PolyStar TAC-50

High-Performance Industrial Polyaspartic Coating

U.S RESIN SUPPLY & MANUFACTURING

TECHNICAL DATA SHEET

PRODUCT DESCRIPTION

PolyStar TAC-50 is a two-component, slow-curing, low-odor polyaspartic coating system designed for decorative yet durable applications on commercial and industrial floors. Utilizing aliphatic chemistry, PolyStar TAC-50 is color-stable and resistant to UV-induced color changes, unlike other coatings like epoxies. With a 1:1 mix ratio, it offers a sufficient pot life for rolling, brushing, or spraying. It also features a versatile application window, allowing it to be applied in low temperatures and high humidity.

SAFETY MEASURES

Prioritizing safety during the handling of our product is paramount. To prevent skin contact, as some individuals may exhibit allergic reactions to the materials used, we strongly advocate the use of protective gloves, eyewear, appropriate attire, and ensuring proper ventilation. For comprehensive insights and guidance on the safe handling, storage, and disposal of chemical products, we urge you to consult the latest Safety Data Sheet (SDS) for Polystar TAC-50. This resource contains essential physical, ecological, toxicological, and other safety-related data.

— KEEP OUT OF REACH OF CHILDREN
— KEEP FROM FREEZING CONDITIONS
— INTENDED FOR INDUSTRIAL USE ONLY

Disclaimer: Our recommendations and information pertaining to the application and utilization of our products are based on our extensive knowledge and experience, provided in utmost good faith. Nevertheless, the actual variances in materials, differences in substrates, and on-site conditions may have implications on the product's performance. Consequently, no warranty or liability can be inferred from this information or any recommendations. Users bear the responsibility of conducting their product testing tailored to their specific application and purpose. We strongly emphasize respecting the proprietary rights of third parties. All orders are subject to our prevailing terms of sale and delivery. For the most recent local product Technical Data Sheet related to the specific product, please don't hesitate to request it.

ADVANTAGES

- Lower odor than most polyaspartics
- Cures at temperatures just above freezing
- Can be applied below -20°F (-28.9°C). Will cure with special handling

Excellent UV resistance, non yellowing and high gloss characteristics

- Excellent color stability
- Achieve a variety of colors, patterns, and logos, using decorative flakes, particles, or signs
- Excellent abrasion and impact resistance
- Available in low VOC and also in zero VOC formulation for restricted areas such as Southern California
- Micro media traction agents can be introduced into the liquid system or dispersed into the top coat
- Excellent chemical resistance, resistant to skydrol
- Resistant to hot tire peel
- Excellent coefficient of friction properties
- High build capability in lifts of 16-18 mils maximum
- Can be matted with a matting agent
- Bonds to virtually all substrates of any dimension,including metals, concrete, and fiberglass Tolerant to 300°F (149°C) for random, incidental heat contact
- VOC compliant in all 50 States and Canada

APPLICATIONS

- Marine protection for fiberglass, steel, concrete or wood
- UV-stable topcoat
- Aircraft hangar floors
- Low temperature equipment
- Maintenance facilities
- Offshore platforms
- Industrial shop floors
- Car washes or wash bays
- Secondary Containment
- Cooling towers
- Bridges
- Wastewater treatment applications

TECHNICAL DATA

Properties	Data	
Packaging	2 US gal (7.57 L) or 10 US gal (37.8 L)	
Color	Upon request	
Recommended thickness	**Primer**	**Finish Coat**
	8-12 mils	- Over solid color : 8-12 mils - Over vinyl chips : 16-18 mils
Shelf life	12 months in original unopened factory sealed containers. Keep away from extreme cold, heat or moisture. Keep out of direct sunlight and away from fire hazards.	
Mix ratio, by volume	A:B = 1:1	
Mix ratio, by weight	A:B = 100:105	
Working time	30 minutes @ 70°F (21°C)	

Revision: 05-21-24

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PROPERTIES

@ 73°F (23°C) AND 50% R.H.

Properties Solids	Data		
	Part A	Part B	Mix
content, by volume - clear	98%	77%	85%
Solids content, by weight - clear	98%	77%	83%
Density (kg/l)	1.06	1.10	1.08
Thinner recommended	Xylene		
Drying times			
Tack-free	4 hours		
Recoat time	4 - 6 hours		
Foot traffic	4 - 6 hours		
Heavy equipment traffic	48 hours		
Full cure	4 - 7 days		
Abrasion resistance, astm d4060 taber abraser cs-17 wheel / 1000g (2.2 Lbs) / 1000 cycles	25 mg loss		
Adhesion, astm d4541	Concrete-primer : > 550 psi (substrate ruptures)		
Water absorption, astm d570	0.2 %		
Water vapour transmission, astm e96	Water procedure B Film 0.01cm (0.004") : 1 perm		
Hardness (shore d), astm d2240	50-55		
Flexibility, 1/8" mandrel, astm d1737	Pass		
Falling sand abrasion resistance (l sand/ 1 dry mil), astm d968	N/A		
Viscosity @ 77°f (25°c)	Part A	Part B	Mix
	800-1000 CPS	150 - 300 CPS	400 - 600 CPS
Gloss, astm d523	95+		
Fire rating can/ulc s102	Estimated on similar coating		
Flame spread	N/A		
Smoke developed	N/A		
Tensile strength, astm d638	6500-7500 psi		
Compressive strength (psi mpa), astm d695	9500		
*W/quartz	13700		
*W/chips	12200		
Elongation at break, astm d638	100%		
Tear strength (pli), astm d2240	350		
Voc	121.8 g/L		

*Times are approximate and will be influenced by ambient conditions, particularly changes in temperature and relative humidity.
**The indicated coverage is calculated for flat surfaces. Porous or uneven surfaces will require more material to achieve the same coverage.

