EKOLAK EPOXY/POLYESTER– E/P

Super glossy SG (E/P-01-1-xxxxx SG), **high glossy** (E/P-01-1-xxxxx), **glossy** (E/P-01-2-xxxxx), **rough structured** (E/P-21-4-xxxxx), **with improved chemical properties** (E/P-02-1-xxxxx), **with improved mechanical properties** (E/P-03-1-xxxxx), **with improved coating of edges** (E/P-05-1-xxxxx), **quality for low curing at 160˚°C** (E/P-06-1-xxxxx), **optimized for thinner coat coating** (E/P-07-1-xxxxx), **quality for low curing up to 140 °C** (E/P-08-1-xxxxx).	**Semi-glossy** (E/P-01-3-xxxxx), **semi-matt** (E/P-01-4-xxxxx), **matt** (E/P-01-5-xxxxx), **fine-structured** (dodati: E/P-11-3-xxxxx, E/P-11-5-xxxxx), **with satisfactory mechanical properties and chemical resistance** (E/P-04-1-xxxxx, E/P-04-2-xxxxx, E/P-14-3-xxxxx, E/P-14-5-xxxxx, E/P-24-4-xxxxx, E/P-24-5-xxxxx).

General information - base: based on saturated polyester resins and epoxy resin, specially selected according to their good chemical resistance and the resistance to yellowing in the curing process.
Colour shade: according to RAL-card or according to the sample.
Packaging: 25 kg cartons or big-bags of 500 kg.

Powder properties
Density (ISO 8310-3): 1,2 to 1,7 g/cm^3, depending upon the shade.
Yield: 9,8 to 13,8 m^2/kg at coat thickness of 60 µm, depending on the shade.
Granulation (Malvern particle sizer): above 40 µm … 40-55%.
Method of application: traditional CORONA procedure, negative voltage 30-100 kV, possible supply of powder adequate for TRIBO system of application (mark T i.e. E/P -XX-X-xxxxxT).
Temperature of powder coatings must be adjusted to the temperature of spraying line before the application.

Pre-treatment:

	STEEL	*GALVAN. STEEL*	*ALUMINIUM*
Mechanic cleaning/ sandblasting	Suitable for bulk object	Less suitable	Less suitable
Cleaning/ degreasing	Suitable as initial phase of pre-treatment	Suitable as initial phase of pre-treatment	Suitable as initial phase of pre-treatment
Iron phosphating	Second phase, suitable for customary requirements	Second phase, suitable for customary requirements	Not suitable
Zinc phosphating	Second phase, advisable for large-scale corrosion requirements	Second phase, advisable for large-scale corrosion requirements	Not suitable
Chrome coating	Not suitable	Partly suitable	Advisable
Zeta coat	Suitable	Suitable	Suitable
Nano ceramics	Suitable	Suitable	Suitable

Mechanical and technological features of the Epoxy/Polyester Ekolak
To determine its mechanical properties the Ekolak was applied to the 0,6 mm thick cold-rolled metal sheet degreased with acetone and cured in the oven at the temperature, required for the particular type of the Ekolak.

Coat thickness: 55-80 µm (depending upon the quality).
Gloss (ISO 2813) at the angle of 60°.

Labelling	% of gloss
1 – super glossy SG	> 90
1 – high glossy	> 80
2 – glossy	60-80
3 – semi-glossy	40-60
4 – semi-matt	20-40
5 – matt	< 20

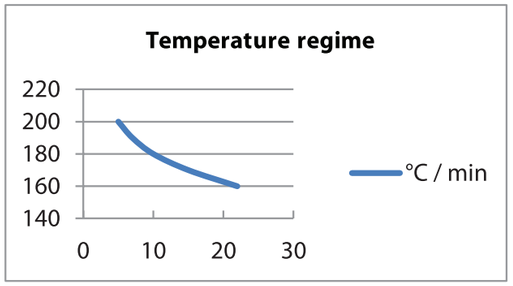
Hardness on Bucholz scale (ISO 2815): minimum 91. T-bend: minimum T4-OK/OK. Impact test (ISO 6272): direct: minimum 100 cm × kg, indirect: minimum 100 cm × kg. Adhesion (ISO 2409): Gt 0.	Hardness on Bucholz scale (ISO 2815): minimum 91. T-bend: minimum T4-OK/OK. Impact test (ISO 6272): direct: minimum 50 cm × kg, indirect: minimum 50 cm × kg. Adhesion (ISO 2409): Gt 0.

Curing conditions: 180 °C/10 min object temperature, more reactive coatings available from 140 °C/10 min up to 160°C/10 min.	**Curing conditions:** 190 °C/10 min object temperature, for semi glossy, semi-matt, matt and fine-structured quality.

In case of inadequate polymerization there is a possibility that the properties of the powder coatings changes:
• when curing on an inappropriate temperature gloss could decrease due to too high temperature,
• due to lower temperatures of curing the gloss may be higher than the prescribed and
• mechanical characteristics are potentially different due to the difference in temperature regime.

Options of curing (table of declared curing for temperature regime 180 °C/10 min):

Temperature (°C)	*Time (min)*
160	20-25
170	15
180	10 (declared temp. regime)
190	7
200	5



Storage time: 24 months at the temperature below 25 °C for standard coatings.

Chemical resistance and resistance to household stains:
Plates with applied Ekolak coating were exposed to the reactive agent for 48 hours, then cleaned. The surface of the coating was inspected for eventual change/damage.

REACTIVE AGENT	SURFACE CHANGE	REACTIVE AGENT	SURFACE CHANGE
HCl 10%	Coating unchanged	Gasoline	Coating unchanged
Ethanol	Coating unchanged	Aceton	Coating softened, peels off the surface
Ammonia 10%	Coating unchanged	Vegetable oil	Coating unchanged
NaOH 10%	Coating unchanged	Red wine	Coating unchanged
Wine acid 5%	Coating unchanged	Sodium, 5% solution	Coating unchanged
Lactic acid 5%	Coating unchanged	Coffee	Coating unchanged
hydrogen peroxide	Coating unchanged	Cleaning agent	Coating unchanged
KOH 10%	Coating unchanged	H3PO4 10%	Coating unchanged
Diesel	Coating unchanged	Citric acid 20%	Coating unchanged
Sodium hypochlorite 5%	Coating unchanged	Glycerin (C3H8O3)	Coating unchanged
H2SO4 40%	Coating unchanged	Coolant fluid-glycol	Coating unchanged

Hygiene and health integrity:
White powder coating has been tested on hygiene and healthiness at the National Laboratory for health, environment and food. The results shows that the powder coating on the overall migration into simulants and regardless of the specific migration of primary aromatic amines, formaldehyde and phenols in food simulant and specific migration of BADGE, BFDGE and derivatives in food simulant, consistent with the provisions of paragraph 1a and b of the 3rd article of the Regulation of the European Parliament and Council Regulation (EC) No. 1935/2004 of 27th of October 2004 on materials and articles intended to come into contact with food and repealing Directives 80/590 / EEC and 89/109 / EEC. A copy of the original report of the National Laboratory for Health, Environment and Food can be obtained at the request of customers.

Areas of application:

- metal furniture,
- shelves,
- lighting, lights,
- white goods,
- radiators,
- ducts, pipes,
- sanitary ware,
- int. car. parts,
- the housing of electronic appliances.