



## OXYHIN SDN. BHD. (393471-X)

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### TECHNICAL DATA SHEET

#### OXYPLAST PR11 OUTDOOR DURABLE POLYESTER POWDER COATING

OXYPLAST PR11 is a thermosetting powder coating based on saturated polyester resins specially selected for exterior use. Its good flow out and excellent resistance to atmospheric ageing and ultra violet light make it highly decorative and durable in outdoor environment.

PR11 is formulated as a slightly more economical alternative to PR12 – giving a slightly lower flow out, but nevertheless highly recommended for outdoor use. Its high performance has been proven through many years of service in various applications.

#### APPLICATIONS

Include architectural hardware, outdoor furniture, air-conditioners, signboards, bicycle frames, garage doors etc.

#### GLOSS AND COLOUR RANGE

Gloss levels range from satin to high gloss: as low as 60% to a high of greater than 90% at 60°. A wide colour range is available, with certain colours subject to technical approval.

#### SUBSTRATES AND PRE TREATMENT

In order to obtain optimal anti corrosion properties, it is advised to apply a chemical pre-treatment prior to powder coating application.

Ferrous metal : Iron or zinc phosphatation  
(cold rolled steel, cast iron etc.)

Zinc surfaces : Chromatation or zinc phosphatation  
(galvanised steel, zinc alloy)

Aluminium alloys : Chromatation

#### APPLICATION SCHEDULE

May be applied by electrostatic spraying using classic devices, which can provide a negative tension of 60 - 80 kV. The powder is cured in a suitable convection or infra red oven.

Curing : 10 min at 200°C (metal temperature)

Optimal film thickness : 60 - 80 µm



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### PROPERTIES OF THE POWDER

Melting range (Kofler) : 90 - 114°C  
Specific gravity (DIN 55990/3): 1.25 - 1.75 (depend on colour)  
Particle size distribution  
(Laser Particle size analyser)  
% above 100µm : Less than 5  
% above 32µm : 50 - 65  
Average particle size, µm : 35 - 45

### PROPERTIES OF THE COATING

#### a. Physical and Mechanical

The following are typical properties of PR11 determined on 0.5 mm gauge degreased galvanised steel :

Film thickness : 60 - 80µm  
Flow out : Good  
Gloss (ASTM D523, 60°) : 60 to 90% and above  
Adhesion (DIN 53151) : GT= 0  
Pencil hardness  
(ASTM D3363 - Staedtler Lumograph) : H - 2H  
Conical mandrel (ASTM D522) : Pass at 4mm diameter  
Direct impact  
(ASTM D2794-0.625in diameter ball) : 65kg.cm  
Reverse impact  
(ASTM D2794-0.625in diameter ball) : 65kg.cm  
Erichsen cupping : > 6 mm  
Heat resistance, 30mins at 200°C : Good

#### b. Resistance to Common Synthetic Detergents

72 hours immersion in 3% solution : No blistering or loss of adhesion,  
No significant change in appearance

#### c. Salt spray Resistance

According to ASTM B117-73 on

Chromated Aluminium, 2000hrs : No blistering or loss of adhesion  
Zinc phosphated steel, 1000hrs : 3-6 mm undercutting  
Iron phosphated steel, 1000hrs : 8-10 mm undercutting



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### d. Humidity Resistance

According to ASTM D2247 on

chromated aluminium, 1000 hrs : No blistering or loss of adhesion

### e. Chemical Resistance

PR11 has been checked to various chemicals (48 hours contact with the coating at ambient temperature.)

Hydrochloric acid 10%, Hydrogen sulphide (saturated), Hydrogen peroxide 40 vol, Ammonium hydroxide 33%, Sodium hydroxide 5%, : Film unchanged  
Tartaric acid 5%, Citric acid 5%, Lactic acid 5%, Ethanol, n-Butanol

Nitric acid 30% : Film matt but washable

Petroleum ether : Slight softening

### STORAGE

At temperatures  $\leq 25^{\circ}\text{C}$  dry condition and humidity  $< 60\%$ , PR11 powder may be stored for up to 6 months without affecting their free flowing properties. The coating thus will still have optimal characteristic.

All the information given in this Data Sheet is the results of our research work and experience. It is given in good faith and with every belief in its accuracy but cannot be considered as a formal warranty. In accordance with OXYPLAST policy of product development, this specification is subject to change without notice