

Abstract

Process Economics Program Report No. 210

HETEROCYCLIC NITROGEN COMPOUNDS

(January 1993)

This report contains preliminary process designs and cost estimates for the production of four heterocyclic nitrogen compounds: pyridine, 3-picoline, 2-picoline, and cyanuric acid. Pyridine and 3-picoline are coproduced by reacting acetaldehyde, formaldehyde, and ammonia in the vapor phase over a silica-alumina catalyst. 2-Picoline is manufactured from acrylonitrile and acetone in a separate process section. Cyanuric acid is produced by the pyrolysis of urea. The report also discusses the industry status for each of the products, and the basic chemistry of the manufacturing processes.

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