



**MiRAY**  
MEDİKAL

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## ABOUT US

**MIRAY MEDIKAL**, founded in 2005 Bursa, is an innovative company that specializes in the field of Ophthalmology. We are the pioneers of the industry that invest in the ophthalmology sector in Bursa, considering both international developments and domestic needs.

Our products are manufactured using the highest levels of care and precision at our manufacturing facility with an indoor area of 6000 m<sup>2</sup> which is equipped with advanced technology machines and equipment. We offer the highest quality products and outstanding customer service with our authorized distributors throughout Turkey and the world.

Our Quality Management System is documented through certifications **EN ISO 13485** and **CE**, ensuring that all products and processes meet and exceed prevailing standards.

Our experienced staff is aware of the importance of human life. So we believe in continuous improvement without compromising on quality. We strive hard to make each and every modern technology and development within the easy reach of ophthalmic surgeons and eye care professionals and to provide them with the best quality and confidence.

Honest, principled, and fast service concept of Miray Medikal proves that human health is at the core of our business values.

**Thank you for your confidence and preference.**

**Atakan DEDE**  
General Manager

**pH:**  
**Osmolality:**  
**Volume:**  
**Packing:**

7.2 - 7.6  
285 - 315 mOsm/kg  
20 cc pp/500 cc glass/500 cc pp/1000 cc glass  
12 × 500 mL glass bottles including hangers

**Composition (100 mL)**  
**Calcium chloride 2H<sub>2</sub>O:**  
**Potassium chloride:**  
**Sodium chloride:**  
**Magnesium chloride 6H<sub>2</sub>O:**  
**Sodium acetate 3H<sub>2</sub>O:**  
**Trisodium citrate 2H<sub>2</sub>O:**  
**Water for injection:**

0.048 g  
0.075 g  
0.640 g  
0.030 g  
0.390 g  
0.170 g  
q.s

*Ocusalt® Balanced Salt Solution (BSS)  
is a sterile irrigating solution for use during both intra-ocular and extra-ocular surgical procedures.*

## Features

- Physiologic solution
- Isotonic to ocular tissues
- Preservative free
- Great for all ophthalmic surgical procedures
- Steam Sterilized
- 3-year shelf life



# OPHTHALMIC VISCOSURGICAL DEVICES (OVDS)



## Features

- Sterile, non-pyrogenic viscoelastic solution containing high-quality sodium hyaluronate derived from bio-fermentation
- Sodium hyaluronate viscoelastic solution is used to maintain anatomical space of the anterior segment with reduced trauma to the corneal endothelium during surgery.
- Multiple concentrations to meet surgeons' demands.
- Easy injection
- Great protection of endothelial cells
- Excellent maintenance of the anterior segment
- Outstanding optical clarity
- Easy removal
- Steam sterilized
- Blister pack for extra protection
- 3-year shelf life

