BLUE RIVER COATINGS
Product Data Sheet

HYDRO-GLOSS TOP COAT

PRODUCT DESCRIPTION

BLUE RIVER COATINGS HYDRO-GLOSS TOPCOAT is a water dispersible polyisocyanate coating. HYDRO-GLOSS provides outstanding coverage, excellent durability, and ease of application as well as being a low VOC and EPA compliant coating. HYDRO-GLOSS offers superior adhesion and has film properties that rival most solvent based catalyzed polyurethane systems.

ENVIRONMENTAL ADVANTAGES

BLUE RIVER COATINGS HYDRO-GLOSS TOPCOAT is considered non-hazardous by EPA definitions and does not contain lead or chromates. The solid and semi-solid sludge produced in spraying and clean up can be flocculated; dried and sent to a "Class B" landfill. Check with local and state regulations for proper handling.

CHARACTERISTICS

- Excellent exterior durability
- Non-photochemically reactive
- Full gloss – 92% at 60° glossometer
- Available in satin to gloss finish
- Excellent hardness/impact resistance
- Excellent adhesion, mar, and abrasion resistance
- Coating will not flash rust on clean, dry metals
- Coatings can be applied in a wide range of temperature and humidity conditions without the use of retarders
- Linear flexibility is excellent on substrates such as Lexan, vinyl, and fiberglass
- Excellent retention of gloss in 1,000 hour QUV weatherometer
- Water is used for reduction
- Excellent performance on most plastics
- Water is used for clean-up
- Non-Hazardous
- Wide range of colors
- Shelf life of 1 year
- Non-Flammable
- Metallics can be formulated

USES

- Steel, Steel Decks
- Aluminum
- Vinyl
- Fiberglass
- Wood
- Plastics
- Canvas

AIR QUALITY DATA

- VOC (Volatile Organic Compounds) 0.3 lb/gal, 36 gm/ltr when catalyzed
  - VOC's Part A: 0.0 lb/gal, 0.0 gm/ltr
  - VOC's Part B: 0.9 lb/gal, 108 gm/ltr
- Free of lead and chromates
- Non-photochemically reactive

PHYSICAL DATA

- Liquid
- Specific Gravity: >1
- Vapor Density: Heavier than air
- Evaporation Rate: Slower than ether
- VOC: 0.3 lb/gal, 36 gm/ltr
- Boiling Point: 340°F (171°C)
- % Solid by weight: 47% when catalyzed
- % Solid by volume: 50% when catalyzed
- Weight per gallon: 9.4 lbs
- Flash Point: 320°F CC

PERFORMANCE DATA

The tests below were performed on aluminum panels primed with Blue River Coatings Hydro-Poxy Primer at 1-1.5 mil dry film thickness after 14 days cure time at a room temperature of 77°F (25°C). Each test rated excellent or no failure.

1. Salt Spray: 1,000 hours
2. Solvent Resistance: lacquer thinner, acetone, MEK, gasoline, xylene-100 double rubs with saturated cloth.
3. Pencil hardness test to 4H
4. Flexibility: 1/8" conical mandrel
5. Impact Resistance: Forward-180 inch pound, Reverse-180 inch pounds
6. Taber Abrasion: CS17 wheel, 1,000 gm load (100mg loss/1,000 cycles)
7. Theoretical Coverage at 1 mil: 802 ft^2 (1,604 x 50% solids by volume)
8. Gloss Retention: >90% gloss retention after 1,000 hours QUV (Quantitative Ultraviolet light)
9. Drying Time (Air Dry): Recoat – 10 minutes @ 50% humidity and 75°F
10. Drying Time (Air Dry): Dust Free – 30 minutes @ 50% humidity and 75°F
11. Drying Time (Air Dry): Dry to handle 3 hours @ 50% humidity and 75°F

SPECIFICATIONS

METALS: Surface must be free of grease, oil, dirt, and other foreign matter. Oxidation material must be removed or converted with Blue River Coatings Conversion Coating. Priming with Blue River Coatings Primer Sealer or Hydro-Poxy Primer is recommended. For compatibility with other primers, contact Blue River Coatings.

PLASTICS: Good adhesion on most plastics and vinyl.

WOOD: Surface must be dry, sanded and dust free. Oil stains may not be used. For information on approved water base stains and sanding sealer, contact Blue River Coatings.

MIXING DIRECTIONS

1. Mix Part A (color) well prior to mixing with Part B (catalyst).
2. Mix together 3 parts A (color) with 1 part B (catalyst) by volume. This mixture will be thick and creamy.
3. Allow the mixture to "sweat-in" for 5 minutes.
4. Stir in approximately ½ to 1 part deionized water until the viscosity is 18-25 seconds with a Zahn #2 viscosity cup.
5. Normal pot life is 30-45 minutes. In areas of high temperature and humidity, the pot life will be less.

