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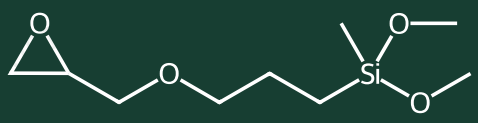
Technical data sheet
TDS-LEGRA-2021-L-EN
Revision 1.0, November 2026

LANDUSIL LEGRA

2021-L

3-Glycidoxypropylmethyldimethoxysilane

Glycidyl epoxy dialkoxysilane for compatible resins and functional surfaces



Chemical identity

Chemical name
3-Glycidoxypropylmethyldimethoxysilane

CAS number
65799-47-5

EC number
265-929-8

Molecular formula
$C_9H_{20}O_4Si$

Molecular weight
220.34 g/mol

Hydrolysis by-product
Methanol

Product description

LANDUSIL LEGRA 2021-L is 3-glycidoxypropylmethyldimethoxysilane, an epoxy-functional silane with two methoxy groups and one methyl group on silicon. It is a reactive component for compatible adhesives, coatings, mineral treatments and glass-fiber formulations.

Methoxy hydrolysis releases methanol and produces silanols for surface attachment and condensation. The glycidyl epoxide reacts independently with suitable partners under selected cure conditions. The dialkoxy silicon has fewer condensation sites than a trialkoxy analogue; organic reactions and other ingredients still determine the network. Measure retained epoxide when a later coupling reaction is required.

Features and benefits

- One glycidyl epoxide for compatible ring-opening reactions
- Two methoxy groups on one silicon atom
- Silicon-bound methyl group for dialkoxy network design
- Releases methanol during hydrolysis
- Surface-treatment and compatible waterborne formulation routes

Specification

Property	Unit	Value	Test method
Appearance		**Colorless, clear liquid**	Visual
Purity (GC)	%	**min. 96.0**	Gas chromatography
Refractive index, n_D^{20}	–	**1.4310 – 1.4340**	Refractometry

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

Typical properties

Boiling point, 4 mmHg	approx. 100 °C
Flash point, cup method not specified	approx. 105 °C
Density, 25 °C	approx. 1.02 g/mL

For guidance only; not part of the specification.

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Applications

Adhesives and primers
Interface component for compatible epoxy and other reactive formulations on prepared glass, ceramics and oxide-bearing metals.

Glass-fiber treatments
Ingredient for sizing or fabric finishing matched to the film former, drying process and final composite matrix.

Functional surfaces and intermediates
Epoxide-bearing surface or siloxane precursor for subsequent coupling to suitable functional polymers; characterize the resulting material.

Waterborne coatings and sealants
Development additive for selected latex or dispersion systems; follow hydrolysis, epoxide retention and changes during storage.

Mineral-filled resins
Treatment of silica, quartz, glass beads and suitable oxides. Assess filler moisture, dispersion, residual alcohol and resin cure.

Guidelines for use

Formulation addition	Determine the addition level in trials with the actual resin and cure package. Check compatibility, working life and stored viscosity before assessing the cured interface.
Surface pretreatment	Apply a compatible dilute treatment to a cleaned inorganic surface, then dry before the next reaction. Establish deposition and remaining epoxide for that process.
Waterborne development	Control water content, pH, temperature and bath age. Compare fresh and aged material and verify epoxide conversion; no universal numeric dosage is specified.

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

Handling and safety

- Avoid skin and eye contact; the liquid can cause irritation. Use chemical-resistant gloves, protective clothing and splash eye protection.
- Hydrolysis releases toxic, flammable methanol. Provide ventilation during mixing, application and drying, and avoid breathing vapor or mist.
- Reaction with amines can be exothermic. Prevent uncontrolled contact with curing agents, acids, bases and moisture during storage or transfer.
- Keep away from heat, flames and sparks. Use dry transfer equipment and read the Safety Data Sheet before use.

Storage and shelf life

Store in original, tightly closed containers in a cool, dry, well-ventilated place, protected from moisture, sunlight and ignition sources. Shelf life is 12 months in unopened containers. Use dry equipment for sampling and reseal promptly to minimize moisture entry.

Packaging

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

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