TIPS NO: 247

Revision:

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KODAK InstaShades® PolyClear™ Gray and Brown
Spherical Single Vision Lenses
Product Specifications & Processing Guide

PURPOSE: The following information provides a guideline for processing the KODAK InstaShades PolyClear Spherical Single Vision lens. As with all technical information, please check for updates if a good amount of time has elapsed from the printed publication date.

CHARACTERISTICS	*KODAK InstaShades PolyClear Single Vision Lens*
Refractive Index	1.586 ref d
Dispersion Value (Abbe)	28.0 (standard polycarbonate)
Density	1.20
Chemical Resistance	Fair (avoid all solvents except IPA)
Machinability	Good
Rear Surface Coating	Required
UV Transmission cutoff	> 380 nm, less than 1% UVA and UVB

BLANK SIZE: 74mm diameter blanks.

BASE CURVES: **1.50, 3.25, 5.00, 7.50**

POWER RANGE: **Sphere: -10.00 to +7.00, Cylinder: to -5.00**

THICKNESSES: : We recommend a minimum center thickness of 1.6mm, or 1.8mm if AR coated.

InstaShades lenses are designed with Multi-Matrix™ technology. The photochromic materials are contained in approximately the front 0.8mm of the lens. The material behind the first 0.8mm provides the optical properties. The mechanical properties of the lenses depend on all of the elements of the Multi-Matrix design. Therefore, it is important to surface the lenses to meet or exceed the recommended minimum center or edge thicknesses.

KODAK InstaShades PolyClear Single Vision - *DIMENSIONS*

Nominal Curve	*True Curve*	*Radius mm*	*SAG at 50mm*	*Nominal Concave*	*Edge Thickness*	*Center Thickness*
1.50	1.45	365.517	0.86	6.00	14.0	7.8
3.25	3.23	164.087	1.92	6.00	12.9	8.9
5.00	4.96	106.855	2.97	6.00	9.6	8.1
7.50	7.49	70.761	4.56	6.00	10.1	12.3

GENERAL:

Processing of the KODAK InstaShades PolyClear Single Vision Lens is similar to that of standard polycarbonate. Generator, edger wheels, and two-step fining pads designed for polycarbonate must be used.

If you have questions about processing the KODAK InstaShades PolyClear Single Vision Lenses, please contact our Technical Services department at 800 759-0075.

COMPUTER CALCULATION OF RX:

The easiest, most efficient method to calculate and process values for an Rx is to use an existing computer software package that contains KODAK Lens design data. If your software company has not included this data in its package, our Technical Services group will be happy to provide the necessary specifications. Please forward us the contact name and phone number of your software vendor. If you need a software program for processing lenses, Signet Armorlite has developed a computer program to calculate surfacing data. This program is available through Signet Armorlite's Technical Services Department.

FINING AND POLISHING :

Processing the KODAK InstaShades PolyClear Single Vision lens is the same as processing other polycarbonate lenses. Safety bevel the lens before fining to allow the slurry smoother access along the lens surface. Large lap tools (at least 3 inch) should be used and allowance made for approximately 0.3mm of stock removal. Perform a stock removal test, using your process to most accurately establish the correct surfacing thickness allowance. We strongly recommend fining pads with eight or more petals be used for curves over 9.00 diopters. This can prevent aberrations and score lines.

BACK SURFACE COATING:

Since the processed back surface of the lens is standard polycarbonate, it must be hard coated with a polycarbonate compatible coating.

EDGING:

Edge this lens using techniques for polycarbonate lenses. Layout for edging should be done in reference to the fitting cross located 4.0mm above the MRP. The fitting cross is placed at the point of the specified segment height and monocular PD.

For rimlon or grooved lens type processing, the groove should be placed so it is contained within the rear polycarbonate portion of the lens. For plano, plus, or up to -0.50D lenses, the edge thickness must be set to at least 2.3mm and the groove positioned at the center of the edge. For minus powers below -0.50, placing the

groove so that it is one third of the distance from the front surface and two thirds of the distance to the back surface will ensure the groove is within the polycarbonate material**.**

DRILLING:

InstaShades polycarbonate lenses have been successfully used on three-piece frames that require drilling or slotting. Many variables will contribute to successful three-piece frame usage. They include machining, smooth surfaces, chamfering the edges, using grommets to cushion the contact, not over-tightening the screws, and patient care. The drilled portion of the lens may fail over time if the drilling was done improperly. Please see TIPS 242, "Making Stronger Three-Piece Eyewear," for our recommendations on drilling and screw torque measurement techniques. We recommend no greater than 8 inches ounces of torque be applied to nuts of three-piece frames.

AR COATING:

Multi-layer AR coatings can be applied to KODAK InstaShades PolyClear Single Vision Lenses. Because lens impact resistance is reduced by AR coatings, we recommend a 1.8mm minimum center thickness and a backside coating that will enhance the impact resistance capability. This minimum thickness recommendation is based on surfacing to no less than 1.8mm and using UltraOptics UVNV backside coating prior to applying AR coating. Other back surface coatings may enhance or reduce the impact resistance after adding AR.

Be sure that your AR and backside coatings are compatible. If you have lenses AR coated by a coating service, include such samples in your impact testing. This lens has a front surface factory-applied hard coating which is designed to be compatible with most AR coating processes. Please call Technical Services at 800-759-0075 for additional information about coatings and impact resistance.

TINTING:

We do not recommend tinting InstaShades lenses. Doing so will void any factory warranty. This coating is applied in the mold and not considered strippable.

KODAK InstaShades PolyClear Single Vision Lens
Base Curve Selection Chart

	Cylinder											
Sphere Power	0.00	-0.50	-1.00	-1.50	-2.00	-2.50	-3.00	-3.50	-4.00	-4.50	-5.00	**Sphere Power**
7.00												7.00
6.50												6.50
6.00												6.00
5.50												5.50
5.00												5.00
4.50				7.50 Base								4.50
4.00												4.00
3.50												3.50
3.00												3.00
2.50												2.50
2.00												2.00
1.50												1.50
1.00												1.00
0.50				5.00 Base								0.50
0.00												0.00
-0.50												-0.50
-1.00												-1.00
-1.50												-1.50
-2.00												-2.00
-2.50												-2.50
-3.00				3.25 Base								-3.00
-3.50												-3.50
-4.00												-4.00
-4.50												-4.50
-5.00												-5.00
-5.50												-5.50
-6.00						1.50 Base						-6.00
-6.50												-6.50
-7.00												-7.00
-7.50												-7.50
-8.00												-8.00
-8.50												-8.50
-9.00												-9.00
-9.50												-9.50
-10.00												-10.00
	0.00	-0.50	-1.00	-1.50	-2.00	-2.50	-3.00	-3.50	-4.00	-4.50	-5.00	