United States Patent [19]

Refojo

[11] **4,452,776**

[45] **Jun. 5, 1984**

[54] **HYDROGEL IMPLANT ARTICLE AND METHOD**

[75] Inventor: **Miguel F. Refojo**, Lexington, Mass.

[73] Assignee: **Eye Research Institute of Retina Foundation**, Boston, Mass.

[21] Appl. No.: **357,735**

[22] Filed: **Mar. 12, 1982**

Related U.S. Application Data

[63] Continuation-in-part of Ser. No. 67,630, Aug. 20, 1979, abandoned.

[51] **Int. Cl.**[3] **A61K 31/78;** C08L 31/00; C08F 120/26

[52] **U.S. Cl.** **424/81;** 264/2.5; 264/2.6; 264/2.7; 523/106; 523/111; 523/113; 524/559; 524/833; 526/320; 604/891; 604/893; 428/78

[58] **Field of Search** 526/320; 524/559, 833; 523/106, 113, 111; 604/891, 893; 424/81; 264/2.5, 2.6, 2.7

[56] **References Cited**

U.S. PATENT DOCUMENTS

3,503,942	3/1970	Seiderman	526/232.1
3,566,874	3/1971	Shepherd et al.	424/81
3,575,946	4/1971	Chromecek et al.	200/29.6 H
3,765,414	10/1973	Arlen	3/1
3,784,540	1/1974	Kliment et al.	526/320
3,857,932	12/1974	Shepherd et al.	424/81
3,868,447	2/1975	Kliment	424/81
3,892,721	7/1975	Gustafson	526/320
3,896,806	7/1975	Wichterle	128/260
3,906,087	9/1975	Sim et al.	424/81
3,951,528	4/1976	Leeds	526/320
3,983,083	9/1976	Kaetsu et al.	526/240
4,056,496	11/1977	Mancini et al.	260/29.6 TA
4,111,922	9/1978	Beede et al.	526/292
4,113,686	9/1978	Holcombe	260/29.6 TA
4,143,017	3/1979	Tarumi et al.	260/29.7 H
4,145,511	3/1979	Gilles	528/73
4,163,092	7/1979	Steckler	526/292
4,180,308	12/1979	Mancini et al.	526/273
4,206,294	7/1980	Simms	525/242
4,224,427	9/1980	Mueller et al.	526/320
4,228,269	10/1980	Loshaek et al.	526/260
4,279,795	7/1981	Yamashita et al.	525/303

FOREIGN PATENT DOCUMENTS

46-41472	12/1971	Japan	524/833
1495043	of 1974	United Kingdom .	

OTHER PUBLICATIONS

Calabria et al., Archives of Ophthalmology, May, 1970, vol. 83, pp. 613–618 and Jul. 1971, vol. 86, pp. 77–81.

M. F. Refojo et al., "Ophthalmic Surgery", Dec. 1978, vol. 9, No. 6, 43–50.

M. F. Refojo, "International Ophthalmology Clinics," Spring 1973, vol. 13, No. 1, pp. 263–277.

M. Refojo, "Encyclopedia of Polymer Science and Technology," Supl. vol. 1, pp. 195–219.

M. Refojo, Encyclopedia of Chemical Technology, vol. 6, 3rd Edit., pp. 725–742.

M. Reuben, Clinical and Applied Technology, Publ. by John Wiley and Sons, Chapter 3, pp. 19–38.

Primary Examiner—Herbert J. Lilling

Attorney, Agent, or Firm—Lahive & Cockfield

[57] **ABSTRACT**

A hydrogel implant article of significant softness, pliability and elasticity when dry as well as when wet consists of a random cross-linked copolymer of 2-hydroxyethyl acrylate and an alkyl acrylate. The acrylate hydrogel article is useful, in one instance, as the material to produce a scleral buckle in retinal detachment surgery.

10 Claims, No Drawings