

**POLY85 SYSTEM – EXTREME HEAT: HI-PERFORMANCE POLYASPARTIC**

**TECHNICAL DATA SHEET (TDS)**

**Description**

Vital Coat **Poly85 Extreme Heat Polyaspartic System** clear coat is an aliphatic, two-component, slow curing, low odor, polyaspartic coating system. It is designed as a decorative, durable coating for commercial and industrial flooring and as a top coat and over flake broadcast systems. The Poly85 System is color and UV stable. It is mixed with a crosslinker at a 1 Part A to 1 Part B (1A:1B) mix ratio. The Poly85 System has an extended pot life that will provide an ample application window and can be applied in higher temperatures and higher humidity. It can be applied by roller, brushed or sprayed

**Primary Applications**

Vital Coat **Poly85 Extreme Heat System** is an excellent choice for many applications.

- Floor Chip System Top Coat
- UV-Stable Top Coat
- Maintenance Facilities
- Garages
- Car Washes or Wash Bays
- Patios & Pool Decks
- Warehouse floors
- Healthcare and medical offices
- Aircraft Hangers
- Show Room Floors

**Features/Benefits**

- Formulated to bond with matched base coat.
- UV Stable, Non-Yellowing
- Achieve a Variety of Colors, Patterns & Logos using Decorative Flakes or Signs.
- Resistant to hot tire peel
- VOC compliant in all 50 States and Canada
- Densely crosslinks to form a durable, chemical, abrasion & impact resistant surface.
- Bonds to Many Types of Substrates

**Technical Information**

Property	Result
Mix Ratio, By Volume	1A:1B = 1:1
Mix Ratio, By Weight	A:B = 100:110
Volume Solids % By Weight	Part A:100% - Part B: 69%
Density (KG/L)	Part A:1.06 - Part B: 1.15 - Mixed: 1.11
VOC Content	100 g/L

Flash Point	>212°F
Dilution	10% Max Recommended – Butyl Acetate Can be increased to accommodate spray operations. Xylene can be used if Butyl Acetate is unavailable but will negatively impact the shelf life. Use it immediately.

## System Properties

Property	Result
Abrasion resistance, ASTM D4060 Taber wheel/1000G (2.2LBS) / 1000 Cycles	25 mg loss CS17 Wheel 1 kg per 1000 cycles
Flexibility 1/8" Mandrel - ASTM D1737	Pass
Viscosity @ 77°F (25°C)	Mix: 90 KU
Adhesion (ASTM D3359)	5B-0% Failure
Gloss, ASTM D523	95+ Gloss
Steam Resistance	Pass (Steam Sweep)
Dry Heat Resistance	Pass to 140°F
Wet Heat Resistance	Pass to 140°F
Compressive Strength	Not Tested
Tear Strength (PLI), ASTM D2240	3600

*Note\* Times are approximate and will be affected by changing ambient conditions, especially changes in temperature and relative humidity. High temp or humidity cause faster cure.*

## Packaging

This product is available in 5 US Gal. Individual Component Pails or 10 US gal (56.7L) Kit

*Note\* The indicated coverage is calculated for flat surfaces. A porous surface will require more material in order to cover the same area.*

## Storage/Shelf Life

Store in a cool, dry, well-ventilated area. Keep containers tightly closed and store away from heat, sparks, open flame or oxidizing materials. Extended storage at excessive temperatures may produce odorous and toxic fumes from product decomposition.

This product has a shelf life of up to one year in its original, sealed, unopened container. If product appears to be hardened or separated contact NxTech before use. Keep away from extreme cold, heat or moisture. Keep out of direct sunlight and away from fire hazards.

Storage Temperature Min/Max 35°- 100°F

## Directions for Use

### Surface Preparation:

**General:** Surfaces must be dry, structurally sound, free of dust, dirt, and all other contaminants and can readily accept water.

Sound Concrete and replace areas that are failing due to poor placement or extensive environmental abuse. Cracks and joints should always be treated as moving, with the possibility they will continue moving after the coating is placed. Expansion joints must always be honored since they allow movement in the slab. Holes and divots in the surface should be filled with **Vital Coat's Mender81 Crack Repair**. Semi-rigid joint fillers may be applied in control joints prior to application of the coating, but if excessive movement occurs, a crack will form in the surface of the coating along the joint. Flexible joint sealants should only be applied after the coating is completed and cured. Expectations should be set with the client prior to commencement of the project so they understand that the coating, when bonded properly, will move as the concrete substrate does.

Concrete surface must be clean, sand blasting, diamond grinder w//30 grit or coarse, or water blasting is highly recommended to remove surface contaminants. Any oils or fats must be removed prior to product application. Do not apply to wet substrates. Chloride, moisture, and pH levels should be checked prior to application.

**Old Concrete** – Concrete surface must be clean, sand blasting, diamond grinder w//30 grit or coarse, or water blasting is highly recommended to remove surface contaminants. Any oils or fats must be removed prior to product application. Acid etching may be required (followed by a thorough rinsing) to open the pores of the concrete to accept a primer. Do not apply to wet substrates. Chloride, moisture, and pH levels should be checked prior to application. It is not recommended to apply the Poly85 Extreme Heat Polyaspartic Top Coat System directly on to concrete. An application of a primer or Vital Coat SuperBase Extreme Heat Base Coat System recommended prior to use of the Poly85 system.

