



SAE

Silane coupling agent



Overview

SAE is a specialty epoxy silane coupling agent, primarily used in coatings, inks, adhesives, inorganic pigment and filler surface treatment, and fiberglass industries. It enhances adhesion to metals (e.g., steel, aluminum, zinc, copper, chromium), glass, ceramics, concrete, nylon, polyester, acrylates, Kevlar, fiberglass, and fabrics, and improves water resistance. SAE also offers excellent resistance to yellowing and outstanding storage stability, making it suitable for PU systems.

Physicochemical Properties

Appearance	Transparent liquid	Composition	Specialty epoxy silane coupling agent
Effective content	≥98.0 %	Solvent	None
Density	1.03 g/ml		

Characteristics and Advantages

Hydrolyzed epoxy silane coupling agents can migrate freely to organic/inorganic interfaces, where the silanol groups form hydrogen bonds with the substrate, which then condense to form -O-Si- bonds. The epoxy groups on the other end form chemical covalent bonds with resin polymers, enhancing adhesion.

- Non-yellowing silane coupling agent without amino groups.
- Can be used in PU systems without affecting viscosity.
- Exhibits excellent storage stability across various resin systems.
- General water boil resistance; effectiveness is improved when formulated with a small amount of polyester resin.
- For optimal performance, it is recommended to dilute with IBA in a 1:1 ratio to activate the agent.

Dosage

Adhesion Promoter:

1. For direct addition: Use 0.2-2% based on the solid content, either added directly or first diluted with butanol.
2. For primer: Dilute with water and alcohols, then apply directly to the substrate.

Inorganic Pigment and Filler Surface Treatment:

1. Adjust the pH of water to 4 with acetic acid, then add 0.1-0.2% SAE to create an aqueous solution. Apply this solution to the surface of inorganic pigments and fillers.
2. Alternatively, mix SAE directly with inorganic pigments and fillers

under low shear for several minutes, then rapidly dry at 104-121 °C.

Application

Non-ferrous metals, glass, plastics, surface treatment.

**Precautions
Storage**

& Storage Conditions: 0-40 °C. Store the product in a cool, well-ventilated area, keep the container tightly closed, and away from heat and sources of ignition.

Safety

Refer to MSDS

Packaging

25 Kg/Barrel