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CHARACTERISTICS OF THE $Fe_2(MoO_4)_3 \cdot MoO_3$ CATALYST USED IN THE SYNTHESIS OF NANOCARBONS FROM METHANE

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ABSTRACT

The analysis of the physicochemical and operational characteristics of two industrial catalysts for the synthesis of nanocarbon is carried out. Various methods: X-ray phase, chemical, IR spectroscopy investigated the composition of the catalysts. It was shown that the main component of industrial catalysts is iron molybdate (67.27%). The catalyst contains about 31% MoO_3 , and 1-2% of molybdenum oxide is included in the lattice of iron molybdate, forming a solid solution. The presence of acid sites of the type on the surface of the catalysts was detected by IR spectroscopy. Lewis and Bronsted and the main centres of varying strength. The catalysts are highly active: their formaldehyde productivity reaches a value (12.5-13 mmol/g.s). The surface area of industrial contacts is (7-9 m^2/g); the size of the mesopores is 2-40 nm. Thus, industrial catalysts for the synthesis of nanocarbon are of high quality, which ensures their high performance throughout the entire period of operation.

KEYWORDS: Iron Molybdate, Molybdenum, Catalyst, IR Spectroscopy, Radiograph

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