



# CrystalChrome®

## Photochromic Spin Coating System

- PRODUCE PHOTOCHROMIC LENSES ON DEMAND
- LEADING PHOTOCHROMIC PERFORMANCE
- SPACE SAVING DESIGN
- SMALL UPFRONT INVESTMENT
- COMPATIBLE WITH ANTI-REFLECTIVE AND METALIZING TREATMENTS
- PHOTOCHROMIC COATINGS SUITE FROM SDC TECHNOLOGIES







CrystalChrome® is designed for applying a photochromic coatings to ophthalmic lenses. It is equipped with a Programmable Logic Control (PLC) and a user-friendly touch screen interface. The machine maintains infrared air cleanliness with a Hepa filter system, utilizes 8 independent spin motors, and a 2-axis motion system for coating lenses. These motors are mounted on a rotating carousel, each with a suction cup to hold and spin ophthalmic lenses at precise speeds. This system consists of two layers: CrystalChrome GY or BN for photochromic functionality and CrystalChrome HC for scratch resistance.



DIMENSIONS

WEIGHT

230kg (507lb)

83.2cm (32.75") Width 100cm (39.4") Depth 191.8cm (75.5") Height

h 240VAC, 50/60Hz, 20A single phase ht

POWER

**AIR** 80psi (5.5bar) (551kPa) WATER Deionized (2 mega ohm or better) or distilled water

WATER CONSUMPTION 30-50g per lens (depending on wash water settings)

#### **Critical to Success**

Maintaining % solids in all coatings
Immediate placement in staging environment after unloading from CrystalChrome

Proper pre-cleaning of lensesStorage temperature of coatings

## **CrystalChrome** Photochromic Coatings Suite

Available in Grey & Brown Colors



#### **PERFORMANCE FEATURES**

- Fast darkening and fading speeds
- Exceptional optical clarity
- Excellent product durability and stability
- Fast drying thermal cure
- Superior abrasion and chemical resistance

#### **RECOMMENDED OPERATING GUIDELINES**

PROPERTY	TYPICAL VALUES	
Coating	CrystalChrome' GY ccsGY-045 CrystalChrome' BN ccsBN-045	CrystalChrome' HC CrystalChromeHC-1
Environmental Conditions*	20 - 25°C, 30 - 55 % R.H.	20 - 25 °C, 25 - 40% RH
Application Spin Speed	3 s @ 400 - 500 rpm	3 s @ 300 - 500 rpm
Spin-off speed 1	50 s @ 400 - 500 rpm	50 s @ 400 - 700 rpm
Spin-off speed 2	3 s @ 1200 - 1500 rpm	3 s @ 1200 - 1500 rpm
Pre-cure (lens temperature)	60 s @ 60 - 80°C	120 s @ 60 - 80° C
Thermal cure	4 hrs @ 110°C	4 h 110° C
Yield	~0.36 g per pair 1,250 to 1,500 pairs	~0.5 g per pair ~1800 – 2000 pairs

\*Refers to environment outside of the CrystalChrome machine

## CrystalChrome<sup>®</sup> GY

CCSGY-045

CrystalChrome® BN CCSBN-045

**SOLUTION PROPERTIES** 

PROPERTY	TYPICAL VALUES
Solids	26 - 28%
Viscosity @ 25°C	<45 cP
Solvent Mix: SM312-041	

#### **COATING PROPERTIES**

PROPERTY	TYPICAL VALUES
Coating Thickness	5.0 - 5.5 μm
Refractive Index	1.50
Adhesion (with CrystalChrome® HC)	100 %

## CrystalChrome<sup>®</sup> HC

CrystalChromeHC-1

#### **SOLUTION PROPERTIES**

	PROPERTY	TYPICAL VALUES
	Solids	23 - 25 %
	Viscosity @ 25°C	≤ 8.0 cP
	Solvent Mix: SM835-041	

#### **COATING PROPERTIES**

PROPERTY	TYPICAL VALUES
Coating Thickness	2.5 - 3.5 μm
Refractive Index	1.49
Adhesion	100 %
Bayer Ratio	3.0 - 3.5

## Activation



<sup>\*</sup>Data collected on a SDC CrystalChrome® M photochromism measurement Instrument. Results may vary based on collection method.

## Frequently Asked Questions

#### Do I need to A/R coat the photochromic lenses?

Yes. All photochromic coated lenses must be A/R coated after the reflow oven curing step.

#### How do I switch coatings from Brown to Grey or Grey to Brown?

CrystalChrome BN (Brown) and CrystalChrome GY (Grey) should have separate tanks. To switch colors, simply switch the tank and follow the start up process. Upon switching colors, replace CrystalChrome HC hard coating as well. Hard coating should not be shared between the different photochromic coatings.

## Are the coatings solvent based and are they considered hazardous goods for shipment purposes?

Yes, these coatings are solvent based and should be stored in accordance with local and federal guidelines, which may include storage in explosion proof, corrosive proof, temperature controlled environments.

#### How should I store these coatings?

CrystalChrome coatings must be stored in an explosion proof, corrosion proof, temperature controlled environment. The recommended storage temperature for CrystalChrome BN and CrystalChrome GY is 20- 25 °C (68- 77 °F). When stored at this temperature in the original closed container, it is recommended to begin use of the coating within 6 months of the date received.

#### Is there a shelf life for CrystalChrome coatings?

Yes. The shelf life of CrystalChrome BN, CrystalChrome GY, and CrystalChrome HC is 6 months.

### Contact



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CrystalChrome coatings should be handled as hazardous materials. Products that are flammable should be handled using methods that are appropriate for flammable materials and should only be used in an environment that is properly classified for flammable material use.

CrystalChrome coatings should also be disposed of according to governing regulations for the disposal of hazardous wastes. A waste disposal expert should be consulted for specific waste disposal alternatives, which will vary from country to country.

Refer to each individual CrystalChrome technical data sheet for requirements on equipment preparation, solution management, health and safety, warranty and liability, and shipping.







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