Technical Information

DEGALAN® VP 4174 E

Binder for heat seal lacquers - Organic dispersion of copolymers on methacrylic esters, olefins and polyesters basis.

DEGALAN® VP 4174 E shows direct adhesion on aluminium and PET.

Usage as an universal binder in PVC-free heat seal lacquers for sealing aluminium foil or PET film versus polypropylene (PP), polystyrene (PS), polyethylene terephthalate (PET) or vinyl (PVC).

Formulation example:

- 65.0 parts DEGALAN® VP 4174 E (~46%)
- 35.0 parts methyl ethyl ketone (MEK) or ethyl acetate

Application:

DEGALAN® VP 4174 E is suitable for **PVC-free** heat sealing application. DEGALAN® VP 4174 E shows direct adhesion to aluminium foil and PET film (no primer required).

Since DEGALAN® VP 4174 E is an organic dispersion, we recommend stirring with care prior to usage. For optimized performance during processing, we recommend dilution with esters or ketones (ethyl acetate or methyl ethyl ketone) to a solids content of about 30%.

In bench-scale testing, DEGALAN® VP 4174 E is applied by a spiral coater (K-Handcoater) and dried at 180°C for 15 seconds. Recommended drying temperature range is between 160°C and 240°C, respectively.

DEGALAN® VP 4174 E will give best heat seal performance at a typical dry coating weight of 6 g/m².

Sealing condition:

Foils prepared as described above are typically sealed at a pressure of 6 bar and a temperature between 200°C and 220 °C within one second.

With DEGALAN® VP 4174 E being coated on aluminium foil , typically sealing strength between 8 and 10 N/15 mm is observed with PP substrates, whereas sealing strength between 9 and 11 N/15 mm is observed with PS substrate.

The quality of the PET film has a significant influence on the sealing strength when DEGALAN® VP 4174 E is used. Typically sealing strength between 4 and 7 N/15 mm is observed on PP substrates, whereas sealing strength between 5 and 8 N/15 mm is observed with PS substrate.

Typical sealing temperatures are between 180°C and 240°C with regard to PP substrates.

Performance range:

DEGALAN® VP 4174 E is very versatile in use. It can be applied on aluminium foil and PET film, which then can be sealed versus PP, PE, PVC, PET and PS.

Structure of coating:

-	Base	Aluminium
-	Intermediate layer	Primering not necessary
-	Heat seal layer	DEGALAN® VP 4174 E
-	Sealing substrate	PP, PS, PVC, PET, (PE)

-	Base	PET
-	Intermediate layer	Primering not necessary
-	Heat seal layer	DEGALAN® VP 4174 E
-	Sealing substrate	PP, PS, PVC, PET, (PE)

Use for pharmaceutical blister and food packaging.

Evonik Industries AG Kirschenallee 64293 Darmstadt
APPLIED TECHNOLOGY: TEL +49 6151 18-4549 **FAX** +49 6151 18-844549
SALES: TEL +49 6151 18-4164 **FAX** +49 6151 18-844164
www.evonik.com/heat-sealing / info: degalan@evonik.com

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