



#### **Molecule of New Cross-linker**





## PZBI-25 Reaction





#### **• PZBI-25 Properties**

- CAS: 7417-99-4
- REACH listed
- White aqueous dispersion
- Solids
  - 27.5<u>+</u>1%
- Viscosity
  - <300 cp at 25° C



# PZBI-25

- Difunctional cross-linker for acid functional inks, coatings, and adhesives
- Addition level
  - 2-3 percent in formulated system
- Potential for 1K system
- Heat cured
  - 225°F (30°C) cure for 1 minute. The activation range is 200°F to 275°F (80°C to 120°C)

#### **MEK Rub Test per ASTM D4752**

#### **Panel Preparation**

- -The addition level of PZBI-25 was 2 % into the formulated coatings.
- -It was added slowly and under good agitation.
- -The mixture was agitated for three minutes.
- -After agitation, the mixture sat for 10 minutes.
- -The mixture was coated onto Aluminum Q-Panels with a dry film thickness of 1 <u>+</u> 0.25 mils.
- -The panels were heated dried to 225°F (107°C) for 1 minute.
- -The panels were set aside for 1 week prior to testing.

## MEK Testing of an Acrylic/Urethane Blend









### MEK Testing of a polyurethane









### **Chemical Spot Testing**

-Panels were prepared the same as the MEK panels -ASTM D-1308-02 "Household Chemical

Spot Test Method" was followed

-1 ml of reagent was applied to the surface of the coating

-1-hour time interval was used

-A watch glass was used to cover the reagent

-After the time interval, the watch glasses were removed and the reagent was removed with a damp cloth.

-The spots were observed for staining





#### Chemical Spot Testing of an Acrylic/Urethane Blend

	Water	IPA	<b>Red Wine</b>	Mustard
Control	++	l	++	-
Xlink 1	++	++	++	-
Xlink 2	++	++	++	+
PZBI-25	++	++	++	+







## Chemical Spot Testing of a Polyurethane

	Water	IPA	<b>Red Wine</b>	Mustard
Control	++	I	++	-
Xlink 1	++	++	++	-
Xlink 2	++	++	++	-
PZBI-25	++	++	++	<u>+</u>







## PZBI-25 Summary

- -Difunctional dispersion cross-linker for acid functional adhesives, inks, and coatings
- -225°F (30°C) cure for 1 minute. The activation range is 200°F to 275°F (80°C to 120°C)
- -Easy mixing into formulated water-based system
- -Potential for a 1K system
- -Improves chemical resistance equivalent to trifunctional cross-linkers
- -Low addition level (2 3%)

# PZBI-25 Summary in Water-Based Systems

	Ease of Addition	Addition Level	Ambient Cross-linking	Chemical Resistance	Potential for 1K	Functionality
Trifunctional cross-linkers	+	++	++	++	-	++
PZBI-25	++	++	-	++	+	+