SURFACE PREPARATION

Old Concrete

The concrete surface must be thoroughly cleaned. Using BLASTRAC, sandblasting, a diamond grinder with 30 grit or coarser, or water blasting is highly recommended to remove surface contaminants. Any oils and fats must be removed before applying the product. Acid etching may be necessary (followed by thorough rinsing) to open the pores of the concrete to accept a primer. Do not apply to wet substrates. Check chloride, moisture, and pH levels prior to application. In almost all applications, a primer is recommended before using the product.

New Concrete

Allow the concrete to cure for at least 30 days. The concrete must have a compression resistance of at least 25 MPa (3625 lb/in²) after 28 days and a traction resistance of at least 1.5 MPa (218 lb/in²). Use BLASTRAC, sandblasting, a diamond grinder with 30 grit or coarser, or acid etching (followed by thorough rinsing) to remove the surface laitance formed during the curing process. A primer should be applied to reduce out-gassing and promote adhesion.

MIXING

For the base coat, mix part A and part B in equal parts (1:1). In a clean, dry mixing pail, combine 1 gallon of part A and 1 gallon of part B with 500 ml of the desired pigment. Stir gently to avoid over-mixing or creating a vortex that could introduce moisture. Ensure the mixture is not done below the dew point, as this will shorten the pot life. Unlike epoxy mixtures, no induction time is required before use. If media agents are to be added, incorporate them after thoroughly mixing parts A and B.

Warning: Large masses of mixed and/or heated material will have a shorter pot life. Avoid applying in direct sunlight when temperatures and humidity are high.

APPLICATION

Roller application is the recommended method. Ideally, use an 18" industrial-grade roller with a phenolic resin core and a synthetic nap or lambswool cover, with a nap length between 1/8" and 3/8". For the perimeter and hard-to-reach areas, small chip brushes or 6-8" wall edgers may be used. Avoid creating puddles.

CLEANING

Clean all application equipment with the specified cleaner. Once the material hardens, it can only be removed mechanically. If the product splatters, wash the affected area thoroughly with hot, soapy water.

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OVERLAPS

Subsequent overlaps must be applied while the primer is still wet or tacky. If the primer has dried, reapply a new coat of primer. Porous substrates may require multiple priming coats.

SUGGESTIONS

Lightly sprinkle aggregate over the primed area to enhance traction.

RESTRICTIONS

- Minimum/Maximum temperature of substrate: 42°F / 86°F (5°C / 30°C)
- Maximum relative humidity during application and curing: 85 %
- Substrate temperature must be 5.5°F (3°C) above dew point measured
- Humidity content of substrate must be < 4 % when coating is applied
- Do not apply on porous surfaces where a transfer of humidity may occur during application
- Protect from humidity, condensation and contact with water during the 24 hour initial curing period

CHEMICAL RESISTANCE

Chemical	Results (77°C/25°C)
ACETIC ACID 100%	C
ACETONE	C
AMMONIUM HYDROXIDE 50%	RC
BENZENE	C
BRINE SATURATED H20	R
H20 CHLORINATED	R
CLOROX (10%) H20	R
DIESEL FUEL	RC
GASOLINE	RC
GASOLINE / 5% MTBE	RC
GASOLINE / 5% METHANOL	RC
HYDROCHLORIC ACID 20%	R
HYDROCHLORIC ACID 10%	NR
HYDRAULIC FLUID (OIL)	RC
ISOPROPYL ALCOHOL	R
LACTIC ACID	RC
MEK	RC
METHANOL	R
METHYLENE CHLORIDE	C
MINERAL SPIRITS	RC
MOTOR OIL	R
MTBE	C
MURIATIC ACID 10%	R
NACL / H2O 10%	R
NITRIC ACID 20%	NR
PHOSPHORIC ACID 10%	R
PHOSPHORIC ACID 50%	NR
POTASSIUM HYDROXIDE 10%	R
POTASSIUM HYDROXIDE 20%	R, DIS
PROPYLENE CARBONATE	RC
SKYDROL	C
SODIUM HYDROXIDE 25%	R
SODIUM HYDROXIDE 50%	R, DIS
SODIUM HYPOCHLORITE 10%	R
SODIUM BICARBONATE	R
STEARIC ACID	R
SUGAR / H2O	R
SULFURIC ACID 10%	RC
SULFURIC ACID >50%	R
TOLUENE	C
1,1,1-TRICHLOROETHANE	R
TRISODIUM PHOSPHATE	R
VINEGAR / H2O 5%	R
H2O	RC
H2O ; 14 DAYS AT 179.6°F (82°C)	
XYLENE	

R = Recommended/ little or no visible damage

RC = Recommended conditional/ some effect, swelling or discoloration

C = Conditional/ Cracking-wash within one hour of spillage to avoid affects

NR = Not recommended

DIS = Discolorative