

**PhysIOL**

ADVANCED OPTICAL SOLUTIONS

**G·FREE TECHNOLOGY**

by PhysIOL

Glistening-free  
hydrophobic  
material

When  
purity  
becomes  
reality

### What do studies say?

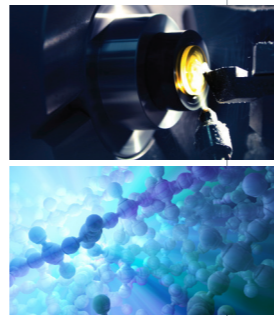
"The new-generation hydrophobic acrylic material reached a low water content at equilibrium, making it glistening free. The hydrophobicity and bioadhesiveness of the new raw material were comparable to those of state-of-the-art reference materials."<sup>(1)</sup>

"The main side effect of using Ethylene Oxide (EO) as a sterilization agent (A/N: common sterilization process) is that it can leave a residue on the devices being processed."<sup>(2)</sup>

### G-free®: the glistening-free hydrophobic material by PhysiOL

G-free® is guaranteed 100% glistening-free thanks to:

- lathe-cutting process instead of the cast-molding process;
- packaging in water for steam sterilization which prevents major conditioning changes during implantation and avoids any toxicity;
- equilibrium of water content in the material.

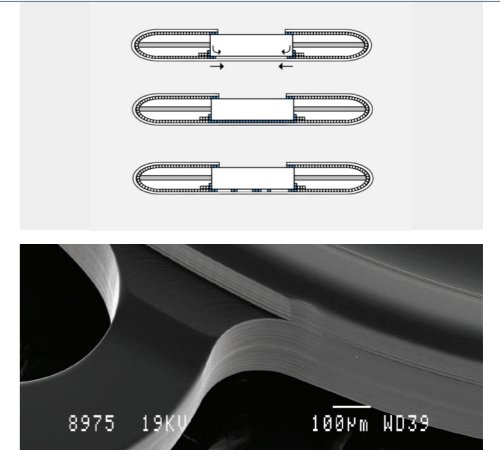


The PhysiOL G-free® material was patented in 2010 (patent number: 1830898).

### Why low PCO with G-free®?

The G-free® material matches the "No space, no cells" concept.<sup>(4)</sup> This confirms that the perfect bio-adhesiveness of the G-free® offers hard tackiness and bond to the capsular bag.

The design of the PhysiOL G-free® material integrates the **2-Step Technology** which features a **360° square edge barrier** and a posterior **haptic angulation**. This technology offers a continuous barrier against PCO.

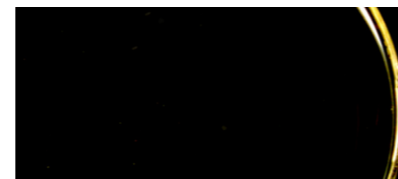


### Do glistenings impact on the quality of vision?

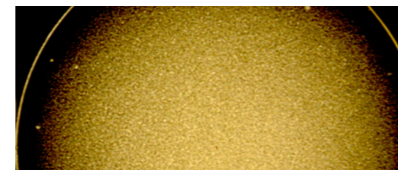
Glistenings or commonly called fluid-filled microvacuoles form within certain IOL materials and can develop in various shapes, sizes, and density.

Some IOLs on the market develop glistenings after implantation which can impact on the quality of vision.

Simulation demonstrated that an increase in density of glistenings can lead to a significant drop in the MTF of the IOL and the pseudophakic eye.



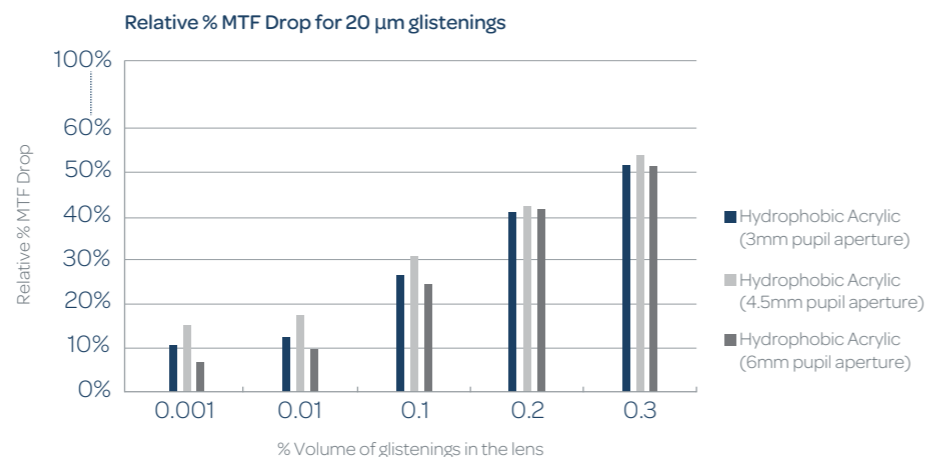
PhysiOL G-free® material



Hydrophobic IOL with glistenings

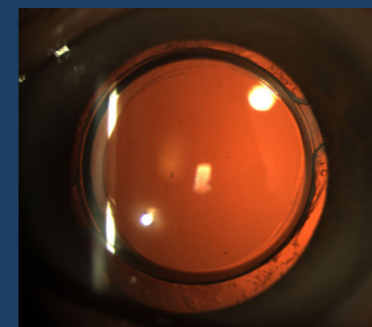
### What do studies say?

