



## OPH Product Data Sheet for Screen Print

**Product Name** CeramiGlass

**Manufacturer** Industrial Control Development, Inc.

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**Description** CeramiGlass is an inorganic water base, screen print coating developed to coat glass surfaces.

**Use** CeramiGlass can be used for opaque coatings such as automotive, appliance and furniture glass.

**Application** **Automotive and appliance glass.**

The coating must be applied in a clean environment with 80% humidity. Increased humidity will allow for longer print runs. The coating must be screened to the "air side" of the glass.

Glass substrates must be thoroughly cleaned. "Recommended Techniques for Washing Glass", by PPG is an excellent resource to review.

It is recommended that a climate controlled room be used. Temperature should be between 50-70°F (10-21°C). Warmer temperatures will not be detrimental to the coating, but will make for more uncomfortable conditions for the operators. For certain locations, it may be a benefit to control the humidity and temperature locally at the printing machine.

### Application Equipment

Automatic printing has shown the most consistent print quality. A flood pass should be performed directly after the print pass.

Suggested Starting Point Settings: Squeegee Durometer: 70 Flood, Print Speeds: 500 mm/sec, Screen Height: 5-6 mm above substrate.

Mesh count: 160—180 mesh per inch (63-71 mesh per cm), Down Pressures: Flood, approximately 1mm below screen, print approximately 1mm below top level of glass.

Smoothness of films is directly to print speeds. Faster print speeds typically show a smoother surface film.

## Glass Preparation

The glass substrate must be thoroughly cleaned. Any contaminants present on the glass surface will lead to aesthetic defects.

Mechanical glass washers are the preferred means for washing the glass and should always be used where quality of glass is desired. The proper detergent and amount is required to ensure glass cleanliness.

## Cure Profiles

### Automotive Glass

Pre-cure: Minimum five (5) minutes, 350-400 °F (177-204°C).

Full cure during typical automotive forming-cooling cycle (room temperature to 1,200°F (650°C).

Thinner applied printing (.5-.6 mils) may by pass pre-cure. After a pre-cure takes place, the final cure may be immediate. Adequate cure at low temperatures is possible for some applications. For information contact ICD.

### Annealed Glass

1. Pre-cure: One (1) mil, a minimum five (5) minutes, 350 - 400°F (177 - 204°C).
2. Cure four to five (4-5) minutes, 700°F (370°C).

### Tempered Glass

1. Pre-cure: One (1) mil, a minimum of five (5) minutes, 350° - 400° (177 - 204°C).
2. Cure: Tempering temperature 1,200°F(650°C).

## Typical Properties

These values are not intended for use in preparing specifications.

Appearance .....	Various
Solids, weight by percent .....	55% minimum
Viscosity .....	12 - 50,000 cps, #6 spindle
Specific gravity .....	Varies with each color 1.4-1.8
pH .....	≤13
Solvent .....	Water
Average particle size, micron .....	<.8
Boiling point.....	102°C (215°F)

## Cured Properties

QUV .....	5,000 Hours +
Hardness .....	9H
Room Temperature Water (depending on cure).....	No effect
60°C Water (depending on cure).....	21 days, No effect

## Application Conditions - Screen Print

CeramiGlass is a water based material. Evaporation times will vary according to temperature and humidity.

For longer working times, higher humidity is required.

80% humidity conditions for extended open time. Environment controlled clean room is suggested.

## Handling after Printing

Printing parts should not be stored in ambient conditions for extended amounts of time prior to heat curing. If the parts are allowed to sit in these conditions, a blooming affect will be seen on the surface of the coating. Therefore, it is recommended that parts be exposed to a heat cycle directly after printing. If continuous production is not practical, then a pre-cure will be required.

If needed, water can be used to remove excess CeramiGlass prior to any heat curing.

For annealed applications, the coating temperature will need to be a minimum 700°F (370°C) for 4-5 minutes to develop film properties.

For tempered applications, a pre-cure may be needed. Once the tempering cycle is complete the coating will have maximum film properties.

## Cleaning

CeramiGlass can be cleaned from equipment and screen with hot water. Do not use solvents.

A final soap and water rinse should be used to remove any remaining residue.

For problem areas, a dilute solution of sodium hydroxide can be used to solubilize the coating.

## Storage & Shelf Life

Store below 90°F(30°C) but KEEP FROM FREEZING. Keep container sealed when not in use. Do not stack containers over two (2) high. For best results, use within six (6) months from date of shipment. Settling may occur. Mix product well before use.

## Packaging Liter Containers

Standard and special colors are packaged in 3.5 gallon containers.

Containers will have product residues when emptied. Follow precautions for handling this product when disposing of container. Containers are not intended for reuse.

## MSDS Information

Attention: Product safety information required for safe use. Before handling, read product and material safety data sheets and container labels for safe use, physical and health hazard information. The material safety data sheet is available from ICD (360) 546-2286.

## Warranty Information

Please Read Carefully

ICD believes that the information in this publication is an accurate description of the typical characteristics and/or uses of the product or products, but it is your responsibility to thoroughly test the product in your specific application to determine its performance, efficiency and safety.

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# CERAMIGLASS

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