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 IONIC CONDUCTIVITY PROPERTIES OF ZrF_4 - BaF_2 - LaF_3 -AF
 (A = Li, Na) GLASSES

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A comparative study of electrical properties of both series of glasses $ZrF_4(0.62-0.4x)BaF_2(0.30-0.5x)LaF_3(0.08-0.1x)AF(x)$ (A = Li, Na) ($0 < x < 0.30$) has been carried out as a function of AF content.

A minimum of ionic conductivity bound to a maximum of activation energy has been detected when the atomic Li/F ratio is equal to ≈ 0.07 . By analogy with the glasses belonging to ZrF_4 - BaF_2 - ThF_4 -LiF system, it is proposed that in the Li-low concentration domain ($Li/F \leq 0.07$) transport properties result from mixed contributions of mobile Li^+ and F^- ions and for high Li concentrations ($Li/F \geq 0.07$), they depend only on the Li^+ rate.

When A = Na, on the contrary, conductivity decreases regularly and activation energy increases with increasing x. The electrical properties result only from the contribution of mobile F^- ions. A ^{23}Na NMR study has shown that Na^+ ions do not participate in the conductivity mechanisms.