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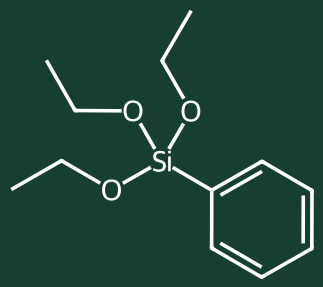
Technical data sheet
TDS-LEGRA-6010-L-EN
Revision 1.0, November 2026

LANDUSIL LEGRA

6010-L

Phenyltriethoxysilane

Phenyl triethoxy precursor for resin networks and defined silica-surface processes



Chemical identity

Chemical name
Phenyltriethoxysilane

CAS number
780-69-8

EC number
212-305-8

Structure
$C_6H_5Si(OC_2H_5)_3$

Molecular formula
$C_{12}H_{20}O_3Si$

Molecular weight
240.37 g/mol

Hydrolysis by-product
Ethanol

Product description

LANDUSIL LEGRA 6010-L is phenyltriethoxysilane, an aromatic organosilane containing one phenyl substituent and three hydrolyzable ethoxy groups. It is a precursor for phenyl-substituted siloxane resins, hybrid structures and selected inorganic-surface treatments.

Hydrolysis releases ethanol and generates silanols that can condense with other precursors or suitable surface hydroxyl groups. Three potential silicon–oxygen connections permit branching, with the actual structure governed by water, catalyst, reaction history and other ingredients. Residual ethoxy groups, silanols, alcohol and storage behavior require control. The phenyl group provides no Si–H, amino, epoxy or vinyl reaction site.

Features and benefits

- Aromatic phenyl substituent attached directly to silicon
- Three ethoxy groups permit condensation branching
- Precursor for phenyl-containing resin development
- Candidate for defined silica-surface modification
- Ethoxy hydrolysis releases ethanol

Specification

Property	Unit	Value	Test method
Appearance		**Colorless to pale yellow clear liquid**	Visual
Purity (GC)	%	**min. 98.0**	Gas chromatography
Density, 20 °C	g/cm³	**0.991 – 1.001**	Density measurement

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

Typical properties

Boiling point, 10 mmHg	approx. 112 – 113 °C
Flash point, closed cup	approx. 53.5 °C

For guidance only; not part of the specification.

Applications

Resin and oligomer development
Precursor with compatible silanes for phenyl-containing networks. Measure composition, residual reactive groups and stability before binder selection.

Electrical-insulation and optical materials
Precursor for a separately formulated resin. Test the finished assembly under the intended electrical, optical, thermal and moisture conditions.

Porous silica and hybrid particles
Precursor for a selected post-grafting or co-condensation route. Establish accessible pores, surface coverage and adsorption behavior for the material actually prepared.

Mineral and metal coating systems
Upstream component for resin or film development. Assess the complete coating on the actual substrate for defects, adhesion and exposure resistance.

Fumed-silica treatment
Candidate for a defined filler-treatment process before rubber compounding. Evaluate surface chemistry, residual material, dispersion and the resulting compound.

Guidelines for use

Resin synthesis	Combine with compatible precursors under controlled water and catalyst addition. Follow ethanol removal, viscosity, gel formation and residual ethoxy or silanol groups.
Particle treatment	Establish a suitable hydroxylated surface and apply a defined treatment. Remove unreacted material and alcohol, then assess compatibility in the actual receiving formulation.
Prehydrolysis and coating trials	Set concentration, reaction time, application and cure in trials. Assess phase separation and retained reactivity during storage; a stable hydrolyzed concentrate requires its own evaluation.

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. Keep away from heat and ignition sources and ventilate transfer, reaction and drying operations.
- Prolonged or repeated ingestion may damage the urinary bladder. Avoid ingestion and prevent repeated exposure.
- Avoid mist and skin or eye contact. Wear suitable gloves and splash goggles and prevent release to drains.
- Hydrolysis releases ethanol. Keep bulk liquid dry and control alcohol vapors during processing and curing.
- Read the Safety Data Sheet before use.

Storage and shelf life

Store tightly sealed in original containers in a cool, dry, well-ventilated area protected from moisture, heat and sunlight. Reseal promptly after dry transfer. 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.

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