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REACTION KINETICS, CATALYSIS AND.....

提高丙烯腈回收率的一种新型急冷工艺和急冷塔

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摘要 Quenching process and design of the quenching tower in acrylonitrile production in China were studied in order to decrease the polymerization loss of acrylonitrile in the quenching tower. Based on the research of acrylonitrile polymerization in the quenching tower, a new quenching process was proposed to avoid the disadvantages of the original process. Two kinds of internals were installed to improve the performance of the quenching tower. Through a series of air-flow and real-flow model experiments, the new quenching process and new design were showed to be successful in enhancing the mass and heat transfer in the vapor-liquid system and decreasing the loss of acrylonitrile.Industrial application showed satisfactory results of decrease of the acrylonitrile loss in the quenching tower by about 4.5% and increase of the acrylonitrile recovery of the whole plant by more than 4%.

关键词 丙烯腈, 淬冷技术, 生产技术, 聚合反应, 有机化合物, 温度,

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A New Quenching Process and Tower to Improve the Recovery of Acrylonitrile

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Abstract Quenching process and design of the quenching tower in acrylonitrile production in China were studied in order to decrease the polymerization loss of acrylonitrile in the quenching tower. Based on the research of acrylonitrile polymerization in the quenching tower, a new quenching process was proposed to avoid the disadvantages of the original process. Two kinds of internals were installed to improve the performance of the quenching tower. Through a series of air-flow and real-flow model experiments, the new quenching process and new design were showed to be successful in enhancing the mass and heat transfer in the vapor-liquid system and decreasing the loss of acrylonitrile.Industrial application showed satisfactory results of decrease of the acrylonitrile loss in the quenching tower by about 4.5% and increase of the acrylonitrile recovery of the whole plant by more than 4%.

Key words acrylonitrile; quenching; recovery of acrylonitrile; quenching process;

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