



HAA POLYESTER (TGIC-FREE) - TECHNICAL SUMMARY

General Specifications

HAA polyester (TGIC-free) powder coatings are designed for decorative and protective end service applications where exterior durability is a requirement. Latest developments with this technology allow for the development of premium weathering formulations that can withstand South Florida weathering exposure beyond five years.

HAA polyester (TGIC-free) powders can be formulated to provide very good chemical and solvent resistance, excellent first pass transfer efficient, and scratch and mar resistance. HAA polyesters (TGIC-free) can be formulated to meet requirements for the agricultural and construction equipments, incidental food contact and automotive companies.

Typical Performance Properties

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 substrates require longer cure times or higher temperatures. Low gloss or textured finishes may require longer cure times. Physical properties typically decrease with decreasing gloss. Since results are formulation dependent, product specific testing is recommended.

Typical Film Thickness

1.5-4.0 mils

Cure Schedules

F-cure

15 minutes at 350°F

10 minutes at 375°F

7 minutes at 400°F

Reflectance

Unshaded white HAA polyester (TGIC-free) powders 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.



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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.

Chemical and Solvent Resistance

After ambient temperature immersion in the listed solvent or reagent, the following results were reported for HAA polyester (TGIC-free) formulations. "Verification of resistance properties should be made for each chemical proposed for use with specific coating, as results can vary greatly depending on formulation. Specific test results or additional testing can be acquired upon request.

SOLUTION	24 HOURS	3 DAYS	7 DAYS	2 WEEKS	1 MONTH	3 MONTHS	6 MONTHS
DI Water	Pass	Pass	Pass	Pass	Pass	Pass	Pass
20% Acetic Acid	Pass	Pass	Pass	Pass	Pass	Pass	Discolors/Dulls
20% Sulfuric Acid	Pass	Pass	Pass	Pass	Pass	Pass	Pass
10% Nitric Acid	Pass	Pass	Pass	Pass	Pass	Blister	NA
10% Sodium Hydroxyde	Dulls	Dulls	Dulls	NA	NA	NA	NA
10% Ammonia	Pass	Pass	Pass	Pass	Pass	Blister	NA
30% Sodium Chlorate	Pass	Pass	Pass	Pass	Pass	Discolor	NA
Isopropyl Alcohol	Pass	Pass	Pass	Pass	Pass	Blister	NA
Ethanol	Pass	Pass	Pass	Pass	Pass	Pass	Blister
Aliphatic Solvent (Essence E)	Pass	Pass	Pass	Pass	Pass	Pass	Pass
Aromatic Solvent (Toluene)	Reversible softening	Reversible softening	Dulls/Softens	NA	NA	NA	NA
M.E.K.	Reversible softening	Dulls/Softens	Dulls/Softens	Dulls/Softens	Dulls/Softens	Dulls/Softens	Dulls/Softens
White Spirit	Pass	Pass	Pass	Pass	Pass	Pass	Pass

**Since formulations may contain ingredients which 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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