

HYPERTHANE⁴¹⁵ ICS DTM Polyester Urethane System
HYPERFORMANCE URETHANE

PRODUCT CODES: IG-2241 – Coarse Metallic | IG-2242 – Fine Metallic | IG-2243 – Medium Metallic | IG-0246 – Clear Base
IG-1247 – White Base | IG-1248 – Deep Base | IG-3251 – Yellow Base | IG-5257 – Red Base

DESCRIPTION: Hyperthane 415 High Performance DTM Polyester Urethane is a two-component polyester urethane, high performance coating system designed for manufacturers that demand excellent gloss retention, hardness, mar, and chemical resistance in a direct to metal coating. This is the system of choice for industrial finishers that desire excellent resistance to fading or chalking from exposure to sunlight and chemicals under splash and spill conditions. Hyperthane 415 High Performance DTM Polyester Urethane can be applied with conventional, airless, electrostatic, and plural component equipment.

PHYSICAL PROPERTIES:

Weight Solids: 65% to 69%
Volume Solids: 54% to 57%
Resin Type: Polyester Urethane
Gloss: 90+
Theoretical Coverage: 850 to 927 square feet at 1.0 mil
Weight per Gallon: 10.0 pounds
Blended Viscosity: #3 Zahn – 28 to 30 seconds at 77°F
EPA VOC: 3.5 pounds per gallon

SURFACE PREPARATION: The service expectancy of a coating is primarily dependent upon good surface preparation. The surface to be coated should be free of mill scale, rust, oil, and other contaminants, including salt deposits. Hyperthane 415 High Performance DTM Polyester Urethane may be applied over steel, aluminum, fiberglass or galvanized steel. Due to inconsistencies in galvanizing, please check with your local Diamond Vogel representative for recommendations and substrate testing. For longer term corrosion protection use the Stratum two component urethane primer system. For optimum adhesion, hot rolled steel should have the mill scale removed by an abrasive blast to SSPC-SP-6 to an average profile of 1.5 mils and then coated before flash rusting occurs.

Steel: Bare steel areas should be treated with an iron phosphate conversion coatings and adequate rinsing.
Aluminum/Galvanized: Aluminum and galvanizing should be treated with appropriate metal cleaners and conditioners.

ACTIVATION: Hyperthane 415 should be mixed 6 parts A to 1 part B IG-0267 by volume. No sweat in time is necessary. The pot life will be approximately 8 hours at 77°F. As temperatures increase, the pot life will decrease.

Mixing Ratio: 6A:1B with IG-0267, IG-0268, IG-0299 by volume
Sweat-In Time: None
Pot Life: 7 hours minimum at 77°F

APPLICATION: This urethane can be sprayed with all types of application equipment.
Airless: For airless application no reduction is necessary. Airless tip sizes should be in the .011 to .015 range. Adjust pressures accordingly for best atomization and transfer efficiencies. Air-assist airless pressures will be in the 800 to 1000 pound range for fluid and 30 to 50 pound range for atomizing air.

Conventional Air: For conventional air and electrostatic spray some reduction may be necessary. Use butyl acetate or MAK for reducing purposes. Pressures are dependent upon the type of gun and fluid nozzle, but typically will be in the 45 to 60 pound range for proper atomization.

In-Line Heat: In-line heat may be utilized up to 100°F to improve application. Caution must be exercised to turn heat down during breaks and shut downs to avoid locking up the paint lines due to decrease in pot life.

Dry Film Thickness: For best results, dry film thicknesses should be 2.0 mils minimum above surface profile. This will require wet film thicknesses of about 3.0 to 4.0 mils. Sag resistance is about 7.0 mils wet.

DRY TIMES: Hyperthane 415 High Performance DTM Polyester Urethane will typically dry to tack free in approximately 2 hours. Dry through will be about 6 to 8 hours. Dry hard times will be 24 hours. See the back panel. N-7026 Urethane Accelerator can be added at a rate of 2 fluid ounces per gallon of Part A to reduce dry hard times to approximately 8 hours and tack free to 1 hour at 77°F. Pot life will be reduced accordingly. Hyperthane 415 High Performance DTM Polyester Urethane can be recoated at tack free and up to 48 hours. After 48 hours Hyperthane 415 High Performance DTM Polyester Urethane will need to be scuff sanded to ensure inter-coat adhesion. Force drying: 20 to 30 minutes at 160° to 180°F depending on metal thickness and mass. Recoating after force drying: Scuff sanding may be required to ensure inter-coat adhesion.

CLEAN UP: Use butyl acetate or ketones to flush application lines and equipment. The pot life will be approximately 8 hours at 77°F. At higher temperatures, pot life will diminish.

PERFORMANCE: Typical, tested on B-1000 panels at 1.5 mils DFT

Salt Spray: ASTM B-117 - 240 hours < 1mm creep DTM

Chemical Resistance: ASTM D870 – 24 hour immersion
Diesel – Pass, no visible change
Ammonia – Pass
Hydraulic Fluid – Pass
30 Weight Oil – Pass
Distilled Water – Pass

Xenon Arc Weathering: SAE J1960 - 1516 Kj/m² exposure – less than 10% loss of gloss

Gravelometer: ASTM D3170 – 2A Excellent

Adhesion: ASTM D3359 - 5B, 100% - no loss

Pencil Hardness: ASTM D3359 - 2H

Dry Times: ASTM D1640
Set to Touch – 15 to 30 minutes
Tack Free – 2 hours
Dry Through – 6 to 8 hours

SAFETY PRECAUTIONS: Contains aliphatic polymeric isocyanate and butyl acetate when blended. Avoid contact with skin. Vapor and spray mist harmful. Use proper respiratory protection, including positive air supplied respirators. Refer to SDS for specific information. All information subject to change without notice