United States Patent [19]

Rawls et al.

[11] **Patent Number: 4,572,920**

[45] **Date of Patent: Feb. 25, 1986**

[54] **FLUORIDE INTERPOLYMERIC RESIN**

[75] Inventors: **Henry R. Rawls**, New Orleans; **Barbara F. Zimmerman**, Metairie, both of La.

[73] Assignee: **Research Corporation**, New York, N.Y.

[21] Appl. No.: **700,847**

[22] Filed: **Mar. 20, 1985**

Related U.S. Application Data

[63] Continuation-in-part of Ser. No. 461,026, Jan. 26, 1983, Pat. No. 4,515,910.

[51] **Int. Cl.**[4] **A61K 7/18**; C08L 27/12

[52] **U.S. Cl.** **523/115**; 106/35; 424/151; 523/116; 524/544; 260/998.11

[58] **Field of Search** 260/998.11; 106/35; 424/151; 523/115, 116; 524/544

[56] **References Cited**

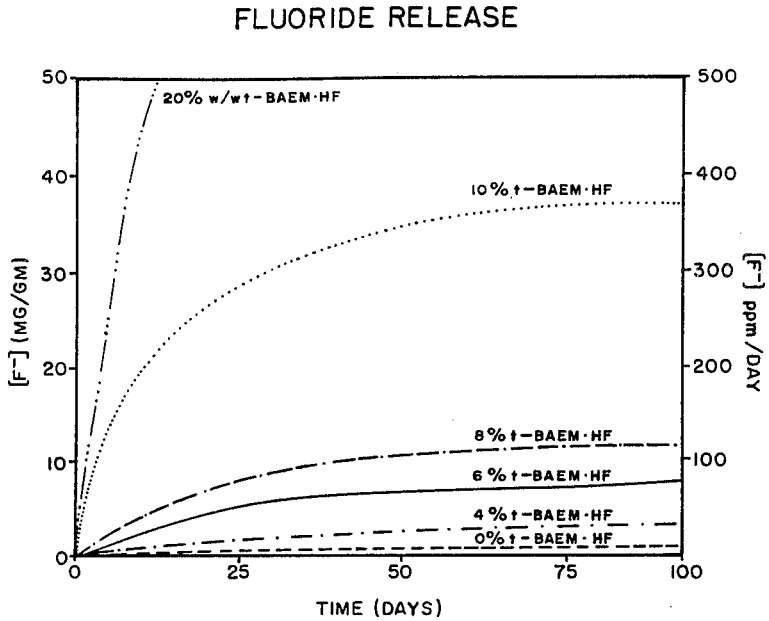
U.S. PATENT DOCUMENTS

3,341,505	9/1967	Gander	526/287
3,427,274	2/1969	Cornell	106/35
3,625,916	12/1971	Newman	524/434
3,925,895	12/1975	Kliment et al.	433/224
3,969,499	7/1976	Lee et al.	433/228
3,991,008	11/1976	Temin et al.	528/950
4,146,608	3/1979	Ritchey	424/147
4,155,890	5/1979	Hofacker-Freifrau	523/115
4,203,220	5/1980	Cranfield	433/228
4,515,910	5/1985	Rawls et al.	523/115

Primary Examiner—Ronald W. Griffin

Attorney, Agent, or Firm—Scully, Scott, Murphy & Presser

[57] **ABSTRACT**

An interpolymeric resin and composition therefrom is provided for treating teeth to prevent dental caries by forming a protective barrier and providing a source of fluoride ions for release adjacent to the surface of the tooth. The resin includes an anion-exchange-site bearing monomer carrying fluoride ions, an acrylic comonomer, a crosslinking monomer, and, optionally, a wetting/etching monomer. The resin may have a high degree of crosslinking which then may include filler material to form a composite composition.

31 Claims, 4 Drawing Figures