Package

Easy open

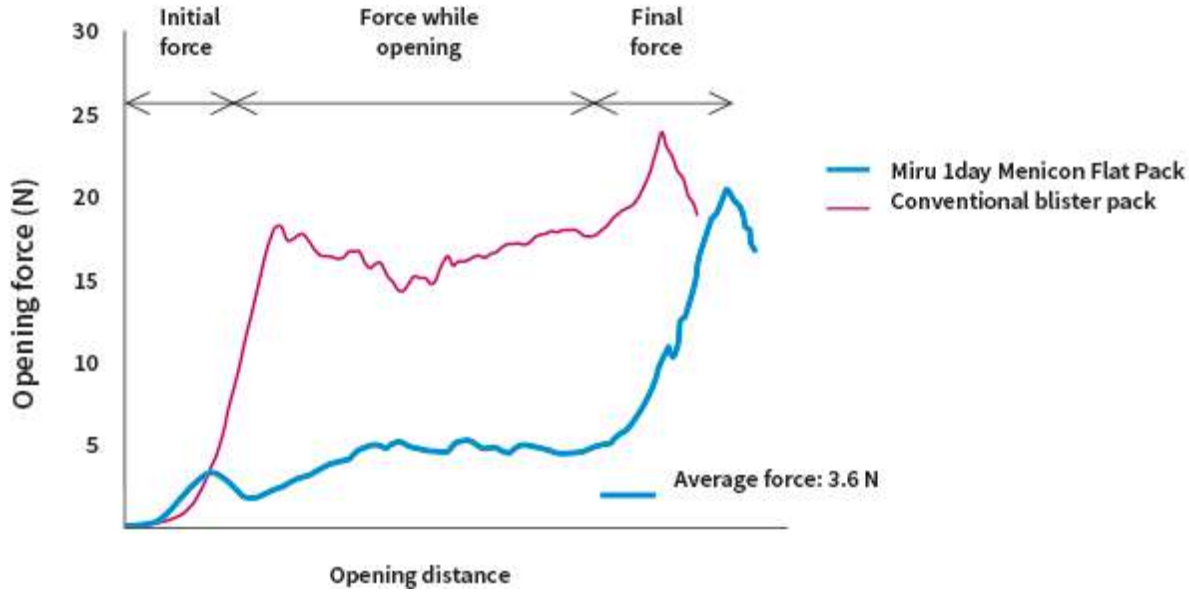
1. Easy to open

2. Easy to take out

3. Easy to wear

Less force required to open the seal

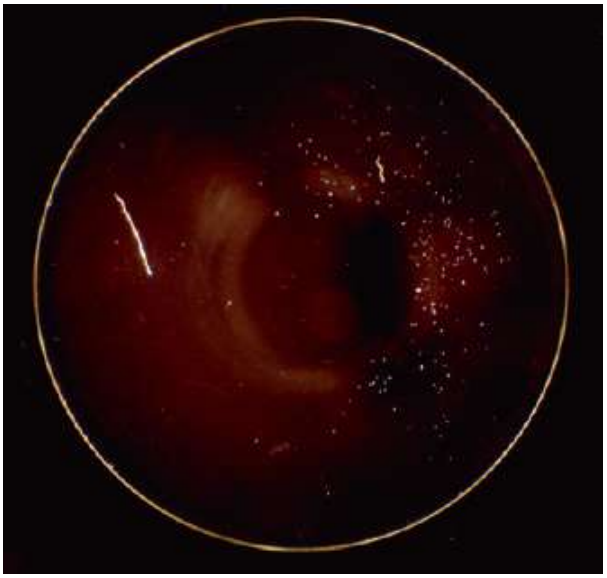
Miru 1day Menicon Flat Pack (1day Flat Pack) requires significantly less force to open than a conventional blister pack.[1]



1day Flat Pack was specifically developed to reduce the chances of contamination of the lens inner surface. When the pack is opened, the outer surface of the lens always faces up. This eliminates confusion about lens orientation and reduces the need to touch the inner surface of the lens, making it less likely that skin oil or harmful microorganisms will get trapped between the lens and the wearer's eye.

