LANDU

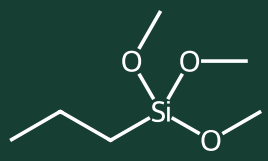
Technical data sheet
TDS-LEGRA-5031-L-EN
Revision 1.0, November 2026

LANDUSIL LEGRA

5031-L

n-Propyltrimethoxysilane

Propyl-functional methoxysilane for surface modification and controlled co-condensation



Chemical identity

Chemical name
n-Propyltrimethoxysilane

CAS number
1067-25-0

EC number
213-926-7

Structure
$CH_3CH_2CH_2Si(OCH_3)_3$

Molecular formula
$C_6H_{16}O_3Si$

Molecular weight
164.27 g/mol

Hydrolysis by-product
Methanol

Product description

LANDUSIL LEGRA 5031-L is n-propyltrimethoxysilane, an alkyl silane containing one linear propyl substituent and three hydrolyzable methoxy groups. It is a building block for mineral surface treatment, silicone-resin co-condensation and hybrid sol-gel development.

The methoxy groups form silanols on hydrolysis and release methanol. Silanols can react at hydroxylated surfaces or condense into propyl-bearing siloxane structures. The propyl group contributes nonpolar character to the resulting interface. Hydrolysis, gelation and residual alkoxy content depend on water, solvent, catalyst, pH and temperature; the complete treatment and cure determine final properties.

Features and benefits

- Linear propyl group contributes nonpolar surface character
- Three methoxy groups support hydrolysis and condensation
- Building block for branched hybrid siloxane networks
- Suitable for mineral powder surface-treatment trials
- 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}	–	**1.3910 ± 0.0050**	Refractometry

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

Typical properties

Density, 25 °C	approx. 0.932 g/cm³
Flash point, method not specified	approx. 34 °C

For guidance only; not part of the specification.

© 2026 LANDUSIL

Applications

Concrete and masonry treatments
Candidate for formulated treatments on cleaned concrete, brick and masonry. Compare liquid-water uptake, vapor transport, appearance and wet/dry ageing.

Sol-gel and silicone resins
Propyl-containing precursor for selected hybrid films, silica networks and silicone-resin co-condensation routes; assess gelation, residual alkoxy groups and cracking.

Mineral powders and pigments
Surface modifier for silica and other hydroxylated minerals before compounding. Evaluate coverage, flow, agglomeration and binder viscosity at matched treatment levels.

Metal, glass and ceramic studies
Component in defined surface-treatment trials where wetting, appearance, adhesion and ageing are measured on the actual substrate and complete formulation.

Guidelines for use

Mineral surface treatment	Apply a compatible treatment formulation to a clean, prepared substrate. Select concentration, solvent and curing for the pore structure and moisture state; compare treated and untreated specimens.
Powder pretreatment	Apply uniformly to an agitated hydroxylated powder and control hydrolysis and drying. Measure moisture uptake, powder flow and stability after incorporation into the intended binder.
Controlled prehydrolysis	Combine with compatible organosilanes or silica precursors using controlled water addition and mixing. Track pH, methanol evolution, viscosity and gel time; verify work-solution stability before coating.

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

Handling and safety

- Flammable liquid and vapor. Eliminate ignition sources, ground transfer equipment and provide ventilation suitable for solvent handling.
- Hydrolysis releases toxic methanol. Prevent inhalation and skin exposure during transfer, mixing and drying.
- Avoid eye and skin contact. Use chemical-resistant gloves and splash goggles; keep bulk material dry and separate from 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 protected from moisture, sunlight and heat. Use opened containers promptly and prevent moisture ingress during transfer. 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.

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.