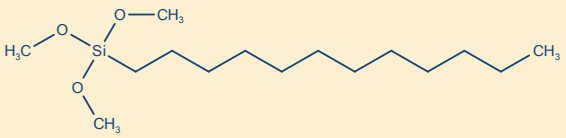
Key Organics
Chemistry | Innovation | Quality
The Home of BIONET

40th anniversary



Dodecyltrimethoxysilane (DTMS)

Penetrating hydrophobic silane for long-term water repellency of concrete, stone, and ceramics

AS-15225
CAS Number 3069-42-9

Overview

Dodecyltrimethoxysilane belongs to the long-chain alkyl silane family. The C12 hydrocarbon chain is long enough to form dense, ordered monolayers with strong van der Waals cohesion, providing superior hydrophobicity compared to shorter alkyl silanes, while remaining more processable than C18 variants. The trimethoxysilyl groups hydrolyse to silanols that bond covalently into the pore walls of concrete and stone. The alkyl chains then orientate outwards, creating a hydrophobic lining that repels water while remaining vapour-permeable.

Key applications

- Penetrating water repellent for concrete, poured-in-place structures, bridges, and car parks — protection against chloride ingress and freeze-thaw damage
- Masonry and natural stone protection — invisible treatment that retains natural appearance
- Superhydrophobic coating formulations — especially in combination with fluoroalkyl silanes
- Self-assembled monolayer (SAM) formation on silica and metal oxide surfaces for surface science research
- MXene/silane composite coatings for corrosion protection of aluminium alloys in offshore applications
- Hydrophobic modification of fillers and pigments for paints and coatings

Key Benefits:

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

Available to purchase today!

More from the Collection

Selected literature

[1] Zhou M. et al. (2024). A review on silane and siloxane materials for cementitious durability. J Materials Science. https://doi.org/10.1007/s10853-024-09771-6

[2] Al-Saadi S. & Singh Raman R.K. (2019). A long aliphatic chain functional silane (ODTMS) for corrosion and microbial corrosion resistance of steel. Corrosion Science 148. https://doi.org/10.1016/j.corsci.2018.11.025

[3] Gonzalez-Coneo J. et al. (2022). Alkylsiloxane/alkoxysilane sols as hydrophobic treatments for concrete. J Build Eng 46, 103729. https://doi.org/10.1016/j.jobe.2021.103729

Key Organics
Chemistry Services

- Collaborative R&D
- FTE Services
- Custom Synthesis
- Process R&D/Scale-up
- Metabolite Synthesis
- Stable Label Custom Synthesis
- Analytical Chemistry
- Compound Management Services

BIONET
Chemistry Products

- Biochemicals
- Intermediates/Building Blocks
- Fragment Libraries
- Screening Compounds
- Stable Labels
- Natural Products
- Electronic Materials
- Amino Acids
- Organosilicon

For more information, please contact us at:

Key Organics Ltd.,
Highfield Road Industrial Estate,
Camelford,
Cornwall PL32 9RA,
United Kingdom

T: +44 (0)1840 212137
E: enquiries@keyorganics.net

www.keyorganics.net

Key Organics
Chemistry | Innovation | Quality

bsi ISO 9001 Quality Management Systems CERTIFIED
FS 803271