

POLYESTER THERMOSETTING POWDER COATING FOR OUTDOOR USE TGIC-FREE

Fundamental Product characteristics

ST Polyester TGIC-Free powder coatings are based on polyester resins characterized by high resistance to atmospheric agents and UV radiations and on pigments selected for their high thermal resistance and solidity to light.

Cure cycle

From 160°C x 20' to 200°C x 20' according to the required reactivity.

Gloss

According to the required finishing, the gloss of **ST Polyester TGIC-Free** powder coatings can be chosen inside the range 15- 95 units (value determined at 60°).

Coverage

The theoretical coverage of ST powder coatings is calculated according to this formula:
Coverage (m²) = 1000/(S x G)
Where S is the coating thickness in microns and G the specific weight of the powder.

Application

According to the customer's specific needs, **ST Polyester TGIC-Free** powder coatings can be formulated particularly for the following application systems:

- Corona;
- Tribo;
- Disk;

Substrate preparation

Before the painting, the item should be adequately pre-treated in accordance with surface type, final use and required performances. The following table can be used as starting point for the pre-treatment choice

Substrate	Indoor use	Outdoor use	Architecture
Aluminium	Soil removal, Chromate, Chrome-Free	Chromate, Chrome-Free	-
Steel	Soil removal, Iron Phosphate, Zinc Phosphate, Sand-blasting	Iron Phosphate, Zinc Phosphate, Sand-blasting	-
Zinc coated steel	Acid attack, Iron Phosphate, Zinc Phosphate, Chromate	Acid attack, Iron Phosphate, Zinc Phosphate, Chromate	-

Particle size distribution

ST Polyester TGIC-Free powder coatings are characterized by an average particle size between 30 and 40 microns. According to the customer's specific needs, specific particle size distributions can be supplied.

Typical Applications	<p>ST Polyester TGIC-Free powder coatings can be used for painting several products for outdoor use. Typical applications include:</p> <ul style="list-style-type: none"> • Articles for garden • Car accessories • Cycles and motorbikes details • Agricultural machinery • Domestic items
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Storage stability	<p>ST Polyester TGIC-Free powder coatings are stable for at least 6 months if stored in a dry place, at temperatures below 30°C.</p>
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General properties of the series ⁽¹⁾	Regulation	Test result
Impact Test ⁽²⁾	ASTM D2794	2,5 Nm
Adhesion ⁽²⁾	ISO 2409	GT0
Deep-drawing	ISO 1520	5 mm
Bending test ⁽²⁾	ISO 1519	5 mm
Salt spray ⁽³⁾	ISO 9227	500 hours without film detachment
Accelerated weathering	EN ISO 11341	800 hours with remaining gloss superior to 50%
Humidity test ⁽³⁾	DIN 50017	500 hours without film detachment or blistering
Acetone	100 double passages with cotton wad	↓ Scarce resistance
Ethyl alcohol	100 double passages with cotton wad	↑ Excellent resistance
Methylethylketone	100 double passages with cotton wad	↓ Scarce resistance
Perchloroethane	100 double passages with cotton wad	↓ Scarce resistance
Toluene	100 double passages with cotton wad	● Limited resistance
Trichloroethane	100 double passages with cotton wad	↓ Scarce resistance
Xylene	100 double passages with cotton wad	● Limited resistance
Acetic acid	Film immersion for 30 days	↑ Excellent resistance
Citric acid	Film immersion for 30 days	↑ Excellent resistance
Hydrochloric acid	Film immersion for 30 days	↑ Excellent resistance
Phosphoric acid	Film immersion for 30 days	↑ Excellent resistance
Lactic acid	Film immersion for 30 days	↑ Excellent resistance
Sulphuric acid	Film immersion for 30 days	↑ Excellent resistance
Ammonium hydroxide	Film immersion for 30 days	↓ Scarce resistance
Sodium hydroxide	Film immersion for 30 days	↓ Scarce resistance

⁽¹⁾ All tests have been carried out on smooth glossy finishes.

⁽²⁾ Tests carried out on Unichim steel panels with coating thickness of about 60 microns.

⁽³⁾ Tests carried out on Bonder 26S/60/OC panels with coating thickness of about 60 microns.

Note

The information given in this Technical Data Sheet, based upon laboratory tests, is currently correct to the best of our knowledge. Since product application and conditions vary and are often beyond our control, we can guarantee only the product quality itself. In the light of continuous product improvement, ST Powder Coatings reserves the right to modify without notice the content of this technical sheet.

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