**Effect of Alkali Phosphate Content on Foaming of CRT Panel Glass Using Mn3O4 and Carbon as Foaming Agents**

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**Abstract**

Phosphates play a role in different foaming processes. In slag foaming, the phosphate can lower the surface tension and increase the foam life time. In the sintering–foaming process, sodium phosphates are added as “foam stabilizers”. Although phosphates show some effect on slag foaming, their effect on the sintering–foaming process still needs to be clarified. Here, we investigate the influence of alkali phosphates (Li3PO4, Na3PO4, and K3PO4) on the glass foaming process, foam density, and glass transition temperature (*T*g) of waste cathode ray tube (CRT) panel glass foamed using Mn3O4 and carbon. The results show that the *T*g of foam glasses decreases with increasing the alkali phosphate content, and with decreasing the alkali ion radius. Furthermore, the foaming temperature is affected by the alkali phosphate, especially by Li3PO4. Thus, alkali phosphates can be used to decrease the heat-treatment temperature. However, only K3PO4 and Na3PO4 prove to be promising candidates for producing low density foam glasses. In addition, the foam glasses prepared from K3PO4 prove to have a higher degree of closed pores.