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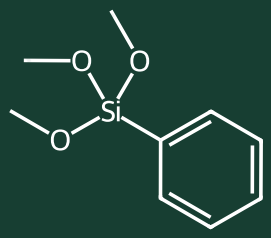
Technical data sheet
TDS-LEGRA-6011-L-EN
Revision 1.0, November 2026

LANDUSIL LEGRA

6011-L

Phenyltrimethoxysilane

Phenyl trimethoxy precursor for resin synthesis and defined particle treatments



Chemical identity

Chemical name
Phenyltrimethoxysilane

CAS number
2996-92-1

EC number
221-066-9

Structure
$C_6H_5Si(OCH_3)_3$

Molecular formula
$C_9H_{14}O_3Si$

Molecular weight
198.29 g/mol

Hydrolysis by-product
Methanol

Product description

LANDUSIL LEGRA 6011-L is phenyltrimethoxysilane, an aromatic organosilane with one phenyl group and three hydrolyzable methoxy groups. It is a precursor for developing phenyl-containing resins, hybrid networks and selected silica-surface modifications.

Hydrolysis releases methanol and generates silanols that can form siloxane bonds. Three potential silicon–oxygen connections allow branching, with network formation governed by water, catalyst, other precursors and reaction history. Monitor residual methoxy and silanol groups, released alcohol and storage stability. The phenyl substituent has no amino, thiol, epoxy, vinyl or Si–H function; the resulting formulation needs separate qualification.

Features and benefits

- Aromatic phenyl group attached directly to silicon
- Three methoxy groups permit condensation branching
- Precursor for phenyl-containing resin development
- Candidate for controlled colloidal-silica treatment
- Methoxy hydrolysis releases methanol

Specification

Property	Unit	Value	Test method
Appearance		**Clear, colorless to straw liquid**	Visual
Purity (GC)	%	**min. 98.0**	Gas chromatography
Density, 25 °C	g/mL	**1.062 ± 0.005**	Density measurement
Refractive index, nD20	–	**1.473 ± 0.005**	Refractometry

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

Typical properties

Boiling point, 45 mmHg	approx. 131 °C
Flash point, closed cup	approx. 29 °C

For guidance only; not part of the specification.

Applications

Resin and hybrid-network synthesis
Precursor with compatible silanes for phenyl-containing oligomers and networks. Assess composition, residual groups, molecular distribution and storage behavior.

Silica fillers and adsorbents
Candidate for treatment of an already formed silica surface or a separate co-condensation route. Evaluate surface chemistry, extractables and accessible pores.

Insulation and optical-resin development
Upstream material for a separately synthesized and formulated resin. Measure dielectric behavior, clarity, refractive index, yellowing and assembly performance under intended conditions.

Coatings and metal films
Component for a defined resin or film process on copper, steel or another selected substrate. Assess defects, adhesion and the complete exposure sequence.

Colloidal silica in resin systems
Precursor for particle modification before any required solvent exchange. Assess dispersion and stability in the actual solvent and receiving resin.

Guidelines for use

Resin processing	Combine with compatible precursors under controlled water and catalyst addition. Follow methanol removal, viscosity, phase behavior and gel formation before further reaction or deposition.
Particle modification	Establish the accessible surface and treatment sequence. Remove unbound material and control solvent exchange before evaluating the treated particles in the receiving binder.
Prehydrolysis and coating trials	Determine concentration, hydrolysis time and cure in trials. Assess retained reactivity and stability of any concentrate; qualify the finished coating or resin for its intended service.

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, sparks and flames and provide suitable equipment and ventilation for transfer and drying.
- Harmful if swallowed. Prolonged or repeated ingestion may damage the bladder; avoid ingestion and repeated exposure.
- Avoid mist and skin or eye contact. Wear chemical-resistant gloves, splash goggles and suitable work clothing.
- Hydrolysis releases toxic methanol. Keep bulk material dry and control alcohol vapors during reaction, 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 place away from moisture, sunlight and ignition sources. Use dry transfer conditions and reseal promptly. 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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