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(21) International Application Number: PCT/US97/21941 (22) International Filing Date: 25 November 1997 (25.11.97) (30) Priority Data: 08/757,310 27 November 1996 (27.11.96) US (71) Applicant: E.I. DU PONT DE NEMOURS AND COMPANY [US/US]; 1007 Market Street, Wilmington, DE 19898 (US). (72) Inventors: DUJARI, Ramdas; R.D. 5, Box 53, River Road, Seaford, DE 19973 (US). CRAMER, Gregory, D.; 201 North Porter Street, Seaford, DE 19973 (US). MARKS, David, Neil; 203 Walker Way, Newark, DE 19711 (US). (74) Agent: STEVENSON, Robert, B.; E.I. du Pont De Nemours and Company, Legal Patent Records Center, 1007 Market Street, Wilmington, DE 19898 (US).		(81) Designated States: AU, BR, CA, CN, JP, KR, SG, 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. Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i>

(54) Title: **METHOD FOR SOLID PHASE POLYMERIZATION**

(57) Abstract

An improved method for increasing the relative viscosity and molecular weight of a polyamide polymer (such as nylon 6,6, nylon 6, and the like) while in the solid state involving the use of a phosphorus-containing catalyst (such as 2(2'-pyridyl)ethyl phosphonic acid, sodium hypophosphite, tolyl phosphinate and manganese hypophosphite or the like) in combination with an oxygen free gas characterized by a low dew point (typically below 30 °C and preferably below -30 °C). Operational and commercial advantages are derived from the combination of using simultaneously a phosphorus-containing catalyst and the recycle of very low dew point drying gas at lower operating temperatures than previously employed in conducting solid phase polymerization of polyamide polymer. Such a process is of particular value during the production of terpolyamide and multipolyamide polymer intended for use in colored nylon fiber manufacture.

