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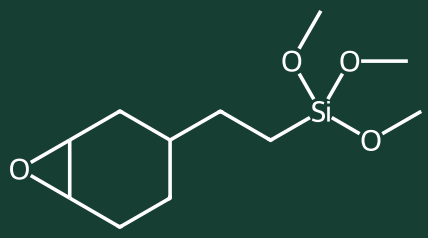
Technical data sheet
TDS-LEGRA-2031-L-EN
Revision 1.0, November 2026

LANDUSIL LEGRA

2031-L

2-(3,4-Epoxycyclohexyl)ethyltrimethoxysilane

Cycloaliphatic epoxy silane for cationic curing and inorganic interfaces



Chemical identity

Chemical name
2-(3,4-Epoxycyclohexyl)ethyltrimethoxysilane

CAS number
3388-04-3

EC number
222-217-1

Molecular formula
$C_{11}H_{22}O_4Si$

Molecular weight
246.38 g/mol

Hydrolysis by-product
Methanol

Product description

LANDUSIL LEGRA 2031-L is 2-(3,4-epoxycyclohexyl)ethyltrimethoxysilane. It contains a cycloaliphatic epoxide and three hydrolyzable methoxy groups, providing separate reaction sites for designed organic curing and inorganic surface treatment.

Methoxy hydrolysis releases methanol and forms silanols that can condense with hydroxyl-bearing surfaces or with other silanols. The ring epoxide can participate in a selected cationic cure or another demonstrated reaction with a functional partner. Control hydrolysis and epoxide conversion independently when preparing reactive surfaces or siloxane intermediates.

Features and benefits

- One cycloaliphatic epoxide for selected curing chemistry
- Three methoxy groups for hydrolysis and condensation
- Releases methanol during hydrolysis
- Precursor for designed epoxy-functional siloxane materials
- Primer, glass-fiber and mineral-interface development routes

Specification

Property	Unit	Value	Test method
Appearance		**Colorless, clear liquid**	Visual
Purity (GC)	%	**min. 97.0**	Gas chromatography
Refractive index, n_D^{25}	–	**1.4510 ± 0.0050**	Refractometry

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

Typical properties

Boiling point, 0.25 mmHg	95 – 97 °C
Flash point, cup method not specified	approx. 141 °C
Density, 25 °C	approx. 1.065 g/mL

For guidance only; not part of the specification.

Applications

Cationic epoxy coatings
Reactive component for deliberately initiated ring-opening cure. Match initiator, light source or heating conditions to the complete formulation.

Glass-fiber and composite interfaces
Coupling ingredient where the matrix cure can use the cycloaliphatic epoxide. Assess sizing distribution, drying and laminate properties.

Printed-metal interlayers
Development of a separate interlayer beneath printed metal features; evaluate coating cure, ink behavior and electrical response as one construction.

Functional siloxane intermediates
Precursor for controlled hydrolysis or co-condensation before a later organic cure; characterize structure and remaining reactants.

Mineral treatment and primers
Surface modification of silica, suitable oxides, glass and ceramics with a compatible coating or adhesive system.

Guidelines for use

Resin development	Determine addition level with the actual functional resin and cure package. Compare fresh and aged formulations for working life, viscosity and epoxide conversion.
Surface treatment	Choose a compatible dilute treatment and establish cleaning, deposition and drying for the actual glass or mineral surface. Check retained epoxide before subsequent coupling.
Cationic curing	Match initiator, exposure, film thickness and any post-cure to the required conversion. A synthesized siloxane intermediate requires its own composition and cure assessment.

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

Handling and safety

- Suspected of causing cancer and genetic defects. Obtain special handling instructions and minimize exposure using appropriate engineering controls.
- Can cause eye irritation. Wear suitable chemical-resistant gloves, protective clothing and splash eye protection; avoid skin contact and breathing mist.
- Hydrolysis releases toxic, flammable methanol. Exclude moisture during transfer and ventilate treatment preparation, application and drying.
- Keep away from heat and uncontrolled acid, base or amine contamination. Read the Safety Data Sheet before use.

Storage and shelf life

Store locked up in tightly closed original containers in a cool, dry, well-ventilated place, protected from moisture, sunlight and heat. Shelf life is 12 months in unopened containers. Use dry transfer equipment and promptly reseal after sampling to limit atmospheric moisture entry.

Packaging

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

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