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United States Patent [19][11] **Patent Number:** **5,264,522**

Mize et al.

[45] **Date of Patent:** **Nov. 23, 1993**[54] **HEAT-CURABLE FLUOROSILICONE RUBBER COMPOSITION AND CURED PRODUCT THEREOF**[75] Inventors: **Kipp J. Mize**, Lkwd, Calif.;
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Masayuki Oyama, Takasaki, Japan[73] Assignee: **Shin-Etsu Chemical Co., Ltd.**, Tokyo[21] Appl. No.: **942,503**[22] Filed: **Sep. 10, 1992**[51] Int. Cl.⁵ **C08K 3/00**[52] U.S. Cl. **524/847; 528/15; 528/35; 528/42; 524/493; 524/862**[58] Field of Search **528/15, 42, 35; 524/862, 847, 493**[56] **References Cited****U.S. PATENT DOCUMENTS**

3,408,325	10/1968	Hittmair et al. .	
3,474,064	10/1969	Hittmair et al. .	
3,624,028	11/1971	Drake .	
3,671,480	6/1972	Wada et al. .	
3,996,187	12/1976	Travnicek .	
3,996,189	12/1976	Travnicek .	
4,089,833	5/1978	Simpson .	
4,100,136	7/1978	Carter et al.	528/42
4,857,564	8/1989	Maxson .	

Primary Examiner—Melvyn I. Marquis*Attorney, Agent, or Firm*—Birch, Stewart, Kolasch & Birch[57] **ABSTRACT**

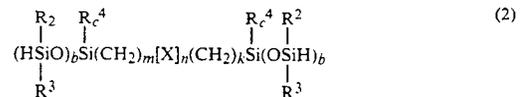
The present invention provides a heat-curable fluorosil-

icone rubber composition to be cured by hydrosilation reactions and having outstanding physical properties, especially improved transparency and processability, said composition comprising

(A) a polydiorganosiloxane having at least two unsaturated aliphatic hydrocarbon groups and represented by the general formula (1):

wherein R¹ represents a substituted or unsubstituted monovalent hydrocarbon group containing 0.01 to 15 mole % of an unsaturated aliphatic hydrocarbon group, a is a positive number of from 1.95 to 2.05.

(B) a polyorganohydrogensiloxane having at least three hydrogen atoms directly bonded to silicon atoms in a molecule and represented by the general formula:

wherein R², R³ and R⁴ independently represents a substituted or unsubstituted monovalent hydrocarbon group, X represents CF₂ or C₃F₆O, b is equal to 2 or 3, c is equal to 1 or 2, b+c=3, m is an integer of 2 or more, n is an integer of 1 or more, and k is an integer of 2 or more,(C) a silica filler having a specific surface area of at least 50 m²/g, and

(D) an addition reaction catalyst.

10 Claims, No Drawings