

REFERERENCES

1. Ziegler, K., Belg.Pat., 533,362, 1953.
2. Ziegler, K., E. Holzkamp, H. Breil and H. Martin, Angew. Chem., 67, 541, 1955.
3. Natta,G., J. Polym. Sci., 16, 145, 1955.
4. Natta, G., P. Pino and G. Mazzanti, Ital. Pat. 526,101, 1954.
5. Vandenberg, E. J., U.S. Pat. 3,051,590, 1962, Hercules Powder Company; see also Belg. Pat. 549,910.
6. Ettore, B. and L. Lucino, Ital. Pat. 557013, Montecatini.
7. Hogan, J. P. and R. L. Banks, U.S. Pat. 2,825,721, 1954.
8. Natta, G., J. Polym. Sci., 34,21,1959.
9. Orzechowski, A. and J. C. McKenzie, Fr. Pat. 1,349,864, 1964.
10. Luft, N. W., C. Hulme and D. Y. Wadden, U.S. Pat. 2,981,725, 1967.
11. May, A., P.Galli, E. Susa, G. D. Drusco, and E. Giachetti, Brit. Pat. 1,286,867, 1969.
12. Haward, R. N., A. N. Roper, and K. L. Fletcher, Polymer, 14, 15, 1973.
13. Gardner, K., I. W. Parsons, and R. N. Harward, J. Polym. Sci., 16, 1683, 1978.
14. Giannini, U., A. Cassata, P. Longi, and R. Mazzochi, Belg. Pat. 785,334, 1972.
15. Bryce-Smith, D., German. Pat. 955,807, 1959.

16. Kaminski, C. W., "Synthesis and Properties of Diorganomagnesium Compound", Ph.D. Thesis, University of Tennessee, 1967.
17. Motecatini-Edison Co., Br. Pat. 1,286,807, 1968
18. Mitsui Petrochemical Ind., Ger. Pat. 904,510, 1960.
19. Boor, Jr. J., J. Polym. Sci., Part C, 237. 1963.
20. Schnecko, H., M. Reinmoller, K. Weirauch, V. Bednjagin, and K. Kern, Makramol.Chem., 73, 154, 1964.
21. Boucher, D. G., I. W. Parsons, and R. N. Harward, Makromol. Chem., 175, 3461, 1974.
22. Doi, Y., K. Soga, M. Murata, E. Suzuki, Y. Ono, and T. Keii, Polym.Comm., 24, 244, 1983.
23. Floyd, S., G. E. Mann, and W. H. Ray "Heat and Mass Transfer Limitation and Catalyst Deactivation Effects in Polymerization for Gas Phase and Slurry Reactor", "Catalytic Polymerization of Olefins", 339-367, Kodancho, Tokyo, 1986.
24. Chien, J. C. W., and Y. Hu, J. Polym. Sci., Part A, 25, 2847, 1987.
25. Sacchi, M. C., I. Tritto and P. Locatelli, Eur. Polym. J., 24, 137, 1988.
26. Kashiwa, N., J. Yoshitake, and A. Toyota, Polym. Bull., 19, 333, 1988.
27. Sugano, T., Y. Yamato, and T. Fujita, "A New Electron Donor for the Stereospecific Polymerization of Propene", "Studies in Surface Science and Catalysis, Catalytic Polymerization of Olefins No.56", 201-209, Kojansho Ltd., Japan, 1989.

