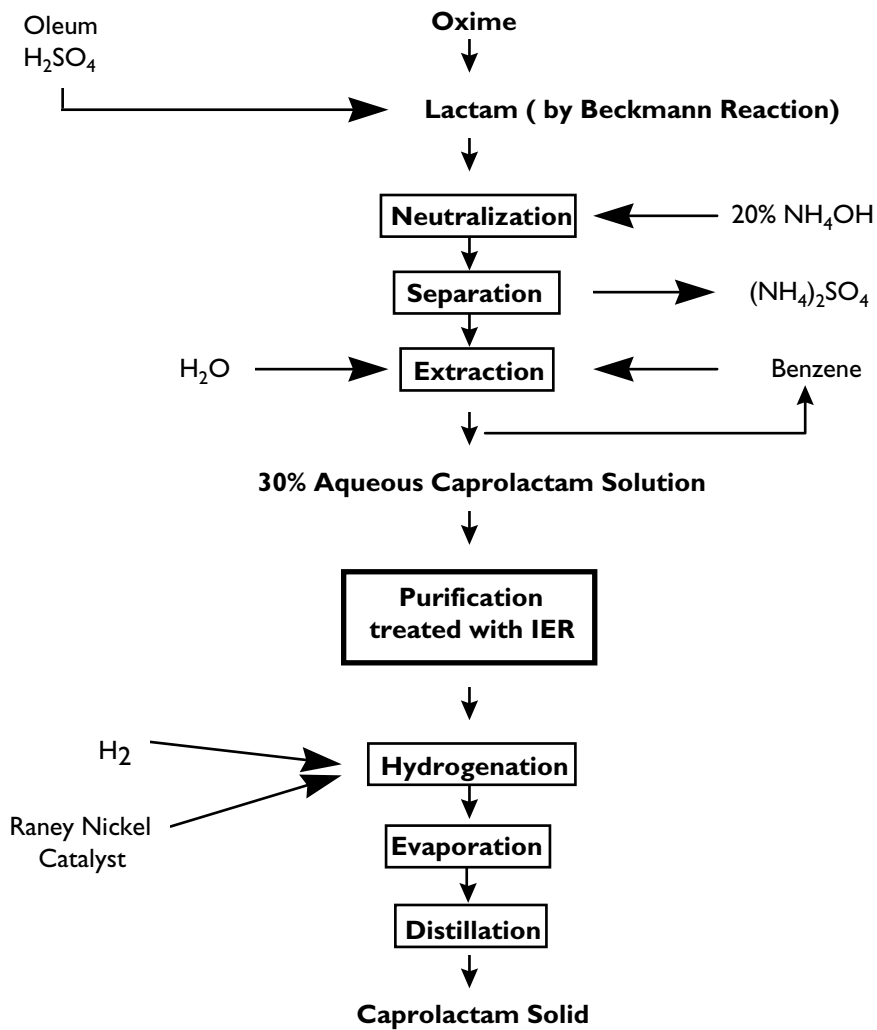


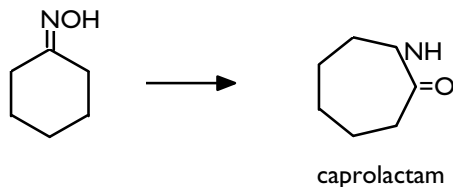
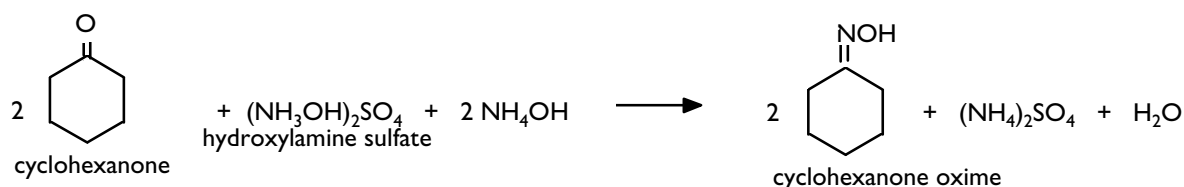
# Caprolactam Purification

## INTRODUCTION

Caprolactam synthesis involves the reaction of cyclohexanone with hydroxylamine sulfate to produce

cyclohexanone oxime which undergoes a Beckmann rearrangement in the presence of oleum to produce caprolactam (Stamicarbon process).





## PROCEDURE

In order to purify caprolactam, which involves the removal of  $\text{NH}_4^+$  and  $\text{SO}_4^{2-}$  ions as well as organic molecules, the following IER scheme is used:

<b>SBA</b>	<b>SAC</b>	<b>SBA</b>
Amberlyst™	Amberlyst™	Amberlyst™
A26OH	15WET	A26OH

Flow rate: 6 - 7 BV/h

## Process steps

- Backwash for 30 min
- If downflow regeneration, drain to resin level
- Pass 3.6 BV of 5%  $\text{HNO}_3$  through 1st SBA at 1.8 BV/h
- Pass 3.6 BV of 4% NaOH through SAC at 1.8 BV/h
- Slow rinse through both columns at 1.8 BV/h
- Fast rinse at 10 BV/h
- Pass 1.8 BV of 4% NaOH through 1st SBA at 1.8 BV/h
- Pass 3.6 BV of 5%  $\text{HNO}_3$  through 2nd SBA at 1.8 BV/h
- Slow rinse through both columns at 1.8 BV/h
- Fast rinse at 10 BV/h
- Pass 1.8 BV of 5%  $\text{HNO}_3$  through SAC at 1.8 BV/h
- Pass 1.8 BV of 4% NaOH through 2nd SBA at 1.8 BV/h
- Slow rinse through both columns at 1.8 BV/h
- Fast rinse at 10 BV/h
- Sweetening on.

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<http://www.amberlyst.com>

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