

Название публикации:

Ecological and economic aspects of vinyl chloride production based on the use of raw materials of coking plant

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Аннотация:

Ecological and economic aspects of vinyl chloride production are considered as the main resource for production of polyvinyl chloride using by-products of coking enterprise, including low-grade coke, as well as coke gas. Implementation of this project is possible based on carbon technologies and technology of conversion of methane contained in coke gas into acetylene using hydrogen-arc pyrolysis. It is proposed to include cryogenic separation of coke gas into methane and hydrogen, needed for implementation of this technology and production of hydrogen chloride as a component for production of vinyl chloride in process of raw material preparation. Rational use of resources of two Kemerovo enterprises-“Cock” PJSC and “Khimprom” PJSC for this product manufacturing allows optimization of added value chain. Currently, “Coke” PJSC has inoperative volumes of coke gas, which can be used as a raw material for vinyl chloride production. Carbon technology of PVC production, as international practice has shown, is economically advantageous if cost of coal raw materials and waste coke production is 40% lower than cost of oil or natural gas. Analysis of economic expenditures and cost of vinyl chloride production based on added value chains have identified the most “narrow” elements of technological process, requiring innovative solutions to reduce costs and environmental impact of production. © 2018, National University of Science and Technology MISIS. All rights reserved.

Ключевые слова:

Carbon technology, Cryogenic method of separating coke gas, Environmental impact of production, Hydrogen chloride, Hydrogen-arc pyrolysis method, Polyvinyl chloride, Value chain, Vinyl chloride