28. Terano, M., K. M. Kataoka, and T. Keii, Makromol. Chem., 188, 1477, 1989.
29. Sepaala, J. V. and M. Harkonen, Makromol. Chem., 190, 2535, 1989.
30. Kokta, B. V. and R. G. Raj, Polym. Bull., 22, 103, 1989.
31. Kokta, B. V. and R. G. Raj, Polym. Bull., 23, 513, 1990.
32. Kokta, B. V. and R. G. Raj, Polym. Bull., 23, 519, 1990.
33. Miyatake, T., K. Mizunuma, and M. Kakugo, " Studies in Surface Science and Catalysis, Catalytic Polymerization of Olefins No.56 ", Kodansha, Tokyo, 1989.
34. Sacchi, M. C., C. Shan, P. Locatelli, and I. Tritto, Macromolecules, 23, 383, 1990.
35. Coutinho, F. M. B. and L. C. Santa Maria, Polym. Bull., 26, 535, 1991.
36. Yang, C. B. and C. C. Hsu, Polym. Bull., 30, 529, 1993.
37. Erich, F. and H. Mark, J. Colloid. Sci., 32, 457, 1958.
38. Patat, P. and H. Sinn, Angew. Chem., 70, 496, 1958.
39. Natta, G., Angew. Chem., 68, 393, 1956.
40. Boor, Jr. J., "Ziegler-Natta Catalyst and Polymerization", Academic Press, USA, 1979.
41. Nenitzescu, C. D., C. Huch, and A. Huch, Angew. Chem., 68, 438, 1956.
42. Cossee, P., Tetrahedron. Lett., 17, 12, 1960.
43. Cossee, P., Proc. Int. Congr. Coord. Chem., 6th, 241, 1961.
44. Cossee, P., J. Cal., 3, 80, 1964.

45. Cossee, P., P. Ros, and J. H. Schachtschneider, Proc. Int. Congr. Catal., 4th, paper 14, 1971.
46. De Brujin, P. H., Chem. Weekbl., 56, 161, 1960.
47. Rodriguez, L. A. M. and H. M. van Looy, J. Polym. Sci. A-1, 4, 1971, 1966.
48. Natta, G. and G. Mazzanti, Tetrahedron, 8, 86, 1960.
49. Patat, P. and H. Sinn, Angew. Chem., 70, 496, 1958.
50. Friedlander, H. N. and K. Oita, Abstr. Pap., 130th Meet., Am. Chem. Soc., 138, 1956.
51. Topchiev, A. V., B. A. Krentsel, and L. G. Sidorova, Dokl. Akad. Nauk SSSR, 128, 732, 1959.
52. Duck, E. W., J. Polym. Sci., 34, 86, 1959.
53. Van Helden, R., H. P. Braendlin, A. F. Bickel, and E. C. Kooyman, Tetrahedron Lett., No.12, 24, 1959.
54. Gilchrist, A., J. Polym. Sci., 34, 49, 1959.
55. Natta, G. and I. Pasquon, Adv. Catal., 11, 1, 1959.
56. Natta, G., E. Giachetti, I. Pasquon, and G. Pajaro, Chim. Ind. (Milan), 42, No.10, 1091, 1960.
57. Natta, G., I. Pasquon, and L. Giuffre, Chim. Ind. (Milan), 43, No.8, 871, 1961.
58. Natta, G., Chim. Ind. (Milan) 41, No.6, 519, 1959.
59. Longi, P., G. Mazzanti, A. Roggero, and A. M. Lachi, Makromol. Chem, 61, 63, 1963.

