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Ac conductivity and Ultrasonic Studies in KHCO_3 Compound

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Abstract: The total conductivity of KHCO_3 compound is studied in the frequency range 50 Hz-1 MHz and in the temperature range 300-370 K. The conductivity frequency dependence relation is divided into three regions: one at low frequency (dc conductivity), while the others appear at a moderate and relatively higher frequency range. In general, the conductivity frequency dependence conductivity obeys a double power law relation, $\sigma_{\text{tot}} = \sigma_{\text{dc}} + A\omega^p + B\omega^q$. The powers p and q have been found to be in the range 0 to 1 and 1 to 2, respectively. The attenuation coefficient β of KHCO_3 compound was studied over a temperature range from room temperature up to 370 K. The general behavior showed two essential activated regions. The activation energies are estimated and discussed.

Key Words: KHCO_3 , Ac conductivity, Ultrasonic

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