

## TECHNICAL DATA SHEET

### Silane SI-619

**Common Names:** SI-69, A-1289, Sulphur Silane Coupling Agent, TESPT  
(trade names owned by respective manufactures)

**Chemical Name:** Bis[3-(triethoxysilyl)propyl]tetrasulfide

**Chemical Formula:** C<sub>18</sub>H<sub>42</sub>O<sub>6</sub>S<sub>4</sub>Si<sub>2</sub>

**CAS Number:** 40372-72-3

**Appearance:** Yellowish transparent liquid

### Technical Specifications

- **Density:** ~1.08 g/cm<sup>3</sup> at 25°C
- **Boiling Point:** >250°C
- **Flash Point:** >100°C
- **Refractive Index:** 1.465–1.475
- **Sulfur Content:** ~22–26%
- **Solubility:** Insoluble in water, soluble in organic solvents

### Key Benefits

- Enhances the mechanical properties of rubber
- Improves abrasion resistance and durability
- Provides better dispersion of fillers like silica in rubber compounds
- Reduces rolling resistance in tires, improving fuel efficiency
- Enhances adhesion between rubber and reinforcing fillers

### Applications

#### 1. Tire Industry

- Improves wet traction, rolling resistance, and wear resistance
- Used in high-performance tires to enhance longevity

#### 2. Industrial Rubber Products

- Applied in rubber belts, hoses, and seals for enhanced strength and durability

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- Increases resistance to heat, chemicals, and mechanical stress

### 3. Footwear Industry

- Improves durability and wear resistance in rubber soles
- Enhances adhesion of rubber to other materials

### 4. Automotive Components

- Used in engine mounts, gaskets, and anti-vibration rubber parts
- Enhances heat and aging resistance of rubber materials

## Recommended Dosage

- The typical dosage of Silane SI619 in rubber formulations ranges from **0.5% to 2.0%** by weight of the filler content. The exact dosage depends on the specific rubber compound formulation and application requirements.

## Storage and Handling

- Store in a cool, dry, and well-ventilated place; away from moisture and direct sunlight
- Use personal protective equipment (PPE) while handling

## Citations

1. Xu, Z., & Zhang, L. (2021). *Effect of Silane Coupling Agents on Rubber Compounds*. Journal of Rubber Research.
2. European Tyre & Rubber Manufacturers' Association (ETRMA). *Silane-Based Additives in Rubber Processing*.
3. Kim, J., et al. (2020). *Advancements in Silica-Silane Technology for Tire Performance Improvement*. International Journal of Polymer Science.

## To purchase or get samples:

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