60. Kissin, Y., J. Polym. Sci USSR (Engl. Transl.), 11, 1779, 1970.
61. Jeffery, E. A., "Organoaluminum Compounds", Elsevier, Amsterdam, 1972.
62. Barney, A. L. and B. L. Morgan, U.S. Pat. 3,418,303, 1968.
63. Mathews, D. N. and R. J. Kelly, U.S. Pat. 3,405,107, 1968.
64. Dost, N., D. Y. Wadden, and H. E. Strauss, Brit. Pat. 851,113, 1960.
65. Erofeev, B. V., V. M. Zapletyakov, A. D. Pecheulein, V. A. Dlyushnikov, V. A. Sererova, V. D. Kozochkina, Z. V. Arkhipova, and I. N. Andreeva, Dokl. Akad. Nauk Beloruss. SSR, 13, 621, 1969.
66. Caunt, A. D., J. Polym. Sci, Part C, 4, 49, 1963.
67. Burfield, D. R. and P. J. T. Tait, Polymer, 15, 87, 1974.
68. Vinogradov, P. A., B. A. Dolgoplosk, V. N. Zgonnik, O. P. Parengo, E. I. Tinyakova, and B. S. Torov, Dokl. Akad. Nauk USSR, 163, 1147, 1965.
69. Bacskai, R., J. Polym. Sci, Part A, 3, 2491, 1965.
70. Coates, G. E., "Organo-Metallic Compounds, 2nd ed., 126-143, Wiley, New York, 1960.
71. Gippin, M., J. Appl. Polym. Sci., 14, 1807, 1970.
72. Mezhevikovskii, S. M., Y. V. Kissin, and N. M. Chirkov, Polym. Prepr., Am. Chem. Soc., 1972.
73. Christman, D. L., J. Polym. Sci., Part A-1, 10, 471, 1972.
74. Minsker, K. S. and V. K. Bykhovskii, Vysokomol. Soedin., 2, 535, 1960.
75. Razuvaev, G. A., K. S. Minsker, and R. P. Chernovskaya, Dokl. Akad. Nauk USSR, 147, 636, 1962.

76. Chernovskaya, R. P., K. S. Minsker, and S. A. Razuvaev, Vysokomol. Soedin., 6, 1656, 1964.
77. Razuvaev, G. A., K. S. Minsker, G. T. Fedoseeva, and V. K. Bykrovskii, Polym. Sci. USSR (Engl. Transl), 2, 299, 1961.
78. Weissermel, K., H. Cherdon, J. Berthold, B. Diedrich, K. D. Keil, K. Rust, H. Strametz, and T. Toth, J. Polym. Sci., Polym. Symp., 51, 187, 1975.
79. Chien, J. C. W. and J. T. T. Hsieh, J. Polym. Sci., Polym. Chem. Ed., 14, 1915, 1976.
80. Zakharov, V. A. and Y. I. Yermakov, Catal. Rev. Sci. Eng., 19, 63, 1979.
81. Sharp, M. J. and J. A. Hockery, J. Catal., 18, 52, 1970.
82. Eley, D. D., D. A. Keir, and R. Rudham, J. Chem. Soc., Faraday Trans., 1, 1685, 1976.
83. Simon, A. and R. Grobler, J. Polym. Sci., Polym. Chem. Ed., 18, 1311, 1980.
84. Soga, K., R. Ohnishi, and Y. Doi, Polym. Bull.(Berlin), 9, 299, 1983.
85. Karol, F. J., "International Symposium on Transition Metal Catalyzed Polymerization", Akron, 1986.
86. Bohm, L. L., Polymer, 19, 553, 1978.
87. Brit. Pat. 1,299,862, 1970.
88. Belg. Pat. 776,301, 1970.
89. Radenkov, P., T. Petrova, L. Petrov, and D. Jelyazkova, Eur. Polym. J., 11, 313, 1976.

90. Radenkov, P., L. Petrov, S. Karaenev, and R. Kyrcheva, Eur. Polym. J., 12, 427, 1976.
91. Petrov, L., R. Kyrcheva, P. Radenkov, and D. Dobрева, Polymer, 19, 567, 1978.
92. Petrov, L., P. Radenkov, and R. Kyrcheva, Polymer, 19, 570, 1978.
93. Kinkelin, E., G. Fink, and B. Bogdanov, Makromol. Chem., Rapid Comm., 7, 85, 1986.
94. Brunj, G. and A. Ferrari, Atti. Accad. Naz. Lincei. Cl. Sci. Fis., Mat. Nat., Rend., 2, 457, 1975.
95. Giannini, U., Makromol. Chem., Suppl., 5, 216, 1981.
96. Allegra, G. and I. W. Bassi, Gazz. Chim. Ital., 110, 437, 1980.
97. Gerbasi, R., A. Marigo, A. Martorana, R. Zannetti, G. P. Guidetti, and G. Baruzzi, Eur. Polym. J., 20, 967, 1984.
98. Goodal, B. L., MMI Press Symp. Ser., 4, 355, 1983.
99. Keszler, B., G. Bodor, and A. Simon, Polymer, 21, 1037, 1980.
100. Chien, J. C. W., J. C. Wu, and C. I. Kuo, J. Polym. Sci., Polym. Chem. Ed., 21, 725, 1983.
101. Kashiwa, N., MMI Press. Symp. Ser., 4, 355, 1983.
102. Chien, J. C. W., J. C. Wu, and C. I. Kuo, J. Polym. Sci., Polym. Chem. Ed., 20, 2019, 1982.
103. Barbe, P. C., L. Noristi, G. Baruzzi, and E. Marchetti, Makromol. Chem., Rapid Commun, 4, 249, 1983.

