Synthesis and characterization of the gallosilicate analog of zeolites TNU-9 and TNU-10

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The synthesis and characterization of the gallosilicate analog of zeolites TNU-9 and TNU-10 are described. Under the synthesis conditions studied here, the SiO_2/Al_2O_3 and $NaOH/SiO_2$ ranges yielding pure gallosilicate TNU-9 and TNU-10 are narrow, which is the same trend as that observed for the synthesis of their aluminosilicate analog. The presence of Ga in the tetrahedral positions of these gallosilicates are evidenced by powder XRD, IR, and ^{29}Si and ^{71}Ga MAS NMR. In addition, the strength and concentration of acid sites in gallosilicate TNU-9 and TNU-10 were found to be considerably weak when compared to the aluminosilicate counterparts.