



ISO 9001:2008

DAI PHU CO.,LTD

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OXYPLAST POLYESTER POWDER COATING DP29 / PR29

DESCRIPTION AND ESSENTIAL FEATURES

OXYPLAST Polyester DP29 / PR29 is a thermosetting powder coating based on saturated polyester resins especially selected for its very good resistance to atmospheric ageing, U.V. light and saponification. These basic characteristics provide coating films showing excellent outdoor durability and outstanding decorative properties.

Cured films of **OXYPLAST DP29 / PR29** retain their bending and impact ability up to 6 months after application.

The crosslinking agent is also U.V. resistant and allows rapid cure of the powder by a polyaddition mechanism i.e. without any release of reaction products.

OXYPLAST DP29 / PR29 is particularly indicated for the decorative and protective coating of Aluminium, Steel or Galvanized building materials, Aluminium car wheels or any other items used outdoors.

OXYPLAST DP29 / PR29 is not critical for curing.

PROPERTIES OF THE POWDER

Melting range (Kofler)	: 90 – 110 °C
Specific gravity (DIN 55990/3)	: 1.35 – 1.65
Particle size distribution (Laser Diffraction) (DIN 55990/2, air flow sieve)	
% ≥ 100 µ	: 1 – 5
% ≥ 32 µ	: 55 – 65
Gel time 180 °C (DIN 55990/8)	: 170 – 240 seconds

APPLICATION SCHEDULE

OXYPLAST DP29 / PR29 can be applied by electrostatic spraying using classic devices which can provide a negative tension of 60 - 80 Kilovolts. The curing process of the powder will occur in a suitable convection oven.

Curing schedule: 10 minutes at 190 – 200°C (metal temp)

PROPERTIES OF THE COATING

The general properties of the coating are determined on degreased chromated Aluminium (DIN 50939).

For other substrates, and in order to obtain optimal corrosion protection it is advised to apply following pretreatment prior to powder coating.

For Steel : Iron or Zinc Phosphate
For Galvanized Steel : Chromate treatment
For Aluminium : Degreased and chromated



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OXYPLAST DP29 / PR29	PROPERTIES OF THE COATING
Metal substrate	: ChromatedAluminium(DIN 50939)
Curing schedule	: 10 min at 190 – 200 0C
Thickness	
The smooth surface	: 60 – 80 microns
The sanding surface	: 60 – 90 microns (depends on the surface)
The wrinkle surface	: 70 – 150 microns(depends on the surface)
Gloss (ASTM D-523 600)	: 5 – 95%
Flow-out	: very good
Buchholz hardness (DIN 53153)	: > 90
Persoz hardness (NF-T-30016)	: > 250 seconds
Pencil hardness (Wolff & Wilb)	: ≥ H
Clemen hardness	: ≥ 3 kg
Erichsen (DIN 53156)	: ≥ 5 mm
Impact (ASTM D-2794)	
Direct	: ≥ 25 kg.cm
Reverse	: ≥ 25 kg.cm
Conical mandrel (DIN 53152)	: maximum 20 mm
Adhesion (DIN 53151), dry	: Gt=0
Adhesion (DIN 53151) after 24 hours immersion in water at 38 0C	: Gt=0
Taber abrasion (ASTM D 1044) wheel CS10, 10N, 1000 revs.	: loss of weight: 29.6 mg

CHALKING

OXYPLAST DP29/ PR29 has been exposed in FLORIDA during two years; the gloss retention and the chalking has been recorded.

EXPOSURE TIME	GLOSS RETENTION 60 ⁰ (unwashed figure)	
4 months	93%	no chalking
8 months	88%	no chalking
12 months	81%	no chalking
16 months	72%	no chalking
20 months	70%	no chalking
24 months	65%	no chalking

COLOUR STABILITY



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OXYPLAST polyester powder coatings have been exposed to Xenon light for a period of 1000 hours after which the total colour change DELTA E of the washed coating film has been recorded.

Testing conditions : accelerated weathering test SUNTEST (ORIGINAL HANAU QUARZ LAMPEN)

Light power	:	150 Kilolux
Temperature	:	40 °C
U.V. glass filter	:	limit 320 nm
Water immersion	:	every 20 minutes

COLOUR FADING SUNTEST 1000 HOURS

OXYPLAST PR29

TOTAL COLOUR CHANGE DELTA E (Glasser)

White	1.3 - 1.5
Brown	0.8 - 1.0
Green	1.5 - 2.0
Beige	0.8 - 1.0
Blue	1.5 - 2.0
Red	2.0 - 3.0

CHEMICAL RESISTANCE

OXYPLAST polyester coatings have been checked for resistance to various chemicals. The reagent is maintained in contact with the coating during 48 hours at room temperature.

CHEMICALS

RESULTS

Hydrochloric Acid 10%	film unchanged
Nitric Acid 30%	film matt but washable
Hydrogen Sulphide (saturated)	film unchanged
Hydrogen Peroxide 40 Vol	film unchanged
Ammonium Hydroxide 10%	film unchanged
Ammonium Hydroxide 33%	film unchanged
Sodium Hydroxide 5%	film unchanged
Tartaric Acid 5%	film unchanged
Citric Acid 5%	film unchanged
Lactic Acid 5%	film unchanged
Ethanol	film unchanged
n-Butanol	film unchanged
Petroleum Ether	slight softening

MORTAR AND DETERGENT RESISTANCE



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OXYPLAST DP29/ PR29 has been tested for mortar and detergent resistance according to the A.A.M.A. (Architectural Manufacturers Association, U.S.A.) and found conform to these requirements.

CORROSION RESISTANCE

OXYPLAST DP29/ PR29 has been tested in the saltspray cabinet according to ASTM B 117-73, on different substrates.

IRON PHOSPHATE	1000 H	: 8 -10 mm undercutting
ZINC PHOSPHATE	1000 H	: 3 - 6 mm undercutting
CHROMATED GALVANIZED STEEL	500 H	: 10 - 15 mm undercutting
CHROMATED ALUMINIUM	1000 H	: no change

STORAGE STABILITY

Due to its high Tg (Glass Transition Temperature) and its specific chemical composition, **OXYPLAST DP29/ PR29** powder can be stored for more than one year at 25°C without showing any change in free-flowing properties.

The coating obtained after this period will still have optimal characteristics.
Best use within 6 months from production date

Transparent polyester powders are weather and UV resistant. However they cannot be applied on top of epoxy-based coatings because these will chalk and discolour even under the clear polyester layer.

All the information given in this Data Sheet is the result 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 BELGIUM policy of product development, this specification is subject to change without notice.

OXYPLAST DP29 / PR29 / CW2

ADDENDUM TO TECHNICAL DATA SHEET DP29 / PR29 / ENG-99/3

OXYPLAST BELGIUM also offers the Epoxy-polyester powder coating qualities in special decorative effects like WRINKLE type "CW2".

The properties, mechanical and corrosion resistance of DP29 / PR29 / CW2 are similar to those of the DP29 / PR29 described in the present technical data sheet.