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(21) International Application Number: PCT/US97/07148 ✓ (22) International Filing Date: 12 May 1997 (12.05.97) ✓ (30) Priority Data: 08/648,970 17 May 1996 (17.05.96) ✓ US (71) Applicant: W.R. GRACE & CO.-CONN. [US/US]; 1114 Avenue of the Americas, New York, NY 10036 (US). ✓ (72) Inventors: ① JEKNAVORIAN, Ara, A.; 4 Percheron Road, Chelmsford, MA 01824 (US). ② ARFAEI, Ahmad; 72 Stonegate Road, Chelmsford, MA 01824 (US). ③ BERKE, Neal, S.; 39 Charlemont Court, North Chelmsford, MA 01863 (US). ④ DARWIN, David, C.; 9009 Blue Pool, Columbia, MD 21045 (US). ⑤ GARTNER, Ellis, M.; 1105 Tanley Road, Silver Spring, MD 20904 (US). ⑥ JARDINE, Leslie, A.; 30 Heartbreak Road, Ipswich, MA 01938 (US). ⑦ LAMBERT, James, F.; 20 Gerry Road, Chestnut Hill, MA 02167 (US). ⑧ ROBERTS, Lawrence, R.; 44 Windsor Avenue, Acton, MA 01720 (US). (74) Agents: LEON, Craig, K. et al.; W.R. Grace & Co.-Conn., 55 Hayden Avenue, Lexington, MA 02173 (US).		(81) Designated States: AU, BR, CA, CN, DE, DK, ES, GB, JP, KP, MX, NO, NZ, PL, SG, TR, ARIPO patent (GH, KE, LS, MW, SD, SZ, UG), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG). Published <i>With international search report.</i>
(54) Title: HIGH EARLY-STRENGTH-ENHANCING ADMIXTURE FOR PRECAST HYDRAULIC CEMENT AND COMPOSITIONS CONTAINING SAME (57) Abstract A high early-strength admixture for precast hydraulic cement comprises a calcium salt and a copolymer having a carbon-containing backbone to which are attached cement-anchoring members, such as carboxyl groups, and to which are also attached oxyalkylene pendant groups by linkages selected from the group consisting of amide and imide members. The copolymers used are preferably formed by reacting an acrylic polymer with ammonia or an alkoxyated amine. The calcium salt, preferably calcium nitrite, and the copolymer can added simultaneously as one admixture, or separately. The invention relates also to methods for enhancing high early strength in concrete, cement, masonry, and mortar mixtures generally, and to precast concrete particularly, and also pertains to such hydraulic mixtures containing the calcium salt and copolymer.		