



Bis(methacryloyloxypropyl) tetramethyldisiloxane

AS-75669
CAS Number 118-37-7

Reactive siloxane crosslinker, combining
silicone flexibility with radical-cure
methacrylate chemistry

Overview

This compound features a dimethylsiloxane (Si–O–Si) backbone terminated at both ends with methacryloyloxypropyl groups. The siloxane segment contributes flexibility, hydrophobicity, and UV stability characteristic of silicone materials, while the two methacrylate termini allow free-radical or UV-initiated crosslinking into acrylic or polyester networks. The result is a silicone-modified polymer with improved flexibility, lower surface energy, and superior weathering resistance compared to pure acrylic systems. It is particularly valuable as a flexibilising crosslinker in hard ceramic-type coatings.

Key applications

- Flexibilising crosslinker in UV-curable acrylic and polyurethane acrylate coatings – improves crack resistance and adhesion
- Dental resin modifier – siloxane segments reduce polymerisation shrinkage stress in composite restoratives
- Silicone-modified acrylic coatings for automotive and industrial clear coats – improved weatherability
- Sol-gel hybrid coatings combining silica network formation with flexible organic matrix
- Release coating component – siloxane segments reduce surface energy for non-stick applications
- Research intermediate for creating silicone-acrylate block copolymers and hybrid materials

Selected literature

- [1] Szczesio-Wlodarczyk A. et al. (2020). Ageing of Dental Composites Based on Methacrylate Resins – A Critical Review. *Polymers* 12(4), 882. <https://doi.org/10.3390/polym12040882>
- [2] IGL Coatings: The Science of Ceramic Coatings – PDMS and reactive siloxane chemistry. <https://blog.iglcoatings.com/the-science-of-ceramic-coatings/>
- [3] Olson's Auto Detailing: The Molecular Shield – Exploring the Chemical Architecture of Ceramic Coatings. <https://www.olsonsautoetailing.com/the-molecular-shield-exploring-the-chemical>

Key Benefits:

- ✓ Affordable
- ✓ Usually Ex-Stock
- ✓ Purity >95%
- ✓ Bulk Pricing



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