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Effects of temperature and solvent concentration on the solvent crystallization of palm-based dihydroxystearic acid with isopropyl alcohol

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Abstract: Palm-based dihydroxystearic acid of 69.55% purity was produced in a 500-kg-per-batch operation pilot plant and purified through solvent crystallization in a custom fabricated simultaneous batch crystallizer unit. The effects of temperature and solvent concentration on yield, particle size distribution and purity were studied. The purity was higher, while the yield and particle size were lower and smaller, respectively, at higher temperature and solvent concentration. The solvent crystallization process efficiency was rated at 66–69% when carried out with 70–80% isopropyl alcohol at 20°C.

Keywords: Dihydroxystearic acid, Pilot plant operation, Solvent crystallization, Simultaneous batch crystallizer, Process efficiency

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