LANDU

Technical data sheet
TDS-LEGRA-5081-L-EN
Revision 1.0, November 2026

LANDUSIL LEGRA

5081-L

Octadecyltrimethoxysilane

C18 methoxysilane for controlled oxide-surface layers and mineral treatment



Chemical identity

Chemical name
Octadecyltrimethoxysilane

CAS number
3069-42-9

EC number
221-339-2

Structure
$CH_3(CH_2)_{17}Si(OCH_3)_3$

Molecular formula
$C_{21}H_{46}O_3Si$

Molecular weight
374.67 g/mol

Hydrolysis by-product
Methanol

Product description

LANDUSIL LEGRA 5081-L is octadecyltrimethoxysilane, a long-chain alkyl silane with a linear C18 group and three hydrolyzable methoxy groups. It is used as a precursor for defined surface treatments and hybrid structures. Physical form depends on temperature and composition; crystallization can occur.

Controlled hydrolysis generates silanols and methanol. Condensation can attach the silane to accessible hydroxyl groups or build siloxane structures retaining the octadecyl group. Coverage, orientation and removal of excess material affect the interface. Substrate cleaning, moisture, catalyst and curing conditions must be established for the actual treatment; water repellency alone does not establish optical or corrosion performance.

Features and benefits

- Linear octadecyl group contributes nonpolar character
- Three methoxy groups provide condensation sites
- Precursor for defined C18 layers on oxide surfaces
- Can participate in hybrid siloxane networks
- May crystallize near ordinary handling temperatures

Specification

Property	Unit	Value	Test method
Appearance		**Colorless to light yellow liquid or white solid**	Visual
Purity (GC)	%	**min. 95.0**	Gas chromatography
Refractive index, nD25	–	**1.4340 – 1.4440**	Refractometry

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

Typical properties

Boiling point, 0.1 mmHg	approx. 170 °C
Flash point, closed cup	approx. 140 °C

For guidance only; not part of the specification.

© 2026 LANDUSIL

Applications

Silica, glass and ceramic surfaces
Precursor for controlled C18 surface layers. Evaluate coverage, haze, transmission, adhesion and cleaning durability in the intended service.

Mineral powders and porous silica
Candidate for alkyl modification of accessible hydroxylated surfaces. Check dispersion, pore accessibility and extractable residues after treatment.

Textiles and hybrid networks
Precursor in defined textile formulations or co-condensation systems. Measure wash durability, permeability and network properties for the selected formulation.

Prepared metal-oxide surfaces
Component for qualified copper or aluminum surface-film studies. Establish pretreatment, aging and cure; assess corrosion behavior on the actual alloy.

Masonry and mineral-board faces
Ingredient for formulated surface treatments. Verify penetration, appearance, water uptake and retention after the specified weathering exposure.

Guidelines for use

Surface-layer preparation	Prepare a clean, suitable substrate and a compatible silane solution. Control moisture and catalyst, apply uniformly, then remove excess material and establish a reproducible cure.
Powder treatment	Distribute the treatment over agitated powder with controlled water addition. Remove residual alcohol and unreacted material before assessing the receiving binder or compound.
Formulation and sampling	Select concentration, hydrolysis time and cure in trials. Check physical form before sampling; obtain a representative homogeneous sample without uncontrolled water exposure.

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

Handling and safety

- Can burn when heated. Keep away from ignition sources and ventilate transfer, application and drying operations.
- Avoid breathing mist and skin or eye contact. Use chemical-resistant gloves, splash goggles and suitable work clothing.
- Hydrolysis releases toxic methanol. Keep bulk material dry and control alcohol-vapor exposure during processing and curing.
- Read the Safety Data Sheet before use.

Storage and shelf life

Keep tightly sealed in original containers in a cool, dry, ventilated area protected from moisture and heat. Check physical form and homogenize before sampling. Shelf life is 6 months from shipment in the original unopened container.

Packaging

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

The information in this data sheet reflects our current knowledge and is given in good faith. It is not a guarantee of properties or of suitability for a particular use, and it does not release users from testing the product for their own application and process. Users are responsible for complying with applicable laws, regulations and third-party rights. Only the values under Specification are binding, as confirmed on the Certificate of Analysis. This edition supersedes all previous editions. For safety information, see the current Safety Data Sheet. © 2026 LANDUSIL. All rights reserved. LANDUSIL and its product series names are trademarks of LANDUSIL. No part of this document may be reproduced, modified or redistributed without prior written permission.