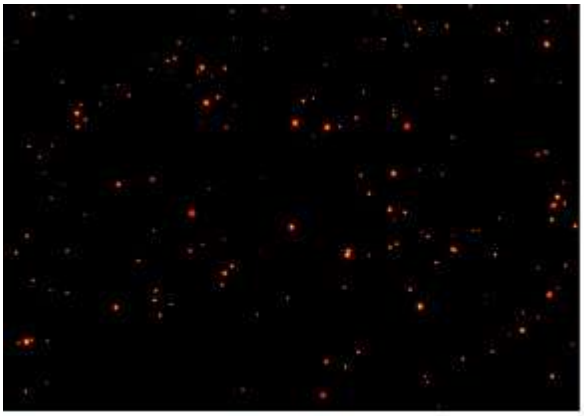
Fibre contamination of lens surface

Even after thorough hand washing, fibres from towels used to dry the hands are a potential source of lens contamination. If a fibre adheres to the inner surface of the lens, tears alone are often unable to flush it out, resulting in lens discomfort and eye irritation. With 1day Flat Pack lenses, such contamination is more likely to be limited to the outer surface, where fibres can be readily dislodged by blinking.

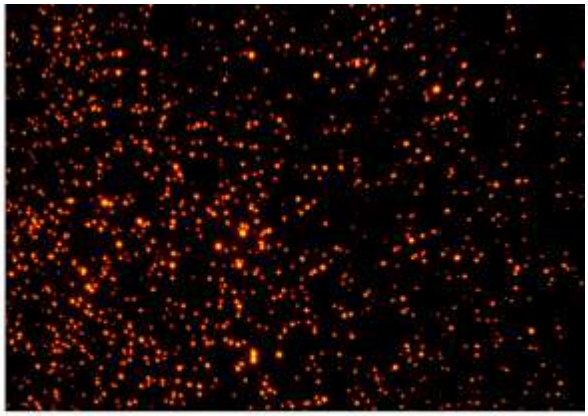


Simulated microbial contamination

Microbial contamination was simulated by "contaminating" fingers with microbe-size fluorescent beads before removing lenses from the package, and then taking fluorescence microscope photos of the central portion of each type of lens.



1day Miru lens

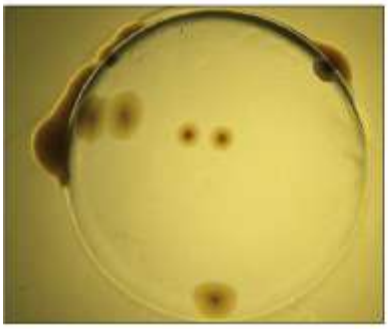


Conventional blister-pack lens

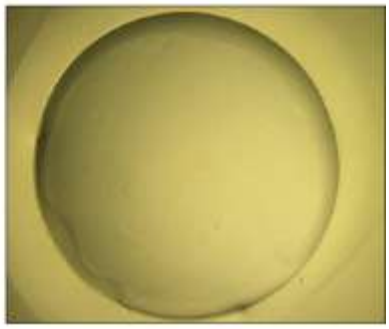
When removed from their package as directed, 1day Flat Pack lenses require less handling, reducing the risk of microbial contamination.

