




# K-POL® 9437

## Urethane Diol

**K-POL 9437** is a water soluble, aliphatic, low molecular weight urethane diol. This 100% solids, low viscosity resin is recommended as a modifier for amino crosslinked water soluble and emulsified acrylic, alkyd, urethane and polyester resins. K-POL 9437 can be used as a reactive co-solvent replacement to increase solids, improve film properties and flow/leveling.

-  Allows for co-solvent and amine reduction
-  Increased hardness while maintaining flexibility
-  Improved corrosion and humidity resistance

### Modification of Polymac Clear Polyester System

**K-POL 9437** modification of Polymac polyester (right) allows for amine reduction and demonstrates several advantages including improved hardness as shown below.

#### Cure & Application Conditions

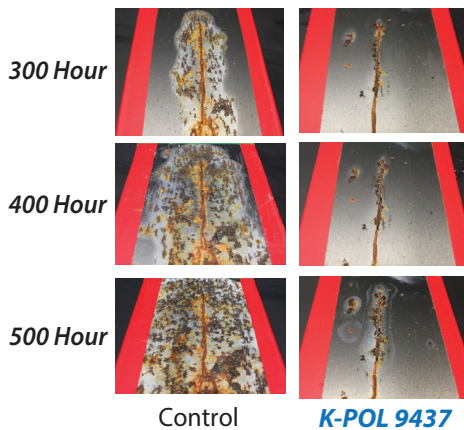
**Cure Schedule:** 15 min / 150°C

**Dry Film Thickness:** 1.0-1.2 mil

**Substrate:** Bare CRS

Film Properties	Control	K-POL 9437
Pencil Hardness	F-H	H-2H
Pendulum Cycles	85	126
Impact, in-lbs	160+	160+
Gloss 20°	94.1	97.6

#### Corrosion Resistance



Material	Description
Polymac WR 72-7203	Water Reducible Resin
Resimene 747	Crosslinker
K-POL® 9437	Urethane Diol
DISPARLON® AQ-7120	Flow/Leveling Agent
Water	Solvent
DMEA	Neutralizing Amine
NACURE® 5528	Blocked Acid Catalyst

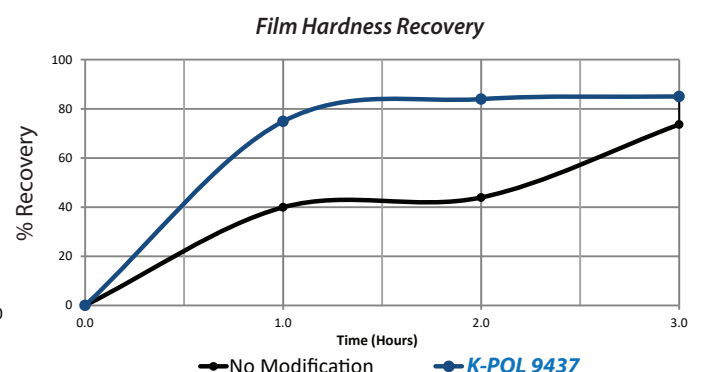
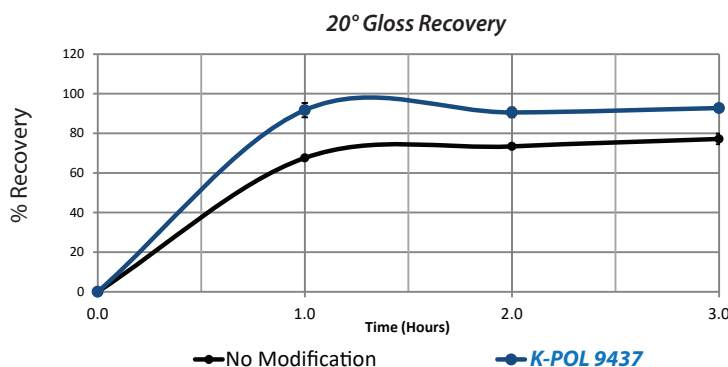
  

Characteristics	No Modification	K-POL 9437
PE / K-POL / Mel	80/0/20	62.7/8/29.3
% TRS	29.0	31.5
% DMEA on TRS	8.2	6.6

Viscosity, 25°C (cPs): 140-170; pH: 8.0-8.1

**K-POL 9437** modification provides films with superior weathering durability. Modified systems show significant improvements in corrosion resistance upon salt fog exposure (left) as well as better recovery times following humidity exposure (below).

