Technical specification

Product	OPHTEIS COHESIVE	OPHTEIS ADAPTIVE PRO	OPHTEIS DISPERSIVE
Classification	Cohesive	Visco-adaptive	Dispersive
Polymer Origin	Biofermentation	Biofermentation	Biofermentation
Sodium Hyaluronate Concentration (NaHA)	1.4%	2.0%	3.0%
Sorbitol Concentration	-	4.0%	-
Molecular Weight (Dalton)	Approx. 3.2 million	Approx. 2.9 million	Approx. 0.75 million
Zero Shear Viscosity (mPas)	Avg. 135,000	Avg. 350,000	Avg. 30,000
Osmolality (mOsm/kg)	300 - 350	295 - 355	300 - 350
pH	6.8 - 7.6	6.8 - 7.4	6.8 - 7.6
Shelf Life (years)	2	2	3
Storage (°C)	2 - 25	2 - 25	2 - 25
Syringe Volume (ml)	1.1	1.1	1.1
Cannula Gauge (G)	27	27	25
Model Number	S-OPCOH	S-OPAPR	S-OPDPS

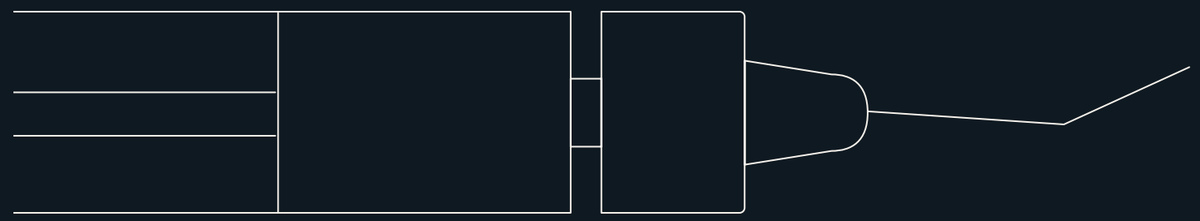
Notes:

Rayner

Ophteis

PREMIUM VOLUME OVDs

WHY SETTLE FOR LESS?



Rayner

Ophteis

Precision-engineered performance for modern eye surgery

For surgeons, consistency is everything. Chamber stability, endothelial protection and predictable handling are not optional – they are fundamental to surgical confidence and patient outcomes.

The Ophteis family of OVDs has been developed to meet these demands with reliability, simplicity and quality at its core.

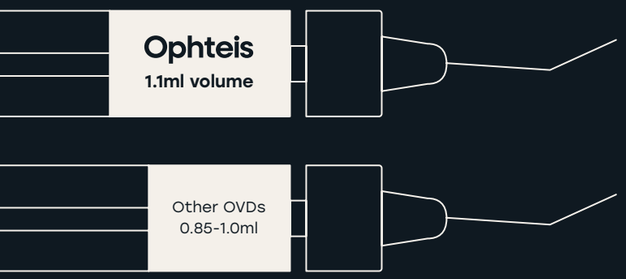
Manufactured in Europe at Rayner's state-of-the-art biomaterials facility, Ophteis OVDs combine exceptional production standards, a dependable supply chain and practical design features that reflect the realities of today's operating room.

High quality manufacturing

Fully owned manufacturing process

Rayner maintains complete control over its OVD production and quality assurance. This in-house capability ensures consistent rheological performance and a dependable supply chain – giving surgeons confidence not only in the OVD, but also in its availability.

Why choose Ophteis?



Larger volume

Every Ophteis OVD is supplied in a generous 1.1 ml filled syringe

This increased fill volume supports your full procedure without compromise, reducing the risk of running short at a critical stage and minimising the need to open an additional syringe. The result is an uninterrupted workflow, reduced waste and greater peace of mind.

Operational simplicity

Ophteis OVDs can be stored at room temperature

By removing the need for refrigerated storage and subsequent temperature acclimatisation before surgery, Ophteis OVDs are ready when you are – reducing operational complexity and streamlining preparation for clinical teams.

