

# Surface Tension of $\text{KPO}_3\text{-}\text{WO}_3$ Melts

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The temperatures  $T_{\text{liq}}$  of molten  $x\text{WO}_3\text{-}(1-x)\text{KPO}_3$  mixtures with a molar content between  $x = 0$  and  $x = 0.60$  have been determined by differential thermal analysis. The surface tension of the  $x\text{WO}_3\text{-}(1-x)\text{KPO}_3$  melts in the interval from  $x = 0$  to  $x = 0.5$  has been measured by ring tensiometry for temperatures 10 K–20 K above the melting points, up to 1373 K. The data obtained for  $\text{KPO}_3$  were fitted by a linear dependence on the temperature and compared with data available in the literature. The surface tension of the  $x\text{WO}_3\text{-}(1-x)\text{KPO}_3$  melts was found to decrease non-monotonously with  $x$ . Three bends at  $x \sim 0.15$ , 0.30, and 0.45 were observed in the surface tension vs. molar fraction curve. The first and the third bends correspond to eutectic compositions; the second one is related to the formation of congruently melting  $\text{K}_2\text{WO}_2\text{P}_2\text{O}_7$ . Equations describing the temperature and concentration dependences of the surface tension are proposed.

*Key words:* Molten Salts; Differential Thermal Analysis; Surface Tension; Ring Tensiometry.