#### Recovery After 140 Hours of Humidity Exposure

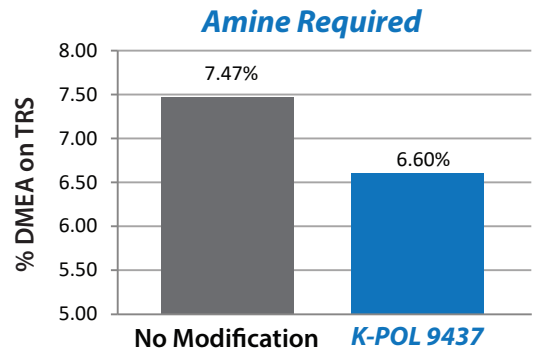


## Modification of Uradil Clear Polyester System

**K-POL 9437** modification of Uradil polyester (below) allows for amine reduction and demonstrates improved hardness with similar performance in flexibility and impact resistance.

Material	Description	
Uradil SZ253 G3Z50	Water Dilutable Resin	
HMMM	Crosslinker	
K-POL® 9437	Urethane Diol	
Water	Solvent	
DMEA	Neutralizing Amine	
Characteristics	No Modification	K-POL 9437
PE / K-POL / Mel	85.1/0/14.9	66.7/8/25.3
% TRS	28.6	34.8
% DMEA on TRS	7.5	6.6

Viscosity, 25°C (cPs): 220-280; pH: 8.3-8.5



### Cure & Application Conditions

**Cure Schedule:** 20 min / 150°C

**Dry Film Thickness:** 1.0-1.2 mil

**Substrate:** Bare CRS

Film Properties	Control	K-POL 9437
Pencil Hardness	H-2H	4H-5H
Pendulum Cycles	123	155
Impact, in-lbs	160+	160+
Mandrel Bend	0 cm	0 cm

## Modification of Uradil Pigmented Polyester System

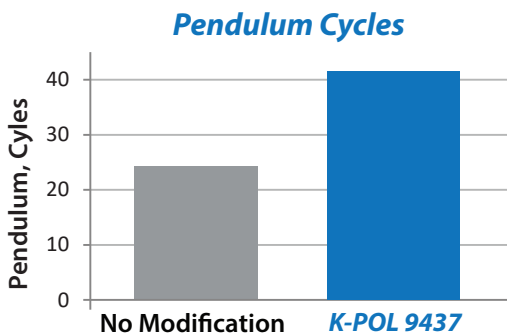
**K-POL 9437** shows improved performance in pigmented systems (right).

### Cure & Application Conditions

**Cure Schedule:** 30 min / 130°C

**Dry Film Thickness:** 1.2-1.4 mil

**Substrate:** Bare CRS



Material	Description	
Uradil SZ255 G3Z65	Water Dilutable Resin	
Resimene 747	Crosslinker	
K-POL® 9437	Urethane Diol	
Water	Solvent	
DMEA	Neutralizing Amine	
Tioxide TR92	White Pigment	
BYK 022	Dispersing Agent	
BYK 346	Leveling Agent	
NACURE® 2500	Blocked Acid Catalyst	
Characteristics	No Modification	K-POL 9437
PE / K-POL / Mel	80/0/20	61.2/8/30.8
% TRS	25.7	28.9
% Solids	46.5	52.3

Viscosity, 25°C (cPs): 300-370; pH: 8.1-8.2

## Contact Information

**Global Headquarters**  
**Tech. Service, R&D, and Sales**  
 King Industries, Inc.  
 1 Science Rd.  
 Norwalk, CT 06852, USA  
 Phone: 1-203-866-5551

**European Tech. Sales Office**  
 King Industries, International  
 Science Park 402  
 1098 XH Amsterdam  
 The Netherlands  
 Phone: 31 20 723 1970

**Asia-Pacific Tech. Sales Office**  
 Synlico Tech Co., Ltd.  
 42 Ju Lin Ya Yuan  
 RichMond Hill (Juhaoyuan)  
 Zhongshan, China  
 Phone: 86 760 88229866

[www.kingindustries.com](http://www.kingindustries.com)



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