



OSH Spray Application Product Data Sheet

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| Product Name | CeramiGlass |
| Manufacturer | Industrial Control Development, Inc. 7250 S. Union Ridge Parkway Ridgefield, WA 98642 Phone: (360) 546-2286 Fax: (360) 546-2287 |
| Description | CeramiGlass™ is an inorganic water base, spray coating developed to coat glass surfaces. |
| Use | CeramiGlass can be used for opaque coatings such as automotive, appliance, architectural and furniture glass. |
| Application | <p>The coating must be applied in a clean environment and the coating must be applied to the "air side" of the glass.</p> <p>Glass substrates must be thoroughly cleaned. "Recommended Techniques for Washing Glass", by Vitro Architectural Glass is an excellent resource to review.</p> |
| Application Equipment | <p>Automatic spray equipment has shown the most consistent film application.</p> <p>Various spray set-ups can be utilized for application of OSH formulations. Production requirements will determine best nozzle size to use.</p> <p>Conventional, air-assisted airless, and airless nozzles have shown acceptable results.</p> |
| Glass Preparation | <p>The glass substrate must be thoroughly cleaned. Any contaminants present on the glass surface will lead to aesthetic defects.</p> <p>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.</p> |

Handling after Application

Coated 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 coatings. Therefore, it is recommended that parts be exposed to a heat cycle directly after application. 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 storage and handling applications, the coating temperature will need to be a minimum 700°F (370°C) for 4-5 minutes to develop film properties.

For final applications, a tempering cycle is required. Once the tempering cycle is complete, the coating will have maximum film properties.

Cleaning

CeramiGlass can be cleaned from equipment 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

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 re use.

SDS 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.

Unless ICD provides you with a specific written warranty of fitness for a particular use, ICD's sole warranty is that the product or products will meet ICD's then current sales specifications. ICD specifically disclaims any other express or implied warranty, including the warranties of merchantability and of fitness for use. Your exclusive remedy and ICD's sole liability for breach of warranty is limited to refund of the purchase price or replacement of any product shown to be other than as warranted, and ICD.

Application Parameters

* A uniform wet film of 2 - 2.5 mills (50 - 62.5 μ) is recommended.

| | | 2 Mils | 2.5 Mils |
|------------------------------|-------------------------------|--------|----------|
| Wet Thickness | Inches/mils | .002 | .0025 |
| | μ | 51 | 62.5 |
| | Millimeters | .051 | .063 |
| Square Foot Coverage | Ft² per Gal | 561 | 449 |
| | Ft² per Kg | 95 | 76 |
| Square Meter Coverage | M² per Gal | 52.1 | 41.7 |
| | M² per Kg | 8.83 | 7.06 |

Cure Profiles

Pre-Cure

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

Annealed Glass

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

Product can be stored for later glass fabrication and tempering processes.

Tampered Glass

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

Typical Properties

These values are not intended for use in preparing specifications.

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|---------------------------|-----------------------------------|
| Appearance | Various |
| Solids, weight by percent | 36 – 52 % |
| Viscosity | 2,000 – 9,000 cps #6 spindle |
| Specific gravity | Varies with each color 1.3 – 1.63 |
| pH | ≤13 |
| Solvent | Water |
| Boiling point | 102°C (215°F) |

Cured Properties

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

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

For longer working times, higher humidity is required.

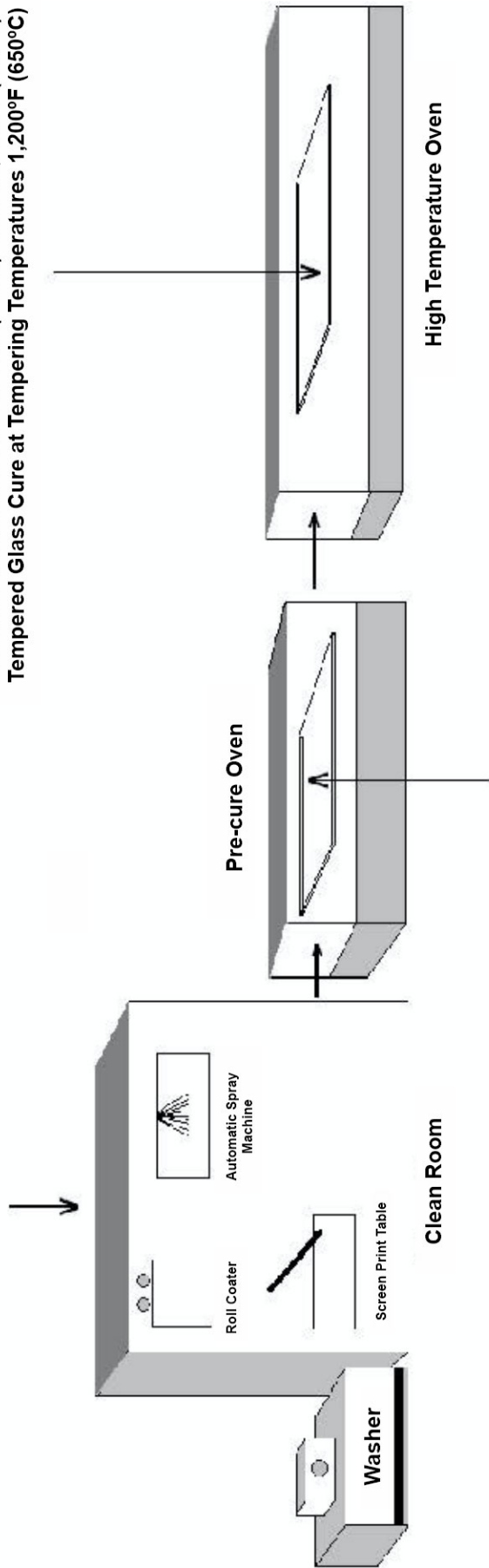
CeramiGlass

INNOVATION



Room Temperature Between 50-70°F (10-21°C)
 Room Relative Humidity 80% or Above

Annealed Glass Cure Four to Five (4 to 5) minutes, 700°F (370°C)
 Tempered Glass Cure at Tempering Temperatures 1,200°F (650°C)



Pre-cure, One (1) mil, a minimum 5 minutes
 @350°F (177°C) Glass Temperature