

Polyester Powder

General Description

Polyester Powders are designed for decorative and protective end service applications where exterior durability is a requirement. Recent enhancements have provided premium durability of Polyester Powder that withstand South Florida weathering exposures beyond five years.

Polyester Powder can be formulated to provide very good chemical and solvent resistance, Faraday cage penetration, and scratch and mar resistance.

Typical Properties of the Powder

Physical performance results were measured using 24-gauge Bonderite® 1000, Parcolene® 60 steel panels with 1.5-2.0 mils of a high gloss formulation. Heavier ware require longer cure times or higher temperatures. Physical properties typically decrease with decreasing gloss. Since results are formulation dependent, product specific testing is recommended.

Typical Film Thickness

1.5 – 6.0 mils

Reflectance

Unshaded white Polyester Powder can provide reflectance values (Y-value) of 90 and greater.

Adhesion (ASTM D-3359, Method B)

Using pressure sensitive tape, no coating is lifted or removed between 1/8" cross-hatch scribes. (Rating = 5B).

Pencil Hardness (ASTM D-3363)

Using Eagle Turquoise pencil leads, surface hardness ranges from H to 2H.

Impact Resistance (Modified ASTM D-2794)

Using a falling weight impact tester, the film surface withstands up to 160 inch lbs. of direct and reverse impact.

Flexibility, Mandrel (Modified ASTM D-522)

The film surface withstands a 180° bend over a 1/8" diameter with no loss of adhesion or surface cracking.

Abrasion Resistance (Modified ASTM D-4060)

Coating weight loss after 1,000 cycles of Taber abraser equipped with CS-10 wheels loaded to 1 kg per wheel is approximately 40-60 mg.

Corrosion and Chemical Performance Properties

Salt Spray Resistance (ASTM B-117)

Scribed Bonderite® 1000 steel panels in a 5% salt fog at 95° F and 100% relative humidity, exhibit no undercutting of the film after 500 hours exposure. No rusting or blistering occurs on panel face away from scribe. After 1,000 hours there is less than 1/16" undercutting. Alodine 1200 aluminum panels show no effect after 1,000 hours.



Chemical and Solvent Resistance

After ambient temperature immersion in the listed solvent or reagent, the following results were reported for Polyester Powder formulations. *Verification of resistance properties should be made for each chemical proposed for use with a specific coating, as results can vary greatly depending on formulation. Specific test results or additional testing can be acquired upon request.

SOLUTION	1 MONTH	3 MONTHS	6 MONTHS	12 MONTHS
0.1% Chlorine	No Effect	No Effect	No Effect	No Effect
Anti-Freeze (50% Ethylene Glycol)	No Effect	No Effect	No Effect	No Effect
87 Octane Unleaded Gasoline	Dulls, Softens - 7 days	Dulls, Softens	Dulls, Softens	Dulls, Softens
15% Hydrochloric Acid	*No Effect, Oxidizes Metallics	*No Effect, Oxidizes Metallics	Discolors, Dulls	Discolors, Dulls
40% Hydrochloric Acid	Discolors, Dulls	Discolors, Dulls	Discolors, Dulls	Discolors, Dulls
15% Sulfuric Acid	No Effect	*No Effect, Oxidizes Metallics	*No Effect, Oxidizes Metallics	*No Effect, Oxidizes Metallics
40% Sulfuric Acid	*No Effect, Oxidizes Metallics	*No Effect, Oxidizes Metallics	*No Effect, Oxidizes Metallics	*No Effect, Oxidizes Metallics
Isopropyl Alcohol	No Effect	Dulls, Crazes	Dulls, Softens	Dulls, Softens, Crazes
Brake Fluid (D.O.T. Type 3)	Dulls, Softens - 1 hour	Dulls, Softens	Dulls, Softens	Dulls, Softens
Acetone	Dulls, Softens - 1 hour		Test Terminated - 1 hour	
Methyl Ethyl Ketone	Dulls, Softens - 1 hour		Test Terminated - 1 hour	
Dow Oven Cleaner	Dulls, Discolors, Softens - 7 days		Test Terminated - 1 month	

*Some Polyester Powder products may exceed the above results. Since formulations may contain ingredients that enhance or detract from chemical resistance, performance has been summarized for this chemistry. This chart is intended as a general guide for chemical resistance.

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