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Matsuda et al.

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[54] **ROOM TEMPERATURE CURABLE FLUOROPOLYMER COMPOSITION; AND FLUORINE-CONTAINING ORGANOSILICON COMPOUNDS, A METHOD OF PRODUCING THE SAME, AND ROOM TEMPERATURE CURABLE SILICONE COMPOSITION CONTAINING THE SAME**

4,100,136	7/1978	Carter et al.	528/42
5,208,312	5/1993	Boutevin et al.	528/28
5,352,752	10/1994	Koike et al.	528/26

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[57] **ABSTRACT**

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A room temperature curable fluoropolymer composition is provided which comprises (A) a straight chain fluoropolymer compound containing, in its backbone chain, at least one structure selected from a perfluoroalkylene structure and a perfluoropolyether structure and having a hydrolyzable silyl group at both ends of its molecular chain, (B) an organic compound having at least one carbonyl group per molecule, and (C) one compound selected from (C-1) an organic compound having at least one primary amino group per molecule and (C-2) a compound having at least one proton per molecule and having an acid dissociation constant (pKa) in water of 2 or less. Another room temperature curable composition is also provided which comprises said (A) component, (B') an organosilicon compound having at least two silanol groups per molecule, and (C') a condensation accelerator. These compositions are not only excellent in heat resistance, weatherability, electrical properties, processability, chemical resistance, solvent resistance and oil repellent properties, but also excellent in fast curability and deep-portion curability. A novel compound which is suitable as said fluoropolymer compound (A) is further provided.

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[30] **Foreign Application Priority Data**

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[51] Int. Cl.⁶ **C08G 77/54**

[52] U.S. Cl. **528/42; 528/15; 528/31; 528/32; 556/419**

[58] Field of Search **556/419; 428/15, 428/32, 31, 42**

[56] **References Cited**

U.S. PATENT DOCUMENTS

3,895,043 7/1975 Wagner et al. 556/419

10 Claims, No Drawings