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- (71) **Applicant:** JOHNSON & JOHNSON VISION CARE, INC. [US/US]; 7500 Centurion Parkway, Jacksonville, Florida 32256 (US).
- (72) **Inventors:** SCALES, Charles W.; 1011 Eagle Point Drive, St. Augustine, Florida 32092 (US). MCCABE, Kevin P.; 2843 Sheephead Court, St. Augustine, Florida 32092 (US). HEALY, Brent Matthew; 1300 Shetter Avenue #8301, Jacksonville Beach, Florida 32250 (US).
- (74) **Agents:** JOHNSON, Philip S. et al.; Johnson & Johnson, One Johnson & Johnson Plaza, New Brunswick, New Jersey 08933 (US).
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Declarations under Rule 4.17:

- as to the identity of the inventor (Rule 4.17(i))
- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))

[Continued on next page]

- (54) **Title:** POLYMERS AND NANOGEL MATERIALS AND METHODS FOR MAKING AND USING THE SAME

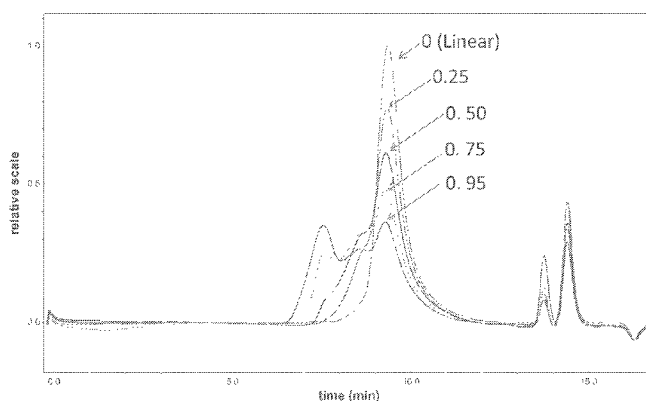


Figure 2

- (57) **Abstract:** Provided are compositions comprising a block copolymer of the following formula: [A]-B-[Q], wherein [A] is a polymer that has an affinity for a substrate; B is a linking group comprising an optionally-substituted, polyvalent linking group having a molecular weight of no more than 1000 g/mole; and [Q] comprises a semi-crosslinked, ungelled polymer derived from copolymerization of an ethylenically unsaturated monomer with a poly-functional ethylenically unsaturated monomer. Such block copolymers are cross-linked via the [Q] segment, but not macroscopically gelled. The [Q] segment is hydrophilic and has a degree of polymerization in the range of about 10 to about 10,000. The [A] segment is located on at least one terminal end of said block copolymer, comprises between about 1 and about 200 repeating units. The block copolymer is associated, via the linear substrate associative segment with a surface comprising at least one hydrophobic site, such as a silicone hydrogel. The polymers may be incorporated into a formulation from which the silicone hydrogel is made or may be contacted with the silicone hydrogel post-formation.





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