Microbial contamination evaluation

1day Miru lens

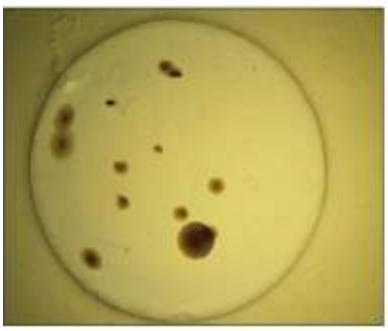


Outer surface

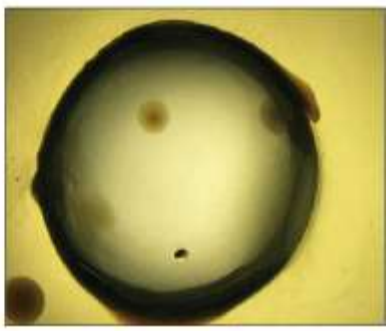


Inner surface

Conventional blister-pack lens



Outer surface



Inner surface

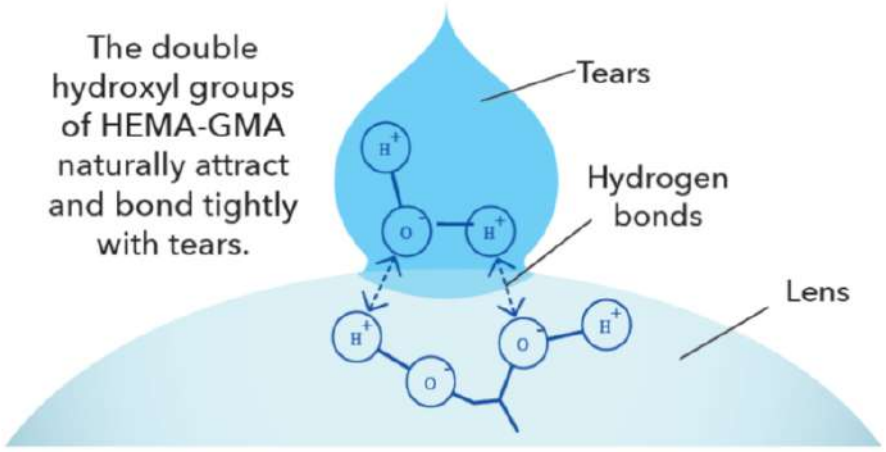
Fingers were contaminated with a standard sample of Staphylococcus aureus bacteria before removing lenses from the package. Inner and outer surfaces of the lenses were then cultured separately so that bacterial growth could be observed for each surface individually. On the inner surface of the 1day Flat Pack lens, no bacterial growth was observed.[2]

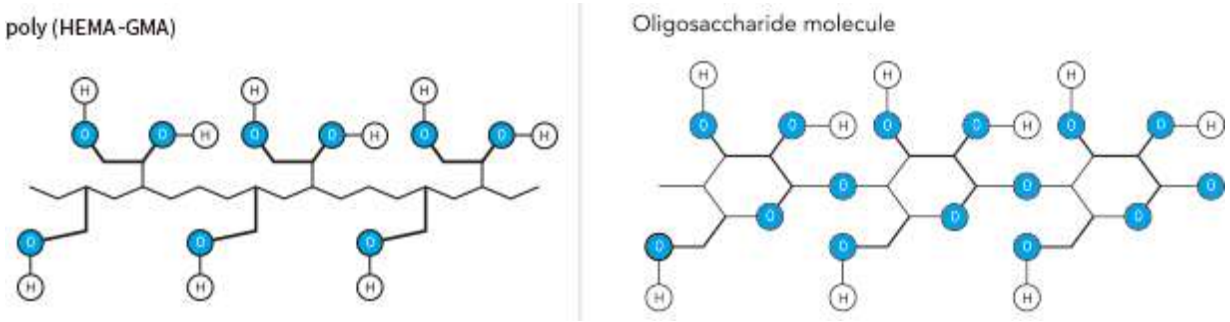
Lens Material

poly (HEMA-GMA) lens material

1day Flat Pack lenses are made from poly (HEMA-GMA), a polymer with numerous free hydroxyl radicals that naturally attract and bond with water molecules to ensure maximum wettability and moisture retention.

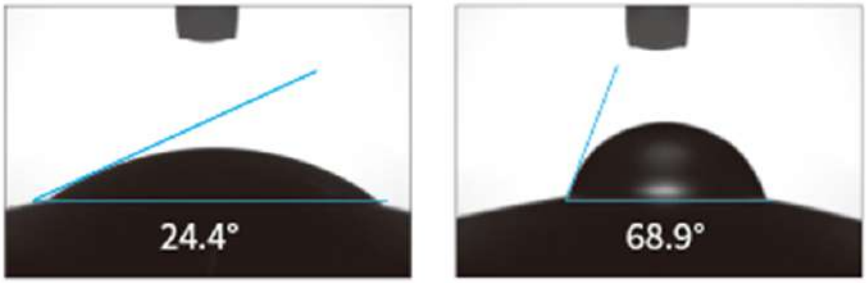
HEMA: 2-Hydroxyethyl methacrylate
GMA: Glycerol monomethacrylate





1day Flat Pack lenses bond naturally with tears because their molecular structure closely mimics the structure of oligosaccharides found in the mucous layer of the tear film.