# NEOCROWN® 1.4%

## TECHNICAL DATA

**Concentration:**

14 mg/ml (1.4%) of sodium hyaluronate

**Origin:**

Biofermentation

**Molecular Weight:**

3.8 - 4.5 million daltons

**Zero Shear Viscosity:**

320,000 - 500,000 mPa.s

**Osmolality:**

270 - 400 mOsm/kg

**pH:**

6.8 - 7.6

**Cannula:**

27G

**Volume:**

1 ml

**Composition (1 mL)**

**Sodium hyaluronate:**

14 mg

**Sodium chloride:**

8.5 mg

**Disodium hydrogen phosphate:**

0.563 mg

**Sodium dihydrogen phosphate:**

0.045 mg

**Water for injection:**

q.s



# MEGACROWN® 1.8%

## TECHNICAL DATA

**Concentration:**

18 mg/ml (1.8%) of sodium hyaluronate

**Origin:**

Biofermentation

**Molecular Weight:**

2.9 - 3.8 million daltons

**Zero Shear Viscosity:**

450,000 - 750,000 mPa.s

**Osmolality:**

270 - 400 mOsm/kg

**pH:**

6.8 - 7.6

**Cannula:**

27G

**Volume:**

1 ml

**Composition (1 mL)**

**Sodium hyaluronate:**

18 mg

**Sodium chloride:**

8.5 mg

**Disodium hydrogen phosphate:**

0.563 mg

**Sodium dihydrogen phosphate:**

0.045 mg

**Water for injection:**

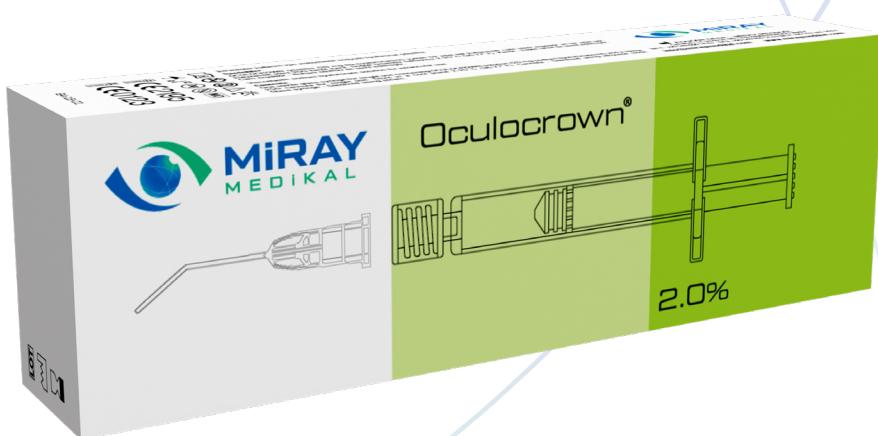
q.s



# OCULOCROWN® 2.0%

## TECHNICAL DATA

<b>Concentration:</b>	20 mg/ml (2.0%) of sodium hyaluronate
<b>Origin:</b>	Biofermentation
<b>Molecular Weight:</b>	1.8 - 2.5 million daltons
<b>Zero Shear Viscosity:</b>	230,000 - 500,000 mPa·s
<b>Osmolality:</b>	270 - 400 mOsm/kg
<b>pH:</b>	6.8 - 7.6
<b>Cannula:</b>	25G
<b>Volume:</b>	1 ml
<b>Composition (1 mL)</b>	
<b>Sodium hyaluronate:</b>	20 mg
<b>Sodium chloride:</b>	8.5 mg
<b>Disodium hydrogen phosphate:</b>	0.563 mg
<b>Sodium dihydrogen phosphate:</b>	0.045 mg
<b>Water for injection:</b>	q.s



# CROWNVISC® 1.0%

## TECHNICAL DATA

**Concentration:**

10 mg/ml (1.0%) of sodium hyaluronate

**Origin:**

Biofermentation

**Molecular Weight:**

3.8 - 4.5 million daltons

**Zero Shear Viscosity:**

200,000 - 400,000 mPa.s

**Osmolality:**

270 - 400 mOsm/kg

**Storage:**

2-25°C

**pH:**

6.8 - 7.6

**Cannula:**

27G

**Volume:**

1 ml - 1.5 ml

### Composition (1 mL)

**Sodium hyaluronate:**

10 mg

**Sodium chloride:**

8.5 mg

**Disodium hydrogen phosphate:**

0.563 mg

**Sodium dihydrogen phosphate:**

0.045 mg

**Water for injection:**

q.s



# CROWNVISC® 1.4%

## TECHNICAL DATA

<b>Concentration:</b>	14 mg/ml (1.4%) of sodium hyaluronate
<b>Origin:</b>	Biofermentation
<b>Molecular Weight:</b>	2.9 - 3.8 million daltons
<b>Zero Shear Viscosity:</b>	300,000 - 470,000 mPa·s
<b>Osmolality:</b>	270 - 400 mOsm/kg
<b>Storage:</b>	2-25°C
<b>pH:</b>	6.8 - 7.6
<b>Cannula:</b>	27G
<b>Volume:</b>	1 ml - 1.5 ml
<b>Composition (1 mL)</b>	
<b>Sodium hyaluronate:</b>	14 mg
<b>Sodium chloride:</b>	8.5 mg
<b>Disodium hydrogen phosphate:</b>	0.563 mg
<b>Sodium dihydrogen phosphate:</b>	0.045 mg
<b>Water for injection:</b>	q.s



