

Bomar[®] XR-9416 Trifunctional Aliphatic Water-dilutable Urethane Acrylate

APPLICATIONS

- Waterborne coatings and inks
- Water-washable UV formulations
- Antifog coatings
- Emulsifier for incompatible formulations

FEATURES

- Scratch resistant oligomer
- Enhances crosslink density in waterborne formulas
- Improves water-cleanability of UV inks and coatings

FEATURES

- 100% solids
- Dilutable in water
- Allows for water wash of uncured 3D printed resins

XR-9416 is a water-dilutable aliphatic urethane acrylate, used for scratch resistant coatings with excellent chemical resistance. XR-9416 contains no water, but is infinitely dilutable with D.I. water. Uncured or residual UV formulations made with XR-9416 have improved cleanability with water. While the material does enhance hydrophilicity of the cured material, the high crosslink density makes the material relatively resistant to hydrolysis.

UNCURED PROPERTIES

Property	Value
Viscosity, cP (25°C)	5,000
Pt-Co (APHA) Color	65
Refractive Index (25°C)	1.490
Density, g/cm ³ (25°C)	1.140

CURED MECHANICAL PROPERTIES

Property	I30	I50	TM50	TP50	H50	HE30
Tensile Strength, psi**	3,500	5,700	5,100	5,100	4,700	3,100
Elongation, %**	2.0	2.7	1.6	4.0	2.8	5.0
Elastic Modulus, ksi**	200	270	340	200	200	120
Durometer Hardness	84D	83D	92D	83D	81D	85D
Water Absorption, % (24 hrs)	4.98	1.14	3.56	3.31	3.35	9.47
MEK Double Rubs (#)	55	33	>200	92	82	63

T_g (DMA) = 65°C; Peak tan delta; cured with 2 phr of Irgacure[®] 184

** Per ASTM D882

ADHESION PROPERTIES

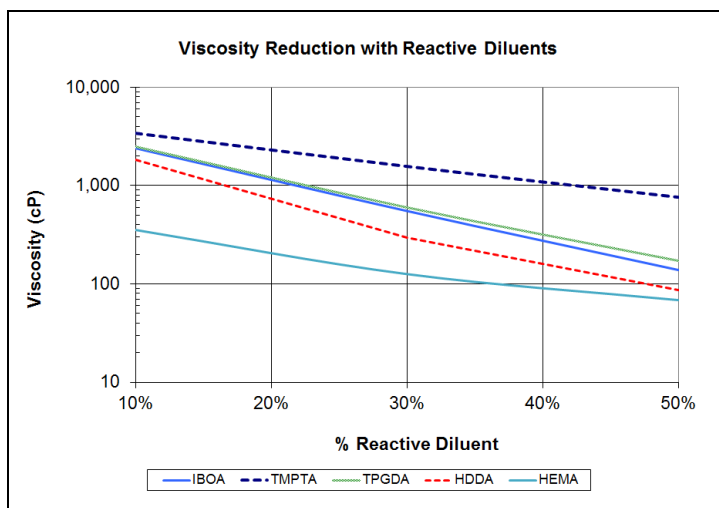
Substrate	I30	I50	TM50	TP50	H50	HE30
ABS			✓✓✓	✓✓✓	✓✓	✓
Aluminum		✓				
Cold Rolled Steel		✓				
Glass						
HDPE		✓	✓			
PET	✓	✓✓	✓✓	✓✓✓	✓✓	✓
PMMA	✓✓✓	✓✓	✓			✓✓
Polycarbonate		✓	✓✓✓	✓✓	✓✓	
PVC	✓✓	✓✓	✓✓✓	✓	✓✓	✓✓
Stainless Steel	✓	✓✓				✓

✓ Recommended ✓✓ Highly Recommended ✓✓✓ Strongly Recommended

TYPICAL FORMULATIONS

Test Formulation Name	I30	I50	TM50	TP50	H50	HE30
XR-9416	70	50	50	50	50	70
IBOA	30	50				
TMPTA			50			
TPGDA				50		
HDDA					50	
HEMA						30
Omnirad™ 184	2	2	2	2	2	2
Viscosity, 25°C *	600	140	800	170	80	130

* Brookfield – CAP 2000+ @ 25°C.



Brookfield – CAP 2000+ @ 25°C

GENERAL INFORMATION

This product is intended for industrial use only. Keep out of the reach of children. Avoid breathing vapors. Avoid contact with skin, eyes, and clothing. Wear impervious gloves. Repeated or continuous skin contact with uncured material may cause irritation. Remove material from skin with soap and water. Never use organic solvents to remove material from skin and eyes. For more information on the safe handling of this material, please refer to the I Safety Data Sheet before use.

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