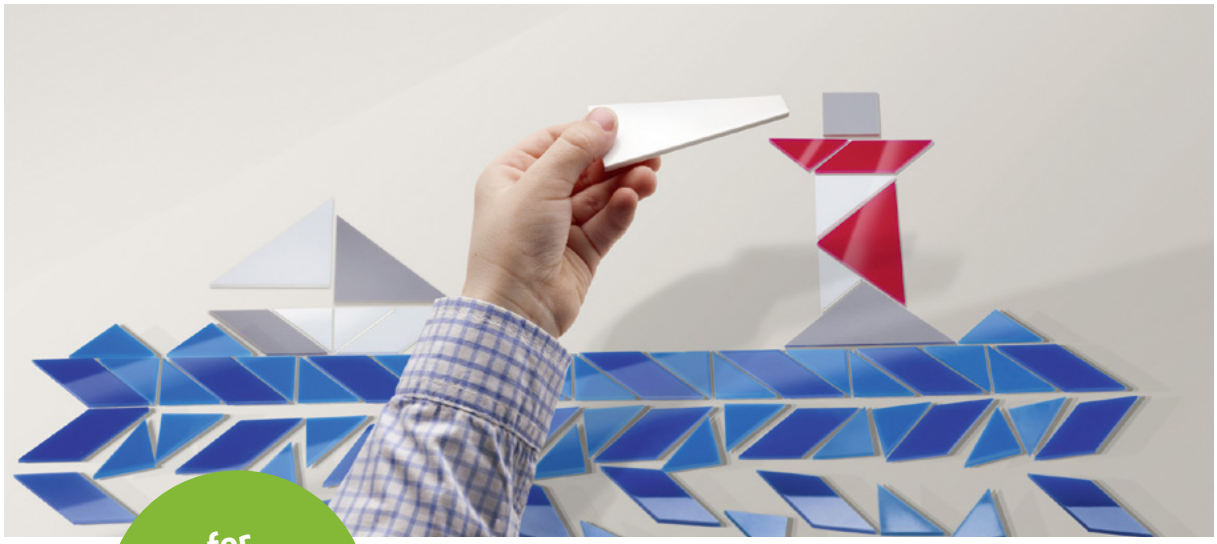
Simply Indestructible!

The VESTANAT® EP-M Family for outstanding scratch and chemical resistance

vestanat

VESTA – Developed in Germany. Available globally.



for Wood Metal & DIY

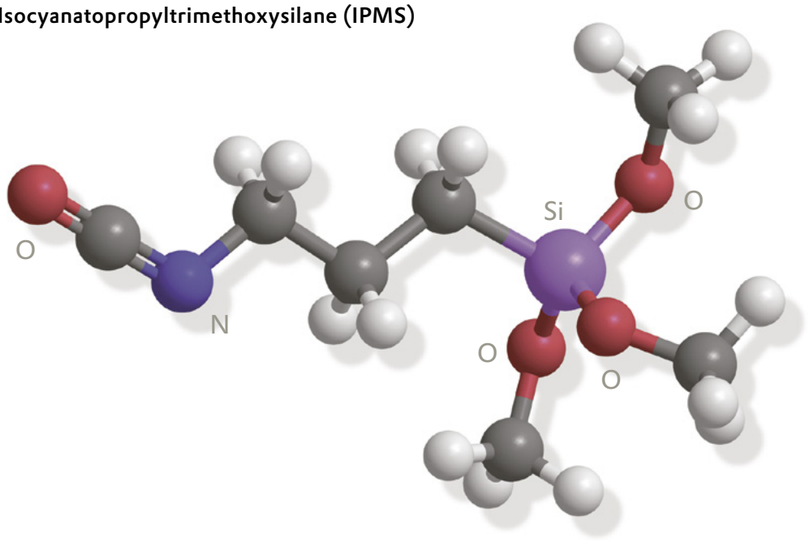
EVONIK
Leading Beyond Chemistry

About us

For more than 55 years Evonik's Business Line Crosslinkers has been the reliable partner and solution provider in the field of isophorone chemistry. With global production sites, we are uniquely placed to satisfy our customers' demands. Our portfolio of VESTA products showcases high performance materials that enhance the quality of our customers' applications.

