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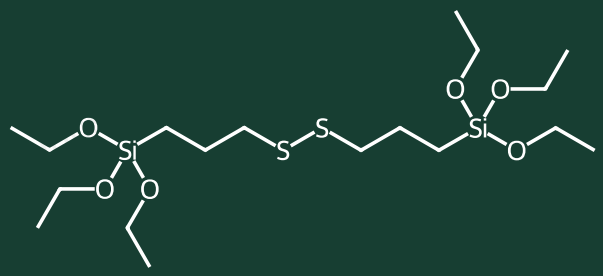
**Technical data sheet**
TDS-LEGRA-8030-L-EN
Revision 1.0, November 2026

LANDUSIL LEGRA

# 8030-L

## Bis[3-(triethoxysilyl)propyl]disulfide

Disulfide-linked triethoxy silane for silica-filled elastomer and compound development



### Chemical identity

Chemical name
**Bis[3-(triethoxysilyl)propyl]disulfide**

CAS number
**56706-10-6**

Molecular formula
**$C_{18}H_{42}O_6S_2Si_2$**

Molecular weight
**474.82 g/mol**

Structure basis
**Nominal S2 molecular species**

Hydrolysis by-product
**Ethanol**

## Product description

LANDUSIL LEGRA 8030-L identifies bis[3-(triethoxysilyl)propyl]disulfide, commonly abbreviated TESPD. Its nominal structure contains two triethoxysilyl ends connected by a disulfide bridge. It is evaluated as a sulfur-functional coupling component for silica-filled tire and industrial rubber compounds.

The ethoxy groups hydrolyze to silanols with ethanol release and can condense with suitable hydroxylated filler surfaces. The sulfur bridge participates in the compound reaction and cure sequence. Technical disulfide-named materials may contain other sulfur-chain lengths, so nominal molecular identity, total sulfur and chain distribution require separate assessment. Rubber, silica, mixing history and curative balance determine the final response.

## Features and benefits

- Two triethoxysilyl ends with a nominal disulfide bridge
- Ethoxy hydrolysis releases ethanol
- Coupling component for compatible silica-filled elastomers
- Sulfur balance and addition sequence require compound trials
- Nominal S2 identity is distinct from chain distribution

## Specification

| Property | Unit | Value | Test method |
|---|---|---|---|
| Appearance | | **Light yellow to yellow, clear liquid** | Visual |
| Total sulfur content | % | **13.5 – 15.5** | Elemental sulfur analysis |

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

## Typical properties

| | |
|---|---|
| Flash point, method not reported | approx. 75 °C |
| Solubility | Soluble in alcohols and ketones; reacts with water |

For guidance only; not part of the specification.

## Applications

**Silica-filled tire rubber**
Screen with the actual elastomer blend, silica and cure package; assess dispersion, scorch, cure and relevant dynamic properties.

**Rubber soles**
Investigate in the intended sole formulation, measuring processing, abrasion and conditioned properties using matched controls.

**Metal-to-rubber primer research**
Assess the actual prepared metal, binder and rubber cure together; qualify initial and aged adhesion separately.

**Industrial rubber and seals**
Evaluate the selected compound for mixing stability, cure, mechanical properties and service-relevant ageing.

**Pretreated silica**
Develop a controlled filler treatment and drying sequence; compare the bound-silane material with a defined in-situ addition route.

## Guidelines for use

| | |
|---|---|
| **Compound screening** | Determine the silane level and complete sulfur/accelerator balance in the selected formulation. Record silica type, rubber, mixing temperature and time, and compare with matched controls. |
| **Addition sequence** | Evaluate silane reaction during mixing separately from later sulfur addition. Check scorch and cure after each change; establish the sulfur contribution experimentally for the actual supplied composition. |
| **Pretreated filler route** | Confirm bound silane and residual volatile content before compounding. Compare on a defined filler and active-material basis, with the same cure and conditioning protocol. |

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

## Handling and safety

- Hydrolysis releases ethanol. Provide ventilation during mixing and drying and keep away from heat and ignition sources.
- Can cause eye irritation. Wear suitable protective gloves, clothing and goggles and avoid skin contact or mist inhalation.
- Keep containers closed and prevent moisture contamination. Collect spills and prevent discharge to drains or the environment.
- Read the Safety Data Sheet before use.

## Storage and shelf life

Store in tightly closed original containers in a dry, temperature-controlled and well-ventilated place, protected from moisture, heat and direct sunlight. Shelf life is 12 months in unopened containers under recommended conditions. Reseal promptly 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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