

# CrownSeal™ CRU

## TECHNICAL DATA SHEET Product Number: 8110

Chemical Resistant Urethane Aliphatic Polyester Polyurethane Clear, Satin and Pigmented Finish Coat

### DESCRIPTION

**CrownSeal CRU No. 8110** is a two-component abrasion, chemical and stain resistant, UV stable aliphatic polyester polyurethane finish coat. It is available in clear gloss, clear satin and can be pigmented with Crown Polyurethane PigmentPacks™. It is VOC Compliant in all states and provinces in North America. It cures to an inert, tough, impact, abrasion and chemical resistant finish coat. It is resistant to Skydrol, betadine and conventional hot-tire staining. Excellent adhesion to Crown Polymers epoxy system. It requires a primer, CrownSeal Polyurethane Hybrid No. 8105 Polyurethane-Acrylic Primer and Concrete Sealer, when it is applied to properly prepared concrete and cementitious overlays. It is used as an upgraded finish coat on Crown Polymers products and systems used in aircraft hangars, industrial kitchens, automotive showrooms and shop floors, commercial laboratories and research facilities, hospital and health care, wine and spirit processing and other facilities subjected to heavy foot traffic, fork lift traffic and chemical attack.

### TYPICAL USES

- Aircraft Hangar and Maintenance Floors
- Automotive Show Room and Repair Floors
- Commercial Bakery and Kitchen Floors
- Hospital and Health Care Facility Floors
- Laboratory and Research Floors
- Manufacturing and Warehouse Floors
- Pharmaceutical Floors

### BENEFITS

- Complies with USDA, FDA, Food Safety Modernization Act. **See Crown Polymers Technical Bulletin: No. 3 Food and Beverage Compliance.**
- Slip Resistance (ADA). **See Crown Polymers Technical Bulletin: No. 4 Coefficient of Friction.**
- LEED® and Green Seal® requirements. **See Crown Polymers Technical Bulletin: No. 5 LEED and Green Seal Information.**
- VOC and EPA Compliant in all states and provinces in North America. Cures to an inert finish. **See Crown Polymers Technical Bulletin: No. 2 VOC Compliance.**
- Strong and Tough Floor
- Excellent Chemical and Abrasion Resistance
- Designed for new concrete and for sealing old concrete

### LIMITATIONS

- This product is best suited for applications in temperatures between 60°F to 90°F (16°C to 32°C). Do not apply when Relative Humidity exceeds 85%. **See Crown Polymers Technical Bulletin: No. 7 Temperature and Relative Humidity Limits**
- CrownSeal CRU Clear Satin finish coat will not appear “satin” unless it is applied over CrownSeal CRU Clear Gloss or CrownSeal CRU Pigmented finish coat.

### COLORS

Available in standard colors by adding CrownPigment SB (solvent borne) Polyurethane PigmentPacks Series No. 6700 available in 15 standard colors. \*See **Crown Polymers Standard Color Guide Acrylics, Epoxies, Polyaspartics, Polyurethanes (PigmentPack).**

### COVERAGE RATE PER GALLON

- Clear Gloss and Pigmented Finish Coat: 300 to 350 sq. ft. (27.9 to 32.5 sq. m.) WFT 4.6 to 5.3 mils (0.12 to 0.13 mm)
- Clear Satin Finish Coat: 400 to 450 sq. ft. (37.2 to 41.8 sq. m.) WFT 4 to 3.6 mils (0.10 to 0.9 mm)

### CONCRETE

Concrete must be structurally sound and free of curing agents, coatings, sealers, densifiers and other bond breakers.

#### New Concrete:

- Place concrete per ACI 302.2R Guide for Concrete Slabs that Receive Moisture-Sensitive Floor Materials.
- Water Cement Ratio 0.4 to 0.5, and an approximate 4,000 psi (28 MPa) strength level.
- Requiring a positive side moisture barrier in direct contact with the concrete meeting ASTM E1745 Standard Specification for Plastic Water Retarders Used in Contact with Soil or Granular Fill under Concrete Slabs.
- The moisture barrier needs to be placed per ASTM E1643 Standard Practice for Selection, Design, Installation of Water Vapor Retarders Used in Contact with Earth or Granular Fill Under Concrete Slabs, Class A 15 mils (0.38mm)

### Existing Concrete:

If field tests or laboratory analysis reveals interior concrete flooring slabs containing contaminants from previously applied unreacted silicate materials that will interfere with the bond, use CrownPrime WBC No. 8201. **See Crown Polymers Technical Bulletin: No. 20 Selecting a Primer.**

- Contaminants include, but are not limited to organic hydrocarbon materials, calcium chlorides and aluminum stearates.
- Concrete flooring slabs can lose their structural strength over time, caused by conditions beyond the control of the flooring manufacturer or the installation contractor.
- If the concrete substrate deteriorates sufficiently, it will no longer support the bond of the remediation floor system.

