ELECTRODEP 1000

CLEAR LACQUER

INTRODUCTION

Electrodep 1000 is a modified cathodically Electro Deposited lacquer.

When fully cured it gives a clear, bright corrosion resistant coating. In addition it is chemically resistant to both acid and alkali environments.

Electrodep 1000 can be dyed to give attractive transparent finishes on a wide variety of metal substrates.

Curing temperatures can be as low as 110°C

BENEFITS

- Superior chemical resistance – suitable for demanding environments
- Excellent UV Stability
- Good emulsion stability – reduced maintenance and improved product life
- Excellent film clarity – Improved substrate appearance
- Solvent resistance – gives excellent performance in domestic office and industrial environments

MAKE-UP

Electrodep 1000	33%
Demineralised water	67%

On make up the emulsion should be allowed to reach equilibrium prior to use. This is more important for large volumes and normally equilibrium is reached in 8 hours.

Equipment required

Mechanical mixing is strongly recommended to provide a consistent emulsion.

1. Add the required volume of Electrodep 1000 to the tank.
2. Slowly add (letting down with) demineralised water (<10 microSiemens) with thorough mixing. Initially the concentrate will become more viscous until the inversion point is reached. At this point the rate at which water is added can be increased.
3. Allow to circulate and filter for a minimum of 8 hours.
4. Check the refractive index and conductivity of the solution and permeate (RI 10.5-11.5, permeate 1.7-2.2 conductivity <700µS) and add solvent if required. (An addition of 5ml/L Electrodep Solvent is usually required).
5. Heat to operating temperature.

OPERATING DATA

Refractive index	10.5 – 11.5
Temperature	28 – 30°C
Coating voltage	30 - 40
Coating time	30 – 120 seconds
Cure Temperature.	110 – 140°C
Cure time	20 mins minimum. .

DEPOSIT CHARACTERISTICS

TEST	**CURE TEMPERATURE**		
	110°C	**120°C**	**140°C**
Pencil hardness (ISO15184)	3 - 4H	3 – 4H	4 - 5H
Solvent resistance (ASTM D5402)	Approx 100 DAR	>300	>500
Perspiration resistance (ISO 12870)	24Hrs	>24Hrs	>48Hrs
Wear resistance RCA (ASTM F2357)	30 Cycles	50 Cycles	100 Cycles
Adhesion (ASTM D 3359)	100% Pass	100% Pass	100% Pass
Corrosion resistance (ISO 12870)	>500 Hrs	>500 Hrs	>500 Hrs

EQUIPMENT

Tank material	Polypropylene
Agitation	Solution movement is important, ensuring good weir characteristics (4 – 5 tank turnovers per hour)
Heaters	Stainless steel heating and cooling within the weir compartment. *CPL must be fitted as part of the coating system
Filtration	In addition to CPL 0.5 - 1 micron pleated glass fibre filters are

	recommended.
Anodes	316 stainless steel (polished)
Anode/Cathode area	1:1 nominal (dependant on application)
Anode cathode distance	100 mm minimum
ED Power unit	Constant volt power are required capable of delivering 30 -70 volts minimum. The current capacity will depend on the surface area. Under constant current densities of 0.05 – 0.1 A dm^2 are required
Extraction	In the emulsion state the process may be considered non-hazardous. Normal dust free environments are required. Positive pressure rooms are beneficial. Circulating air stoving ovens should be externally vented with the inlet filtered to remove airborne particles and dust.

***CLP = Closed loop purification via ultra filtration (UF)**

TYPICAL PROCESS SEQUENCE

The pre-treatment will very much depend on the substrate to be coated. A general guide for zinc & zinc die cast is as follows:

1. Solvent Degrease if necessary
2. Soak Cleaner
3. Ultrasonic Cleaner
4. Cathode Cleaner
5. Counterflow or Air Agitated town water
6. DI water rinse x2
7. Pre dip (1% Electrodep 1000 solution)
8. Electrodep 1000
9. Drag out
10. DI water rinse x2
11. Dye conditioner (Optional)
12. Dye (Optional)
13. Dye conditioner (Optional)
14. DI water rinse x2
15. Dry (110 –160°C).

MAINTENANCE AND CONTROL

Material Consumption at 100% Efficiency

1L of Electrodep 1000 concentrate will cover approximately 50 M² at a thickness of 10um. Typical efficiencies in larger installations exceed 97% using CLP (Closed Loop Purification)

Notes

Ovens used for curing should have the appropriate air extraction. This allows for any volatile organic compounds (VOCs) released to be removed.

DISPOSAL

Dispose of in accordance with local authority requirements.

PRODUCT FAMILIES

The following products are referred to in this data sheet.

PRODUCT NAME	PRODUCT NUMBER
Electrodep 1000	
Electrodep solvent	

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