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(21) International Application Number: PCT/NL97/00488 (22) International Filing Date: 28 August 1997 (28.08.97) (30) Priority Data: 96202438.6 2 September 1996 (02.09.96) EP (34) Countries for which the regional or international application was filed: NL et al. 60/027,496 30 September 1996 (30.09.96) US (71) Applicants (for all designated States except US): DSM N.V. [NL/NL]; Het Overloon 1, NL-6411 TE Heerlen (NL). E.I. DU PONT DE NEMOURS AND COMPANY [US/US]; 1007 Market Street, Wilmington, DE 19898 (US). (72) Inventors; and (75) Inventors/Applicants (for US only): GUIT, Rudolf, Philippus, Maria [NL/NL]; Boviersdaal 12, NL-6228 GP Maastricht (NL). BUIJS, Wim [NL/NL]; Wolfhagen 145, NL-6365 BM Schinnen (NL). (74) Agent: CRAMWINCKEL, Michiel; Octrooibureau DSM, P.O. Box 9, NL-6160 MA Geleen (NL).		(81) Designated States: CA, CN, JP, KR, SG, US, European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE). Published <i>With international search report.</i>
(54) Title: PROCESS FOR THE PREPARATION OF ϵ -CAPROLACTAM (57) Abstract Process for the preparation of ϵ -caprolactam, in which in a step (a) a compound with general formula (1): $O-CH-(CH_2)_4-C(O)-R$, in which R is -OH, -NH ₂ or O-R', in which R' is an organic group with 1 to 10 carbon atoms, is contacted with ammonia and hydrogen in a suitable solvent at elevated pressure in the presence of a hydrogenation catalyst to a mixture of primary amino compounds and ϵ -caprolactam, followed by a separate second step (b) in which the primary amino compounds are reacted to ϵ -caprolactam, wherein the solvent in step (a) is an aqueous medium, including water, the yield to ϵ -caprolactam in step (a) is more than 10 %, calculated on the initial molar amount of the compound according to formula (1), that ϵ -caprolactam is separated from the aqueous mixture obtained in step (a) by extraction and that the aqueous mixture resulting from the extraction, containing the primary amino compounds, is used in step (b).		