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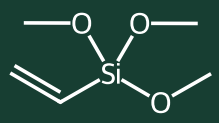
Technical data sheet
TDS-LEGRA-3011-L-EN
Revision 1.0, November 2026

LANDUSIL LEGRA

3011-L

Vinyltrimethoxysilane

Vinyl-functional methoxysilane for polymer grafting and moisture-reactive formulations



Chemical identity

Chemical name
Vinyltrimethoxysilane

CAS number
2768-02-7

EC number
220-449-8

Molecular formula
$C_5H_{12}O_3Si$

Molecular weight
148.23 g/mol

Hydrolysis by-product
Methanol

Product description

LANDUSIL LEGRA 3011-L is vinyltrimethoxysilane, a molecular coupling agent containing one silicon-bound vinyl group and three hydrolyzable methoxy groups. It is used in designed polymer grafting, silane-modified binders, mineral treatments and compatible sealants.

The vinyl group can be incorporated through a selected radical reaction with an appropriate polymer or monomer system. Methoxy hydrolysis separately releases methanol and forms silanols. Subsequent condensation can connect silane-functional chains or attach to hydroxyl-bearing inorganic surfaces. Control grafting, shaping and moisture cure as distinct stages.

Features and benefits

- One silicon-bound vinyl group for selected radical reactions
- Three methoxy groups for hydrolysis and condensation
- Releases methanol during hydrolysis
- Precursor for moisture-crosslinkable polymers
- Suitable for compatible filler and sealant formulation routes

Specification

Property	Unit	Value	Test method
Appearance		**Colorless, clear liquid**	Visual
Purity (GC)	%	**min. 98.0**	Gas chromatography
Density, 20 °C	g/cm³	**0.9668 – 0.9768**	Density measurement
Refractive index, n_D^{20}	–	**1.3910 – 1.3950**	Refractometry

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

Typical properties

Boiling point, 1013 hPa	approx. 123 °C
Flash point, closed cup	approx. 22 °C
Dynamic viscosity, 20 °C	approx. 1 mPa·s

For guidance only; not part of the specification.

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Applications

Polyethylene cable and pipe compounds
Grafting precursor followed by a separate moisture-curing step. Evaluate processing, premature gel, residual monomer and final cure.

Silane-modified dispersions
Comonomer for designed latex synthesis; qualify incorporation, residual monomer and storage stability before assessing film properties.

Siloxane functionalization
Starting material for selected condensation or vinyl-addition reactions with suitable partners; characterize branching and residual functionality.

Mineral-filled polymers and elastomers
Treatment of suitable hydroxyl-bearing fillers where the matrix has an available vinyl reaction route, including selected peroxide-cured compounds.

Sealant moisture management
Methoxy-reactive component for compatible moisture-sensitive systems. Evaluate water reduction, methanol formation and subsequent cure together.

Guidelines for use

Polymer grafting or copolymerization	Screen 0.2 – 2 wt.% based on total monomers in a designed reaction. Match initiator, temperature and residence time; measure incorporation and residual monomer.
Moisture scavenging	Screen 0.1 – 1 wt.% based on total formulation, depending on measured moisture in the raw materials. Check viscosity, stored stability and intended cure response.
Filler treatment	Determine loading for the actual surface area, moisture and matrix chemistry. Compare separate pretreatment with addition during compounding and verify volatile removal.

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

Handling and safety

- Highly flammable liquid and vapor. Exclude ignition sources, ground and bond transfer equipment, and use suitable ventilation.
- Harmful if inhaled and may cause an allergic skin reaction. Avoid vapor, mist and skin contact; wear suitable gloves, clothing and eye protection.
- Hydrolysis releases toxic methanol. Control exposure during mixing and drying; repeated or excessive exposure can damage organs.
- Keep away from moisture and uncontrolled initiator, acid or base contamination. Read the Safety Data Sheet before use.

Storage and shelf life

Store in original, tightly closed containers in a cool, dry, well-ventilated flammable-liquid storage area, away from moisture, sunlight, heat and ignition sources. Shelf life is 12 months in unopened containers. Use dry equipment and promptly reseal after sampling or transfer.

Packaging

25 kg plastic drum, 200 kg steel drum, 1,000 kg IBC. Other pack sizes on request.

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