Such conditions are detailed in ACI 201.2R “Guide to Durable Concrete” published by the American Concrete Institute. **See Crown Polymers Technical Bulletin: No. 1 Concrete Surface Preparation.**

### CHEMICAL RESISTANCE DATA

**See Crown Polymers Technical Bulletin: No. 9 Chemical Resistance Guidelines and Chart.**

### CHECK CONCRETE MOISTURE

Concrete must be dry before application of this floor coating material. Concrete moisture tests are required, either ASTM F1869 (calcium chloride) or ASTM F2170 (in situ RH probe). Refer to appropriate Technical Data Sheet limits and **Crown Polymers Technical Bulletin: No. 6 Moisture Mitigation Negative Side Moisture Barrier.**

### CHECK TEMPERATURE AND HUMIDITY

Floor and material temperature must be at or above the published Technical Data Sheet requirements. Dew point must be 5°F (3°C) or more below the surface temperature. Do not apply if humidity is at or above 85%. **See Crown Polymers Technical Bulletin: No. 7 Temperature and Relative Humidity Limits.**

### SURFACE PREPARATION

Surface preparation in accordance with: ICRI Guideline No. 310.2R Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings, Polymer Overlays, and Concrete Repair. The pH of the concrete substrate should be at 9 or above. All bond-breaking material must be removed. **See Crown Polymers Technical Bulletin: No. 1 Concrete Surface Preparation.**

### APPLICATION EQUIPMENT

Depending on system applied: Variable low speed drill (450 rpm) with Jiffy® type impeller mixing paddle, disposable 3” brush for cutting in, 3/8 inch nap non-shedding phenolic core roller and rubber squeegee for spreading CrownSeal CRU No. 8110. Pour, squeegee and back-roll suggested, because Dip-n-Roll can be challenging for inexperienced installers resulting in unattractive lap lines.

### OPTIONAL ANTIMICROBIAL

The antimicrobial additive Silver® (sodium hydrogen zirconium phosphate) is a non-heavy metal biocide that can be added during the manufacturing process. (EPA Regulation Number 11631.2. and US Patent Number US 9,247,736 B2). The antimicrobial agent can be added to the top coat only for an economical application or it can be added to each step of the application, primer, body coat and top coat, which is recommended for abusive environments. **See Crown Polymers Technical Bulletin: No. 11 Understanding Silver® the Optional Antimicrobial Additive.**

### MIXING

For ease of mixing and placement, the temperature of the “A” and “B” components should be between 70°F to 80°F (20°C to 26°C). Pre-mix the “A” and “B” component to ensure all raw material and pigments are dispersed uniformly. **See Crown Polymers Technical Bulletin: No. 10 Mixing Guidelines.**

### APPLICATION

After mixing all contents as instructed, immediately pour all liquid material on to the properly prepared concrete substrate or next lift in ribbons and squeegee the material out evenly. Back-roll and cross rolling of material. Check for desired wet film thickness with a WFT Gauge. If broadcasting aggregate, such as, 60 mesh or 90 mesh, broadcast a sprinkle (not full broadcast) into the wet material. Place all steps per **Crown Polymer Installation Guidelines.**

### SKID-RESISTANCE

Skid-Resistance – Field (in situ) Wet Dynamic Coefficient of Friction (DCOF), ANSI A326.3. **See Crown Polymers Technical Bulletin: No. 12 Wet Dynamic Coefficient of Friction.**

<b>Physical Properties at 77°F (25°C) 7 Day Cure (Unless stated otherwise)</b>	
<b>VOC (Volatile Organic Compounds),</b> (VOC Calculated Per ASTM D3960)	<100 gr./lt.
<b>Viscosity, Mixed</b>	400 cps
<b>Solids Content, by Volume</b> (Clear Gloss and Clear Satin)	51.0%
<b>Solids Content, by Volume</b> (Pigmented)	54.0%
<b>Mix Density, Mixed</b>	9.2 lb./gal
<b>Pot Life, 1 gallon</b> (3.79 liters) Mass, Pot Life is Reduced by Increases in Mass & Temperature	45 Minutes
<b>Mix Ratio, by Volume</b>	2:1
<b>Minimum Application Surface Temperature</b>	50°F
<b>Dry to Touch</b> 50°F to 90°F (10°C to 32°C)	5 to 10 Hours
<b>Recoat Time</b> 50°F to 90°F (10°C to 32°C)	10 to 16 Hours
<b>Light Traffic</b> 50°F to 90°F (10°C to 32°C)	24 Hour Minimum
<b>Full Cure</b> 50°F to 90°F (10°C to 32°C)	7 to 14 Days
<b>Shelf Life</b> (shipped and stored) at 40°F to 100°F (4.4°C to 38°C)	1 Years
<b>Packaging</b> 1.5 gal, 3 gal, 15 gal. (5.7 lt, 11.4 lt., 56.8 lt.)	

