

# PolyGreen Solutions



*"Polymer Solutions for Sustainability"*

## Technical Data Sheet *Polyurea Aromatic 227TC*

### PRODUCT DESCRIPTION

**PAR-227TC** is a 100% solids elastomeric two-component spray applied aromatic polyurea with a silicone tail. This enables the polyurea to have superior chemical and heat resistance, lower water absorption, better abrasion resistance and improved weathering. Although aromatic the silicone tail reduces oxidation when exposed to direct sunlight. Light colors will still change but the gloss remains. **PAR-227TC** will have less algae build up and reduce marine growth compared to regular polyurea. **PAR-227TC** performs well when exposed to petroleum products such as gasoline with or without ethanol, diesel fuel with or without biofuel added, and crude oil and brine solutions. **PAR-227TC** is designed as a topcoat for **PAR-217**.

### ADVANTAGES

- Chemical Resistance - Good
- Complies with National Association of Corrosion Engineers (NACE 6A198) definition for a polyurea coating
- Complies with SCAQMD Requirements - 100% Solids
- Complies with the Polyurea Development Associations (PDA) definition of a pure polyurea coating
- Installation with or without reinforcement
- Low Temperature Flexibility
- Meets USDA Criteria
- No Primer for Carbon or Mild Steel Metals
- Odorless
- Thermal Stability - Excellent

### RECOMMENDED USES

- Beverage/Food Processing Plants
- Cold Storage Facilities
- Entertainment
- Environmental
- Gas/Oil - Primary and Secondary Containment
- Industrial/Manufacturing Facilities
- Marine
- Institutional/Medical/Pharmaceutical
- Military
- Mining/Timber
- Parking Structures
- Transportation
- Utilities
- Wildlife Enclosures

### SURFACE PREPARATION

Surface preparation is the essential first stage treatment of a substrate before the application of any coating. The performance of a coating is significantly influenced by its ability to adhere properly to the substrate material. It is generally well established that correct surface preparation is the most important factor affecting the total success of surface treatment. The presence of even small amounts of surface contaminants, oil, grease, oxides etc. can physically impair and reduce coating adhesion to the substrate.

Be sure that surfaces are clean, dry, and sound and give sufficient profile to obtain adequate product adhesion. Remove all dust, efflorescence, laitance, salts, curing compounds, dirt, oil, form release agents, and other foreign matter. Perform an adhesion test prior to starting any coating project.

Concrete should be cured for a minimum of 28 days prior to product application and have at least 3000psi compressive strength.

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### SURFACE PREPARATION REFERENCES

ASTM D4258-Standard practice for cleaning concrete  
ASTM D4259-Standard practice for abrading concrete  
ASTM D4260-Standard practice for etching concrete  
ASTM F1869-Standard test method for measuring moisture vapor emission rate of concrete  
ICRI 03732: CSP 3-5-Concrete surface preparation  
SSPC-SP 5/NACE No.1, White Metal Blast Cleaning  
SSPC-SP 6/NACE No. 3, Commercial Blast Cleaning  
SSPC-SP 7/NACE No. 4, Brush-Off Blast Cleaning  
SSPC-SP 8, Pickling  
SSPC-SP 10/NACE No.2, Near-White Blast Cleaning  
SSPC-SP 11, Power Tool Cleaning to Bare Metal  
SSPC-SP 12/NACE No. 5, Surface Preparation and Cleaning of Metals by Water Jetting prior to Recoating  
SSPC-SP 13/NACE No. 6, Surface Preparation of Concrete  
SSPC-SP 14/NACE No. 8, Industrial Blast Cleaning

### CONCRETE REPAIR

If the concrete surface is unsuitable for coating, use a suitable primer or suitable primer with sand as a repair agent. Once the repair has cured, prime the entire surface intended for coating. Consult PolyGreen or your Sales Agent for selecting the best primer for your substrate.

### COLOR

Black and Neutral - Non Standard colors and color packs are available upon request. Add color to Part-B only.

Aromatic polyureas are known to yellow or darken in color when exposed to UV and/or sunlight. If a top coat is required it must be applied within six (6) hours of application with an aliphatic polyurea, polyurethane, or other suitable coating.

### COVERAGE RATE

1 gallon (3.79 liters) of **PAR-227TC** will cover approximately 1600 square feet 1 mil (0.025mm) thick, and can be applied in one or more passes to achieve a desired thickness.

### PACKAGING

52 gallons Part-A (Isocyanate) and 52 gallons Part-B (Resin) packaged in 55 gallon drums.

### MIXING PROCEDURES

Do not Dilute **PAR-227TC** under any circumstances.

Adequately blend **PAR-227TC** Part-B (Resin) with air driven power tools until the mixture and color is consistent.

### STORAGE

**PAR-227TC** has a shelf life of 1 year shelf life from the date of manufacture, in factory-sealed containers.

Storage temperature for Part-A and Part-B is between 59°F - 77°F (15°C - 25°C), avoid freezing temperatures.

Keep containers sealed tightly to eliminate any condensation, moisture, or water contamination in Part-A or Part-B.

## APPLICATION

Primer is recommended on all substrates. Except on properly prepared steel (immersion service requires a primer).

Prior to application: Precondition both Part-A and Part-B to 75°F - 80°F (24°C - 27°C) before applying.

Surface temperature should be between 40-100°F. Insure that the outside temperature is at least 5°F (-15°C) above the dew point.

