LANDU

Technical data sheet
TDS-LEGRA-5051-L-EN
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LANDUSIL LEGRA

5051-L

n-Octyltrimethoxysilane

Linear C8 methoxysilane for particle treatment and controlled siloxane chemistry



Chemical identity

Chemical name
n-Octyltrimethoxysilane

CAS number
3069-40-7

EC number
221-338-7

Structure
$CH_3(CH_2)_7Si(OCH_3)_3$

Molecular formula
$C_{11}H_{26}O_3Si$

Molecular weight
234.41 g/mol

Hydrolysis by-product
Methanol

Product description

LANDUSIL LEGRA 5051-L is n-octyltrimethoxysilane, an alkyl silane with a linear octyl chain and three hydrolyzable methoxy groups. It is a precursor for inorganic particle treatment, mineral surface formulations and controlled siloxane intermediates.

Hydrolysis produces silanols and releases methanol. Condensation can attach the silane to compatible hydroxylated surfaces or build octyl-containing siloxane structures. The octyl chain contributes nonpolar character to the treated interface. Water, catalyst, solvent and reaction history control conversion and work-solution stability; dispersion, wetting and end-use properties require trials in the complete formulation.

Features and benefits

- Linear octyl chain contributes nonpolar surface character
- Three methoxy groups enable hydrolysis and condensation
- Particle-treatment precursor for nonaqueous dispersions
- Co-precursor for octyl-containing siloxane networks
- Releases methanol during hydrolysis

Specification

Property	Unit	Value	Test method
Appearance		**Colorless clear liquid**	Visual
Purity (GC)	%	**min. 96.0**	Gas chromatography
Density, 20 °C	g/cm³	**0.902 – 0.912**	Density measurement

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

Typical properties

Flash point, method not specified	approx. 68 °C
Viscosity, 20 °C	approx. 2 mPa·s

For guidance only; not part of the specification.

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Applications

Inorganic powders and pigments
Treatment candidate for compatible silica, titanium dioxide, iron oxide and mineral fillers before nonaqueous dispersion or incorporation into a selected polymer.

Cable and thermal compound interfaces
Candidate for separate filler treatment before compounding. Evaluate extrusion, electrical behavior or thermal contact resistance with controls for residual moisture and alcohol.

Siloxane intermediates
Co-precursor for controlled oligomers and hybrid films; follow residual methoxy groups, methanol removal, gelation and work-solution stability.

Mineral building surfaces
Component in formulated treatments for cured concrete, brick and stone. Compare water uptake, appearance and vapor transport under defined curing conditions.

Porous silica surfaces
Precursor for C8 attachment to existing silica supports; assess loading, accessible pores, extractables and the intended separation response.

Guidelines for use

Filler or pigment treatment	Screen 0.5 – 1.5 % on filler or pigment weight. Apply uniformly, control reaction and drying, then compare moisture uptake, dispersion and receiving-formulation viscosity.
Mineral treatment	Use a compatible carrier and treatment concentration selected for the actual substrate. Apply to a clean, prepared surface and assess absorption, appearance and ageing against untreated specimens.
Controlled condensation	Introduce water and catalyst under controlled mixing and temperature. Monitor pH, alcohol evolution and gel time; verify stability before coating or further processing.

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

Handling and safety

- Combustible when heated. Keep away from heat and ignition sources and provide ventilation during transfer, treatment and drying.
- Avoid eye and skin contact and breathing mist. Wear suitable chemical-resistant gloves and splash goggles.
- Hydrolysis releases toxic methanol. Protect bulk material from moisture and manage alcohol vapors throughout processing.
- 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 and sunlight. Use opened containers promptly and avoid moisture ingress during transfer. Shelf life is 12 months 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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