

Anti-bacterial Polyester Powder Coatings

The information given in this data sheet is generic for Thermaset Polyester Powder Coatings containing the anti-bacterial agent *Hygienilac*. Specific products may vary from the generic and for these individual product datasheets will be available.

Product Description:

Thermaset Limited offer a range of polyester powder coatings formulated to be TGIC-free, designed for interior or exterior use. The range is specially formulated on selected resins and light-fast pigments to give excellent exterior durability and resistance to yellowing with the added benefit of an effective anti-bacterial agent which kills most species of bacteria, including the deadly MRSA, salmonella, E coli and C difficile.

Range Available:

Thermaset's Anti-bacterial Polyester range is designated the prefix TLAB, any colour available by arrangement.

- TLAB- -G Polyester Gloss Anti-bacterial Powder Coating
- TLAB- -S Polyester Semi-gloss Anti-bacterial Powder Coating
- TLAB- -M Polyester Matt Anti-bacterial Powder Coating

Suggested Application Areas:

Agricultural equipment	Cookers	Garden furniture	Heaters
Hospital beds	Radiators	School furniture	Shop shelves
Tools	Window frames		

Curing Schedule:

10 minutes @ 180⁰C metal temperature

Coating Thickness:

60-70 microns preferred

Particle size:

Max 10% < 10 microns
Max 3% > 120 microns
D50 = 34-42 microns

Specific Gravity:

1.2 – 1.8 depending on colour and finish.

Shelf Life:

12 months when stored according to specification.

Storage:

Store in original containers in dry cool conditions between 5 and 25⁰C.

Pretreatment:

It is essential that surfaces to be coated are clean and free from grease etc. Aluminium substrates may require a chromate conversion coating. Ferrous substrates will benefit greatly from iron phosphate and particularly lightweight zinc phosphate to improve corrosion resistance. For optimum corrosion resistance also use our zinc rich primer TLE-6226-M.

Application:

Suitable for application by manual or automatic electrostatic spray equipment and triboelectric charging guns. Unused powder can be reclaimed using suitable equipment and recycled through the spraying system.

Chemical Properties:

Generally good resistance to acids, alkalis and oils at normal room temperatures.

Coating Properties:

Mechanical test panels 60-70 microns on polished steel. Chemical and durability test panels 60-70 microns on lightweight zinc phosphate. Results shown below are for laboratory test conditions and are given in good faith for guidance only.

Mechanical Properties:

Flexibility (conical mandrel)	BS3900	Pass 3mm
Scratch	BS3900 E2 (4Kg)	Pass-no penetration to substrate
Impact (Direct)	BS1391	Pass 80 in lbs
Impact (Reverse)	BS1391	Pass 80 in lbs
Erichsen cupping	BS3900 E4	Pass > 7mm
Adhesion (2mm cross hatch)	BS3900 E6	Pass Gt 0

Physical Properties:

Salt spray resistance	ASTM B117	Pass 1000 hours
Humidity resistance	BS3900 F2	Pass 1000 hours
Water resistance	BS3900 G2	Pass 1000 hours
Exterior durability		Excellent-no chalking, slight loss of gloss after 12 months continuous exposure but no film breakdown or loss of protective properties.

Antibacterial Effect:

Hygienilac has achieved >Log 3 (99.9%) kill rates over a 24 hour period against the following bacteria:

- Staphylococcus aureus Methicillin-Resistant Strain (MRSA)
- Listeria monocytogenes
- Clostridium difficile
- Escherichia coli
- Staphylococcus aureus
- Salmonella enteritidis
- Klebsiella pneumonia
- Aspergillus niger
- Pseudomonas aeruginosa
- Penicillium purpurogenum
- Bacillus cereus
- Saccharmyces cerevisiae

Thermaset's TLAB anti-bacterial powder coating containing Hygienilac has also been tested by independent laboratories to BS EN 13697 (surface test) for Clostridium difficile spores and passed the requirements of the British Standard with >Log 3 (1.0×10^3) kill rate, a unique feat for a UK coating manufacturer at time of going to print.

Additional Information:

Thermaset Limited has developed these TLAB anti-bacterial powder coatings to aid the inhibition of bacterial growth on coated metal surfaces. They are not intended to replace or reduce existing hygiene or cleaning regimes but as an additional protection against bacterial growth.

The TLAB anti-bacterial coatings are not based on silver technology and so do not suffer from reduced effectiveness with time caused by UV degradation like silver does. The Hygienilac active anti-bacterial agent in TLAB coatings does not migrate on contact with water either and so cleaning regimes will not reduce the coatings ability to kill bacteria. Since the Hygienilac anti-bacterial agent is homogenized throughout the powder coating bacteria will continue to be killed effectively for as long as there is powder coating on the item, so it will remain effective for years.