Fit Part-A with a desiccant drying device.

Apply **PAR-227TC** using a plural component, high pressure 1:1 ratio heated, spray equipment.

Proportioner Conditions:

- Capacity minimum 20 lbs. per minute
- Static pressure 2200 – 2400psi
- Spraying pressure 2000psi minimum
- Pressure balance 100 variance desirable
- 300 psi variance maximum
- Temperatures preheaters & hose 150-160°F each

**PAR-227TC** should be sprayed in a smooth pattern, to establish uniform thickness and appearance.

Perform a substrate adhesion test (if required) seven days after application of **PAR-227TC**.

## EQUIPMENT CLEAN UP

Immediately clean equipment with an environmentally safe solvent, as permitted by local regulations. Cured or dried material may be removed by mechanical means.

## SPECIFICATION AND FIELD ASSISTANCE

Contact PolyGreen Solutions for specification assistance.

Jobsite visits by PolyGreen Solutions employees or its independent agents are for the purpose of making recommendations only and can not provide analysis of architectural specifications, management or quality control on the project.

## LIMITATIONS

The end user should check the suitability of this product prior to its application.

Excess moisture vapor in concrete slabs may result in primer and/or coating to delaminate, discolor or cause improper curing.

Recoat **PAR-227** within 0 – 6 hours of previous coat.

Do not open until ready to use.

PolyGreen Solutions assumes no liability for substrate defects.

Substrates that have previously been coated are subject to absorption, which may affect the adhesion of a new coating.

Surface temperature should be between 40-100°F and at least 5°F (-15°C) above the dew point.

High temperatures and humidity can significantly affect pot life and the cure time.

Low temperatures and humidity can extend the cure time.  
Not UV Stable will discolor; however retain gloss.

## TECHNICAL DATA

MIX RATIO BY VOLUME.....	1A:1B
POT LIFE @ 150°F (66°C).....	4 SECONDS
TACK FREE TIME (DEPENDS ON THICKNESS & SUBSTRATE TEMPERATURE).....	7-10 SECONDS
RECOAT TIME.....	0 - 6 HOURS
DENSITY (SIDE A & B COMBINED).....	1.078 LBS/GAL
VISCOSITY AT 75°F (24°C), BROOKFIELD:	
PART-A.....	800–1200 CPS
PART-B.....	300–600 CPS
SHORE HARDNESS, ASTM D-785.....	75 D
TENSILE, ASTM D-412.....	6800 PSI
ELONGATION, ASTM D-412.....	*350-600%
TEAR, ASTM D-624.....	*360-690 PLI
GEL TIME.....	*15-180 SEC
APPEARANCE.....	CLEAR/AMBER
RETURN TO SERVICE: FOOT TRAFFIC.....	*1 HOURS
RETURN TO SERVICE: FULL SERVICE.....	*6-24 HOURS
TABER ABRASION RESISTANCE, ASTM D-4060 (C17 WHEEL, 1000 CYCLES, 1 KG LOAD) (MAXIMUM).....	
<50 MG LOSS	
WATER ABSORPTION, ASTM D-570 (MAXIMUM 23°C, 24 HOURS).....	
0.25%	
IMPACT RESISTANCE @ 25°C (ASTM D-2794).....	
PASSED	
PULL-OFF STRENGTH (MINIMUM), ASTM D-4541	
INTER-COAT ADHESION (WITHIN RECOAT TIME).....	
EXCELLENT	
LINEAL SHRINKAGE.....	
1 - 2%	
FLEX MODULUS, ASTM D-790.....	
400K PSI	
TOTAL SOLIDS BY WEIGHT, ASTM D-2369.....	
100%	
TOTAL SOLIDS BY VOLUME, ASTM D-2369.....	
100%	
BOND STRENGTH, ASTM D4541	
CONCRETE, NOT PRIMED.....	
300 PSI; EXCELLENT BONDING	
STEEL, NOT PRIMED.....	
1000 PSI; EXCELLENT BONDING	
COMPOSITE LAMINATE.....	
1000 PSI; SATURATED, EXCELLENT BONDING	

NOTE: PHYSICAL PROPERTIES MAY VARY ON THE TYPE OF SPRAY EQUIPMENT USED.  
THE END USER SHOULD CHECK THE SUITABILITY OF THIS PRODUCT PRIOR TO ITS USE.  
\*VALUES RANGE RELATIVE TO GEL TIME FORMULATION

CHEMICAL RESISTANCE ASTM D-3912  
21 DAY IMMERSION @ 77°F (25°C)

R - RECOMMENDED (NO DAMAGE)  
C - CAUTION (SOME SWELLING, DISCOLORATION, OR CRACKING)  
N- NOT RECOMMENDED

ACETIC ACID 60% - R	METHANOL - R
ACETIC ACID 25% - R	MINERAL SPIRITS - R
ACETONE - R	MOTOR OIL - R
BLEACH - R	MURATIC ACID 10% - R
DEISEL FUEL - R	PHOSPORIC ACID 50% - R
GASOLINE 5%MTBE - R	POTASIAM HYDROX.10%- R
GASOLINE 5% METHENOL - R	TOLUENE - C
HYDROCHLORIC ACID 25% - R	SODIUM HYDROX. 25% - R
HYDROFLUORIC ACID 10% - R	SULFURIC ACID 30% -R
HYDRAULIC FLUID – R	TOLUENE - R
MEK - R	TRISODIUM PHOSPHATE -R

