Okada, S., Yu, Y., Ishizawa, Y.: J. Solid State Chem. 133 (1997) 122 (Proc. 12th Int. Symp. Boron, Borides and Rel. Compounds, Baden, Austria, 1996).
- 99M Mori, T., Tanaka, T.: J. Phys. Soc. Jpn. 68 (1999) 2033.