

# FGI – 401HR Ceramic Thermal Transfer Coating

## Unique Coatings – Extreme Results

### Description

**FGI-401HR** is an extremely unique ultimate performance ceramic thermal transfer, corrosion and moisture protection coating. **FGI-401HR** is formulated to provide increased thermal transfer from the surface to a free flowing air environment, while maintaining high resistance to chemical and thermal breakdown of metal substrates. Increased thermal transfer allows components to operate at lower temperatures, creating gains in efficiency and extending part life. **FGI-401HR's** cutting edge ceramic technology is continually tested under extreme conditions, both in the laboratory and in the field, with excellent performance. Designed for ease of application and durability in a single component formula,

**FGI-401HR** is formulated using a unique air-dry PolyCeramic backbone, which is able to withstand temperatures in excess of 1800°F, while having little effect on film integrity. While many coatings will micro crack and break down upon exposure to high temperatures, **FGI-401HR** uses this heat to flux and become harder and more abrasion resistant. **FGI-401HR** provides a very cost efficient coating with high-end performance.

### Features & Benefits

- UV, Weather, Chemical, Salt and Abrasion Resistant
- Extreme Adhesion to Substrate
- Extremely Durable Wear Surface
- No Top-Coat necessary
- Contains No Zinc, Lead or Chromates

### Some Recommended Uses for FGI-401HR

- Thermal Transfer Applications
- Air Conditioning Condensers
- Industrial Heat Exchangers
- Computer Heat Sinks
- Truck and Car Radiators
- Industrial Machines, Electrical Motors, Turbines

### FGI-401HR Properties

- Solids by Weight 74% +/- 2%
- Viscosity #2 Zahn Cup 17.0 seconds
- Film Thickness 1.5 to 2.0 mils
- VOC's 0.00 lbs per gallon
- 5% Salt Spray (ASTM B117) No Damage
- Pencil Scratch Hardness (ASTM D3363) 8h
- Adhesion Cross-Cut Tape (ASTM D3359) 4B
- Heat Stability 1800°F (982C)
- The FGI-401HR color is copper/bronze-brown

### Application Methods

Conventional spray equipment such as a 4oz HVLP gravity fed spray gun or small siphon type gun is recommended. Recommended film thickness is 1.5 to 2.0 mils. Preparation of substrate is crucial for maximum adhesion and performance of this material

- 1) Remove all coatings, oils, and contaminants from substrate with either a de-greasing chemical and/or by heating substrate to temperatures high enough to remove coatings or contaminants.
- 2) A blasted profile must be applied to the substrate to remove any carbon, scale, or other coatings. This is required to ensure maximum adhesion. For best results use a dry grit material such as aluminum oxide or garnet equivalent to a 100 - 120 mesh size. Remove any sharp edges or burrs that may create thin areas or protrude through coating.
- 3) Place parts in an oven at 300°F for approximately 30minutes to evaporate any last minute moisture, oils, or contaminants that blasting or contact with skin have deposited on surface. (This is done on small parts.) Do not apply any solvents to substrate after a blast profile has been applied.
- 4) Hang or lay parts out to allow for best view and application access. Do not touch parts with bare skin.
- 5) Make sure **FGI-401HR** is completely mixed and no solids remain in the bottom of the container. Failure to completely disperse the product will result in poor chemical ratios and product failure.
- 6) Recommended spray equipment is a HVLP spray gun. The use of a small spray tip pattern will aid in coating hard to reach areas without excessive build up in surrounding areas. Material does not need to be thinned. Use as received.
- 7) Blow off substrate with a high-pressure air nozzle to remove any blasting dust left on the surface. Wear safety goggles or face shield for your protection.
- 8) Two applications of product are recommended for a 0.5 to 2.0 mil film thickness. In some cases a single coat will suffice for particular applications such as the 0.5 thickness. Work from the most difficult surface out to the easiest. This will aid in reducing runs or excessive build up.
- 9) Parts will be tack free after approximately 35 minutes.
- 10) Parts will be partially cured after 24 hours. Full cure and hardness does not take place until 5 to 6 days after application.
- 11) Finished goods may be shipped after 24 hours.
- 12) Clean tools and equipment with acetone or xylene.

**NOTE:**

Always spray coating in a well ventilated area or use a NIOSH approved self contained breathing apparatus or vapor filters on a mask. Protective gloves and safety glasses must be worn at all times. Only very high abrasion will remove the coating. Caution: With the extreme adhesion characteristics of this product all safety procedures must be followed. Be aware of over-spray so it will not land on any item that is not to be coated.

Please contact an *F G International* technician with questions on proper use and/or application.

Consult your MSDS information sheets for proper handling, disposal, and precautions while using this product.

### **Storage Stability & Shelf Life**

The shelf life of **FGI-401HR** is **6 MONTHS FROM DATE OF SHIPMENT** when stored in original, unopened container. Store cans in a well ventilated and covered area away from extreme heat and moisture. Please contact your FGI representative if you have any questions about product usability.

**F G International does not warranty the use or application of the materials it manufactures or supplies. Our only obligation shall be to replace any defective materials supplied by us or refund the original purchase price of that product after we have determined the product to be defective. We assume no liability for damages of any kind and the user accepts the product “as is” and without any warranties, expressed or implied. The suitability of the product and/or intended use shall be solely the responsibility of the user.**

**The information contained in this bulletin we believe to be correct to the best of our knowledge and testing. The recommendations and suggestions herein are made without guarantee or representation as to results. We recommend that you make adequate tests in your laboratory or plant to determine if this product meets all your requirements.**

**Additional information is available at [www.fginternational.net](http://www.fginternational.net)**

Health, safety and environmental information are provided for this product in the Materials Safety Data Sheet. This gives details of potential hazards, precautions and First Aid measures, together with environmental effects and disposal of used products. Before using the product other than directed, please contact FGI for consultation.

F G International, LLC  
33717 Hwy 23  
Collins, Ga. 30421, USA  
Email: [info@fginternational.net](mailto:info@fginternational.net)  
Tel: +1.912.684.2283  
Fax: +1.630.604.7984