VESTA – Developed in Germany. Available globally.

Isocyanatopropyltrimethoxysilane (IPMS)



Benefits at a glance

- **Outstanding scratch resistance**
- **Up to 100% active matter**
- **Fast curing cycles**
- **High chemical resistance**
- **Room temperature curing**
- **DIY possible**

Evonik has developed a new crosslinking concept for high performance, scratch resistant coatings based on adducts of isocyanatosilanes. This class of silane-urethane hybrid crosslinkers exhibits an outstanding performance profile with regard to both mechanical and chemical properties.

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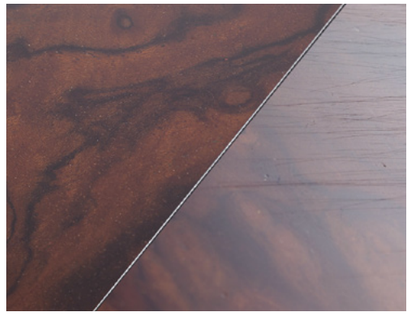
M Family - Simply Indestructible!

A toolbox for custom-designed solutions

The technology platform opens up a wide range of possibilities to formulate scratch resistant low temperature cure coatings for a plethora of substrates such as wood, plastic and metals and many more. The temperature sensitivity of the substrate and the desired curing conditions determine the choice of crosslinker.

VESTANAT® EP-M grade based clearcoat (left)
Standard 2K PUR clearcoat (right)



VESTANAT® EP-MF grade based clearcoat (left)
Standard 2K PUR clearcoat (right)

VESTANAT® EP-IPMS

Monomeric IPMS is an isocyanate-functionalized trimethoxysilane for the synthesis of non-isocyanate crosslinkers to combine PUR chemistry with moisture curable silane technology.

VESTANAT® EP-M grades

The VESTANAT® EP-M product range is based on IPMS and PUR adducts. It combines PUR properties with glass-like hardness in a single, NCO-free component. The products are curable at elevated temperatures above 80°C.

VESTANAT® EP-MF grades

The VESTANAT® EP-MF product range transforms the unique hybrid properties of IPMS-based adducts into isocyanate-free, moisture-curable systems for room temperature applications with drying times of less than one hour.

VESTANAT® EP-E grades

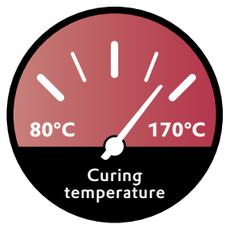
VESTANAT® EP-E grades impart the same high performance in terms of durabilty and scratch resistance as the M-grades but are based on ethoxy-silane technology. The EP-E grades offer full formulation freedom in terms of flexibilty, durability and reactivity.

VESTANAT EP-EF grades

VESTANAT® EP-EF grades are fully formulated, catalyzed ethoxy-silane based adducts and resemble the ready to use versions of the EP-E grades. Both, EP-E and EP-EF grades are suitable for DIY applications.

Too good to be true?
Come and see for yourself!

VESTANAT® EP-M grades



VESTANAT® EP-M grades are silanes for curing at elevated temperatures (>80°C). These grades are used in combination with suitable binders and enable the formulation of highly scratch resistant coatings.

Benefits at a glance

- Outstanding scratch resistance
- Excellent chemical resistance
- Full performance in combination with appropriate resins
- Booster for 2K PUR systems

VESTANAT® EP-M 60, M 95, M 222 and M 222 X

With the different types of **VESTANAT® EP-M 60**, **M 95**, **M 222** and **M 222 X** a broad range of properties like viscosity, scratch resistance or flexibility can be tailored. For best results the coating requires a catalyst such as VESTANAT® EP-CAT 11 B. Its full compatibility with standard 2K PUR systems also allows the product to be used as booster for scratch resistance and durability.

