

Technical Information

DEGALAN® VP 4313 E

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

DEGALAN® VP 4313 E shows direct adhesion on aluminium and PET.

Usage as a binder in PVC-free heat seal lacquers for sealing aluminium foil or PET film versus polystyrene (PS), polyethylene terephthalate (PET), poly lactic acid (PLA) and polyvinyl chloride (PVC).

Formulation example:

- 70.0 parts DEGALAN® VP 4313 E (~45%)
- 30.0 parts ethyl acetate or methyl ethyl ketone (MEK)

Application:

DEGALAN® VP 4313 E is suitable for **PVC-free** heat sealing application. DEGALAN® VP 4313 E shows direct adhesion to aluminium foil and PET film (no primer required).

Since DEGALAN® VP 4313 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 approximately 25 to 30%.

In bench-scale testing, DEGALAN® VP 4313 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 4313 E will give best heat seal performance at a typical dry coating weight of 5 g/m² on aluminium foil. The coating weight can be reduced by 1 to 2 g/m² when used on PET film.

Sealing condition:

Foils prepared as described above are typically sealed at a pressure of 3 bar and a temperature between 180°C and 220 °C within one second.

With DEGALAN® VP 4313 E being coated on aluminium foil, typically sealing strength between 6 and 9 N/15 mm is observed with PS substrates, whereas sealing strength of the same range is observed with PET substrates.

The quality of the PET film has a significant influence on the sealing strength when DEGALAN® VP 4313 E is used. Typically sealing strength between 6 and 9 N/15 mm is observed on PS substrates, whereas sealing strength between 6 and 8 N/15 mm is observed with PET substrate.

Typical sealing temperatures are in the range of 180°C and 240°C with regard to PS substrates.

Performance range:

DEGALAN® VP 4313 E is very versatile in use. It can be applied on aluminium foil, PET, aluminium/PET and paper/PET structures, which then can be sealed versus PS, HIPS, A-PET, C-PET, PLA and PVC.

Structure of coating:

- | | |
|----------------------|---------------------------------------|
| - Base | Aluminium |
| - Intermediate layer | Primering not necessary |
| - Heat seal layer | DEGALAN® VP 4313 E |
| - Sealing substrate | PS, PET, PLA, PVC |
| - Base | Paper/PET, Paper/metPET, Alu/PET, PET |
| - Intermediate layer | Primering not necessary |
| - Heat seal layer | DEGALAN® VP 4313 E |
| - Sealing substrate | PS, PET, PLA, PVC |

Use for pharmaceutical blister and food packaging.

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