

Mechanochemical Synthesis of Chromium Tris(2-ethylhexanoate) and Evaluation of Its Catalytic Activity in the Reaction of Ethylene Trimerization

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Abstract—A method was developed for synthesis of chromium(III) tris(2-ethylhexanoate) by the mechanochemical interaction of chromium(III) chloride with sodium 2-ethylhexanoate without a solvent, followed by heating of the reaction mixture. The influence exerted by the conditions of the mechanical activation and the subsequent thermal treatment on the course of the processes and some properties of activated mixtures was studied. Chromium(III) tris(2-ethylhexanoate) can be isolated from the reaction mixture in a ~75% yield. Both the activated reaction mixture and the target product obtained exhibit a high catalytic activity and selectivity in the reaction of ethylene trimerization.

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