**New Concrete** – The concrete should be allowed to cure for a minimum of 30 days. Sand blasting, diamond grinder w/30 grit or coarser or acid etching (followed by a thorough rinsing) is required to remove the surface laitance that appeared during the curing process. It is not recommended to apply the Poly85 Extreme Heat Polyaspartic Top Coat System directly on to concrete. An application of a primer or Vital Coat SuperBase Extreme Heat Base Coat System is required prior to use of the Poly85 system.

**Note:** Any oils or fats must be removed prior to product application. Do not apply to wet substrates. Chloride, moisture, and pH levels should be checked prior to application.

**Vinyl Chips or Flakes** – Ensure installed base coat and broadcast chips or flakes have cured sufficiently. Remove all loose flakes by buffer, or scraping method followed by vacuum before Poly85 Extreme Heat Polyaspartic Top Coat System application.

### Mixing:

The amount of material mixed should only be what can be utilized within the listed pot life of the product. Each component should be mixed thoroughly with individual tools, part B may be shaken in lieu of mixing. The Poly85 Extreme Heat System is to be mixed at a ratio of 1 parts A to 1 part B (1:1) in clean mixing containers. Pour the correct ratio in and mechanically mix for 2 minutes using a Jiffy-style mixer.

Optimal Conditions at Application	
Ambient Temperature	80°F & Above*
Surface Temperature	82°-95°F*
Liquid Temperature	45°-95°F*

Polyaspartic Top Coat Pot Life Test	
All Sizes Tested	Pot life in excess of 1 hour
Max Core Temperature	110°F
Laser External Temperature	107°F

#### Pot Life Test Results:

- Unusable pot life is defined as drawing a line across the surface of the curing product. If it flows back, that is a PASS, if it does not flow, that is a FAIL.
- A Laser temperature sensor was shot on top of the product surface to obtain surface temperatures. A probe was sunk into the interior of the curing product to obtain max core temperatures.
- All samples were measured by weight, and mixed for 3 minutes.

### Application:

Mixed product may be poured onto the floor in thin ribbons then spread and back rolled. Apply with either a ¼" or 3/8" industrial grade cover or squeegee making sure the product does not puddle. Make sure to back roll in opposite direction for uniform product application. Small chip brushes or 6 - 8" wall edgers may be used along the perimeter and in more difficult to reach areas. Avoid creating puddles. Overlaps must be applied when coating is still wet or tacky. Recoat time listed in below table is directly affected by the ambient surface temperature. Apply additional coatings as early in the recoat window as possible for the best results. To reduce slip coefficient, the coating can be sprinkled with a light aggregate to provide better footing.

Coverage/Thickness	Over Solid Color	Over Flakes
Recommended Thickness	4 mils	8 mils
Coverage @ Recommended Thickness	300-350 ft²/gal	150-200 ft²/gal
Min / Max Recoat Time @ 77F 50% RH	2-8 hours	

*Note\* The indicated coverage is calculated for flat surfaces. A porous surface will require more material in order to cover the same area.*

## Curing:

Do not touch treated surface during curing. Do not add water or allow water to come in contact while curing. Protect surface from debris coming in contact with surface while drying.

Drying/Cure Times	
Pot Life (16oz)	60 minutes @ 80°F
Tack Free Time @77°F 50% RH	1-2 Hours
Min/Max Recoat Time @77°F 50% RH	2-8 Hours
Foot Traffic	2-4 Hours
Heavy Equipment Traffic	24 Hours
Full Cure	24 Hours
Dry to Touch	2 hours

*Note\* Times are approximate and will be affected by changing ambient conditions, especially changes in temperature and relative humidity. This system can be installed in cold temperatures. Curing times will be impacted and times stated should be doubled.*

## Clean-up

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

## Precautions/Limitations

- Before handling, consult the Safety Data Sheet and Container Labels for physical and health hazard information.
- Maximum relative humidity during application and curing: 85%
- Substrate temperature must be 5.5 degrees F 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			
Acetone	D	Nitric Acid 20%	NR
Ammonium Hydroxide 50%	D	Phosphoric Acid 10%	E
Water Chlorinated	E	Phosphoric Acid 50%	NR
Clorox (10%) Water	E	Skydrol	D
Diesel Fuel	D	Sodium Hydroxide 25%	E
Gasoline	D	Sugar Water	E

Hydrochloric Acid 20%	D	Sulfuric Acid 10%	E
Isopropyl Alcohol	E	Sulfuric Acid >50%	NR
MEK	NR	Sugar Water	E
Methanol	E	Sulfuric Acid 10%	E
Motor Oil	E	Sulfuric Acid >50%	NR
Muriatic Acid 10%	E	Vinegar/Water 5%	E
Xylene	D	Water	E

**E** = Excellent

**D** = Discolors

**NR** = Not Recommended

## Health and Safety

Always wear proper safety equipment to protect eyes and skin. Keep a neat, clean mixing area to avoid potential safety issues. Make sure to read and understand all SDS sheets and become familiar with all application procedures and best practices. Recommended for use by professionals only! In case of skin contact, wash with water and soap. In case of eye contact, immediately rinse with water for at least 15 minutes. Consult with a doctor. For respiratory problems, transport victim to fresh air. Remove contaminated clothes and clean before reuse. For more information, consult the material safety data sheet.

Components A and B contain toxic ingredients. Prolonged contact of this product with the skin is susceptible to provoke an irritation. Avoid eye contact. Contact with may cause serious burns. Avoid breathing vapors release from this product. This product is a strong sensitizer. Wear safety glasses and chemical resistant gloves. A breathing apparatus filtering organic vapors approved by the NIOSH/MSHA is recommended. Predict suitable ventilation

## Important Notice

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**Revisions:**

