

## Bomar<sup>®</sup> BR-1043MB Difunctional Aliphatic Polyether Urethane Methacrylate

**APPLICATIONS**

- Nail coatings
- Flexible 3D printing resins
- Impact-resistant coatings

**FEATURES**

- High bio-based content
- Low modulus
- Low temperature flexibility

**FEATURES**

- Excellent elasticity
- High rebound
- Low yellowing

BR-1043MB is a bio-based polyether urethane methacrylate oligomer with a majority percentage of bio-based content. This oligomer provides low-temperature flexibility, elasticity, and excellent dynamic properties and rebound with a lower viscosity versus similar polyether chemistries. The oligomer exhibits a higher degree of heat resistance vs other polyether oligomers. The high bio-based backbone and methacrylate functionality make this an excellent candidate for consumer applications with low irritancy requirements.

UNCURED PROPERTIES	
Property	Value
Viscosity, cP (25°C)	54,000
Pt-Co (APHA) Color	40
Refractive Index (25°C)	1.470
Density, g/cm <sup>3</sup> (25°C)	1.100

CURED MECHANICAL PROPERTIES						
Property	I30	I50	TM50	TP50	H50	HE30
Tensile Strength, psi**	800	2,000	3,600	1,900	2,000	1,100
Elongation, %**	130	180	4	8	7	5.0
Elastic Modulus, ksi**	1.3	15	130	35	55	15
Durometer Hardness	24D	40D	80D	57D	65D	37D
Water Absorption, % (24 hrs)	1.30	0.70	1.50	1.40	1.10	4.70
MEK Double Rubs (#)	41	13	>200	16	100	18
T <sub>g</sub> (DMA) = 19°C; Peak tan delta; cured with 2 phr of Irgacure <sup>®</sup> 184						

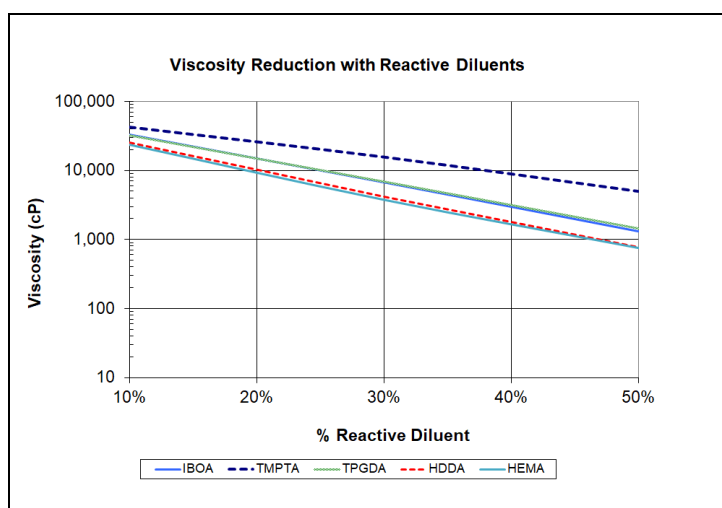
\*\* Per ASTM D882

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
BR-1043MB	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 *	6,700	1,300	5,000	1,400	800	3,800

\* 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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