Ophteis

Room temperature storage from 2-25°C

Other OVDs require 2-8°C **refrigeration**

Together, these family-wide benefits create an OVD portfolio **designed to simplify surgery and support consistent performance**, case after case.

A complete family for every surgical approach

Whether your priority is space creation, endothelial coating or all-stage versatility, there is an Ophteis OVD designed to support your approach.

COHESIVE	ADAPTIVE PRO	DISPERSIVE
Build space & maintain control	**Adapt & protect**	**Coat & protect**
• High molecular weight and viscosity facilitate excellent space creation, plus stable anterior chamber maintenance. • Cohesive behaviour supports fast and controlled removal of the OVD at the end of surgery. • High transparency helps maintain a clear surgical view for enhanced safety and precision.	• Performs predictably across all stages of surgery. • High viscosity supports consistent anterior chamber maintenance when needed. • Sorbitol free-radical scavenging helps to protect endothelial cells from phaco-induced trauma. • High transparency helps maintain a clear surgical view for enhanced safety and precision.	• Low molecular weight and high NaHA concentration supports effective endothelial cell coating and protection. • Designed to remain evenly distributed across ocular tissues, whilst contributing to adequate anterior chamber maintenance. • High transparency helps maintain a clear surgical view for enhanced safety and precision.

NEW Ophteis Cohesive

Build space & maintain control

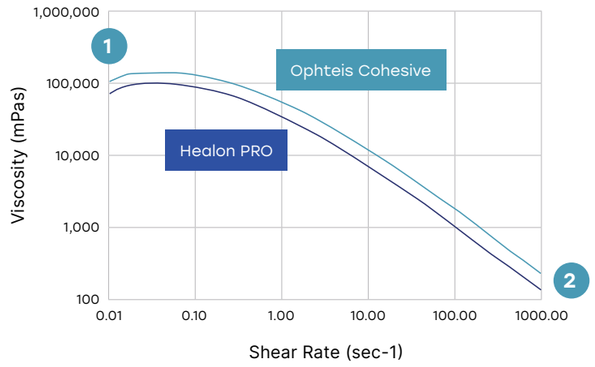
Ophteis Cohesive has been developed for surgeons who require strong space creation, chamber stability and efficient removal.

Ophteis Cohesive's high molecular weight enables the creation of a deep and stable anterior chamber that facilitates a controlled capsulorhexis, confident phacoemulsification and smooth IOL implantation. High viscosity helps to ensure the OVD maintains its integrity inside the eye, supporting efficient instrument manoeuvring while preserving working space.

At the end of the surgery, the highly cohesive nature of Ophteis Cohesive is designed to enable rapid and controlled removal, reducing the likelihood of any residual material, as well as supporting predictable postoperative pressure management.

For enhanced precision at every stage, Ophteis Cohesive's high transparency helps ensure an unobstructed surgical view throughout the procedure.

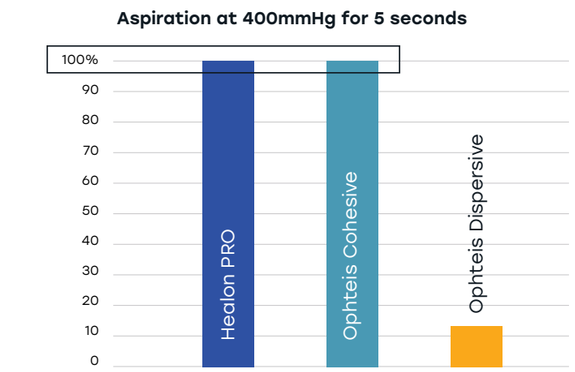
Comparable rheological behaviour to J&J Healon PRO*



1. High viscosity at zero shear rate **The OVD holds its shape in the anterior chamber**

2. Fast drop in viscosity as shear rate increases **The OVD is fast and easy to remove**

Comparable aspiration time to J&J Healon PRO*



Fast removal when aspirated from the eye

Removal in one piece without hunting for the OVD inside the eye or behind the IOL

For surgeons who value **stability during surgery** and **efficiency at its completion**, Ophteis Cohesive is formulated to deliver reliable, controlled performance.

