

# VINNOL<sup>®</sup> H 15/45 M SPECIAL



## Vinyl chloride Co- and Terpolymers

VINNOL<sup>®</sup> H 15/45 M SPECIAL is a carboxylate-containing terpolymer of approx. 84 wt. % vinyl chloride (VC), approx. 15 wt. % vinyl acetate (VAc) and approx. 0.5 wt. % dicarboxylic acid.

Its main use is as a binder for surface coating compounds and printing inks.

## Properties

VINNOL<sup>®</sup> H 15/45 M SPECIAL is a thermoplastic, physically drying binder that forms a film when the solvent contained in the formulation has evaporated.

Like all VC copolymers, VINNOL<sup>®</sup> H 15/45 M SPECIAL is extremely tough, showing permanent flexibility, abrasion resistance, little tendency to swell in the presence of water and low gas permeability. It is also highly resistant to oil, grease, dilute aqueous acids, alkalis, and saline solutions, as well as to aliphatic hydrocarbons, such as white spirit, and alcohols.

## Special features

By virtue of its carboxyl content, VINNOL<sup>®</sup> H 15/45 M SPECIAL adheres excellently to metal surfaces. It can also be used as a reactant or co-binder in two-pack systems. For example, it may be crosslinked with isocyanates, epoxy or melamine resins.

VINNOL<sup>®</sup> H 15/45 M SPECIAL is characterized by improved thermal stability, making it especially suitable for use in countries with hot climates or as a reactant in applications involving high temperatures, for example in baking finishes.

## Technical data

### Specification

Property	Condition	Value	Method
Viscosity, dynamic (20% in MEK) <sup>(1)</sup>	20 °C	50 - 70 mPa·s	DIN 53015 (20°C)
K-value	-	47 - 49	DIN EN ISO 1628-2
Chlorine content	-	46.8 - 48.0 wt. %	specific method
Volatiles	-	< 1.0 wt. %	specific method
Acid number / saponification number	-	3 - 6 mg KOH/g	specific method

<sup>1</sup>after dissolving at 50 °C

### General Characteristics

Property	Condition	Value	Method
Molecular weight (Mw)	-	60000 - 80000 g/mol	SEC, PS-Standard
Glass transition temperature	-	approx. 74 °C	DSC (DIN 53765 / ISO 11357-5)
Density	-	1.37 g/cm <sup>3</sup>	DIN 66137-2
Bulk density	-	approx. 750 kg/m <sup>3</sup>	DIN EN ISO 60
Supply form	-	white powder	Visual
Efflux time (20% in MEK)	-	approx. 50 s	DIN EN ISO 2431 (4 mm)
Particle size	-	< 1.0 mm	specific method

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.

## Applications

- Screen Printing
- Heat Sealing Coatings
- Marine & Protective Coatings
- Printing Inks
- Pad Printing
- Industrial Coatings

- Transfer Printing
- Anti-Corrosive Coatings
- Plastic Coatings
- Coil Coatings

## Application details

Typical applications for VINNOL® H 15/45 M SPECIAL:

- Heat-sealable lacquers
- Metallic paints
- Paper and film coatings
- Printing inks
- Masonry paints

### Processing

VINNOL® H 15/45 M SPECIAL is generally used in dissolved form.

Ketones and esters are the solvents most commonly used for VINNOL® H 15/45 M SPECIAL, ketones being more efficient than esters. Of the chlorinated hydrocarbons, methylene chloride and 1,2-dichloroethane are true solvents, while tri- and tetrachloroethene have only a swelling effect. Alcohols and aliphatic hydrocarbons do not dissolve VINNOL® H 15/45 M SPECIAL. Aromatic hydrocarbons may be combined to a limited extent with true solvents.

VINNOL® H 15/45 M SPECIAL can be plasticized with monomeric and polymeric plasticizers such as phthalates, adipates, sebacates, citrates, phosphates, epoxides and chlorinated paraffins.

VINNOL® H 15/45 M SPECIAL is fully compatible with all other VINNOL® surface coating resins. It also combines well with many acrylic polymers and ketone resins, as well as with some epoxides. Alkyd resins, nitrocellulose, polyvinyl acetates and polyvinyl butyrals are in general incompatible with VINNOL® H 15/45 M SPECIAL.

We recommend always checking the compatibility of VINNOL® H 15/45 M SPECIAL with the polymer in question.

The compatibility of VINNOL® H 15/45 M SPECIAL with pigments or colorants must be checked in preliminary tests. Certain pigments/colorants may produce thixotropic effects and/or impair adhesion. Care must be taken when using pigments containing zinc or cadmium because these catalyze the decomposition of VC copolymers at elevated temperatures. The same applies to iron-oxide pigments.

Despite good inherent stability, it is necessary for some applications to stabilize coatings based on VINNOL® H 15/45 M SPECIAL against heat and/or UV light. Epoxy compounds often suffice to stabilize these coatings against low thermal impact. Where higher temperatures are involved, it is advisable to use calcium/zinc or organotin stabilizers. Outdoor applications require the additional use of UV stabilizers along with thermal stabilizers optimized for these conditions. To avoid the risk of discoloration, contact with iron should be avoided both during the preparation of the solution and during subsequent storage of the product. VINNOL®-based surface coating compounds should be stored in coated containers.

### Additional Information

The product can be used for applications with food contact in compliance with FDA 21 CFR §175.105 and §175.300. Comprehensive information regarding evaluation with respect to other food contact regulations may be requested from our account managers and Wacker subsidiaries.

If the product is used in applications other than those mentioned, the choice, processing and use of the product is the sole responsibility of the purchaser. All legal and other regulations must be complied with.

## Packaging and storage

### Packaging

VINNOL® H 15/45 M SPECIAL is packed in 25-kg, coated three-ply paper bags containing a polyethylene liner.

### Storage

Store VINNOL® H 15/45 M SPECIAL under dry conditions and at room temperature (below 25 °C). Under these conditions, the product has a shelf life of at least 12 months, from the delivery date. If the material is kept beyond the recommended shelf life, it is not necessarily unusable, but the user should perform quality control on the properties relevant to the application.

The properties determined in our pre-release quality control may change during storage, depending on storage conditions, and deviate from the specification.

## Safety notes

Comprehensive instructions are given in the corresponding Material Safety Data Sheets. These are available on request from WACKER sales offices or may be downloaded from the WACKER Web site [www.wacker.com/vinnol](http://www.wacker.com/vinnol).

## QR Code VINNOL® H 15/45 M SPECIAL



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

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