

viscoelastics with the endothelial cell and tissue protection and IOL coating properties of dispersive viscoelastics. DisCoVisc™ (OVD) creates and maintains a deep anterior chamber dome space. As previously noted, this prevents a shallow anterior chamber from forming during surgery, thereby providing a workspace for the surgeon. The larger workspace protects the corneal endothelium from damage caused by the energy produced at the phacoemulsification tip. Increased space also minimizes endothelial cell damage due to the turbulent irrigating fluid. Free-floating human lens fragments propelled by fluid movement are less likely to collide with the endothelial cells during surgery. In addition, the triple negative charge of DisCoVisc™ aids in its molecular attraction to tissue. This results in protective qualities for the endothelial cells and other intraocular tissues and helps facilitate surgical manipulation of these tissues. DisCoVisc™ may also be used to coat intraocular lenses and instruments during cataract extraction and IOL insertion. DisCoVisc™ does not become cloudy during injection, maintains excellent visibility during surgery and is easy to remove at the end of surgery. DisCoVisc™ may be used at any or all phases of anterior chamber surgery, especially cataract extraction and IOL implantation.

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## II. CHEMISTRY

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DisCoVisc™ is a sterile, nonpyrogenic, viscoelastic solution of highly purified, non-inflammatory sodium chondroitin sulfate and sodium hyaluronate. DisCoVisc™ is formulated to a viscosity of  $75,000 \pm 35,000$  mPa (at shear rate of  $1 \text{ sec}^{-1}$ ,  $25^\circ\text{C}$ ). Each mL of DisCoVisc™ contains not more than 40 mg sodium chondroitin sulfate, 17 mg sodium hyaluronate, 0.45 mg monobasic sodium phosphate, monohydrate, 2 mg dibasic sodium phosphate anhydrous, 3.1 mg sodium chloride (with water for injection, USP/EP, q.s.). The osmolality of DisCoVisc™ is  $298\text{mOsm/kg} \pm 32\text{mOsm/kg}$  (U.S.) and the pH is  $7.2 \pm 0.4$ .

The principle components of DisCoVisc™ (OVD), sodium chondroitin sulfate and sodium hyaluronate, are natural polymers found in the extracellular matrix of connective tissues such as cartilage, synovia, umbilical cord, and vitreous. They consist of disaccharide units of N-acetylglucosamine and sodium glucuronate.

DisCoVisc™ possesses both viscous and elastic properties with a pseudoplastic rheological profile as shown in Figure 1.

Compared to other viscoelastics, DisCoVisc™ (OVD) has an intermediate cohesive/dispersive index (CDI) (Illustration 1 and Figure 2)<sup>6,7</sup>.