

# POLYUREA 5100

## PRODUCT DESCRIPTION AND USE

Polyurea 5100 is a 100% solids, two component, aliphatic polyurea/polyaspartic hybrid. Unique new resin chemistry has provided the raw materials to formulate this coating that gives the desirable properties of polyester-polyurethane materials with virtually no odor and less film thickness limitations. Polyurea 5100 is a low viscosity, solvent free, easy to handle product that gives very high gloss finishes that are both hard and abrasion resistant. This material releases soil easily and has excellent resistance to a broad range of chemicals. Unlike conventional polyurea materials, Polyurea 5100 has enough work time to be applied by brush and roller. It is available in both a regular cure and a fast cure version for use in rapid turnaround projects. The fast cure material may be used at temperatures as low as 20°F. For exterior applications, a UV stabilizer package is incorporated to ensure long-term gloss retention and resistance to yellowing.

Polyurea 5100 was developed as a high performance top coat in various protective coatings and seamless flooring applications. Because its solvent free, it may be applied heavier in one coat than conventional solvent or water-based polyurethanes. Applications that required two or more top coats can now be done in a single application resulting in savings of both time and labor. Polyurea 5100 is ideally suited for use as a finish coat in color chip and color quartz flooring, automotive repair facilities, aircraft hangars, clean rooms and various types of decorative architectural concrete applications.

### **Chemical Composition**

Hydroxyl functional polyaspartic and amine crosslinked with aliphatic isocyanate.

### **Colors**

Available in clear only.

### **Limitations**

- Do not use on unprimed substrates.
- Do not allow to puddle. Film thickness must not exceed 16 mils.

## TECHNICAL DATA

### **Physical Properties**

Mixing Ratio, by Volume .....	1-1
Solids Content, by Weight .....	100%
V.O.C. ....	5 gms/ltr.
Viscosity, cps (77 degrees) .....	500
Pot Life, Regular Cure (77 degrees, 25% R.H.) .....	40 minutes
Pot Life, Fast Cure (77 degrees, 25% R.H.) .....	20 minutes
Pot Life is reduced by increasing humidity and/or temperature.	

### WARRANTY INFORMATION

Arizona Polymer Flooring guarantees that this product is free from manufacturing defects and complies with our published specifications. In the event that the buyer proves that the goods received do not conform to these specifications or were defectively manufactured, the buyer's remedies shall be limited to either the return of the goods and repayment of the purchase price or replacement of the defective material at the option of the seller. ARIZONA POLYMER FLOORING MAKES NO OTHER WARRANTY, EXPRESSED OR IMPLIED, AND ALL WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY DISCLAIMED. Arizona Polymer Flooring shall not be liable for damages caused by application of its products over concrete with excessive moisture vapor transmission or alkalinity. Arizona Polymer Flooring shall not be liable for any injury incurred in a slip and fall accident. Manufacturer or seller shall not be liable for prospective profits or consequential damages resulting from the use of this product.

### **HIGH PERFORMANCE CONCRETE COATING SYSTEM**

**Physical Properties (Cont'd.)**

Dry Times., Regular Cure Material (77 degrees, 25% R.H)

- Dry to Touch..... 3 hours
- Light Traffic..... 12 hours
- Vehicle Traffic.....5 days
- Full Chemical Resistance.....7 days

Dry Times., Fast Cure Material (77 degrees, 25% R.H.)

- Dry to Touch..... 2 hours
- Light Traffic..... 6 hours
- Vehicle Traffic..... 24 hours
- Full Chemical Resistance..... 72 hours

Dry Times., Fast Cure Material (30 degrees, 25% R.H.)

