

Study of glass formation in the Sb₂O₃–PbO–MnO ternary system

Journal of Alloys and Compounds, Volume 511, Issue 1, 15 January 2012, Pages 209–214

Authors: M. Nouadji, A. Attaf, R. El Abdi, M. Poulain.

Abstract

Vitreous systems based on antimony oxide Sb₂O₃ have been investigated. The influence of MnO substitution on the mechanical and physical properties in the (80 – x)Sb₂O₃–20PbO–xMnO and (70 – x)Sb₂O₃–(30 – x)PbO–2xMnO systems has been studied. Vickers hardness, density, molar volume, Young modulus, glass temperature transition, infrared and UV transmission spectra depend on the MnO concentration. Crack analysis of the glass surface under indenter deformation shows the tenacity changes according to concentration of the MnO.

Keywords : Antimony oxide; Mechanical properties; Optical properties; Crack analysis

Link <http://www.sciencedirect.com/science/article/pii/S0925838811018548>