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## Technical Information

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# Poligen<sup>®</sup> WE 3

® = Registered trademark of BASF group

## Polyethylene wax emulsion

Poligen WE 3 is used in aqueous coatings

**Chemical nature**

Aqueous emulsion of an ethylene copolymer wax

**Properties**

	Test method	
	DIN	ASTM
Solids content	EN ISO 3251	24 – 26%
pH-value (23 °C)	EN 1262 19268	8.5 – 9.5
Minimum film-forming temperature	ISO 2115	approx. 35 °C
Flow time (cup 5 mm, 23 °C)	EN ISO 2431	<85 s
Density (Aräometer, 23 °C)	51757	D-1298 approx. 1.0 g/cm <sup>3</sup>
Melting point of the wax (DSC)	51007	D-3418 approx. 85 °C
Freeze-thaw stability		Must be protected from frost

The above information is correct at the time of going to press. It does not necessarily form part of the product specification.

A detailed product specification is available from your local BASF representative.

**Shelf life**

Poligen WE 3 has a shelf life of at least one year in its sealed original packaging. Drums should be tightly resealed each time material is taken from them. The viscosity of Poligen WE 3 can increase slightly in storage. We would recommend filtering it before use if it has been stored for a long time or if a crust has formed on the surface due to evaporation. The air in the headspace of bulk storage tanks should be kept permanently saturated with water vapour.

**Low-temperature stability**

It is not advisable to store Poligen WE 3 in the open in winter, and care should be taken to prevent it from freezing. If it does freeze, the best course of action is to thaw it gradually by leaving it to stand at room temperature. It should not be heated direct. Reconstituted dispersions should be filtered before use.

**PRD-No.\***

30043786

\* BASF's commercial product numbers.

**Applications****Aqueous coatings**

Poligen WE 3 is an aqueous wax emulsion which is free of emulsifiers. It is miscible in all proportions with water.

Poligen WE 3 can be applied to substrates by dipping, spinning or spraying. The thickness of the polymer film can be controlled by adjusting the viscosity or solids content of the dilute emulsion.

It can be advisable to dry coatings at elevated temperatures, depending on the thickness of the film.

The films formed by Poligen WE 3 are resistant to salt water, oils, fats and many different chemicals such as ethylene oxide.

**Paraffin wax emulsions**

Stable paraffin wax emulsions with a wide range of concentrations can be prepared with Poligen WE 3.

40%	Poligen WE 3
50%	Paraffin wax, m.p. 50 – 54 °C
10%	Water

The above mixture should be stirred vigorously at approx. 70 °C with an Ultra-Turrax mixer or similar equipment.

**Mould-release agents for metal**  
(Die casting)

The wax contained in Poligen WE 3 is very hard, has a high melting point and has high thermal stability. It performs exceptionally well as a mould release agent for metal, especially in combination with paraffin wax, silicone oils and corrosion inhibitors.

**Coatings for paper**

Poligen WE 3 can be used to coat paper in order to enhance its resistance to fats. It also acts as an effective barrier to the permeation of water vapour.

**Nonwovens**

Poligen WE 3 can be used as a binder to bond nonwovens. Unlike conventional binders, Poligen WE 3 is stable and does not have to be applied as part of a complex formulation. As a binder, Poligen WE 3 is resistant to water after it has dried. It also has the advantage that it is free of salts, surfactants and biocides.

**Alkaline stripper solution**

Films containing Poligen WE 3 can be removed with an alkaline stripper.

3%	Sodium hydroxide (solid)
4%	Sodium gluconate
1%	Lutensol® TO 15
2%	Lutensit® A-PS
90%	Water

**Food-contact applications**

The composition of Poligen WE 3 conforms to the requirements of the following FDA regulations and BgVV recommendations.

**FDA Paragraph 21 CFR**

175.105	Adhesives
176.170	Components of paper and paperboard in contact with aqueous and fatty foods
176.180	Components of paper and paperboard in contact with dry food
177.1310	Ethylene-acrylic acid copolymers

**BfR recommendations**

XIV	Plastics dispersions
XXXVI	Paper and board for food contact

The restrictions stipulated in these regulations must be observed.

**Safety**

We know of no ill effects that could have resulted from using Poligen WE 3 for the purpose for which it is intended and from processing it in accordance with current practice.

According to the experience we have gained over many years and other information at our disposal, Poligen WE 3 does not exert any harmful effects on health, provided that it is used properly, due attention is given to the precautions necessary for handling chemicals, and the information and advice given in our safety data sheets are observed.

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