SPRAY APPLICATION

1. The first coat of Hydro-Gloss should be applied as a very light fog/tack coat. Primer should still be visible.
2. After the fog/tack coat, wait about 30 seconds, and then apply a medium wet coat. This will color the entire surface lightly.
3. When this coat is sticky to the touch (approximately 10 minutes), apply a full wet coat.
4. Allow 8-12 hours curing time before applying masking tape if needed.
5. Hydro-Gloss will be dust free in about 30 minutes. Dry to the touch 1-2 hours. Force curing can be accomplished with rapid air movement over the substrate. Do not force cure with heat over 120°F.
6. It is possible to stripe or re-coat up to 10 days without sanding the surface. After 10 days lightly scuff sand the surface to be repainted.
7. Allow paint to cure for 30 days before applying any wax or protective coatings.

BRUSH APPLICATION

Spraying provides the best results but if brushing is desired, you can achieve a nice finish by using a foam brush. Do not thin the 2 Part Polyurethane with water. It will lay smooth and flow out without running.

CLEAN-UP WITH WATER

Clean paint gun immediately with water. If the paint dries, solvents may have to be used for clean up. If the spray equipment is not stainless steel, the equipment may have to be taken apart and air-dried.

WEATHEROMETER

QUV testing was performed using the following cycles: 4 hours UV @131°F/55°C, followed by 4 hours of condensation @ 104°F/40°C with 30-minute cooling/dry off cycle.

HYDRO-GLOSS TOP COAT
TEST PERFORMANCE DATA

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TESTING

BLUE RIVER COATINGS HYDRO-GLOSS has passed the following tests:

1. ANSI Standard 255, 1-1973
2. ASTM Standard G23-1969 Amended 1975
3. ASTM Standard D523-1969 Amended 1972
4. ASTM Standard D2794-1969 Amended 1974
5. CGSB Standard 1-GP-71 Amended 1975

6. CGSB Standard 31-GP-0 Amended September 1974
7. CSA Standard CO5-176
8. DMS-2115
9. MIL-C-85285B (AS)

American National Standard Institute
American Society of Testing and Materials
Canadian Government Specification Board
Canadian Standards Association

Hydro-Gloss was applied as part of a "finishing system" which included metal treatment and Blue River Hydro-Poxy Primer. The product was applied on metallic surfaces of electrical apparatus intended for outdoor use. Also tested were standard panels of SAE 1020 cold rolled steel of 3.5mm and 1.5mm in thickness finished in the same manner described above. Testing was conducted after air dry and 7-day cure.

PERFORMANCE

- **HARDNESS** – (500gm method 116.2 of CGSB standard 1-GP-71) no exposure of metal through the scratch in the film.
- **IMPACT RESISTANCE** – ASTM Standard D2749 with Gardener Variable Impact Tester with 16mm diameter ball. Exceeds 1.8J and 180 inch pounds reverse and direct.
- **FLEXIBILITY** – Bend through 180° around 6mm-diameter mandrel bare side of specimen in contact with the mandrel. Temperature was 23° (+/- 2°) C. Bending time not to exceed 1 second. No cracking or peeling when examined with unaided eye.
- **FLEXIBILITY** – Navy Weapons System Command – (-60°F/-51°C) over a ¼" mandrel on anodized aluminum panel – No cracking or peeling when examined with unaided eye.
- **ADHESION** – CGSB Standard 31-GP-0 Method 7.3. No removal of paint.
- **OIL RESISTANCE** – Half immerse test panel in transformer oil conforming to CSA Standards C50 at 100°C(212°F)(+/- 1°) for 120 hours. Remove and wipe with a clean lint free cloth. Allow panel to cool for 2 hours. No softening, surface disintegration, wrinkling, blistering, or loss of adhesion.
- **OIL RESISTANCE** – Passes MIL-C 85285 DI water, lube oil, hydraulic fluid. Passes DMS 2115 skydrol resistance test.
- **WATER RESISTANCE** – Half immerse test panel in distilled water at 20-25°C (68-77°F) for 18 hours. Removed and wipe with clean lint free cloth. Allow product to dry for 7 hours (less than 50% humidity). No wrinkling or blistering.
- **SALT FOG RESISTANCE** – Salt fog tests were conducted according to ASTM B117 standards.
- **CORROSION RESISTANCE** – Corrosion tests were conducted according to ASTM D610 that uses 10 to 0 scale with 10 indicating no rust and 0 indicating bad rust. Performance observed was medium rust #8.
- **BLISTERING** – Blistering tests were conducted according to ASTM D714 that uses 10 to 0 scale with 10 indicating no blisters and 0 indicating the largest size blisters. Performance observed was #8-medium size blisters.

Anodized aluminum test panel with Blue River Hydro-Gloss and Blue River Hydro-Poxy Primer. Results of above test are as follows;

Duration:	1,000 hours
Corrosion/rust:	None

Blistering: None
Special Note: No filaform corrosion

- **ACCELERATED WEATHERING** – 1,500 hours in arc weatherometer per ASTM Standard C23. No film degradation. Loss of gloss <10%. Loss of color-RED-<10%.

TEST WERE CONDUCTED BY THE FOLLOWING:

- McWhorter Technologies
- Naval Air Warfare Center
- McDonnell Douglas Aerospace
- Buckman Laboratories
- Hughes Aircraft