- Dry to Touch..... 3 hours
- Light Traffic..... 9 hours
- Vehicle Traffic..... 48 hours
- Full Chemical Resistance..... 72 hours

**Performance Properties**

- Gloss (60 degrees) ..... 95
- Hardness (Pendulum)..... 172
- Tabor Abrasion (1000 gm. load 1,000 cycles, CS17 wheel) .....36 mg loss

**CHEMICAL AND STAIN RESISTANCE (ASTM D-1308 24 HOUR IMMERSION)**

- Urine ..... no effect
- Blood..... no effect
- Whiskey ..... no effect
- Black Ink..... no effect
- Brake Fluid..... no effect
- Gasoline..... no effect
- Skydrol B-4 ..... no effect
- Hydraulic Fluid #83282..... no effect
- Mineral Spirits ..... no effect
- Xylene ..... no effect
- MEK .....film softened
- 50% Sodium Hydroxide ..... no effect
- 25% Hydrochloric Acid ..... no effect
- 25% Sulphuric Acid ..... no effect
- 25% Acetic Acid..... no effect
- 25% Nitric Acid .....film blistered

**GENERAL INFORMATION**

**Moisture Vapor Emissions Precautions**

All interior concrete floors not poured over an effective moisture vapor retarder are subject to possible moisture vapor transmission that may lead to blistering and failure of the coating system. It is the coating applicator's responsibility to conduct calcium chloride and relative humidity probe testing to determine if excessive levels of vapor emissions are present before applying any coatings. APF can supply moisture remediation products. Consult our technical service department. Arizona Polymer Flooring and its sales agents will not be responsible for coating failures due to undetected moisture vapor emissions.

### **Surface Preparation**

Polyurea 5100 is intended to be applied over primed or previously coated surfaces. Do not apply directly to concrete. Surface must be absolutely clean, dry and free from all dirt, wax, oil, chalk, incompatible paint or detergent film. Fully cured, previously coated surfaces, must be cleaned and sanded lightly with 80-100 grit sandpaper or otherwise mechanically abraded before recoating. If multiple coats of Polyurea 5100 are applied, apply additional coats as soon as possible. If more than 12 hours has elapsed or the coating cannot be indented with a fingernail, abrade surface with 80-100 grit sandpaper or screen to ensure intercoat adhesion.

### **Mixing Instructions**

The material is supplied in pre-measured kits for easy proportioning. Add the entire contents of the Part B container to the Part A. **The mixing ratio is 1 Parts A to 1 Parts B by volume. Mix for 1 full minute using a slow speed drill, scraping the bottom and sides of the mixing container.** Mix only that amount which can be applied within 40 minutes for the regular cure material and 20 minutes for the fast cure.

### **Application Recommendations**

Polyurea 5100 is a very reactive material and requires special application techniques. It may be brushed, rolled or sprayed using plural component spray equipment. Easy application is accomplished by pouring the freshly mixed product on the floor, spreading to the desired thickness with a flat trowel or rubber squeegee, and finish rolling immediately with a ½ inch roller. The mechanic rolling the material should wear spiked shoes to walk on the wet material. If using the fast cure material, the best application technique is using an 18 inch roller and working out of a roller pan. Because the material sets quickly, change roller covers every hour.

Application of the material must be done immediately after mixing. On large jobs, be sure to have enough mechanics to keep a wet edge. Application rate should be kept above 100 sq. ft. per gallon (16 mils). **Thicker films may cause CO<sub>2</sub> bubbles. If allowed to puddle, CO<sub>2</sub> bubbles will appear as frosted areas.**

### **Handling Precautions**

Use only with adequate ventilation/or a cartridge type respirator designed to be used for isocyanates. Avoid contact with skin, wear protective gloves. **Read Material Safety Data Sheet before using.**

### **Slip and Fall Precautions**

OSHA and the American Disabilities Act (ADA) have now set enforceable standards for slip-resistance on pedestrian surfaces. The current coefficient of friction required by ADA is .6 on level surfaces and .8 on ramps. Arizona Polymer Flooring recommends the use of angular slip-resistant aggregate in all coatings or flooring systems that may be exposed to wet, oily or greasy conditions. It is the contractor and end users' responsibility to provide a flooring system that meets current safety standards. Arizona Polymer Flooring or its sales agents will not be responsible for injury incurred in a slip and fall accident.