

The focus is on the eyes

In the Eye Care Technologies divison – a separate product field of Harro Höfliger - everything revolves around solutions for the production and packaging of ophthalmic products.

ontact lenses inspire the imagination in many ways. In the blockbuster "Mission Impossible", they make it possible to photograph secret documents in the blink of an eye. During the Olympic

Games, the British sprinter Linford Christie made clever use of it as an advertising space for his sponsor's logo. Even the eye color can be intensified or temporarily changed, if desired. For most contact lens wearers, however, the ultra-thin

vision aids that provide all-around clear vision are primarily an alternative to corrective glasses.

The majority of people with poor sight opt for soft contact lenses, which are available in a wide variety of designs: daily, weekly, 14-day or monthly lenses. Precise manufacturing processes and comprehensive quality controls guarantee that contact lenses not only reliably correct visual defects but are also gentle on highly sensitive eyes. Jochen Stein, Director Eye Care Technologies at Harro Höfliger, knows about the demanding processes: "For more than 20 years, this company has been dealing with eye care products and offers, among other things, fully automated solutions covering the entire value chain for contact lenses all the way to their distribution. In addition to lens manufacturing, whether bifocal or multifocal, for short-sightedness or for long-sightedness, for the correction of astigmatism or even as an implantable intraocular lens, we cover all of the following packaging steps. That is, primary packaging into blisters for product protection, secondary packaging into cartons and tertiary packaging into shipping cases - naturally including all in-process controls and labeling."

Gentle handling of the sensitive lenses

Nowadays, commercial contact lenses are mainly made by molding silicone hydrogel or hydrogel and then packaged into blisters. At the beginning, there is an injection mold into which a liquid monomer mixture is dosed. Adding energy in the form of temperature or UV light triggers polymerization and results in curing of the lens. However, before further processing, it must become soft again and retain moisture. After the so-called hydration, it is carefully released from the mold in a fully automated process and then individually packaged into blisters with saline solution. Harro Höfliger technology is used to seal the blisters and laser code them with data such as, for example, lens type, eyesight and diameter.

Fully automatic cartoning is one of Harro Höfliger's key strengths. Jochen Stein: "In addition to packaging machines for large volumes, we also offer intelligent solutions for lot size 1 such as may be required for intraocular lenses (IOLs). These implantable lenses are customized for each patient and, for instance, are inserted into the eye during cataract surgeries." \rightarrow











Products for eye care

Maximum precision is also crucial for another medical device from the Eye Care Technologies range: Injection systems specifically designed for the eye. In line with their turnkey approach, Harro Höfliger not only offers reliable joining techniques for the sensitive individual components, but also solutions for the subsequent packaging. The know-how in filling, assembly, packaging and labeling of eye care devices also plays an important role when it comes to eye drops, gels and ointments.

Eye drops are not only filled into classic vials and as hygienic single doses into blow-fill-seal plastic ampoules. Even two-chamber tubes for ophthalmic mixture applications are possible, as offered by Neopac with their Fleximed[®] Easymix tube. Two components are separated by a seam in a medical tube. The thin barrier opens under pressue. With this method, two liquids as well as one liquid and one powder component can be mixed. Filling and sealing of the plastic laminate tube and the central bar are performed on machines from Harro Höfliger. Depending on the application, the tubes can be equipped with different closures, application and dispensing aids.

Smart future

By the way, high-tech lenses should not be reserved for Hollywood scripts, they could also provide added medical value. Contact lenses with biosensors, for instance, are under development. Possible applications include the measurement of blood sugar levels in the tear fluid and alert in case of deviating values – a smart trend that could make quite a few finger pricks obsolete.

Research is also being conducted on virtual-reality-lenses that digitally extend the real world and feed in information such as heart rate or even navigation data on mini-displays. When that will be? We will see.

"We provide intelligent solutions for lot size 1, for example for introcular lenses that are tailored to the individual patient."



Jochen Stein, Director Eye Care Technologies at Harro Höfliger