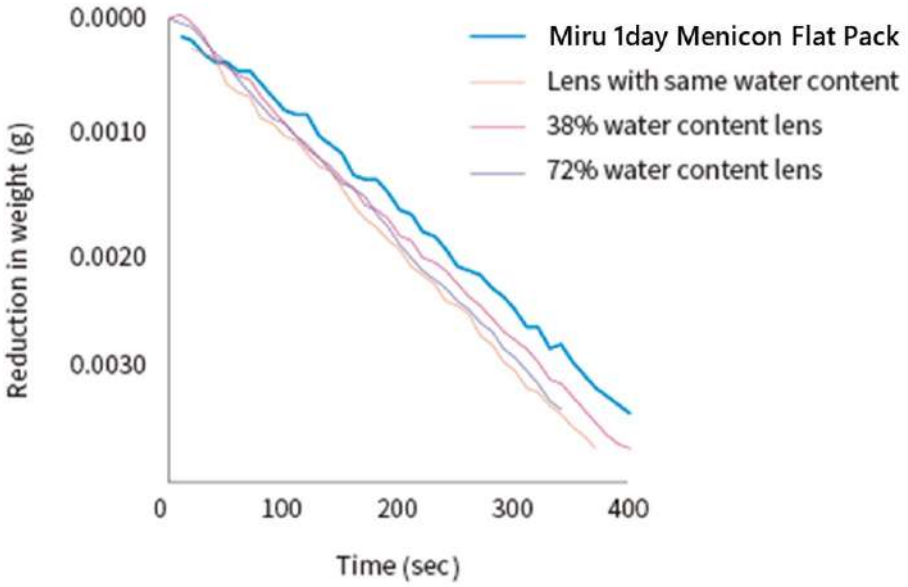
Wettability tests



Miru 1day Menicon Flat Pack　　Menicon HEMA-based lens

Poly (HEMA-GMA) hioxifilcon A has more free hydroxyls radicals than HEMA- based polymers, ensuring higher wettability. Sessile drop method contact angle measurement tests show that 1day Flat Pack lenses have a smaller contact angle than Menicon's HEMA-based lenses, further contributing to high wettability.

Evaporation rate comparison tests



* Menicon in-house test data

With most contact lenses, evaporation rates tend to increase in tandem with water content. However, this is not the case with 1day Flat Pack. In fact, 1day Flat Pack lenses exhibit a lower rate of evaporation than competing lenses with similar water content as well as lenses with evaporation rates lower than 72% (high water content) and 38% (low water content).

Manufacturing Technology

CENTRAFORM process

1day Flat Pack lenses are created using Menicon's proprietary CENTRAFORM spin casting and polymerization process.

Spin casting moulds are created for each contact lens specification.

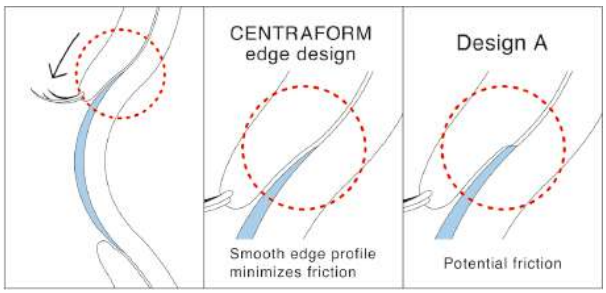
Lens material is injected into mould —injection and rotation are precisely controlled.

Lens polymerization

Careful control of injection volume and rotation speed enables efficient spin-casting production with a precision and reproducibility equivalent to that of cast molding.

Edge profile

The CENTRAFORM process results in a smooth edge profile that helps reduce friction when the wearer blinks.

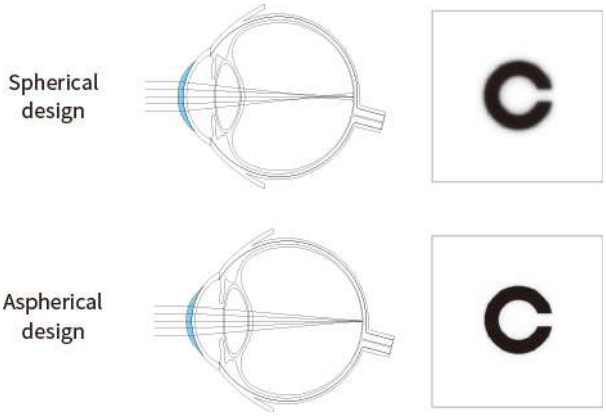


Aspherical design for clearer vision

The CENTRAFORM process makes it possible to manufacture aspherical lenses of extremely high quality.

With spherical lenses, spherical aberrations can cause blurriness because the focal point of light-rays passing through the lens varies according to the rays' distance from the lens center.

With 1day Flat Pack aspherical lens design, spherical aberration is minimized; light rays come together at the correct focal point to ensure a sharper, clearer view.



Environmental focus

The secondary boxes are made from recycled lens-mold plastic.

The primary packages are made from significantly less material than before.