

# SpectruLite<sup>®</sup> organics | TECHNICAL INFORMATION

## 84 SERIES WATERBORNE ORGANIC COATINGS

### 1.0 PRODUCT CHARACTERISTICS

#### 1.1 PHYSICAL PROPERTIES

Solids	40 - 45% - acrylic base
V.O.C.	Maximum 5% by weight
Flash point	>200°F, 93.3°C
Density	1.06 g/ cm <sup>3</sup> +/- 0.03
Viscosity (Clear or Colors)	21 - 24 seconds #3 Zahn @75°F, 24°C 20 - 25 seconds #4 Afnor @75°F, 24°C
Thinner	De-ionized water

#### 1.2 RECOMMENDED APPLICATION PARAMETERS

Application Methods	Hand held or automatic spray gun, siphon feed, electrostatic disc or aerobell spray equipment.
Recommended application conditions	Glass temperature: 68 - 86°F (20 - 30°C) Air Temperature: 68 - 86°F (20 - 30°C) Relative Humidity: 60 - 80%
Applied film thickness	20 to 30 microns average Wet film thickness
Filtering recommendations	Filtering before use is recommended: Frost > 50 microns filter Clear/color concentrate > 10 microns filter
Atomization pressure	30 - 60 psi (2 - 4 bar) depending on application
Paint supply pressure	14.5 psi (1 bar) maximum
Spray gun nozzle size	Hand held gun: 0.5 - 1.5 mm diameter Automatic machine: 0.5 - 1.0 mm diameter
Recommended reduction	Product is supplied ready to spray. If thinning is necessary, use the minimum amount of water needed to achieve acceptable spray performance.
Suggested cleaning solvents	Wet coating can be cleaned up with water or a wet towel. Dried coating must be cleaned with acetone or MEK. Paint thinners, mineral spirits or turpentine are not recommended.

#### 1.3 CURING/DRYING OF PRODUCT

Curing Method	Radiant heat, convection oven or lehr.
Curing Parameters	Flash dry: 2 - 3 minutes at room temperature. Temp: 356 - 400°F (180 - 200°C) <b>glass temperature</b> Time: 10 - 20 minutes depending on glass weight

#### 1.4 GENERAL PERFORMANCE CHARACTERISTICS

Pencil hardness	>3H
MEK/Acetone double rubs	>50
24 Hours soak in Water/Ethanol/G1 liquid	Pass
Dishwasher resistance/Autoclave	Passes 100 Cycles

**\*Note:** Performance characteristics based on testing conducted in Ferro development laboratories. Data is given for general comparison only; it is not a guarantee of performance in a particular application. It is always recommended that the customer evaluate the coating for suitability in the intended application. We strongly recommend that all safety precautions be followed as per the relevant Ferro MSDS.

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### 2.0 PRODUCT PREPARATION

The 84 Series water-borne organic coatings are supplied ready to use for spraying, dipping or flow-coating. Thinning may be necessary depending on application equipment. Distilled or deionized water is recommended for thinning. Do not use tap water, salts present in tap water may cause lumps or gelling to occur or may cause water sensitivity of the cured film.

Insure that the product has been well mixed prior to use. Some settling may occur during prolonged storage. Product temperature should be equivalent to your room temperature prior to measuring viscosity or application of the material. If water must be added, use only distilled or deionized water. Water should be added slowly while the coating is under agitation. Coating should be mixed gently to assure uniformity. Do not mix under high-speed agitation, this may whip or entrap air into the coating and affect spray performance.

The 84 Series contains water; equipment used must be made of stainless steel or corrosion resistant metals. Membrane pumps made of stainless steel or polypropylene are recommended. The compressed air supply must be free of oil and dirt. Immediately after use, wash the guns and alimentation system with distilled or deionized water.

### 3.0 APPLICATION NOTES

Cleanliness of the substrate is extremely important. Dirt, dust, fingerprints, wax, lubricants or oils on the glass or in the workplace environment can cause surface defects or performance problems. Cold end coatings based on polyethylenes, soaps, oleic acid are known to cause wetting problems or adhesion issues. It is strongly recommended that either no cold end coating, or a light application of stearate cold end coating is used. Oleic acid based and polyethylene cold end coatings should be avoided.

### 4.0 CURING NOTES

For complete curing and best performance the 84 Series coating and the substrate must reach a temperature of about 356°F (180°C). In forced air ovens and Lehrs, a recommended starting point cure cycle is 20 minutes at 356°F (180°C). The actual time necessary to cure the coating is dependent on the heat transfer rate of the oven or Lehr and the size, shape, and thickness of the ware. Infrared ovens can allow faster cross-linking cycles of the coating, and hence shorter cycle times. Blistering can occur if the wet film is heated too quickly.

Freshly applied film is opalescent; final appearance, gloss and transparency will be achieved upon curing.

Other firing cycles are possible according to the required chemical-mechanical properties. Any firing cycle chosen should be checked on the specific installation under normal production conditions.

Cured film can be tested by rubbing film with a rag soaked in a strong solvent (MEK or acetone) – if under-cured, the solvent will remove the film.

### 5.0 STORAGE RECOMMENDATIONS

This product contains water and freezing can occur at temperatures below 32°F (0°C). Product must be stored in cool and dry conditions. The storage temperatures should not be below 50°F (10°C) and not exceed 95°F (35°C). Settling may occur if stored for long periods of time. Before use, products must be stirred thoroughly. Partly used containers must be tightly sealed after use. Product should always be filtered as it is transferred into spray equipment. If stored as recommended, a minimum shelf life of twelve months after the production date is guaranteed.

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