*Rayner 2026, data on file.

Ophteis Adaptive PRO

Adapt & protect

Ophteis Adaptive PRO is designed for surgeons who require versatility and protection throughout the procedure.

Based on advanced rheological technology, Ophteis Adaptive PRO combines chamber stability with sustained endothelial cell protection, reducing the need to switch between multiple OVDs for most cases.

Ophteis Adaptive PRO's high viscosity supports reliable anterior chamber maintenance during the capsulorhexis and phacoemulsification, while maintaining predictable handling characteristics during IOL implantation.

The visco-adaptive nature of the OVD flows smoothly during injection, remains stable when needed and can be removed in a controlled manner at the end of surgery.

In addition to its reliable mechanical performance, Ophteis Adaptive PRO contains 4% sorbitol, a free-radical scavenger designed to help neutralise reactive oxygen species generated during phacoemulsification.

By addressing oxidative stress as well as mechanical trauma, it offers an added dimension of intraoperative endothelial protection.

What is sorbitol?

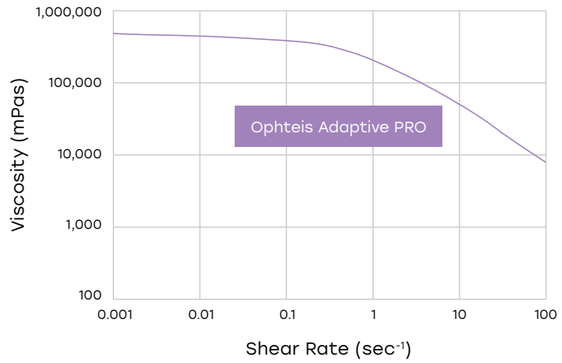
Sorbitol is naturally found in aqueous humour, where it acts as a key corneal nutrient.

Sorbitol is a stable, non-reactive molecule that lends two additional free radical scavenging molecules to every sodium hyaluronate (NaHa) chain, making it a perfect free radical scavenger to maximise endothelial cell protection.

Ophteis Adaptive PRO with sorbitol is proven to:

- **Reduce cell death by an average of 28.4%** compared to J&J Healon, Alcon ProVisc and Bausch + Lomb OcuCoat.[1]
- **Provide endothelial cell protection** and IOP changes comparable to dispersive Alcon Viscoat at 1 and 3 months post-surgery.[2]

Rheological performance of Ophteis Adaptive PRO



The combination of **stability, versatility and biochemical support** makes Ophteis Adaptive PRO a practical choice for surgeons seeking efficiency without compromise.

Ophteis Adaptive PRO

Leading endothelial protection[1]

An in-vitro laboratory study carried out at the University of Brighton (UK) in collaboration with Prof Steve Arshinoff evaluated the cellular protection provided by Ophteis FR Pro (now Ophteis Adaptive PRO) and other leading OVDs against free radical damage under phaco conditions.

The results showed that during three-second phaco exposure, Ophteis FR Pro (now Ophteis Adaptive PRO) demonstrated greater overall average cell viability (28.4%) compared to the three tested market-leading OVDs (Figures 1 & 2).

Cell viability after 3 seconds total phaco time

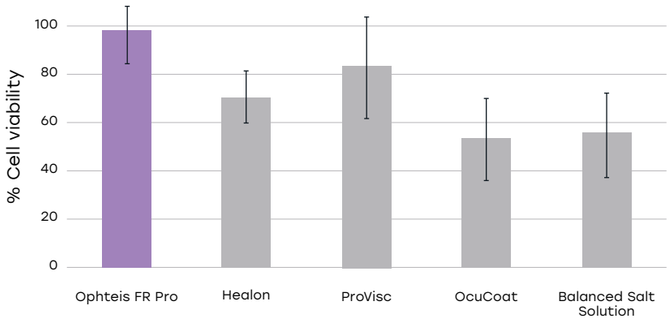


Figure 1. 3T3 Cellular viability post 3 second ultrasound time: 3T3 Cells were exposed to 3 second total ultrasound time at 60% power in linear chop mode. Cell viability was quantified using MTS assay. Ophteis FR Pro (now Ophteis Adaptive PRO) provided the greatest level of cell protection, significantly greater than Healon, OcuCoat and BSS.

