

SILRES® M 51 E

Functional Methyl Silicone Resin Emulsion for Water-Borne Heat-Resistant Coatings

Silicone resins are highly appreciated as binders for pigmented metal coatings that withstand temperatures of up to 600 °C. With SILRES® M 51 E, WACKER now presents a novel water-borne methyl silicone resin for these demanding applications. This makes it possible to harness all the positive effects of water-borne paints in heat-resistant industrial applications.

Water-Borne Binder for Heat-Resistant Coatings

Silicone methyl resin binders have been used in waterborne coatings before but not in heat-resistant applications on metal. SILRES® M 51 E changes this: water-borne coatings that use SILRES® M 51 E as the sole binder show a very similar performance as heat-resistant coatings containing solvent-borne silicone resin binders.

A Move To Sustainability – And More

Aqueous paint formulations based on SILRES® M 51 E offer a host of advantages: they dry quickly and, after baking, possess exceptional chemical and mechanical strength. Following thermal stress, they retain their hue and lose very little of their gloss.

Benefits of SILRES® M 51 E in Heat-Resistant Industrial Coatings

SILRES® M 51 E is a functional methyl silicone resin finely dispersed as tiny droplets in an aqueous medium. The emulsion has good storage stability.

Coatings based on this novel binder offer various advantages:

- Heat resistance up to 600 °C (when pigmented)
- Tack-free after 15–20 minutes at room temperature
- High hardness
- Excellent scratch and chemical resistance
- Very good color and gloss retention
- Low-VOC formulations possible
- Reduced smoke formation when first heated (once crosslinked)

General Characteristics of SILRES® M 51 E

Solids content	50–54 %
pH value	~5.0
Viscosity	~1,500 mPa·s
Density at 25 °C	~1.1 g/ml
Flash point	>110 °C
Autoignition temperature	>500 °C

Broad Application Range

Typical applications include coatings for:




- Vehicle exhaust systems
- Ovens and stoves
- Range hoods
- Fireplaces
- Pots and pans
- Pipes and plant components in the petrochemical industry



Applications for coatings based on SILRES® M 51 E include all metal coatings that are exposed to very high temperatures.

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