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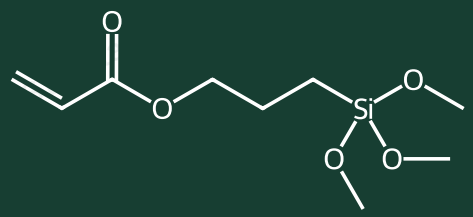
Technical data sheet
TDS-LEGRA-4021-L-EN
Revision 1.0, November 2026

LANDUSIL LEGRA

4021-L

3-Acryloxypropyltrimethoxysilane

Acrylate-functional trimethoxy silane for compatible reactive resins and surface treatments



Chemical identity

Chemical name
3-Acryloxypropyltrimethoxysilane

CAS number
4369-14-6

Molecular formula
$C_9H_{18}O_5Si$

Molecular weight
234.32 g/mol

Hydrolysis by-product
Methanol

Product description

LANDUSIL LEGRA 4021-L is 3-acryloxypropyltrimethoxysilane, a reactive organosilane containing one acrylate double bond and three hydrolyzable methoxy groups. It is evaluated in compatible acrylic resins and at prepared glass, silica or mineral interfaces. The acrylate identity is distinct from a methacrylate-functional silane.

The acrylate group can participate in appropriately initiated radical polymerization. Hydrolysis of the methoxy groups releases methanol and forms silanols that can condense with hydroxylated surfaces. Organic cure and siloxane formation are separate reactions. Their balance depends on water, pH, inhibitor, initiator and drying conditions. Confirm conversion and conditioned adhesion in the complete formulation before selecting production conditions.

Features and benefits

- Acrylate double bond for compatible radical polymerization
- Three methoxy groups provide a hydrolyzable surface function
- Hydrolysis releases methanol
- For evaluation on glass, silica and suitable oxide surfaces
- Usable in reactive primers and hybrid precursor studies

Specification

Property	Unit	Value	Test method
Appearance		**Colorless to almost colorless, clear liquid**	Visual
Purity (GC)	%	**min. 92.0**	Gas chromatography

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

Typical properties

Density, 25 °C	approx. 1.055 g/cm³
Flash point, closed cup	approx. 123 °C

For guidance only; not part of the specification.

Applications

Glass and silica interfaces
Surface treatment screening with compatible acrylic or methacrylic resins; define substrate cleaning, application and subsequent cure.

Acrylic adhesives
Reactive interface component in complete adhesive formulations; assess conversion, bond strength and retained adhesion after conditioning.

Film-surface primers
Investigate prepared film surfaces in the intended laminate construction; qualify each primer, adhesive and ageing sequence together.

Mineral filler treatment
Evaluate coverage, agglomeration and drying on suitable silica or quartz fillers before incorporating them into the selected resin.

UV and hybrid coatings
Screen the acrylate function with the chosen initiator, wavelength and film thickness; monitor residual volatiles and siloxane development.

Guidelines for use

Surface pretreatment	Develop a controlled hydrolysis and application sequence for the actual substrate. Monitor bath clarity and age, surface coverage and drying; avoid excessive deposition that leaves a weak surface layer.
Reactive formulation	Introduce into a compatible acrylic formulation with adequate mixing. Select the level in trials and evaluate cure, viscosity and storage stability before scaling up.
Qualification	Treat polymer incorporation, surface reaction and final adhesion as separate measurements. Compare untreated controls and include water or humidity conditioning appropriate to service.

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

Handling and safety

- Moisture exposure releases toxic methanol. Use ventilation and avoid inhalation or ingestion of the material.
- Can cause severe skin burns and eye damage. Wear chemical-resistant gloves, protective clothing and eye/face protection.
- May cause skin sensitization; assess reproductive-hazard precautions in the current safety documentation.
- Protect from heat, light and initiator contamination. Confirm inhibitor requirements before storage or processing.
- Read the Safety Data Sheet before use.

Storage and shelf life

Store in the original, tightly closed container in a cool, dry, ventilated place, protected from moisture, heat and sunlight. Shelf life is 6 months in unopened containers under recommended conditions. Reseal promptly after use and avoid contamination.

Packaging

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

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