ENVIROCRON® XHT Powder Coat

Silicone Acrylic

PCH90101 - Hi-Temp Black

POWDER COATING

Technical Data Sheet

Highlights

PPG's Enviracryl™ and Envirocron® powder coatings are aesthetically pleasing, produce a durable uniform finish and can be custom formulated with finishes from high gloss to low gloss, and in a variety of textures.

PPG's "World Class" Heat Resistant Envirocron® Powder Coatings are engineered to provide strong physical and chemical resistance properties and to maintain these properties during exposure to elevated temperatures. This line of Envirocron® Powders is manufactured to meet the requirements of industrial markets which require outstanding organic coating performance under demanding service conditions. These sophisticated Heat Resistant powder coatings are the solution to your durability and physical property requirements. An unsurpassed application development program enables consistently friendly use on selected substrates.

- Excellent heat resistance
- Exterior durability
- Good chemical resistance

PRODUCT CHARACTERISTICS

The maximum recommented film thickness is 8.0 mils.
Recommened for use over aluminum and cast aluminum substrates.

TEST CONDITIONS

Property	Test method	Value
Substrate		Pretreated aluminum panels
Recommended Thickness	ASTM D 7091	2.0 - 4.0 mils
Curing Conditions	Metal Temperature	20 min @ 450 °F

Impact Resistance and Conical Mandrel were determined at 2.0 mils.

PRODUCT PROPERTIES

Property	Test method	Value
Appearance	Visual Inspection	Texture
Gloss 60°	ASTM D 523	3.0 - 9.0
Adhesion	ASTM D 3359	Initial - 100% (5B Pass) Intercoat - 100% (5B Pass)
Hardness	ASTM D 3363	2H Pencil (Eagle)
Impact - Direct	ASTM D 2794	80 in-lbs
Impact - Reverse	ASTM D 2794	20 in-lbs
Conical Mandrel	ASTM D 522	1/8" Mandrel - No cracking
Chemical Resistance		
Ammonia	24 Hrs Covered Room Temp.	No effect
Chlorine	24 Hrs Covered Room Temp.	No effect
HCl 40%	24 Hrs Covered Room Temp.	Slight haziness to film
H2SO4 40%	24 Hrs Covered Room Temp.	No effect
Antifreeze	24 Hrs Covered Room Temp.	No effect
Mustard	24 Hrs Covered Room Temp.	No effect
Catsup	24 Hrs Covered Room Temp.	No effect
BBQ Sauce	24 Hrs Covered Room Temp.	No effect
DOT #3 Brake Fluid	24 Hrs Covered Room Temp.	No effect

Property	Test method	Value
Ethyl Alcohol	24 Hrs Covered Room Temp.	No effect
Coca-Cola	24 Hrs Covered Room Temp.	No effect
Easy-Off Oven Cleaner	24 Hrs Covered Room Temp.	Dulled, discolored
Crayon	24 Hrs Covered Room Temp.	No effect
Lemon Juice	4 Hrs @ 400° F After Oven Cleaner	No effect
Bacon Grease	4 Hrs Covered 400° F	No effect
Beef Grease	4 Hrs Covered 400° F	No effect
Catfish Grease	4 Hrs Covered 400° F	No effect
Chicken Grease	4 Hrs Covered 400° F	No effect
Salt spray	ASTM B 117	1000 hrs No adhesion loss No blistering Slight corrosion bleed through
Humidity	ASTM D 1735	1000 hrs No adhesion loss No blistering Slight corrosion bleed through
Heat Resistance with adhesion	1 hr 800 °F x 4 cycles ASTM D 3359	100% (5B Pass)
Heat Resistance with gloss	ASTM D 523 4 hrs 800° F	5 @ 60°
QUV	ASTM G 53 & G90 (UVA 340)	1000 hrs No chalking or gloss loss No blistering, Slight haziness
Specific gravity	Calculated	1.61 ± .05
Theoretical coverage	Calculated	119 ft²/lbs at 1.0 mil 24.5 m²/kg at 25 µm

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CURING WINDOW* (object temperature)

See Cure Curve PCH-001

20 min @ 375 °F (191 °C)
10 min @ 400 °F (204 °C)
5 min @ 450 °F (232 °C)

*Temperature and time to be adjusted to accomplish proper curing of coating. This can be achieved using infrared, convection, or combination ovens.

STORAGE STABILITY

6 months at 70 °F maximum

Materials need to be stored in sealed plastic bags under dry and cool conditions. Do not expose to sunlight.

PPG recommends that all material be used in FIFO order (first in - first out). Materials that exceed the recommended shelf life should be tested prior to use.

SUBSTRATE PREPARATION

Surface preparation should be chosen according to the type of substrate and required performance.
The coater should test the suitability of the surface preparation before the application using appropriate test methods.

APPLICATION RECOMMENDATIONS

Electrostatic Spray
The maximum recommended film thickness is approximately 7.0 - 8.0 mils. Cured films above this thickness are likely to exhibit structural porosity due to volatiles generated during the baking process. This can result in weakened physical properties (flexibility, impact resistance) and poor film cohesion.
Conventional iron and zinc phosphate conversion coatings, utilized for cleaning and pretreatment of steel and aluminum prior to powder coating, do not have thermal stability at high temperatures and can degrade underneath the cured powder film. This can result in severe adhesion loss between the high temperature powder coating and the metal substrate. Also not recommended over conventional (not thermal resistant) electrocoat, liquid or powder primers. Can be applied over clean blasted or pickled steel. Rust spotting may be observed over steel substrate at 200 – 250 hours salt spray testing due to some inherent film porosity.
Maximum recommended continuous temperature exposure for this product is 600° - 650° F (315° - 343° C).
Maximum recommended intermittent temperature exposure is 800° - 850° F (427° - 454° C).
Exposure to temperatures in the 900° - 1,500° F (482° - 815° C) range is not recommended.
Coating can be applied with automatic and manual devices.
Substrate should be correctly cleaned before use.
Do not mix this product with other powder coatings.
Color and finish influenced by film thickness: a good control of the film thickness will help the consistency of the aspect.

HEALTH AND SAFETY

For comprehensive Health, Safety, and Environmental advice, please refer to the relevant Safety Data Sheets, and information printed on the product label.

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