

# SILRES<sup>®</sup> MSE 100



## Silicone Resins

SILRES<sup>®</sup> MSE 100 is the methyl ester of a mixture of different oligomeric methylsilicates. It is a methoxyfunctional methyl polysiloxane.

Typical application of SILRES<sup>®</sup> MSE 100 is the use as binder for coatings with these key properties:

- resistance to high heat
- room temperature cure
- no smoke generation during (first) heating
- high hardness, no thermoplasticity

## Properties

SILRES<sup>®</sup> MSE 100 is recommended as an ambient temperature moisture-curing binder for heat resistant paints. In combination with suitable catalysts and temperature stable pigments and fillers, SILRES<sup>®</sup> MSE 100 is the optimum binder for ambient curing, heat resistant paints. The curing rate depends on the catalyst used and on the relative humidity. After paint application and paint drying, coatings based on SILRES<sup>®</sup> MSE 100 can withstand temperatures of up to 650°C (1200°F) without losing adhesion.

- low viscous liquid, solventfree silicone binder (solvent content < 2%)
- very high inorganic content (corresponds to 68 - 72% SiO<sub>2</sub>)
- curable at ambient temperature within less than 15 min
- no smoke generation upon initial stoving
- limited compatibility (preferably used as a sole binder)

## Technical data

### General Characteristics

Property	Condition	Value	Method
Appearance	-	clear, low-viscous liquid	-
Color	-	colorless	-
Density	-	1.14 g/cm <sup>3</sup>	-
Flash point	-	69 °C	ISO 3679
Ignition temperature	-	220 °C	not specified
Viscosity, kinematic	-	20 - 35 mm <sup>2</sup> /s	DIN 51562

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

All the information provided is in accordance with the present state of our knowledge. Nonetheless, we disclaim any warranty or liability whatsoever and reserve the right, at any time, to effect technical alterations. The information provided, as well as the product's fitness for an intended application, should be checked by the buyer in preliminary trials. Contractual terms and conditions always take precedence. This disclaimer of warranty and liability also applies particularly in foreign countries with respect to third parties' rights.

Store in a dry and cool place.

Protect against moisture.

## Applications

- Heat-Resistant Coatings
- Industrial Coatings

## Application details

Heat resistant paints based on SILRES<sup>®</sup> MSE 100 can be either formulated as one or two-pack systems.

One-pack systems are very sensitive to moisture once the catalyst has been added to the paint. Typically, pigments, fillers (mica or talc), (anti-settling) additives, catalyst(s), additional solvents (where necessary) are mixed/dispersed with the binder SILRES<sup>®</sup> MSE 100. Storage stability has to be checked carefully during development and production scale-up.

Two-pack systems offer much longer shelf-life. First pack: Pigments, fillers (mica or talc), (anti-settling-) additives, additional solvents (where necessary) are mixed/dispersed with the binder SILRES<sup>®</sup> MSE 100. Second pack contains catalyst(s) and additional solvents where necessary. Both packs are mixed immediately before use.

Suitable catalysts include acids and bases, tin, zinc, titanium and zirconium compounds. Recommended standard catalyst is WACKER<sup>®</sup> Catalyst TC 44.

The best adhesion and corrosion resistance is obtained with platelet-shaped pigments and fillers.

Example formulations are available on request.

Basic handling instructions:

- Surface pretreatment: Sand-blasting and degreasing by suitable solvents is highly recommended.
- Paint application by spraying, dipping or brushing.

- Provide adequate ventilation to maintain concentrations of particulates and any vapour below occupational exposure limits.
- Dry-to-touch is approx. 30 min at ambient temperature and 50% relative humidity.
- Recommended DFT is 15 to 25µm.

SILRES® MSE 100 is the binder of choice for all heat resistant coatings between 200°C (400°F) and 650°C (1200°F) which have to cure at ambient temperature prior to heat exposure. In many applications the major target of the coating is to provide corrosion resistance to the steel or aluminium substrate. Corrosion resistance can be further improved if a zinc-rich ethylsilicate is used as a primer (thereby lowering maximum operation temperature to around 420°C). Maximum heat resistance depends on the paint formulation, especially on the pigments used. A maximum temperature up to 650°C (1200°F) is observed for silver-coloured aluminium pigments and about 500°C (930°F) for black pigments. Others colors are possible as well.

- automotive, motor-bike and aircraft parts (e. g. exhaust systems, mufflers, engine parts)
- industrial coatings (Chimneys, furnaces, gas boilers, heat exchangers, light bulbs)
- household & appliances (ovens (inserts), stoves, barbecues)

## Packaging and storage

### Packaging

- 25 kg Steel can
- 200 kg Steel drum
- 1000 kg IBC

### Storage

SILRES® MSE 100 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® MSE 100



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

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