Synthesis and Characterization of Gallium-Containing Mordenite Zeolites

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A series of mordenite zeolites having framework Ga and Al atoms over the entire compositional range $0 \leq Ga/(Ga + Al) \leq 1$ has been prepared under wholly inorganic conditions. It was found that during the calcination of the gallo- and galloaluminosilicate mordenites, most framework Ga atoms have been removed from the zeolite framework, forming intrazeolitic gallium oxide nanoparticles.