104. Kashiwa, N. and J. Yoshitake, Makromol. chem., 185, 1984, 1984.
105. Baulin, A. A., Ye. I. Novikova, G. Ya. Malkova, V. L. Maksinov, L. I. Vyshinskaya, and S. S. Ivanchev, Polym. Sci. USSR (Engl. Transl.), 22, 205, 1980.
106. Chien, J. C. W. and J. C. Wu, J. Polym. Sci., Polym. Chem. Ed., 20, 2461, 1982.
107. Tait, P. J. T., "History of Polyolefins", 213, 1986.
108. Chien, J. C. W. and J. C. Wu, J. Polym. Sci., Polym. Chem. Ed., 20, 2445, 1982.
109. Lenz, R. W., "Organic Chemistry of Synthetic High Polymer", John Wiley & Sons, New York, 1967.
110. Kirk-Othmer, "Encyclopedia of Polymer Science & Engineering", Vol.16, John Wiley & Sons, New York, 1981.
111. Boocock, G. and B. N. Harward, Soc. Chem. Ind. (London), Monograph, No.20, 3, 1966.
112. Arlmann, E. J., J. R. de Jung, J. Beintema, and L. L. Van Reijen, Rec. Trav. Chim., 80, 1129, 1961.
113. Kodama, S., T. Kagiva, S. Machi, T. Shimidzu, S. Yuasa, and D. Fukui, J. Appli. Polym. Sci., 3, 20, 1960.
114. Banglap, C., "Effect of An External Electron Donor on Polypropylene Synthesis", M. Eng, thesis, Chulalongkorn University, 1995

115. Hoeg, D. F. and S. Liebman, Ind. Eng. Chem., Process Design Develop, 1, 120, 1962.
116. Natta, G., I. Pasquon, J. Svarb, and A. Zambelli, Chim. Ind. (Milan), 44, 621, 1962.
117. Eur. Pat. Appli. 250,229, 1988.
118. Eur. Pat. Appli. 267,576, 1988.
119. Guyot, A., R. Bobichon, R. Spitz, L. Duranel, J. L. Lacombe, "Activation and Stereospecific Control in Propylene Polymerization with $MgCl_2$ Supported Ziegler-Natta Catalysts" in "Transition Metals and Organometallics as Catalyst for Olefin Polymerization", 13, Springer-Verlag, Berlin, 1988.
120. Sacchi, M. C., I. Tritto, and P. Locatelli, Eur. Polym. J., 24, 137, 1988.
121. Iiskola, E., P. Sormnen, T. Garoff, E. Vahasarja, T. T. Pakkanen, T. A. Pakkanen, "Solution NMR and FTIR studies on the reactions and the complexes of alkoxy silane with triethylaluminum" in "Transition Metals and Organometallics as Catalyst for Olefin Polymerization", 113, Springer-Verlag, Berlin, 1988.
122. Guttman, J. Y. and J. E. Guillet, Am. Chem. Soc., 1, 177, 1970.
123. Odian, G., "Principles of Polymerization", 240, McGraw-Hill, New York, 1970.
124. Tait, J. T. "Monoalkene Polymerization", "Comprehensive Polymer Science", Vol. 4, Pergamon, 1989.

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