# CROWNVISC® 1.6%

## TECHNICAL DATA

<b>Concentration:</b>	16 mg/ml (1.6%) of sodium hyaluronate
<b>Origin:</b>	Biofermentation
<b>Molecular Weight:</b>	2.9 - 3.8 million daltons
<b>Zero Shear Viscosity:</b>	350,000 - 550,000 mPa·s
<b>Osmolality:</b>	270 - 400 mOsm/kg
<b>Storage:</b>	2-25°C
<b>pH:</b>	6.8 - 7.6
<b>Cannula:</b>	27G
<b>Volume:</b>	1 ml - 1.5 ml
<b>Composition (1 mL)</b>	
<b>Sodium hyaluronate:</b>	16 mg
<b>Sodium chloride:</b>	8.5 mg
<b>Disodium hydrogen phosphate:</b>	0.563 mg
<b>Sodium dihydrogen phosphate:</b>	0.045 mg
<b>Water for injection:</b>	q.s



# CROWNVISC® 1.8%

## TECHNICAL DATA

<b>Concentration:</b>	18 mg/ml (1.8%) of sodium hyaluronate
<b>Origin:</b>	Biofermentation
<b>Molecular Weight:</b>	2.9 - 3.8 million daltons
<b>Zero Shear Viscosity:</b>	450,000 - 750,000 mPa·s
<b>Osmolality:</b>	270 - 400 mOsm/kg
<b>Storage:</b>	2-25°C
<b>pH:</b>	6.8 - 7.6
<b>Cannula:</b>	27G
<b>Volume:</b>	1 ml - 1.5 ml
<b>Composition (1 mL)</b>	
<b>Sodium hyaluronate:</b>	18 mg
<b>Sodium chloride:</b>	8.5 mg
<b>Disodium hydrogen phosphate:</b>	0.563 mg
<b>Sodium dihydrogen phosphate:</b>	0.045 mg
<b>Water for injection:</b>	q.s



# CROWNVISC® 3.0%

## TECHNICAL DATA

<b>Concentration:</b>	30 mg/ml (3.0%) of sodium hyaluronate
<b>Origin:</b>	Biofermentation
<b>Molecular Weight:</b>	1.8 - 2.5 million daltons
<b>Zero Shear Viscosity:</b>	350,000 - 650,000 mPa·s
<b>Osmolality:</b>	270 - 400 mOsm/kg
<b>Storage:</b>	2-25°C
<b>pH:</b>	6.8 - 7.6
<b>Cannula:</b>	25G
<b>Volume:</b>	1 ml - 1.5 ml
<b>Composition (1 mL)</b>	
<b>Sodium hyaluronate:</b>	30 mg
<b>Sodium chloride:</b>	8.5 mg
<b>Disodium hydrogen phosphate:</b>	0.563 mg
<b>Sodium dihydrogen phosphate:</b>	0.045 mg
<b>Water for injection:</b>	q.s



# CROWNGEL® 2.0% - 2.4%

## TECHNICAL DATA

<b>Concentration:</b>	20 mg/mL (2.0%) of HPMC	24 mg/mL (2.4%) of HPMC
<b>Zero Shear Viscosity:</b>	3,000 - 5,000 mPa·s	6,000 - 8,000 mPa·s
<b>Osmolality:</b>	270 - 400 mOsm/kg	270 - 400 mOsm/kg
<b>pH:</b>	6.8 - 7.6	6.8 - 7.6
<b>Volume:</b>	2 ml	2 ml
<b>Packing:</b>	10 per box	10 per box
 <b>Composition (1 mL)</b>		
<b>HPMC:</b>	20 mg	24 mg
<b>Sodium chloride:</b>	6.40 mg	6.40 mg
<b>Potassium chloride:</b>	0.75 mg	0.75 mg
<b>Calcium chloride 2H<sub>2</sub>O:</b>	0.48 mg	0.48 mg
<b>Magnesium chloride 6H<sub>2</sub>O:</b>	0.30 mg	0.30 mg
<b>Sodium acetate 3H<sub>2</sub>O:</b>	3.90 mg	3.90 mg
<b>Trisodium citrate 2H<sub>2</sub>O:</b>	1.70 mg	1.70 mg
<b>Water for injection:</b>	q.s	q.s



**CrownGel® - Sterile Viscoelastic Solution (HPMC)**  
 CrownGel® is used to maintain anatomical space and avoid collapsing of the chamber in anterior segment surgical procedures such as cataract extraction and IOL implantation.