Properties

VESTANAT®	EP-M 60*	EP-M 95*	EP-M 222*	EP-M 222 X*
Active matter content	100%	100%	85%	85%
Viscosity at 23°C [mPas]	200 - 400	500 - 700	3000 - 5000	5000 - 7500
Solubility	Ketones, Esters, Aromatics	Ketones, Esters, Aromatics	Ketones, Esters, Aromatics	Ketones, Esters, Aromatics
Scratch resistance	++	+	+/o	+/o
Chemical resistance	++	+	+/o	+/o
Flexibility	+/o	+	++	++

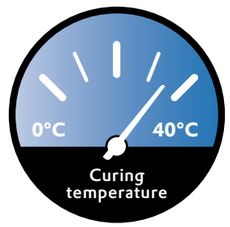
* EP = Experimental Product

VESTANAT® EP-MF grades

Benefits at a glance

- Ready-to-use 1K self crosslinking system
- Fast curing cycles even at room temperature
- 100% active ingredient
- Excellent chemical resistance
- Outstanding scratch performance

VESTANAT® EP-MF grades are solvent free, ready-to-use crosslinkers. They can be used as single binder but they are also compatible with a variety of co-binding agents, such as acrylic polyols. The coatings can be cured at ambient temperature and are suitable for all kinds of substrates.



VESTANAT® EP-MF 203

This crosslinker enables coatings with high reactivity and fast return-to-service times. It makes them conspicuous through short curing cycles at ambient temperature. VESTANAT® EP-MF 203 is the next generation product with even enhanced drying behavior and scratch resistance.

VESTANAT® EP-MF 204

This crosslinker has a higher content of urethane structures. It offers a more balanced profile between flexibility and scratch resistance. VESTANAT® EP-MF 204 is the next generation product with greater enhanced drying behavior and scratch resistance.

VESTANAT® EP-MF 205

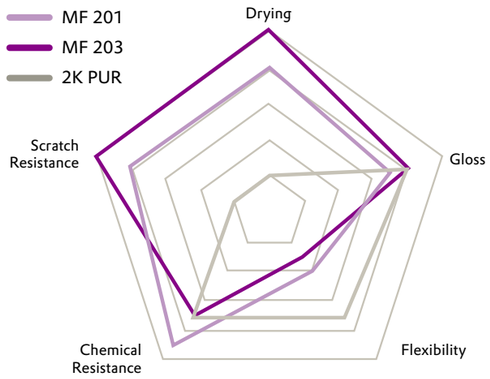
This crosslinker has the highest flexibility of the entire EP-MF product range. A harmoniously tuned mechanical property profile allows for silyl-polyurethane coatings with good hardness and simultaneously high flexibility.

Properties

VESTANAT®	EP-MF 201*	EP-MF 202*	EP-MF 203*	EP-MF 204*	EP-MF 205
Active matter content	100%	100%	100%	100%	82%
Viscosity at 23°C [mPas]	200 - 300	2000 - 3000	100 - 200	1500 - 2500	600 - 800
Solubility	Aromatics, Solvent naphtha, Glycol ethers	Aromatics, Solvent naphtha, Glycol ethers	Aromatics, Solvent naphtha, Glycol ethers	Aromatics, Solvent naphtha, Glycol ethers	Aromatics, Solvent naphtha, Glycol ethers
Hardness [König] 1d/final	> 120	> 120	> 130	> 130	> 130
Touch dry at 23°C (approx.)	1 hour	2 hours	< 1 hour	1.5 hours	1.5 hours
Appearance (distinction of image)	+	+/o	++	+	+

