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Process to prepare  $\epsilon$ -caprolactam starting  
5 from a starting mixture containing a 6-aminocaproate  
ester, in which in a first step (1) the 6-aminocaproate  
ester is converted into 6-aminocaproic acid and 6-  
aminocaproamide by reaction with water in the presence  
of ammonia at a temperature of between 50 and 250°C,  
10 with a separate or simultaneous removal of alcohol(s),  
and in a subsequent step (2) the 6-aminocaproic acid  
and 6-aminocaproamide are cyclizised at an elevated  
temperature, wherein in step (1) the 6-aminocaproate  
ester is converted into 6-aminocaproic acid and 6-  
15 aminocaproamide in the presence of an amount higher  
than 2 wt.% and less than or equal to 25 wt.%  $\text{NH}_3$   
(relative to the total amount of organic compounds,  
water and ammonia present in step (1)).