

K-POL[®] 8211

High Performance Diol

K-POL 8211 is a 100% active aliphatic diol recommended for 2K PU general-purpose coatings, elastomers and adhesives. It provides improved flexibility while maintaining hardness and durability. K-POL 8211 provides low VOC systems with improved elastic modulus, mechanical strength, chemical resistance and stain resistance.

Applications



K-POL 8211 VS Polycaprolactone (PCL) Diol

	Hardness	Flexibility	Mechanical Strength	Toughness	Salt Spray Resistance	Chemical Resistance	Crack Resistance	Hot Tire Pick-up
K-POL 8211	✓	✓	✓	✓	✓	✓	✓	✓
PCL Diol	✗	✓	✗	✗	✗	✗	✗	✓

K-POL Performance

Image 1. Reverse Impact

Solventborne 2K PU acrylic clear



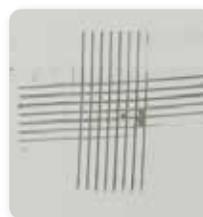
Control
(no resin modifier)



10% K-POL 8211

Image 2. Crosshatch Adhesion

2K PU pigmented - 2 mil film on ABS plastic



Control
(no resin modifier)



10% K-POL 8211

Image 3. Skydrol Resistance, 24 hours

Zero-VOC 2K PU clear floor coating



10% PCL Diol



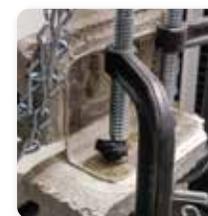
10% K-POL 8211

Image 4. Flexibility

Zero-VOC 2K PU clear floor coating



10% PCL Diol



10% K-POL 8211

Typical Properties

	Appearance	% Active	Hydroxyl # as Supplied	Viscosity 25°C (cP)	Recommended Dosage (on TRS)
K-POL® 8211	Clear Liquid	100	400	7,200	5-10%

Mechanical Properties

K-POL 8211 will provide improved mechanical strength, which will impart higher flexibility, chemical and stain resistance, and impact resistance. K-POL 8211 can improve crack bridging.

Example 1: Zero-VOC Filled Aliphatic 2K PU

	Control	PCL Diol 10%	K-POL 8211 10%	
Stress at max psi	723	742	901	Tensile load at max
Strain at max %	35	61	52	Elongation at break
Modulus psi	4,402	2,463	6,464	Stiffness

Example 2: Zero-VOC Clear Aliphatic 2K PU Floor Coating

	Control	PCL Diol 10%	K-POL 8211 10%	
Stress at max psi	1,213	573	1,585	Tensile load at max
Strain at max %	21	21	30	Elongation at break
Modulus psi	26,644	4,805	31,718	Stiffness



Low mechanical strength (low modulus/elongation) = licorice or chewing gum
Breaks or loses stiffness when stretched

High mechanical strength (high modulus/elongation) = rubber band
Maintains stiffness when stretched

Incorporation

A 5-10% K-POL 8211 modification on total resin solids (TRS) is recommended. Isocyanate level will need to be increased accordingly.

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