Synthesis of $AlPO_4$-5 by using aluminum dross as a raw material

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$AlPO_4$-5 was synthesized using pure and extracted aluminum hydroxide from aluminum dross as an aluminum source and triethylamine (TEA) was used as a structure directing agent. These materials were characterized by XRD, N_2 adsorption-desorption measurement, and SEM. Various physical properties such as crystallinity, surface area, and pore volume were investigated for the obtained reaction product. The specific surface areas of $AlPO_4$-5 products from pure aluminum hydroxide, aluminum dross, and extracted aluminum hydroxide from aluminum dross are 256, 270, and 286 m^2/g and the pore volumes are 0.18, 0.15, and 0.17 cm^3/g respectively