



## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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| <b>(51) International Patent Classification <sup>6</sup> :</b><br><br><b>C07C 209/02</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <b>A1</b> | <b>(11) International Publication Number:</b> <b>WO 99/10311</b><br><br><b>(43) International Publication Date:</b> <b>4 March 1999 (04.03.99)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>(21) International Application Number:</b> PCT/GB98/02453<br><br><b>(22) International Filing Date:</b> 17 August 1998 (17.08.98)<br><br><b>(30) Priority Data:</b><br>97114495.1                      21 August 1997 (21.08.97)                      EP<br><br><b>(71) Applicant:</b> IMPERIAL CHEMICAL INDUSTRIES PLC<br>[GB/GB]; Imperial Chemical House, Millbank, London<br>SW1P 3JF (GB).<br><br><b>(72) Inventors:</b> AXON, Sean, Alexander; Krommerstraat 39/4,<br>B-1970 Wezembeek-Oppem (BE). JACKSON, Samuel,<br>David; 62 The Headlands, Darlington DL3 8RP (GB).<br>CLAES, Peter, Rene, Rik; Haspershovenstraat 59, B-3900<br>Overpelt (BE).<br><br><b>(74) Agent:</b> MOENS, Marnix, Karel, Christiane; ICI Materials,<br>Intellectual Property Dept., P.O. Box 90, Wilton, Cleveland<br>TS90 8JE (GB). |           | <b>(81) Designated States:</b> AL, AM, AT, AU, AZ, BA, BB, BG, BR,<br>BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE,<br>GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ,<br>LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW,<br>MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ,<br>TM, TR, TT, UA, UG, UZ, VN, YU, ZW, ARIPO patent<br>(GH, GM, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent<br>(AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent<br>(AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT,<br>LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI,<br>CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).<br><br><b>Published</b><br><i>With international search report.</i> |
| <b>(54) Title:</b> PROCESS FOR THE PRODUCTION OF AROMATIC AMINES<br><br><b>(57) Abstract</b><br><br>Process for the production of an aromatic amine by reacting an aromatic hydrocarbon with ammonia at a temperature of less than 500 °C and a pressure of less than 10 bar in the presence of a catalyst comprising at least one metal selected from the group consisting of the transition elements, lanthanides and actinides, preferably in the presence of an oxidant.                                                                                                                                                                                                                                                                                                                                              |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |