

Manual

SILIKOPON[®] EF

High-Solids 2-Pack Silicone-Epoxy Resin



Silicone-epoxy systems represent a novel technology for today's coatings formulator.

The high crosslinking density associated with these coatings exhibit strong anti-corrosive characteristics. Due to the hydrophobic nature of the resin, silicone-epoxy coatings display antifouling and anti-icing properties.

Although the most common substrate for silicone-epoxy coatings has traditionally been metal, recent studies have shown benefit on wood, concrete and masonry substrates. SILIKOPON[®] EF can be formulated as a low VOC, corrosion and weather resistant coating.

These systems exhibit excellent dirt pickup resistance and anti-graffiti properties.

SILIKOPON[®] EF allows the formulation of low VOC coatings without compromising properties associated with traditional higher VOC systems.

Contents of the Sample Kit

Binder: 1 bottle (1 kg) SILIKOPON[®] EF

Hardener: 2 bottles (each 100 g), DYNASYLAN[®] AMEO and 1 bottle (100 g) DYNASYLAN[®] 1124

Chemical Data

SILIKOPON[®] EF

Epoxy equivalent weight: approx. 450 g/mole

DYNASYLAN[®] AMEO

Amine H-equivalent weight: 110 g/mole

DYNASYLAN[®] 1124

Amine H-equivalent: 341 g/mole

Guiding Formulations and Test Results

Part A	Amount by weight
SILIKOPON® EF	53.5
TEGO® AIREX 990	0.3
TEGO® Dispers 670	1.0
THIXATROL® ST	0.5
Xylol	1.0
TINUVIN® 400	2.0
TINUVIN® 292	1.0
KRONOS® 2360	30.0
BLANC FIXE Micro	7.0
Butylacetat	3.7
Total	100.0

Part B	Variation 1	Variation 2
DYNASYLAN® AMEO	12.5	0
DYNASYLAN® 1124	0	20.3
Total	12.5	20.3

Mixing ratio	Variation 1	Variation 2
Part A : Part B	100 : 12.5	100 : 20.3

Properties of the coating

	DYNASYLAN® AMEO	DYNASYLAN® 1124	DynasyLAN® AMEO + 3% TIB-Kat 318
Mixing ratio	100 : 12.5	100 : 20.3	100 : 12.5
Calculated crosslinkage	approx. 95 %	50 %	approx. 95 %
Potlife	approx. 5 h	approx. 7 h	approx. 1.5h
Drying recorder "dry to touch" at rt*	15 h	3 h	2.5h
Drying recorder "dry trough" at rt*	>24 h	5 h	3.5h
Gloss 60° cured at rt*	94	89	94
Pendulum hardness König (14 d at rt*)	82	54	95
DFT [µm]	60-70	60-70	60-70

* rt = room temperature (23 °C, approx. 50 % humidity)

Processing Instructions

1. Mix the hardener to Part A and add a catalyst e.g. TIB-Kat 318 to increase the curing speed.
2. Try a mixture of 3 parts of DYNASYLAN® AMEO with 1 part of DYNASYLAN® 1124 to increase the curing speed.
3. The paint based on SILIKOPON® EF is either ambient curing or could be dried for e.g. 30 min @ 80°C, in presence of the catalyst TIB KAT® 318.
4. For an improvement of flexibility of the obtained film it is possible to replace an amount of about 1% of part B by JEFFAMINE® D230.
5. Avoid big parts of water in the formulation, because the storage stability of the paint is affected.
6. Additive recommendation: TEGO® Dispers 685, TEGO® Dispers 670, TEGO® Dispers 672, TEGO® Airex 900, TEGO® Airex 931, (990, 991), TINUVIN® 292, TINUVIN® 400

Holders of the trademarks

Mentioned trademark	Supplier
BLANC FIXE	Sachtleben Chemie GmbH
DYNASYLAN®	Evonik Industries or one of its subsidiary companies
JEFFAMINE®	Huntsmann Petrochemical Corp.
KRONOS®	KRONOS TITAN GmbH
SILIKOPON®	Evonik Industries or one of its subsidiary companies
TEGO®	Evonik Industries or one of its subsidiary companies
THIXATROL®	Elementis Specialties, Inc.
TIB KAT®	TIB Chemicals AG
TINUVIN®	BASF SE

This information and all further technical advice is based on our present knowledge and experience. However, it implies no liability or other legal responsibility on our part, including with regard to existing third party intellectual property rights, especially patent rights. In particular, no warranty, whether express or implied, or guarantee of product properties in the legal sense is intended or implied. We reserve the right to make any changes according to technological progress or further developments. The customer is not released from the obligation to conduct careful inspection and testing of incoming goods. Performance of the product described herein should be verified by testing, which should be carried out only by qualified experts in the sole responsibility of a customer. Reference to trade names used by other companies is neither a recommendation, nor does it imply that similar products could not be used.

Evonik Industries AG

Goldschmidtstraße. 100, 45127 Essen, Germany

PHONE +49 201 173-2222

TELEFAX +49 201 173-1939

Info-tego@evonik.com

www.tego.de