* EP = Experimental Product

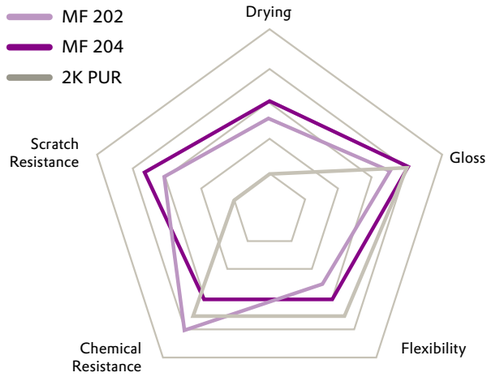
VESTANAT® EP-MF grades



High performance grade: VESTANAT® EP-MF 203

- Silane content and crosslinking density are the highest among the MF-range
- Outstanding scratch and also chemical resistance
- Solvent-free
- Touch dry within one hour possible

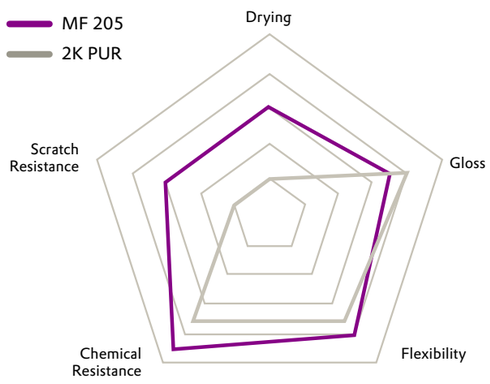
VESTANAT® EP-MF 203 is the optimized solution with improved viscosity and drying behavior.



Optimum balance between performance and flexibility: VESTANAT® EP-MF 204

- Increased content of PUR chains
- Carefully adjusted balance between extraordinary mechanical performance and well tuned flexibility
- Solvent-free
- Touch dry times of less then 120 minutes

VESTANAT® EP-MF 204 is the improved next generation product with better drying behavior and applicability.



VESTANAT® EP-MF 205 with unprecedented flexibility and efficiency

- PUR-like flexibility paired with the typical hardness and resistance of the MF Family
- Touch dry times of 90 minutes possible
- Moderate silane content for optimum balance between performance and price

VESTANAT® EP-EF grades

VESTANAT® EP-EF grades are high solid, ethoxy-silane-based crosslinkers for ultra high performance coatings.
They can be used in the do-it-yourself sector and are characterized by fast drying times at ambient temperatures.

Benefits at a glance

- **Do-it-yourself conform**
- **Room temperature curable**
- **Touch dry within one hour**
- **Low viscosity**
- **Easy handling and dosing**
- **Enhanced compatibility to esters**

VESTANAT® EP-E 95 and EP-E 222

VESTANAT® EP-E 95 and EP-E 222 are building blocks with different silane content for individual tuning of durability and flexibility of the coating. They can be used as sole binder in 1K coatings or as additive in 2K coating systems. In 2K applications they can be used as sole crosslinker for acrylic polyols or in combination with classical isocyanate crosslinkers. VESTANAT® EP-E grades are high temperature curing adducts, the addition of the catalyst VESTANAT® EP-CAT 21 allows for room temperature curing within less than 60 minutes.

VESTANAT® EP-EF 201

VESTANAT® EP-EF 201 is the fully catalyzed grade for ready to use 1K coating systems. Alternatively, it can be used in combination with appropriate acrylic polyols.
It delivers highest scratch and chemical resistance combined with significantly less flexibilty, when compared to classical 2K PUR coatings.

Properties

VESTANAT®	EP-E 95*	EP-E 222/100*	EP-EF 201*
Solid content %	100	100	96
Viscosity at 23°C	350 mPas	140 Pas	350 mPas
Colour (Hazen)	<50	<50	<50
Scratch resistance	++	+	++
Chemical resistance	++	++	++
Flexibility	+/-	+	+/-

EP = Experimental Product

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