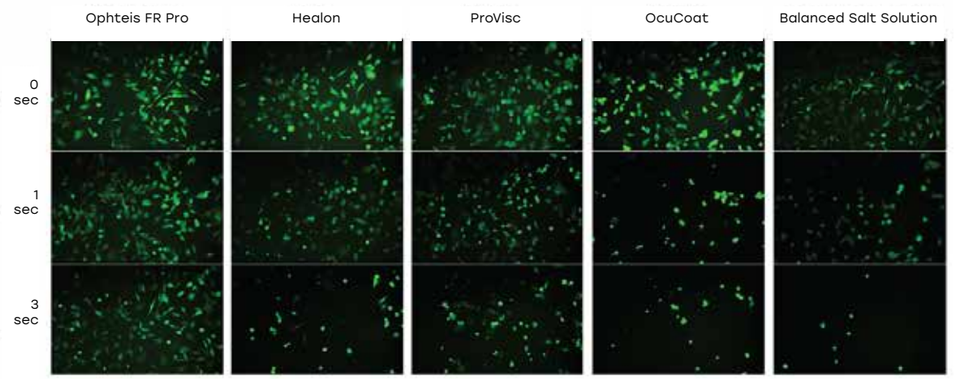


Figure 2. 3T3 Cellular viability post 0, 1 & 3 second ultrasound time: Cell viability and morphology were visually assessed using Calcein-AM staining. The results closely match that of the MTS assay supporting the quantitative analysis findings. Ophteis FR Pro (now Ophteis Adaptive PRO) provided the best level of cellular morphological protection following all exposures, with typical healthy spread fibroblastic form. All other OVDs presented with spherical or reduced morphology.

Ophteis Adaptive PRO was previously Ophteis FR Pro.

1. Rayner (2016). Maximising endothelial protection, improving patient outcomes: Selecting the right OVDs for modern cataract surgery. EC-2016-61.
2. Wood, Keren; Pessach, Yuval; Kovalyuk, Natalya; Lifshitz, Michal; Winter, Halit; Pikkel, Joseph (2024): Corneal endothelial cell loss and intraocular pressure following phacoemulsification using a new viscous-cohesive ophthalmic viscosurgical device. In International ophthalmology 44 (1), p. 10. DOI: 10.1007/s10792-024-02997-y.

Ophteis Dispersive

Coat & protect

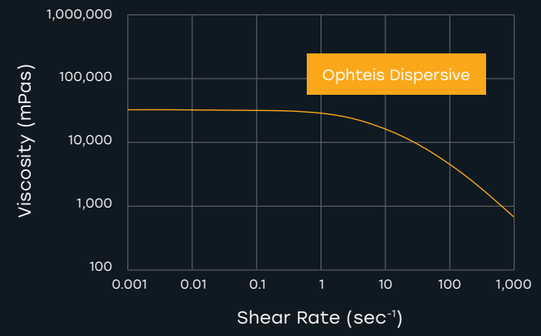
Ophteis Dispersive is designed to maximise endothelial coating and protection during surgery.

Ophteis Dispersive provides reassurance during procedures with vulnerable corneas or that require increased phaco energy.

Formulated with a low molecular weight and high concentration of sodium hyaluronate (NaHA), Ophteis Dispersive spreads effectively across intraocular tissues, forming a protective layer over the endothelium. Its dispersive properties allow it to remain well distributed inside the eye, resisting aspiration and maintaining coverage during phacoemulsification.

At the same time, Ophteis Dispersive contributes to adequate anterior chamber maintenance, with a high level of transparency so that visibility is not compromised, allowing surgeons to work with confidence and precision.

Rheological performance of Ophteis Dispersive



Ophteis Dispersive was previously OphteisBIO 3.0%

Formulated to support **endothelial protection** in the most demanding cases, Ophteis Dispersive is designed to offer **consistent coating performance**.