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Comparative Analysis of Technologies for Production of Granular NPKS-Fertilizers

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Abstract : Based on a comparison of technologies for the production of granular nitrate-containing and nitrate-free NPKS-fertilizers, this paper considers the effect of process parameters on the economic feasibility of production, on physical & chemical, and structural & mechanical properties and quality of final products (caking, static strength of granules, hygroscopicity, etc.), as well as on thermal stability of fertilizers, eco-friendly production, and other aspects. This comparative analysis allows to select the optimal technology for specific conditions and requirements. Additionally, the report considers flexible, a unique technology for the production of granular NPKS-fertilizers containing sulfur and calcium, suggested by Samoilov Research Institute for Mineral Fertilizers JSC “NIUIF” - the oldest industry-oriented institute in Russia. This technology is implemented at one of the Russian plants where combined drum is used for granulation and drying.

Keywords : caking, granule static strength, granulating-drying drum, NPKS-fertilizers
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