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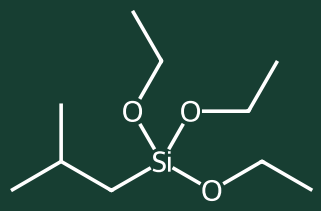
Technical data sheet
TDS-LEGRA-5040-L-EN
Revision 1.0, November 2026

LANDUSIL LEGRA

5040-L

Isobutyltriethoxysilane

Branched alkyl ethoxysilane for mineral treatments and hybrid siloxane development



Chemical identity

Chemical name
Isobutyltriethoxysilane

CAS number
17980-47-1

EC number
402-810-3

Structure
$(CH_3)_2CHCH_2Si(OC_2H_5)_3$

Molecular formula
$C_{10}H_{24}O_3Si$

Molecular weight
220.38 g/mol

Hydrolysis by-product
Ethanol

Product description

LANDUSIL LEGRA 5040-L is isobutyltriethoxysilane, a branched alkyl silane with one isobutyl substituent and three hydrolyzable ethoxy groups. It is a precursor for formulated mineral treatments, filler modification and controlled hybrid-network development.

Hydrolysis converts ethoxy groups to silanols with ethanol release. Condensation can form bonds at hydroxylated surfaces or produce siloxane networks containing the branched alkyl group. The isobutyl group changes the organic character of the interface. Surface coverage, wetting and reaction depend on substrate, water, catalyst and solvent; the selected treatment and cure determine final properties.

Features and benefits

- Branched isobutyl group modifies surface character
- Three ethoxy groups support siloxane condensation
- Surface modifier for compatible minerals and pigments
- Co-precursor for organic-inorganic hybrid networks
- Releases ethanol during hydrolysis

Specification

Property	Unit	Value	Test method
Appearance		**Colorless clear liquid**	Visual
Purity (GC)	%	**min. 98.0**	Gas chromatography
Density, 20 °C	g/cm³	**0.880 ± 0.005**	Density measurement
Refractive index, n_D^{25}	–	**1.4000 ± 0.0050**	Refractometry

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

Typical properties

Flash point, method not specified	approx. 60 °C
Solubility	Soluble in common nonpolar organic solvents

For guidance only; not part of the specification.

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Applications

Concrete and masonry treatments
Candidate for formulations applied to cleaned concrete, brick and masonry. Compare water uptake, vapor transport, appearance and wet/dry ageing.

Sol-gel and silicone resins
Branched alkyl co-precursor for hybrid silica and silicone-resin studies with controlled branching, residual alkoxy content and drying.

Mineral powders and pigments
Surface treatment of suitably reactive fillers and pigments before compounding; evaluate moisture uptake, powder flow, agglomeration and binder viscosity.

Wood, metal, glass and ceramic studies
Component in defined low-coverage surface-treatment trials. Check wetting, color, adhesion and ageing in the complete formulation on the actual substrate.

Guidelines for use

Filler or pigment treatment	Screen 0.5 – 1.5 % on filler or pigment weight. Apply uniformly with suitable mixing, control hydrolysis and drying, then measure flow and viscosity in the selected binder.
Porous mineral application	Dilute with a compatible solvent as required by the treatment system. Apply to a clean, prepared substrate; match concentration and curing to porosity and moisture content.
Hybrid co-condensation	Combine with compatible precursors under controlled water addition and mixing. Track ethanol evolution, pH, gel time and residual alkoxy content 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 liquid. Keep away from heat, sparks and open flames; ground equipment and provide ventilation during transfer and processing.
- Causes skin irritation. Avoid eye and skin contact and wear suitable chemical-resistant gloves and splash goggles.
- Hydrolysis releases ethanol. Protect bulk liquid from moisture and prevent alcohol-vapor accumulation during formulation and drying.
- 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 during storage and 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.

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