Ophthalmic Testing Report

Report Number: R-20230809-041

Prepared for:

Ben Singer
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1401 N Royal Ave
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P.O. #: Check

August 23, 2023

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Project Definition and Scope

Three sets of lenses (three and five lenses per set) were submitted for Bayer Abrasion, Contact Angle +20,000 rubs, QUV Accelerated Weathering testing. The tests outlined were performed on all lenses. The sample lenses were received on August 9, 2023. Individual data for each lens follows on the subsequent pages.

Sample Identification

The samples are labeled as indicated in the table below.

Sample Number	Client Label
S-230809-093	Plano 1-3
S-230809-094	Plano 1-5
S-230809-095	-2.00 1-5

Opinions, Interpretations and Conclusions

If you have any questions regarding these results, please contact us.

Report Prepared by: Terry Graham
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Results

Table 1: Bayer, Plano 1-3

Ophthalmic Materials Test Report for Bayer Test

Submission #:	**R-20230809-041**	Sample #:	**S-230809-093**
Date:	August 15, 2023	Lens Manufacturer:	Singer Optical
Technician:	TG	Lens Material:	CR39, Plano
Comments:	Plano 1-3	Coating:	HC+AR+TC
		Standard Lens:	Essilor CR39 pcat-0586

Lens Sample No.	Test Piece Initial Haze	Test Piece Final Haze	Test Piece Haze Gain	Standard Initial haze	Standard Final Haze	Standard Haze Gain	Test Piece Bayer Ratio	Test Piece Avg. Ratio
230809-093.1	0.05	4.53	4.48	0.13	24.3	24.17	5.40	***5.91***
230809-093.2	0.04	3.86	3.82	0.12	24.4	24.28	6.36	
230809-093.3	0.03	4.06	4.03	0.13	24.2	24.07	5.97	

The Bayer test result is reported as an average of the ratio between the uncoated CR-39 standard lens and the test lens. The higher the number, the more scratch resistant the coating.

Table 2: Contact Angle+20,000 Rubs, Plano 1-5

Ophthalmic Materials Test Report for Contact Angle measurement after rubbing cycles

Submission #: **R-20230809-041**
Sample #: **S-230809-094**

Date: August 14, 2023
Lens Manufacturer: Singer Optical

Technician: TG
Lens Material: CR39, Plano

Comments: Plano 1-5
Coating: HC+AR+TC

Lens Sample No.	Initial CA	CA after 5K	CA after 10K	CA after 15K	CA after 20K
230809-094.1	117.0	116.4	116.3	116.1	114.9
230809-094.2	118.1	117.5	116.8	116.8	116.8
230809-094.3	117.7	117.2	116.3	116.5	116.7
230809-094.4	118.8	117.9	118.2	117.4	117.8
230809-094.5	117.4	117.2	116.9	116.8	116.3
S-230809-094	***117.8***	***117.2***	***116.9***	***116.7***	***116.5***

Additional Comments:

Table 3: QUV Accelerated Weathering, -2.00 1-5

Ophthalmic Materials Test Report for QUV Accelerated Weathering

Submission #: **R-20230809-041**

Sample #: **R-20230809-095**

Date: August 10, 2023

Lens Manufacturer: Singer Optical

Technician: TG

Lens Material: CR39, -2.00

Comments: CR39, -2.00, 1-5

Coating: HC+AR+TC

Lens Sample ID	CX or CC	24 Hours (Day 1)				48 Hours (Day 2)				72 Hours (Day 3)				96 Hours (Day 4)				120 Hours (Day 5)			
		A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D
230809-095.1	CX	5	5	5	5	5	5	5	5	4	5	5	5	4	5	5	5	4	5	5	5
	CC	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
230809-095.2	CX	5	5	5	5	5	5	5	5	4	5	5	5	4	5	5	5	4	5	5	5
	CC	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
230809-095.3	CX	5	5	5	5	5	5	5	5	4	5	5	5	4	5	5	5	4	5	5	5
	CC	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
230809-095.4	CX	5	5	5	5	5	5	5	5	4	5	5	5	4	5	5	5	4	5	5	5
	CC	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
230809-095.5	CX	5	5	5	5	5	5	5	5	4	5	5	5	4	5	5	5	4	5	5	5
	CC	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5

Test Result Descriptions:

A-CRAZING	B-DELAMINATION (interlayer)	C-DELAMINATION (double layer)	D-CROSSHATCH AREA
A5 No crazing	B5 No Delamination (0%)	C5 No Delaminating (0%)	D5 No peeling
A4 Hairline Crazing	B4 Partial Individual Layers (25%)	C4 Delamination all layers (25%)	D4 Some peeling (5%)
A3 Hairline (25%)	B3 Partial Individual Layers (75%)	C3 Delamination all layers (75%)	D3 peeling (15%)
A2 Hairline (75%)	B2 Total Delamination (100%)	C2 Complete Delamination (100%)	D2 peeling (35%)
A1 Hairline (100%)			D1 peeling (65%)
AO Severe - Fern-like or matt-like (100%)			D0 peeling (100%)