SILRES® HK 46

Silicone Resins

SILRES® HK 46 is a high-molecular weight methyl silicone resin supplied as 50 wt.%-solution in xylene/n-butanol 4:1. Typical applications include the use as a binder for high heat-resistant coatings and heat-stable nonstick coatings.

Properties

SILRES® HK 46 offers the following properties:

- good balance of flexibility, hardness, heat resistance and curing speed
- low viscosity
- rapid air-drying
- limited compatibility (preferably used as a sole binder, compatibility typically exists only with other methyl silicone resins)
- excellent hydrophobicity and corrosion-protection

Technical data

General Characteristics

Property	Condition	Value	Method
Viscosity, kinematic	25 °C	40 - 60 mm^2/s	-
Appearance	-	clear, colorless to slightly yellow solution	-
Density	20 °C	approx. 1.01 g/cm^3	DIN 51757
Flash point	-	26 °C	DIN 53213
Ignition temperature	-	435 °C	DIN 51794
Solids content	200 °C | 1 h	approx. 50 wt. %	-
Solvent	-	Xylene/n - Butanol 4:1	-

These figures are only intended as a guide and should not be used in preparing specifications.

Store in a dry and cool place.

Protect against moisture.

Applications

- Baking Tray Coatings
- Heat-Resistant Coatings
- Industrial Coatings
- Marine & Protective Coatings

Application details

SILRES® HK 46 may be used as a binder for coatings. It combines outstanding heat resistance and weatherability.

Heat-resistant Coatings
SILRES® HK 46 is suitable for all kinds of heat-resistant paints. It is an excellent choice for (anti-corrosion) coatings on fireplaces, mufflers, exhaust systems, engine parts, boilers, furnaces, ovens and oven inserts, chimneys, barbeques, electric/gas heaters, incinerators. High-heat resistant coating formulations with SILRES® HK 46 in combination with suitable temperature stable pigments and fillers can achieve thermal stability up to 600°C (1100°F) . Aluminum pigments can be used for silver/grey colors and black pigments like iron managnese oxides or copper chromite black spinels for dark black coatings. Platelet-shaped inorganic fillers/extenders like mica or talc are suitable for such formulations. The pigments and fillers must be properly dispersed in the paint. Degreasing/Cleaning and sandblasting of the substrate are recommended for obtaining optimum corrosion resistance and heat stability on metal surfaces. The adhesion will always depend on the specific coating formulation, too. Coating application can be done by spraying, dipping and brushing. Coatings made with SILRES® HK 46 dry at room temperature to tack-free films which already provide temporary corrosion protection. Such coating films are not resistant to solvents, however, and have to be heat-cured above 150°C. We propose 250°C/30 min as a guideline to develop optimum mechanical properties and resistance to solvents.
Formulation examples are available on request.

Non-stick coatings
SILRES® HK 46 can be used as a binder for non-stick or release coatings. Applications include technical coatings or bakeware coatings (food contact) for professional or industrial use. Typical formulations may contain additional non-stick additives (e. g. SILFAR® 350, recommended amount: 3-5 wt.% on resin solids) and 0.5 to 1 wt.% Titanium(IV) n-butoxide (CAS No. 5593-70-4) to accelerate the formation of a long-term heat-resistant silicone resin film.
Information on the current BfR/FDA-status is available on request.

Packaging and storage

Packaging

- 25 kg steel can
- 200 kg steel drum
- 950 kg IBC

Storage

SILRES® HK 46 must be stored in tightly closed original containers with exclusion of moisture. Contact with tin (e.g. with improper metal containers) or moisture will cause gelation.
The 'Best use before end' date of each batch is shown on the product label.
Storage beyond the date specified on the label does not necessarily mean that the product is no longer usable. In this case however, the properties required for the intended use must be checked for quality assurance reasons.

Safety notes

Comprehensive instructions are given in the corresponding Material Safety Data Sheets. They are available on request from WACKER subsidiaries or may be printed via WACKER web site http://www.wacker.com.

QR Code SILRES® HK 46

For technical, quality or product safety questions, please contact:

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