



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

HQ : LOT 1, JALAN 13/3, 46200 PETALING JAYA, SELANGOR DARUL EHSAN, MALAYSIA.  
TEL: 03-79565599, 79586636 FAX: 03-79565232, 79565799  
E-MAIL: oxyhin@po.jaring.my, oxyhin@streamyx.com

BR : 968, JLN. PERUSAHAAN, KWS. PERUSAHAAN PERAI, 13600 PERAI, PENANG, MALAYSIA.  
TEL: 04-3971233, 3971488 FAX: 04-3901266  
E-MAIL: oxyhinpg@po.jaring.my, oxyhinpg@streamyx.com



### **TECHNICAL DATA SHEET**

#### **OXYPLAST SAPR SUPER-DURABLE ARCHITECTURAL POWDER COATING**

OXYPLAST SAPR is a thermosetting powder coating based on super-durable polyester resins systems. The use of these resin systems, together with the selection of highly durable pigments, allows the formulation of a coating with significantly improved resistance to weathering.

Compared to standard polyester powders, OXYPLAST SAPR offers much longer outdoor durability in terms of gloss retention, colour stability and chalking resistance while maintaining the excellent protective function expected of polyester powders.

OXYPLAST SAPR is formulated to meet the most stringent requirements in the AAMA 2604-10 and Qualicoat 12<sup>th</sup> Edition (Class 2) architectural specifications. It is recommended for the coating of architectural hardware for projects requiring long lasting durability in demanding climatic conditions such as the tropics.

#### **GLOSS AND COLOUR RANGE**

Gloss levels range from satin to high gloss : 30-90% and above at 60°. A wide colour range is available, with certain colours subject to technical approval.

#### **APPLICATIONS**

Only on architectural aluminium extrusions and panels.

#### **PRE TREATMENT**

May be applied to aluminium substrates pre-treated according to DIN 50939.

#### **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 : 12 mins at 200°C (metal temperature)

Optimal film thickness : 60 - 80 um

#### **STORAGE**

Under dry conditions, SAPR powders may be store for up to 6 months at temperature  $\leq 25^{\circ}\text{C}$  and humidity  $< 60\%$ , without affecting their free-flowing properties. The coating thus obtained will still have optimal characteristic.



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### PROPERTIES OF THE POWDER

Melting range (Kofler)	: 75 - 115°C
Specific gravity (DIN 55990/3)	: 1.25 - 1.75 (depending on colour)
Particle size distribution (Laser Particle size analyser)	
% above 100um	: Less than 5
% above 32um	: 50 - 65
Average particle size, um	: 35 - 45

### PROPERTIES OF THE COATING

#### a. Physical and Mechanical

The following are typical properties of SAPR determined on 0.8mm chromated aluminium:

Film thickness (ISO 2360)	: 60 - 80um
Gloss (ISO 2813,60 degree)	: 30 - 90% and above
Finish (Visual)	: Defects free, very good flow out
Colour uniformity (Visual & instrumental)	: Uniform
Adhesion (ISO 2409 -2mm)	: No detachment
Pencil hardness (ASTM D3363)	: H - 2H
Erichsen cupping (ISO 1520, min 5mm, tape pull)	: No detachment
Direct impact (ASTM D2794-0.625in diameter ball)	: Min 0.20in deformation
Reverse impact (ECCA T5, min 25.5kg.cm, tape pull)	: No detachment
Conical mandrel (ISO 1519, max 5mm dia., tape pull)	: No detachment
Heat resistance, 30mins at 200°C	: Good

#### b. Corrosion Resistance

Determined on chromated aluminium.

Humidity resistance (ASTM D2247, 3000hrs)	: Blistering not exceeding "few" no 8
Salt spray resistance (ASTM B117, 3000hrs, tape pull)	: Max. 1.6 mm creep with 2 % blistering
Acetic acid salt spray resistance (ISO 9227, 1000hrs)	: No undercutting at scratch



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### c. Chemical Resistance

Muriatic acid (10% solution of 37% HCl, 15' spot test)	: No blistering or visual change
Nitric acid (70% HNO <sub>3</sub> , 30')	: Colour change $\leq 5\Delta E_{\text{units}}$ (Hunter)
Detergent (3% solution, 38°C, 72hrs, tape pull)	: No loss of adhesion, blistering or significant visual change
Mortar (ASTM C207, 38°C, 100%RH, 24hrs Pat Test)	: Mortar is removable, no loss of adhesion or visual change
Sulphur dioxide (Kesternich, ISO 3231, 0.2 l, 24 cycles)	: No loss of adhesion, blistering, softening or colour change.

### d. Florida Exposure

5 years, 45°, facing south.	
Colour retention (ASTM D2244)	: $\Delta E(\text{Hunter}) \leq 5$
Gloss retention (ASTM D523, 60°)	: $\geq 50\%$
Chalk resistance (ASTM D659)	: Rating $\leq$ no. 8
Erosion resistance (ASTM B244)	: $<10\%$ film loss

### e. Accelerated Weathering

Suntest (Qualicoat 12 <sup>th</sup> edition, 1000hrs, class 2)	
Gloss retention (ISO 2813)	: $>90\%$
Colour change, $\Delta E$ (DIN 6174)	: RAL 3005 $< 2.5$ RAL 5010 $< 2.5$ RAL 9010 $< 1.0$

### QUV-A340 (ASTM G53, 3000hrs - 8hrs UV, 4hrs cond.)

Gloss retention	: 85-100%
Colour retention	: Excellent

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