

04-P-12 - Co-templated synthesis of CrAPO-5 with various organic acids

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Most of the 20 tested saturated, unsaturated, and bifunctional aliphatic acids can be used as co-templates for CrAPO-5. The acid type and amount affect significantly the crystallinity, the content of substituted Cr, as well as the dimensions and morphology of the crystals. The co-templating role of the acids is clearly visible, however, a systematic correlation with the resulting crystal properties is not observed. The acid has to be chosen with respect to the required product properties. The highest crystallinity is observed with acetic, acrylic, methacrylic or crotonic acids, the most perfect morphology is obtained with unsaturated acids of C₃ to C₆ chain length and the highest substitution of Cr with C₃ to C₅ bifunctional acids. Only methacrylic acid seems to satisfy all the above requirements to a relatively high extent.

04-P-13 - How to increase the amount of framework Co²⁺ in microporous crystalline aluminophosphates?

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Using the synthesis of CoAPO-5 and CoAPO-CHA molecular sieves as examples, the influence of the synthesis conditions the solvents as well as the presence of monovalent counterocations and structure-directing organic template molecules on the isomorphous substitution degree of Co for Al in microporous crystalline aluminophosphates are studied. It was possible to prepare CoAPO-5 with more than 25% of the framework Al sites substituted by Co²⁺, CoAPO-CHA with Co²⁺ occupying most of the framework Al sites ([Co]:[Al]>1) and a new cobalt phosphate material.

04-P-14 - Preparation of zinc containing zeolite catalysts

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A method is described for the preparation of zinc-containing zeolite by direct synthesis from hydrogels. The synthesis of Zn-MFI type zeolite materials and the post synthesis introduction of Cu are discussed. The samples are characterized by XRD, AAS, thermal analysis, SEM and ²⁹Si-NMR spectroscopy. The catalytic results on the cumene conversion are discussed.