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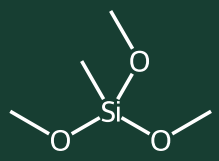
Technical data sheet
TDS-LEGRA-5011-L-EN
Revision 1.0, November 2026

LANDUSIL LEGRA

5011-L

Methyltrimethoxysilane

Methyl-functional methoxysilane for mineral interfaces and hybrid silica networks



Chemical identity

Chemical name
Methyltrimethoxysilane

CAS number
1185-55-3

EC number
214-685-0

Structure
$CH_3Si(OCH_3)_3$

Molecular formula
$C_4H_{12}O_3Si$

Molecular weight
136.22 g/mol

Hydrolysis by-product
Methanol

Product description

LANDUSIL LEGRA 5011-L is methyltrimethoxysilane (MTMS), a methyl-bearing organosilane with three hydrolyzable methoxy groups. It is a precursor for mineral surface modification, silicone-resin synthesis and organic-inorganic sol-gel systems.

Moisture converts the methoxy groups to silanols with the release of methanol. Condensation can attach these species to hydroxylated surfaces or build a methyl-containing siloxane network. The methyl group adjusts the surface character, while water, catalyst, pH and solvent control reaction and gelation. Film transparency, porosity, adhesion and moisture response depend on the complete formulation and drying schedule.

Features and benefits

- Three methoxy groups for hydrolysis and condensation
- Methyl-bearing precursor for hybrid silica networks
- Suitable for mineral surface-energy adjustment trials
- Compatible with controlled sol-gel processing routes
- Releases methanol during hydrolysis

Specification

Property	Unit	Value	Test method
Appearance		**Colorless clear liquid**	Visual
Purity (GC)	%	**min. 98.0**	Gas chromatography
Refractive index, n_D^{25}	–	**1.3670 – 1.3730**	Refractometry

Tested on every batch and reported on the Certificate of Analysis.

Typical properties

Boiling point, 760 mmHg	approx. 102 °C
Flash point, method not specified	approx. 8 °C
Kinematic viscosity, 25 °C	approx. 0.5 mm²/s

For guidance only; not part of the specification.

Applications

Mineral surface treatment
Candidate treatment for concrete, masonry, stone and ceramic surfaces. Compare water uptake, vapor transport, staining and color after curing.

Glass and ceramic coatings
Component in experimental hydrophobic coatings, with adhesion, haze and abrasion evaluated on the intended substrate.

Mineral powders and silicone systems
Surface modifier for silica and selected oxide fillers. Fix the filler grade, treatment sequence and binder before evaluating dispersion or compound viscosity.

Hybrid films and aerogels
Methyl-containing precursor for silica films and hybrid aerogel networks; evaluate porosity, transparency, cracking and mechanical integrity.

Photovoltaic cover-glass development
Precursor for defined mixed-silica coating trials. Optical behavior and outdoor ageing require tests of the complete coating and curing process.

Guidelines for use

Mineral treatment	Use a compatible treatment system on a clean, prepared surface. Select solvent, water and application method for the substrate pore structure; assess treated and untreated samples.
Sol-gel preparation	Meter the hydrolysis components under controlled mixing and temperature. Track methanol evolution, pH, viscosity and gel time before coating, drying or further condensation.
Powder modification	Apply uniformly to an agitated hydroxylated filler. Control drying and residual volatiles, then evaluate flow, moisture uptake and behavior in the intended binder.

These levels are starting points. Determine the optimum level and method in trials under your own production conditions.

Handling and safety

- Highly flammable liquid and vapor. Keep away from heat and ignition sources, ground equipment and provide suitable exhaust ventilation.
- Hydrolysis releases toxic methanol. Avoid breathing vapor and prevent skin contact during mixing, transfer and drying.
- Exclude moisture from bulk storage. Use chemical-resistant gloves and splash goggles; separate from acids and strong oxidizers.
- Read the Safety Data Sheet before use.

Storage and shelf life

Store in original, tightly closed containers in a cool, dry, well-ventilated area away from sunlight and ignition sources. Protect from moisture and use opened containers promptly. Shelf life is 12 months from manufacture in unopened containers.

Packaging

25 kg plastic drum, 200 kg steel drum, 1,000 kg IBC. Other pack sizes on request.

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