




Coates Screen

PRODUCT DATA SHEET

Product : CRYSTAL™**Series : GLS**

DESCRIPTION: GLS Crystal is a UV curing screen ink formulated for printing onto glass. It is not intended for unprotected exterior use.

SUBSTRATES AND APPLICATIONS: GLS Crystal can be printed onto the following:

- Sheet glass, such as for gaming machines or decorated mirrors.
- Glass containers, such as wine/beer bottles and medical vials.
- Ceramic objects, such as china drinking mugs.

NOTE: Pretest all substrates and suitability for end-use applications prior to use in production.

RESISTANCE PROPERTIES: When fully cured, GLS Crystal has excellent resistance to water condensation and low-temperature water immersion, and can be further improved by the addition of 2-3% ST-373 Adhesion Promoter.

GLS Crystal has successfully withstood 10 hot-wash/dry cycles in a domestic dishwasher.

NOTE: Pretest all resistance properties prior to use in production.

MODIFICATION: GLS Crystal does not normally require any modification prior to printing. If viscosity reduction is required, ST-319 Viscosity Modifier may be added to a recommended maximum of 5% by weight.

ST-373 Adhesion Promoter may be added at 2-3% by weight to enhance water resistance, adhesion and hardness. Once the Adhesion Promoter has been added, the uncured ink will remain active for up to 8 hours, after which time it will lose its enhanced resistance properties. This will not affect cured ink films, which will retain the enhanced resistance properties indefinitely.

COLOR MATCHING: GLS Crystal is supplied as 14 C-MIX 2000 blending colors which, together with Blending Black, Blending White and Mixing Clear, can be blended together to match virtually any color. Opaque Black and White are also available but should be used as stand alone products and not in color blends.



CURING: Generally, a typical 12-14 μ deposit of a GLS Crystal color achieved with 355/in.(140/cm) mesh will require a UV exposure of approximately 250-350 MJoules, as measured with an IL390 International Light Radiometer. Opaque Blacks and Whites will require significantly more UV irradiation to successfully cure.

Actual cure speeds will vary depending on color and opacity of the ink, screen mesh, and other printing parameters that affect ink deposit, as well as the UV curing unit used.

COLOR SELECTION: GLS Crystal is intended for a variety of **indoor** applications which may result in varying conditions ranging from very little exposure to natural light to prolonged exposure to sunlight, such as on the inside of a window. To accommodate these various requirements, GLS Crystal inks are available in a variety of different pigmentations, as follows:

C-MIX 2000 Blending Colors - Suitable for artificial light and up to 5 years¹ direct sunlight.

Limited Lightfast Colors specified by the "LL" designation - Suitable for prolonged exposure to artificial light and 6-12 months¹ direct sunlight. LL colors are cleaner and brighter than their C-MIX 2000 equivalents.

Short Lightfast Colors specified by the "SL" designation - Suitable only for exposure to artificial light.

Blacks, Whites and Clears - Suitable for artificial light and up to 5 years¹ direct sunlight.

Process Colors - Suitable for artificial light and up to 5 years¹ direct sunlight. GLS Crystal is available as high-strength SWOP process colors. Color density may be adjusted by adding GLS-TPS Transparent Base.

¹Based on indoor exposure to direct sunlight (e.g. through a window).

NOTE: Blends of colors should be assumed to have the properties of the least lightfast component unless pretested prior to use in production.

CLEAR BASES: There are 3 distinct clear bases in the GLS Crystal Ink range:

- **GLS-E50** is the standard Mixing Clear which is used in most color blends.
- **GLS-TPS** is a Short-flowing Transparent Base to be used in conjunction with the Process Colors.
- **GLS-C50** is a Non-yellowing Clear that is recommended for overprint applications or as a substitute for GLS-E50 Mixing Clear when non-yellowing is considered a critical factor for color-matching.

COVERAGE: When printed through 355/in. (140/cm.) mesh, one gallon of GLS Crystal will cover approximately 2,500-3000 square feet (55-70 m²/Kg), depending on printing variables.

SCREEN MESH: 355-420/in. (140-165/cm) monofilament polyester mesh.

SQUEEGEE: Sharp urethane squeegee of approximately 75-85 durometer.

WASH-UP: Misprints during processing may be cleaned from glass with Isopropanol prior to curing. Screens may be cleaned with ET-5 Retarder, VL Wash, or many commercial screen washes.

STORAGE: When stored in black polyethylene containers at temperatures between 40-90°F (5-32°C), GLS has a shelf-life of 24 months.

HEALTH AND SAFETY: GLS Crystal is formulated to be NVP-free. As with all inks, gloves and safety goggles should be used when handling this product. For more complete information, refer to the relevant Material Safety Data Sheet before use.

C-MIX 2000 Blending Colors:	Short Lightfast Colors (SL):
GLS-Y30 Primrose	GLS-R52SL Short Lightfast Red
GLS-Y50 Golden Yellow	
GLS-O50 Orange	Process Colors:
GLS-R20 Scarlet	GLS-S231 SWOP Process Yellow
GLS-R50 Red	GLS-S235 SWOP Process Cyan
GLS-M50 Magenta	GLS-S240 SWOP Process Magenta
GLS-V50 Violet	GLS-S271 SWOP Process Black
GLS-B50 Blue	GLS-TPS Short-Flow Transparent Base
GLS-G50 Green	
GLS-N50 Blending Black	Standard Products:
GLS-W50 Blending White	GLS-C50 Non-Yellowing Overprint Clear
GLS-E50 Mixing Clear	GLS-W501 Opaque White
Limited Lightfast Colors (LL):	GLS-N501 Opaque Black
GLS-Y34LL LL Primrose	
GLS-Y54LL LL Golden Yellow	Modifiers:
GLS-O54LL LL Orange	ST-319 Viscosity Modifier
GLS-R26LL LL Scarlet	ST-373 Adhesion Promoter
In accordance with information received from suppliers, the full GLS series is formulated without heavy metals and complies with: 16 CFR, Part 1303; ANSI Z66.1-1964; ASTM F 963; CONEG packaging regulations; EC Packaging Waste Directive EC/94/62; EN71, section 3; RoHS 2002/95/EC; WEEE 2002/96/EC; E2003/11/EC.	

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