BR-640D

Difunctional Aliphatic Polybutadiene Urethane Acrylate

Applications

- Electronics coatings and adhesives
- Potting compounds
- Water vapor barrier coatings

Features

- Excellent hydrophobicity
- Low water absorption
- Excellent dielectric properties

Additional Features

- Acid/Base resistance
- Low temperature flexibility
- Thermal cycling capabilities

BR-640D is a polybutadiene (PBD) urethane acrylate with a functionality of two. Designed to meet rigorous electronic applications, BR-640D has many desirable properties typical to PBD resins, combined with radiation curability. In applications requiring thermal cycling resistance, BR-640D withstands the extremes of temperature typical of such tests, without undue degradation of properties. Excellent hydrophobic properties exhibited where 0.012 and 0.037% water was absorbed by cured coating when submerged in water for 24 hours. In addition to the adhesion properties listed in the table below, BR-640D showed excellent adhesion to ABS, acrylic, nylon-6, PVC, and PS.

UNCURED PROPERTIES

Property	Value
Viscosity, cP (60°C)	5,000
Pt-Co (APHA) Color	15
Refractive Index (25°C)	1.48
Density, g/cm3 (25°C)	0.94

CURED MECHANICAL PROPERTIES

Property	I30	I50	TM50	TP50	H50	HE30
Tensile Strength, psi**	500	800	||	||	1,300	500
Elongation, %**	190	190	||	||	10	60
Elastic Modulus, ksi**	0.27	0.65	||	||	35	1.7
Durometer Hardness	76A	45D	||	||	66D	45D
Water Absorption, % (24 hrs)	0.01	0.04	||	||	0.09	0.85
MEK Double Rubs (#)	65	9	||	||	>200	10
Tg(DMA)=33°C; Peak tan delta; cured with 2 phr of Omnirad® 184						

** Per ASTM D882 – Not Tested || Incompatible X Unable to Measure

ADHESION PROPERTIES

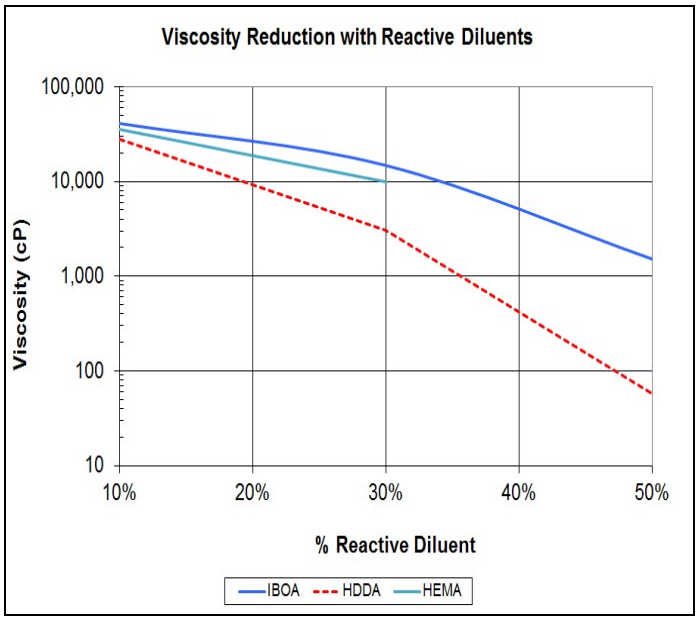
Substrate	I30	I50	TM50	TP50	H50	HE30
ABS			||	||	✓✓✓	
Aluminum			||	||		✓
Cold Rolled Steel		✓✓	||	||		
Glass		✓	||	||		
HDPE			||	||		
PET		✓	||	||	✓	
PMMA			||	||		
Polycarbonate			||	||	✓✓✓	
Polypropylene			||	||	✓✓	
PVC	✓		||	||	✓✓✓	
Stainless Steel	✓	✓✓✓	||	||		✓

✓ Recommended ✓✓ Highly Recommended ✓✓✓ Strongly Recommended

TYPICAL FORMULATIONS

Test Formulation Name	I30	I50	TM50	TP50	H50	HE30
BR-640D	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 *	15,000	1,500	||	||	60	9,900

* Brookfield – CAP 2000+ @ 25°C.



Brookfield – CAP 2000+ @ 25°C

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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 Safety Data Sheet before use. The data provided in this document are based on historical testing that Bomar performed under laboratory conditions as they existed at that time and are for informational purposes only. The data are neither specifications nor guarantees of future performance in a particular application. Bomar does not guarantee that this product's properties are suitable for the user's intended purpose. Numerous factors—including, without limitation, transport, storage, processing, the material with which the product is used, and the ultimate function or purpose for which the product was obtained—may affect the product's performance and/or may cause the product's actual behavior to deviate from its behavior in the laboratory. None of these factors are within Bomar's control. Conclusions about the behavior of the product under the user's particular conditions, and the product's suitability for a specific purpose, cannot be drawn from the information contained in this document. It is the user's responsibility to determine (i) whether a product is suitable for the user's particular purpose or application and (ii) whether it is compatible with the user's intended manufacturing process, equipment, and methods. Under no circumstances will Bomar be liable for determining such suitability or compatibility. Before the user sells any item that incorporates Bomar's product, the user shall adequately and repetitively test the item in accordance with the user's procedures and protocols. Unless specifically agreed to in writing, Bomar will have no involvement in, and shall under no circumstances be liable for, such testing. Bomar makes no warranties, whether express or implied, concerning the merchantability of this product or its fitness for a particular purpose. Nothing in this document should be interpreted as a warranty of any kind. Under no circumstances will Bomar be liable for any injury, loss, expense or incidental or consequential damage of any kind allegedly arising in connection with the user's handling, processing, or use of the product. It is the user's responsibility to adopt appropriate precautions and safeguards to protect persons and property from any risk arising from such handling, processing, or use. The specific conditions of sale for this product are set forth in Bomar Conditions of Sale. Nothing contained herein shall act as a representation that the product use or application is free from patents owned by Bomar or any others. Nothing contained herein shall act as a grant of license under any Bomar Patent. Except as otherwise noted, all trademarks used herein are trademarks of Bomar Specialties, LLC. The "®" symbol denotes a trademark that is registered in the U.S. Patent and Trademark Office. The contents of this document are subject to change. Unless specifically agreed to in writing, Bomar shall have no obligation to notify the user about any change to its content.

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