<b>Mechanical Properties at 77°F (25°C) 7 Day Cure</b>	
<b>Surface Preparation ICRI Guideline No. 310.2R</b> Concrete Surface Profile (CSP 2 and above) Depending on System to be Installed and Condition of Concrete.	
<b>Gloss Index, 60 Degrees Clear Gloss, ASTM D523</b>	90 - 95
<b>Gloss Index, 60 Degrees Clear Stain, ASTM D523</b>	40 - 70
<b>Gloss Index, 60 Degrees Pigmented, ASTM D523</b>	80 - 90
<b>Adhesion, ASTM D7234, Concrete Failure</b>	>400 psi
<b>Tensile Strength, ASTM D882</b>	7,500 psi
<b>Tensile Elongation, ASTM D882</b>	10%
<b>Pencil Hardness, ASTM D3363</b>	2H
<b>Abrasion Resistance, ASTM D4060</b> 1,000 cycles, Wheel No. CS17, 1000 gr. Load	0.03 gr.
<b>Flexibility, Bend Mandrel Coating Test, ASTM D522</b>	Pass 1/8 Inch
<b>Flame Test, ASTM E648, Bonded to Concrete</b>	Class 1
<b>Flammability, ASTM D635, Bonded to Concrete</b>	Self-Extinguishing
<b>Microbial (fungi) Resistance, ASTM G21 (Without the Anti-Microbial Agent)</b>	Pass #1
<b>Wet Dynamic Coefficient of Friction, ASNI 326.3</b> Depends on texture of system selected, ranging from smooth or aggressive. Measured with BOT 3000E equipment.	>0.45 (inclines) >0.42 (level)
<b>Moisture Vapor Emission Rate, ASTM F1869*</b>	3 lbs.
<b>Moisture Relative Humidity, ASTM F2170*</b>	80% RH
*If moisture or relative humidity exceeds the limits consult the Crown Polymers representative and refer to Crown Polymers Technical Bulletin: <b>Crown Polymers Technical Bulletin: No. 6 Moisture Mitigation Negative Side Moisture Barrier</b>	

Note: Although testing is critical, it is not a guarantee against future problems. This is especially true if there is not a positive side vapor barrier or it is not functioning properly and/or concrete has contamination from oils, chemical spills, densifiers, excessive salts or other bond breakers.

## CLEAN-UP

Clean-up mixing station, tools and equipment as required. Use acetone, a VOC exempt solvent, for cleaning up. Observe all legal, and health and safety precautions when handling or storing solvents and materials, particularly in confined spaces. Make sure the working areas are well ventilated at all times during placement and curing time.

## DISPOSAL

Dispose of empty packaging and other waste in accordance with federal, state, provinces and local regulations.

## MAINTENANCE

Inspect the installed floor by spot cleaning and spot repairing the damaged or cracked areas. To prolong life of the flooring system, a daily maintenance program is highly recommended to ensure the floor is safe for its intended purposes. See **Crown Polymers Technical Bulletin: No. 8 Care and Maintenance.**

## TECHNICAL SUPPORT

For questions, contact a Crown Polymers Representative.

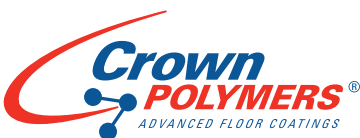
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## DISCLAIMER

All guidelines, recommendations, statements, and technical data contained herein are based on information and tests. The accuracy and completeness of such tests are not guaranteed and are not to be construed as a warranty, expressed or implied. It is the responsibility of the user to document information and tests to determine the intent of the product for ones' own use. The application, job conditions and user assumes all risks and liability resulting from use of the product. We do not suggest or guarantee any hazards listed herein are the only ones, which may exist. Neither seller nor manufacturer shall be liable to the buyer or any third person for any injury, loss or damage directly or indirectly resulting from use of, or inability to use the product. Recommendations or statements, whether in written or verbal, other than those contained herein shall not be binding upon the manufacturer, unless in writing and signed by a corporate officer of the manufacturer. Technical and application information is provided for the purpose of establishing a general profile of the material and proper application procedures. Test performance results were obtained in a controlled environment and Crown Polymers makes no claim that these tests or any other tests accurately represent all environments. Not responsible for any typographical errors.

## LIMITED WARRANTY

Crown Polymers warrants its products to be free of manufacturing defects and meets all Crown Polymers current published physical properties. Crown Polymers' sole responsibility shall be to replace the portion of any product proved to be defective. There are no other warranties by Crown Polymers of any nature whatsoever expressed or implied, including any warranty of merchantability or fitness for a particular purpose in connection with this product. Crown Polymers shall not be liable for damages of any sort, including remote or consequential damages resulting from any claimed breach of any warranty whether expressed or implied. Crown Polymers shall not be responsible for the use of this product in a manner to infringe on any patent held by others. In addition, no warranty or guarantee pertaining to appearance, color, fading, chalking, staining, shrinkage, peeling, normal wear and tear or improper application by the applicator will be issued. Damage caused by abuse, neglect and lack of proper maintenance, acts of nature and/or physical movement of the substrate or structural defects are also excluded from the limited warranty. Crown Polymers reserves the right to conduct performance tests on any material claimed to be defective prior to any repairs by owner, general contractor, or applicator.



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