

年产 12 万吨苯乙烯工艺设计

摘 要

苯乙烯在生产生活中的用途广泛，通过对苯乙烯性质上的分析，以及它的市场需求和制备工艺等多方面的考虑，来选择一个适合的生产工艺并进行规模化的生产。通过查阅资料，来选择合适的建厂地址。本次课题是通过乙苯催化脱氢法来制取 12 万吨苯乙烯。之后进行了工艺的模拟及优化，通过对工艺的深度了解和剖析，完成了对本次工艺设计的可行性设计任务。本课题利用 Aspen plus 对各设备的进出流股进行物料衡算和能量衡算。并根据其流程模拟的详细数据对标准设备、非标准设备进行设备选型。

根据规定标准，利用 AUTO CAD 绘制带控制点的工艺流程图、车间平面布置图和典型设备图。

关键词：苯乙烯 ;Aspen plus;生产工艺

Abstract

Styrene is an important raw material in petrochemical industry. With the development of society, styrene has become the raw material of a variety of new materials, resulting in a surge in market demand for styrene.

Styrene is widely used in production and life, through the analysis of the properties of styrene, as well as its market demand and preparation process and other aspects of the consideration, to choose a suitable production process and carry out large-scale production. By looking up information, to choose the appropriate plant address. This project is to prepare 120,000 tons of styrene by catalytic dehydrogenation of ethylbenzene. After the process simulation and optimization, through the depth of understanding and analysis of the process, the completion of the process design of the feasibility of the design task. In this paper, Aspen plus is used to calculate the material balance and energy balance of the flow unit in and out of the equipment. According to the detailed data of the process simulation, the standard equipment and non-standard equipment are selected.

According to the prescribed standard, use AUTO CAD to draw the process flow chart with control point, shop layout and typical equipment diagram.

Keywords: styrene ;Aspen plus; production process

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