TEST CELL FOR OXYGEN PERMEABILITY TESTING OF CONTACT LENSES

TECHNICAL BULLETIN

Easily test the oxygen permeability (Dk value) of contact lenses using the Contact Lens Test Cell for use with the MOCON OX-TRAN® 2/22 Model H

Background

For contact lens wearers, water and oxygen permeability through the lens are important to the health and comfort of the eyes. The industry uses Dk values to describe the oxygen permeability (OP) of contact lenses, where D is the diffusivity and k is the solubility. The higher the Dk value is for a particular contact lens, the higher the oxygen availability is to the cornea, and the healthier eyes. With the variety of contact lens materials in the marketplace today, mainly Hydrogels and Silicone Hydrogels, Dk testing is important to ensure optimal OP in the design and manufacturing of contact lenses.

Apparatus

A specially designed Contact Lens Test Cell was developed to test the Oxygen Transmission Rate (OTR) of contact lenses. This Contact Lens Test Cell works with the MOCON OX-TRAN 2/22 H Oxygen Permeation Analyzer. The test cell consists of two parts, the Bottom half is the same as the standard cell for the OX-TRAN 2/22 H. The Top half is customized to accommodate a contact lens. See detailed descriptions in Figure 1.

Specialty test cell allows you to accurately test the oxygen permeability of contact lenses with a diameter of 10-15 mm.

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EASILY & ACCURATELY TEST
Dk VALUES OF CONTACT LENSES

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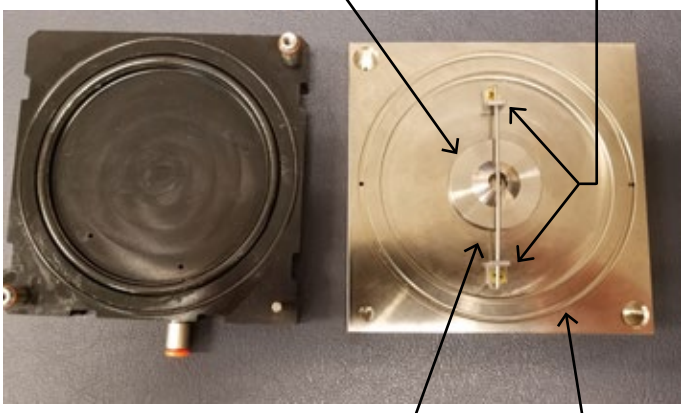

Figure 1. Contact Lens Test Cell

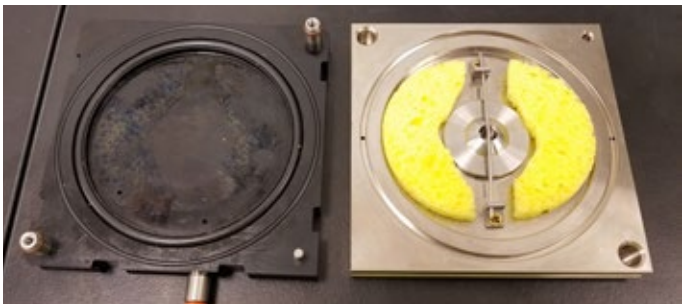

Figure 2. Contact Lens Test Cell with wet sponge in cell

For detailed setup procedures, please refer to the Contact Lens Cell Test Setup Procedure for using this contact lens cell on the OX-TRAN 2/22 H.

Operating Procedure

The most common test temperature setting to conduct a soft contact lens test is 35C, and the most common relative humidity (RH) setting is > 90% RH. This RH condition can be achieved by setting 90% RH (with the OX-TRAN 2/22 H) for both the test gas and the carrier gas side, and placing wet sponges in the test gas side. See Figure 2.

1. Set Test gas (tank air with 21% oxygen is suggested for testing contact lens)
2. Load the lens sample
3. Enter test conditions (Temperature and RH)
4. Enter instrument parameters (Refer to the Ox-Tran 2/22 Operator's Manual)
5. Start the test
6. The OTR test is usually done within an hour.

Recommendations

Contact lenses come in different types of materials, sizes and other specifications. We can help to find out whether this test cell fits your lens products. Please contact your Account Manager if you have any questions about whether this Contact Lens Test Cell will work for your specific application.

To order the Contact Lens Test Cell, please use the following part number and description:

Contact Lens Test Cell - Part#: 052-505
Note: Two (2) complete test cells are included

Questions?

Call MOCON to speak with a certified customer support specialist. Tel: 763.493.6370 | Email: *info.mocon@ametek.com*

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