

POWDER - Lak

(PTY) LTD

Technical Information

Powder – Lak Series 2000 FUSION BONDED EPOXY (FBE) Standard Cure and Residual Cure variant “R.C.”

- Basic Material** A thermo-curing epoxy resin combined with catalysts.
- Product Indication** Powder-Lak Powder Coating paints for electrostatic powder spray, as well as fluidised bed application.
- Applications** Powder-Lak Series 2000 is a single coat application, particularly suitable for metal parts of various shapes and types, such as plate work, wire products, piping, profiles and castings made of steel plate, aluminum, iron, galvanized steel etc.* Special qualities are available for the coating of glass, ceramics, pipelines, packaging materials, plastic, and other materials.
Powder-Lak Series 2000 should be used when the protective coating has to meet high requirements:
- Resistance to chemicals, oil, grease, detergents and solvents
 - Impact and shock resistance.
- Suitable for use in office and school furniture industry, shop fitting and shelving, household equipment, chemical plants, refrigerators and washing machines, automotive components, bicycles and motorcycles, and for use in the electronics / Busbar industry, due to its excellent insulation qualities.
- Powder-Lak Series 2000 may also be used whenever a chemically resistant coating is required.
- Properties** Powder-Lak Series 2000 has excellent adhesion, high flexibility, high impact and abrasion resistance. The coating is de-formable, wear resistant, and offers optimum protection against corrosion, is very resistant against chemicals such as diluted acids (10% sulfuric acid as an example) and bases, brines, aromatic and aliphatic hydrocarbons and alcohols. The coating is affected by several reagents: chlorinated hydrocarbons, ketones, 30% nitric acid, 100% acetate, ammonia. Product range has also received W.R.A.S. approval.

* Powder-Lak Series 2000 may be used as an extremely effective primer / undercoat for use in areas of high corrosion. Decorative coatings such as texture powders, or ultra-violet resistant coatings such as Series 1000/3000, may be applied over Powder-Lak Series 2000 to provide a complete coating system.

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Surface Preparation	The surface must be dry, free of rust and scale, or any trace of grease, dust, oil or parting compounds. On some surfaces, a light sandblasting improves adhesion. Special preparation is not required, but iron or zinc phosphating on steel surfaces will improve adhesion as well as corrosion protection.
Application Method	<p>Powder-Lak Series 2000 may be applied using any electrostatic high voltage powder coating equipment, with a charge of 30 - 100 Kv. The compressed air must be free of water or oil.</p> <p>When used as a primer / undercoat, apply Powder-Lak Series 2000 to a film thickness of 40 - 60 microns and bake, before applying the top coat. When applying the top coat, it is necessary to reduce the voltage of the gun to 30 - 40 Kva, and to ensure that the air pressure is not greater than 2 Bar.</p> <p>The usual instructions of the equipment supplier must be followed concerning the preparation of recovered powder, the time/temperature baking cycle, cleaning of the spray booth and filter unit, and checking of the humidity. Adequate Personal Protective Equipment must be worn.</p>
Curing Schedule	<p>180°C (metal temperature) for 10 minutes – <u>Minimum cure requirement</u></p> <p>“R.C.” variant is able to self cure using residual heat of the substrate. Self cure is achieved with a minimum steel/cast iron thickness of 8mm and above. Thinner material may need a post cure cycle. Suitable tests should be conducted to ensure that an optimal cure schedule is attained.</p> <p>Higher temperatures may negatively affect color and gloss level. It is not advisable to exceed 210°C (metal temperature) as this will weaken the protective properties of the coating.</p>
Powder Data	<ol style="list-style-type: none">1. Particle size: < 100 um for manual application, < 200 um for fluidised bed application. The particle size is determined by an ALPINE Air Jet Sieve (DIN 53734).2. Specific Gravity: 1,2-1,9 (depending on tint and type).3. Coating thicknesses: 60 -150 um (for cold workpieces); up to 350 < um (for preheated workpieces)4. Theoretical Coverage: 7-10 sq. m/kg. with 60 - 70 um thickness depending on the type.
Colors	Many RAL and SABS colors, standard colors as per the color card. Special colors on request, subject to minimum quantities.
Gloss (GARDNER DIN 67530)	Gloss to Semi-Matt

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Curing loss	0,6-1,2%
Shelf life	6 months if stored in a cool, dry environment, not in excess of 23°C. Prevent exposure to sun and heat radiation, as these will affect the flow characteristics and gel time. Due to the volatility of the curing agent contained within this product, it should be used, once received, to ensure adequate product performance.
Packaging	20kg non-returnable box with polyethylene bag.
Cleaning of jigs	Hot alkaline baths and/or sandblasting
Repair coating	<ol style="list-style-type: none">1. By re-coating2. With usual single or twin-pack repair coatings or specially formulated “Touch up”.
Advantages	Single coat with thicknesses of 40 - 150 um. User-friendly, as no solvents are required. Reduced fire hazard, good edge covering. Loss reduced to 3 - 5% due to recovery of material, clean working stations, no evaporation period, low porosity of coating, excellent insulation. If coating is done correctly, no pollution. No dripping or running during application.

TECHNICAL DATA

Surface	0,8 mm shallow-drawn plate, degreased.
Coating thickness	Depending on required application, e.g. pipe coatings should receive 300+ um
Cross Hatch (DIN 53151)	Gt0
ERICHSEN cupping (DIN 53156)	8-10 mm
BUCHHOLZ Hardness (DIN 53153)	>100
Spindle-bend test (DIN 53152)	Up to 2 mm. 6-10 mm for standard formulations.
Impact test	> 120 inch lbs. (GARDNER)
Water compliance	WRAS / AWWA C213 - 15

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Abrasion test (ERICHSEN abrasion with 400 double lift motions)	30 +/- 10 mg.
Salt Spray test ASTM B 177-61	240 - 1000 hours depending on type. Maximum sub-rusting: 1,5 mm on Andreas cross. 10-25 rounds “i.o”
Temperature resistance	Briefly: up to 180°C Long periods: up to 60°C * * No mechanical stress (slight yellowing of bright colors)
Hot water resistance	100 hours "o.B" and good resistance against lye solutions.
Dew point environment DIN 50017	500 hours with no disbonding (when suitably pretreated).
Toxicological properties	The LD-50 figures for the resins and hardeners used are available. Product is manufactured in accordance with WRAS / ANSI / SANS standards.

NOTE: Test results apply to powders applied under controlled conditions. Variations may occur due to the surface, application, pre-treatment, curing, etc.

The data on this information sheet does not constitute a guarantee.