Earth abundant and non-toxic elements based functional materials have been found commercially viable for applications. Pursuing this, ternary phase clathrate $K_8Al_7Si_{39}$ was synthesized and its physical properties were studied. X-ray diffraction, induction-coupled plasma optical emission spectroscopy (ICP-OES), and electron probe micro-analysis have revealed that the synthesized compound is a type-I ternary clathrate $K_8Al_7Si_{39}$ with lattice parameter $a = 10.434(1)$ Å. Chemical composition of as-synthesized sample, determined by ICP-OES, was 14.7(2) at.% K, 13.2(1) at.% Al, and 72.1(7) at.% Si, which expresses its chemical formula $K_{7.9(2)}Al_{7.1(1)}Si_{38.9(4)}$. Low temperature (10-320K) transport measurements were performed on the compound. Electrical resistivity measurements suggested that it has metallic nature. Moderate value of Seebeck coefficient with $n$-type conduction was observed. Hall measurement confirmed $n$-type carriers with almost constant concentration ($n$) of $8.8-14.5*10^{20}$ cm$^{-3}$ and mobility ($\mu$) of $4.5-10.3$ cm$^{2}$V$^{-1}$s$^{-1}$ in the range 10-300K. Slight decrease in thermal conduction was observed with increasing temperature, after a maximum at ~50K, indicating metallic type thermal conduction.