# OCUBLU®-TRY TRY PAN BLUE

## TECHNICAL DATA

**Formula:**

C<sub>34</sub>H<sub>24</sub>N<sub>6</sub>Na<sub>4</sub>O<sub>14</sub>S<sub>4</sub>

**Concentration Options:**

0.02%, 0.04%, 0.06%

**Storage:**

10–30°C

**Packing:**

1 ml in vial / 10 per box

1 ml in syringe / 10 per box

**Ocublu-Try Trypan Blue 0.02%:**

0.2 mg / 1 ml

**Ocublu-Try Trypan Blue 0.04%:**

0.4 mg / 1 ml

**Ocublu-Try Trypan Blue 0.06%:**

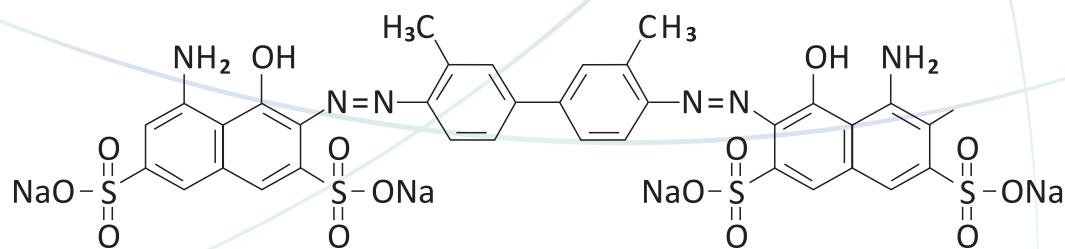
0.6 mg / 1 ml

### Ocublu® Trypan Blue

Ocublu® Trypan Blue is a sterile intra-ocular solution which stains the anterior lens capsule to visualize capsulorhexis during cataract surgery.

## Features

- Rapid and easy application
- Improved visualization of the anterior lens capsule
- Excellent distinction of the capsulorhexis margin
- Reduced risk of incomplete capsulorhexis
- Reduced surgical time
- Steam sterilized



# OCUBLU® ILM Blue - ILM/ERM Blue

## TECHNICAL DATA

**pH:**

6.0 – 8.0

**Storage:**

10 – 30°C

**Packing:**

1 mL in vial / 10 per box

1 mL in syringe / 10 per box

6.0 – 8.0

10 – 30°C

1 mL in vial / 10 per box

1 mL in syringe / 10 per box



## Features

- Good staining and better contrast
- Fast sinking, maximized contact area with the tissue
- Biocompatible
- Steam sterilized

**Ocublu® ILM Blue** is used to selectively stain and visualize Internal Limiting Membrane (ILM), facilitating removal of the tissue and reducing the risk of retinal damage.

**Ocublu® ILM/ERM Blue** has selective affinity for both Epiretinal Membrane (ERM) and Internal Limiting Membrane (ILM), which allows surgeons to clearly differentiate **ILM**, **ERM**, and **retina**.