"Mathematical modeling demonstrated that glistenings in IOLs will lead to reduction in MTF of the IOL and the pseudophakic eye. The loss in MTF is more pronounced at high densities and small cavitation sizes across all biomaterials."<sup>(3)</sup>



### What do studies say?

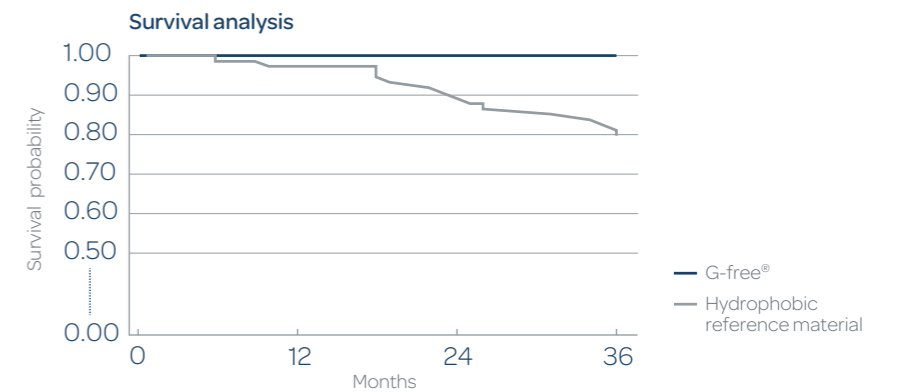
"The G-free® material showed its effectiveness in the absence of glistening. This survival analysis shows no glistening event during 36 months follow-up."<sup>(5)</sup>



"One YAG has been made in the G-free® IOL cohort after the third year (n = 43 eyes)."<sup>(6)</sup>

After three years, the G-free® IOL showed no glistening.

A two sample test demonstrated a significant difference in the occurrence of vacuoles between the G-free® material and the hydrophobic reference material.



#### References:

- (1) C. Pagnouille, PhD, D. Bozukova, PhD, L. Gobin, PhD, V. Bertrand, MSc, M-C. Gillet-De Pauw, PhD : Assessment of new-generation glistening-free hydrophobic acrylic intraocular lens material, J Cataract Refract Surg 2012; 38:1271–1277.
- (2) ANSI/AAMI/ISO 10993-7:2008/(R) 2012, Biological evaluation of medical devices – Part 7: Ethylene oxide sterilization residuals.
- (3) E. DeHoog, PhD, A. Doraiswamy, PhD: Evaluation of the impact of light scatter from glistenings in pseudophakic eyes, J Cataract Refract Surg 2014; 40:95–103.
- (4) Linnola RJ. Sandwich theory: Bioactivity-based explanation for PCO. JCRS 1997;23:1539–42.
- (5) & (6) C. Chassain, MD: Clinical outcomes after 3 years. Data on file with PhysiOL.

# PhysIOL G-free® solutions

 <p><b>FINEVISION TRIUMF</b> G-FREE EDOF TRIFOCAL OPTIC</p>  <p><b>FINEVISION HP</b> G-FREE TRIFOCAL OPTIC</p>	 <p><b>ISOPURE 1.2.3</b> G-FREE ISOFOCAL OPTIC</p>  <p><b>ISOPURE</b> G-FREE ISOFOCAL OPTIC</p>
<p>G-free® hydrophobic trifocal diffractive optic Double C-loop platform &amp; RidgeTech® Non-preloaded injection system 10D to 35D power</p> <p>FineVision Triumf (Pod L GF): Edof trifocal optic Additional power : Elongated depth of focus energy with +1.75D &amp; +3.50D addition</p> <p>FineVision HP (Pod F GF): Additional power : +1.75D for intermediate vision and +3.50D for near vision</p>  	<p>IsoPure 123: G-free® hydrophobic isofocal IOL Preloaded with PhysIOL 1.2.3 injection system from 10D to 30D power</p>  <p>IsoPure: G-free® hydrophobic isofocal IOL Non preloaded injection system from 31D to 35D</p> 
 <p><b>MICROPURE 1.2.3</b> G-FREE MONOFOCAL OPTIC</p>  <p><b>MICROPURE</b> G-FREE MONOFOCAL OPTIC</p>	 <p><b>PODEYE</b> G-FREE MONOFOCAL OPTIC</p>
<p>MicroPure 123: G-free® monofocal IOL Preloaded with PhysIOL 1.2.3 injection system from 0D to 30D power</p>  <p>MicroPure: G-free® monofocal IOL Non preloaded injection system from -10D to 35D power</p> 	<p>G-free® hydrophobic monofocal IOL Double C-loop platform &amp; RidgeTech® Non-preloaded injection system 0D to 35D power</p> 

## Other PhysIOL advanced optical solutions

**FINEVISION**  
TRIFOCAL OPTIC

**FINEVISION** TORIC  
TRIFOCAL OPTIC

**ANKORIS** TORIC  
MONOFOCAL OPTIC

**MICRO+** 1.2.3  
MONOFOCAL OPTIC

Distributed by

Note: The PhysIOL intraocular lenses are not FDA approved.



PhysIOL sa/nv - Liège Science Park - Allée des Noisetiers 4 - 4031 Liège - Belgium  
t. +32 (0)4 361 05 49 - f. +32 (0)4 361 05 30 - info@physiol.be - www.physiol.eu

