Your ToolBox for 3D Printing Materials

VISIOMER®
Specialty Methacrylates

EVONIK
Leading Beyond Chemistry

VISIOMER® SPECIALTY METHACRYLATES

AN OVERVIEW

With more than 80 years' experience with methacrylate chemistry, the Specialty Methacrylates business offers a versatile ToolBox for all 3D printing material designers. Methacrylate monomers have a history of being known as reactive diluents in various industries like adhesives or composite resins. Monomers like **VISIOMER® IBOMA** and **VISIOMER® HEMATMDI** are established co-monomers in photo curing resins used in SLA printing techniques.

GENERAL PROPERTIES

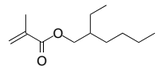
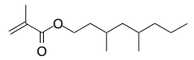
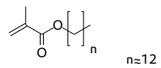
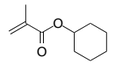
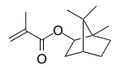
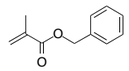
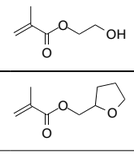
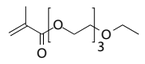
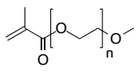
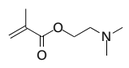
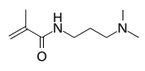
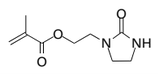
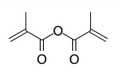
Our **VISIOMER®** products are high purity methacrylates with a low color value. Methacrylate-based polymers typically provide high resistance against environmental influences like UV light or chemicals, due to their high glass transition temperature materials where enhanced mechanical properties are obtained, especially by using methacrylate based crosslinkers. We offer a range of di- and tri-functional crosslinkers varying in their chain length and hydrophilic/hydrophobic nature, e.g. **VISIOMER® EGDMA** is a short hydrophilic crosslinker. Additionally, our **VISIOMER® TMPTMA** is a tri-functional crosslinker used where high crosslinking density is needed.

LOW TOXICITY

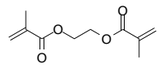
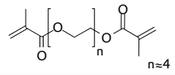
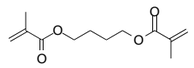
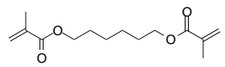
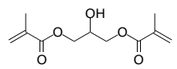
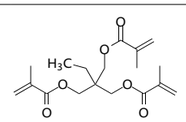
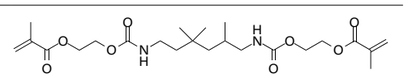
We focus on eco-friendly methacrylate monomers with a low toxicity profile. Most monomers come with a 'warning' label, with a few exceptions our monomers are no CMR substances.

WE GO BEYOND BOUNDARIES

Our technical and production capabilities ready's us to support our customers to develop solutions for their 3D-printing challenges. Please do not hesitate to contact us to support you in your developments!

VISIOMER® CAS No.	Chemical Structure	T_g [°C]	Vapor Pressure at 20 °C [hPa]
ALKYL/ARYL METHACRYLATES			
EHMA 688-84-6		–10	0.065
IDMA 29964-84-9		–30	0.013
Terra C13-MA 90551-76-1	 n≈12	–46	<0.001
c-HMA 101-43-9		110	0.22
Terra IBOMA 7534-94-3		150	0.075
BNMA 2495-37-6		54	0.03
FUNCTIONAL METHACRYLATES			
UHP-HEMA 868-77-9		55	0.08
THFMA 2455-24-5		40	0.27
ETMA 39670-09-2		–31	<0.001
MPEG MA W 26915-72-0		n = 17 MPEG 750 MA W n = 22,5 MPEG 1005 MA W n = 45 MPEG 2005 MA W	
MADAME 2867-47-2		18	0.58
DMAPMA 5205-93-6		96	0.004
MEEU 86261-90-7			<0.001
MAAH 760-93-0			0.9

These **VISIOMER®** products are all made from raw materials with bio-carbon content. Additionally, all **VISIOMER® TERRA** products are eco-friendly labelled.

VISIOMER® CAS No.	Chemical Structure
CROSSLINKER METHACRYLATES	
EGDMA 97-90-5	
PEG200DMA 25852-47-5	 n≈4
1,4-BDDMA 2082-81-7	
1,6-HDDMA 6606-59-3	
GDMA 1830-78-0	
TMPTMA 3290-92-4	
HEMATMDI 72869-86-4	

SELECTED SOLUTION

FOR POST-PROCESSING

VISIOMER® GDMA and **VISIOMER® UHP-HEMA** provide free hydroxyl group for isocyanate curing or further chemical functionalization.

FOR ADHESION

VISIOMER MEEU® is an excellent adhesion promotor for polar surfaces.

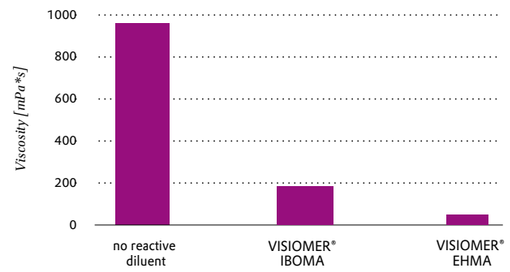
OLIGOMER MODIFICATION

VISIOMER MAAH® easily introduces methacrylic functionalities into various oligomers.

METHACRYLATE MONOMERS AS REACTIVE DILUENTS

The **VISIOMER®** portfolio offers a large variety of monomers with high solvency for various oligomers. Using 10-30 % of our monomers usually leads to a much lower viscosity.

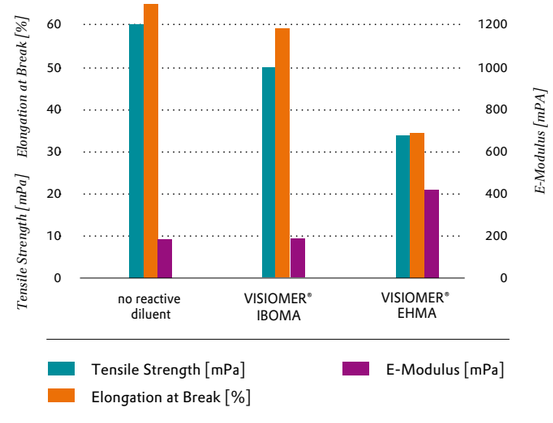
Viscosity of a commercial dental UV curing resin with 30 % VISIOMER® reactive diluent



REACTIVE DILUENTS ARE ACTUALLY CO-MONOMERS

The right choice of **VISIOMER®** monomers as a reactive diluent allows for tailoring mechanical properties of your printed objects. Visit our **VISIOMER®** ToolBox to find the best properties—during printing and in the final object.

Mechanical properties of a commercial dental UV curing resin with 30 % VISIOMER® reactive diluents



EUROPE, AFRICA, MIDEAST

EVONIK OPERATIONS GMBH

Kirschenallee
64293 Darmstadt
Germany

ASIA

**EVONIK SPECIALTY CHEMICALS (SHANGHAI) CO., LTD.
OIL ADDITIVES**

55 Chundong Road,
Xinzhuang Industry Park,
Shanghai 201108,
China

AMERICAS

EVONIK OIL ADDITIVES USA, INC.

723 Electronic Drive
Horsham, PA 19044-4050
USA

Phone +1 215 706-5800
Fax +1 215 706-5801
Toll-free +1 888 876-4629

visiomer@evonik.com
www.visiomer.com

EVONIK
Leading Beyond Chemistry