# OCUSIL® SILICONE OIL

## TECHNICAL DATA

**Viscosity:**

1000/1300/2200/5000/5500/5700 cSt

**Refractive Index:**

1.401 – 1.405 at 25°C

**Specific Gravity:**

0.97 g/cm<sup>3</sup> at 25°C

**Packing Options:**

10 ml in vial

15 ml in vial

10 ml in syringe

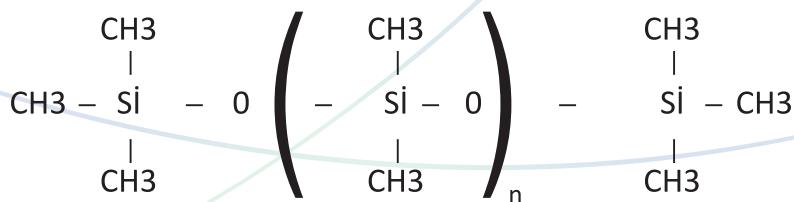


## Features

- Excellent chemical purity
- Reduced incidence of complications
- Reliable long-term tolerance
- Steam sterilized
- High emulsification resistance

Ocusil® Silicone Oil

Ocusil® Silicone Oil is indicated for prolonged tamponade after surgical treatment for severe retinal detachment.



# OCUDEKA® DECALINE

## TECHNICAL DATA

Ocudeka® Decaline  
100% Fluorinated Perfluorocarbon Liquid for Retinal Surgery

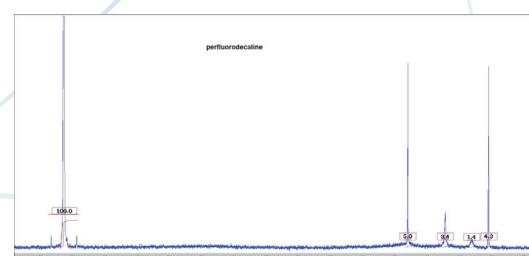
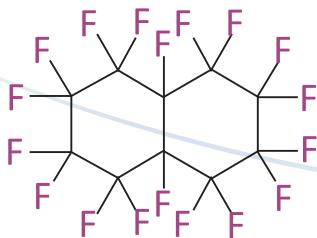
**Formula:**  
**Density:**  
**Content:**  
**Boiling Point:**  
**Packing Options:**

$C_{10}F_{18}$   
1.908 g/cm<sup>3</sup> at 20°C  
100% fluorinated perfluorocarbon  
142°C  
5/7/10 ml in vial



## Features

- Biocompatible
- High specific density
- Chemically and physiologically inert
- Steam sterilized
- Efficient retinal unfolding and stabilization



# HPMC GEL® 2.0% OCUSIL® PROSTHETIC EYE CARE SOLUTION

## Features

- Highly viscous HPMC solution
- For use as a contact fluid during gonioscopy
- Forms a protective layer onto the eye surface during fundus examination with a lens
- Optimum protection of eye surface
- For external use only  
Hold the bottle upside down with a special bottle holder provided to prevent bubbling problem in the solution

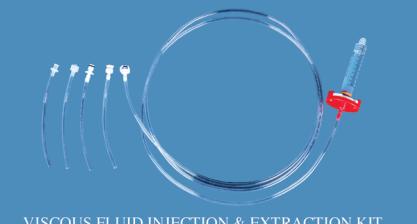
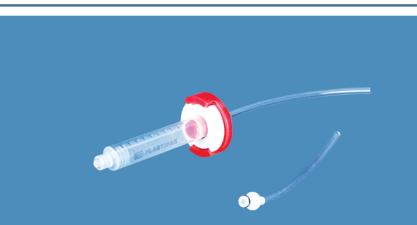
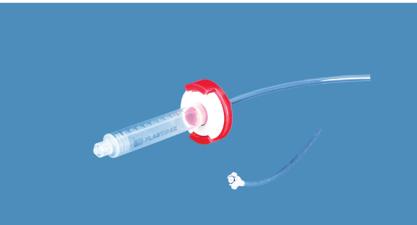


## Features

- For use as a lubricant for artificial eyes
- Reduces drainage and friction between the eyelids and the prosthetic surface
- Relieves irritation and discomfort
- Makes the artificial eye look more natural and shiny



# OCUCIL® VISCOUS FLUID INJECTION & EXTRACTION KIT

VFI/VFE Viscous Fluid Injection & Extraction Kit Connector Type	Manufacturer	Vitrectomy System
 Compatible connector with Dorc, Alcon (VFI-1)	DORC ALCON	Eva Accurus Constellation
 Compatible connector with Oertli (VFI-2)	OERTLI	Orbit Faros 0S3 0S4
 Compatible connector with Bausch&Lomb (VFI-3)	BAUSCH&LOMB	Millenium Stellaris

