

## 0.6 万吨/年分离甲醇 - 水混合液的填料精馏塔设计

### 摘 要

精馏是借助回流技术来实现高纯度和高回收率的分离操作，在抗生素药物生产中，需要甲醇溶媒洗涤晶体，洗涤过滤后产生废甲醇溶媒，然后对甲醇溶媒进行精馏。操作一般在塔设备中进行，塔设备分为两种，板式塔和填料塔。填料塔结构简单、装置灵活、压降小、持液量少、生产能力大、分离效率高、耐腐蚀，且易于处理易气泡、易热敏、易结垢物系等优点，同时也有投资费用较高、填料易堵塞等缺点。近年来由于填料塔结构的改进，新型的高负荷填料的开发，既提高了塔通过能力和分离效能又保持了压降小及性能稳定的特点。因此，填料塔已被推广到大型气液操作中，在某些场合还代替了传统的板式塔。从设备设计的角度看，不论板式塔还是填料塔，基本上由塔体、内件、裙座、和附件构成。近年来由于填料塔结构的改进，新型的、高负荷填料的开发，既提高了塔通过能力和分离效能又保持了压降小以性能稳定等特点。因此填料塔已被推广到大型汽液操作中，在某些场合还代替了传统的板式塔。但国内在这方面的研究则较少，如何设计规整填料蒸馏塔已成为一个重要的课题，它对自行设计，改进现有设备生产状况都较为重要。随着对填料塔的研究和开发，性能优良的填料塔必将大量用于工业生产中。

关键词：精馏，填料塔，设备设计

## Abstract

Distillation through reflux technology to achieve the separation of high purity and high recovery operation in the production of antibiotics, methanol solvent washing crystal, washing the filtered waste methanol solvent, and then the methanol solvent distillation. The operation generally tower equipment, tower equipment is divided into two types, plate tower and packed tower. Packed tower structure is simple, flexible devices, low pressure drop, hold less liquid, large production capacity, and high separation efficiency, corrosion resistance, and easy to handle and easy bubble, easy to thermal, easy to scale in the Department of advantages, but also investment costs higher filler easy to plug the shortcomings. In recent years, due to the improvement of the packed tower structure, the development of new high-load packing, both to improve the tower through the capacity and separation efficiency while maintaining low pressure drop and stable performance characteristics. Therefore, the packed tower has been extended to large-scale gas-liquid operations, in some cases instead of the traditional plate tower. In recent years, due to the improvement of the packed tower structure, the development of new, high-load packing, not only improves the tower capacity and separation efficiency, while maintaining the pressure drop and small to stable performance. Packed tower has been extended to the large vapor-liquid operations, in some cases instead of the traditional plate tower. Domestic research in this area is less, how to design a structured packing distillation tower has become an important issue, its own design, improvement of existing equipment conditions are more important. With the research and development of the packed tower, the excellent performance of the packed tower is bound to a large number of industrial production.

**Keywords:** Distillation, packed tower, equipment design

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