## Features

- Compatible with most vitrectomy machines and silicone oil syringes on the market
- Silicone oil injection can be performed in 23G or 25G
- Includes VFI cannulas for injection
- Comes with a ready-to-use empty syringe for silicone oil removal
- Extraction cannula included
- Maximal pressure: 5 bars
- Sterile
- Box of 5 kits
- Single use



# CROWNFLEX® Classic 20 mg - Classic Plus 32 mg

## TECHNICAL DATA

**Sodium hyaluronate:**

1.0%

1.6%

**Molecular Weight:**

3.8 – 4.5 million daltons

2.9 – 3.8 million daltons

**Zero Shear Viscosity:**

200,000 – 400,000 mPa·s

350,000 – 550,000 mPa·s

**Osmolality:**

270 – 400 mOsm/kg

270 – 400 mOsm/kg

**Storage:**

2 – 25°C

2 – 25°C

**pH:**

6.8 - 7.6

6.8 - 7.6

**Origin:**

Biofermentation

Biofermentation

**Volume:**

2.0 mL

2.0 mL

### Composition (Per 2 mL)

**Sodium hyaluronate:**

20 mg

32 mg

**Sodium chloride:**

17 mg

17 mg

**Disodium hydrogen phosphate:**

1.126 mg

1.126 mg

**Sodium dihydrogen phosphate:**

0.090 mg

0.090 mg

**Water for injection:**

q.s

q.s



# CROWNFLEX® Ultra 40 mg - Ultra Plus 60 mg

## TECHNICAL DATA

**Sodium hyaluronate:**  
**Molecular Weight:**  
**Zero Shear Viscosity:**  
**Osmolality:**  
**Storage:**  
**pH:**  
**Origin:**  
**Volume:**

2.0%  
1.8 – 2.5 million daltons  
230,000 – 500,000 mPa·s  
270 – 400 mOsm/kg  
2 – 25°C  
6.8 - 7.6  
Biofermentation  
2.0 mL

3.0%  
1.8 – 2.5 million daltons  
350,000 – 650,000 mPa·s  
270 – 400 mOsm/kg  
2 – 25°C  
6.8 - 7.6  
Biofermentation  
2.0 mL

### Composition (Per 2 mL)

<b>Sodium hyaluronate:</b>	40 mg	60 mg
<b>Sodium chloride:</b>	17 mg	17 mg
<b>Disodium hydrogen phosphate:</b>	1.126 mg	1.126 mg
<b>Sodium dihydrogen phosphate:</b>	0.090 mg	0.090 mg
<b>Water for injection:</b>	q.s	q.s



## Features

- Easy controlled injection
- Reliable lubrication and shock absorbing properties
- Reduced pain and improved joint mobility following the intra-articular injection
- Highly effective to improve the quality of the joint's lubrication
- Steam sterilized

# OCUFULL® Fresh Plus - Fresh

## TECHNICAL DATA

<b>Ingredient:</b>	0.2% Sodium Hyaluronate	Hydroxypropyl Methyl Cellulose (HPMC)
<b>Zero Shear Viscosity:</b>	15 - 30 mPa.s	3 - 15 mPa.s
<b>Storage:</b>	2-25°C	2-25°C
<b>pH:</b>	6.0 - 8.0	6.0 - 8.0
<b>Origin:</b>	Biofermented	
<b>Volume:</b>	0.5 ml x 30pcs	0.5 ml x 30 pcs



## Features

- Used to relieve the burning, redness and irritation caused by dry eyes
- Thanks to the sodium hyaluronate it contains, it provides long-lasting moisture in the eye and minimizes the need for reapplication throughout the day
- Special packaging ensures ease of use with controlled drop application
- 0.5ml single-use packaging, presented in a box of 30 units
- Contains no preservatives
- Suitable for use with contact lenses
- Suitable for use as supportive treatment after laser surgery



[www.miraymedikal.com](http://www.miraymedikal.com)



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