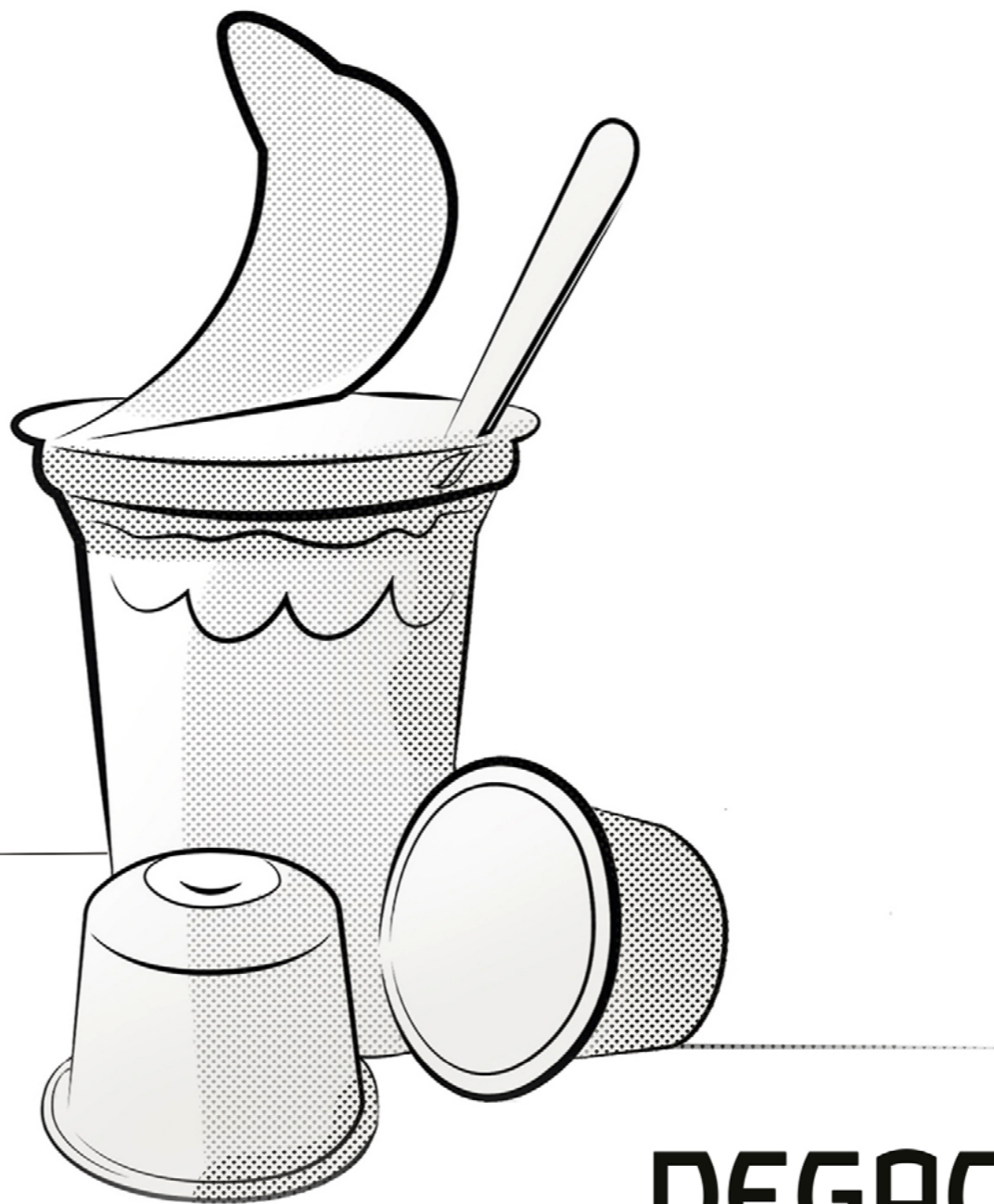
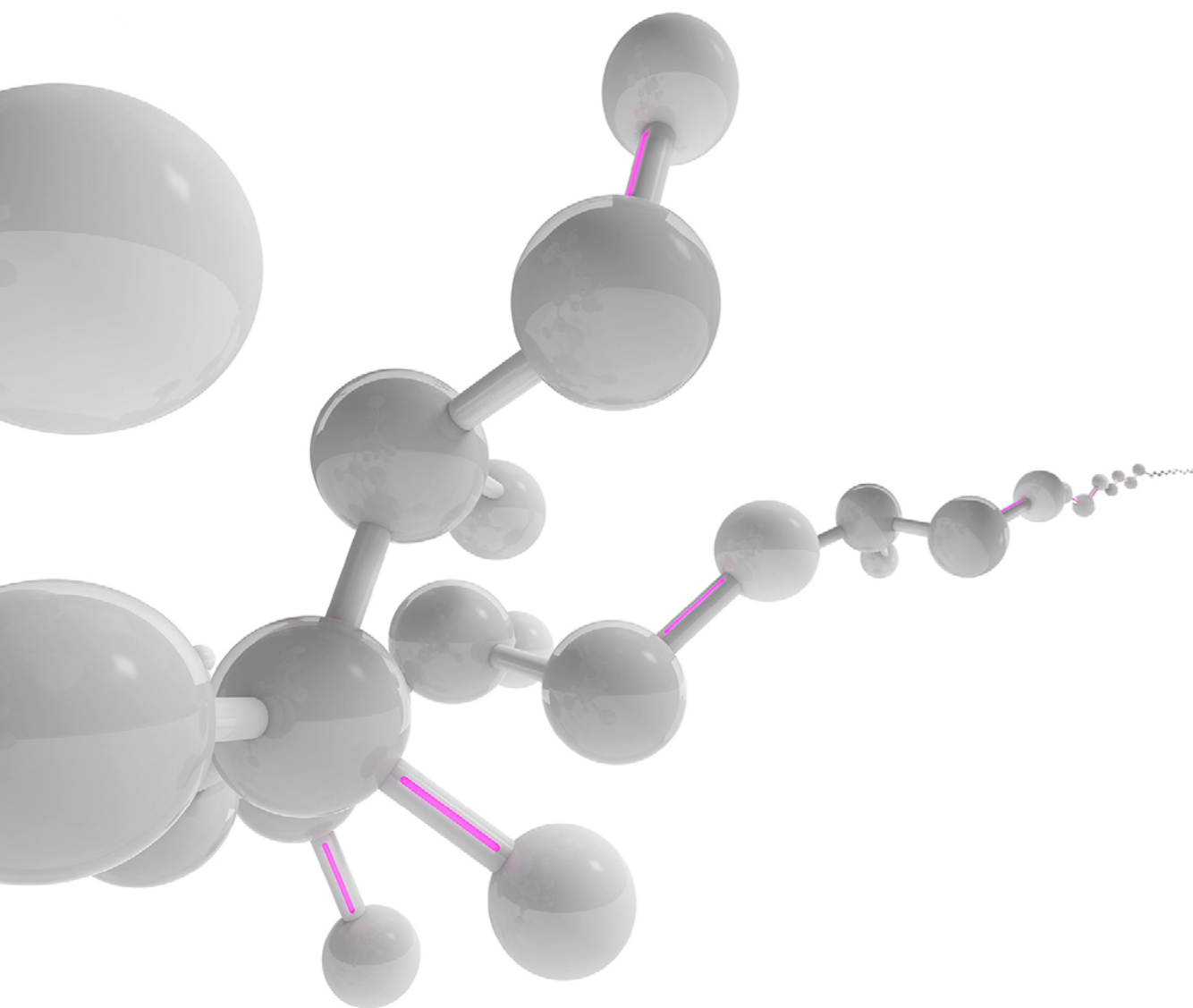


We design polymers.

Discover our world of  
**methacrylate binders for  
heat seal applications.**



**DEGACRYL®**

# DEGACRYL® HS

## Methacrylate binders for heat sealing applications



With its DEGACRYL® HS binders Evonik offers a unique product portfolio of functional methacrylic co-polymers. These binders represent an excellent solution for heat sealing applications in the packaging industry.

**Our functional binders can be divided into four groups based on their appearance:**

- **DEGACRYL® HS - Organic Dispersions**
- **DEGACRYL® HS - Organic Solutions**
- **DEGACRYL® HS - Bead Polymer**
- **DEGACRYL® HS - Aqueous Dispersions**

Our DEGACRYL® HS binders are ideally suited for the formulation of high-quality heat seal coatings to provide an excellent and secure sealing in combination with smooth peeling.

DEGACRYL® HS organic dispersions provide direct adhesion to aluminum or PET lidding material for economical and environmentally friendly packaging solutions.

All common cup materials from polar polystyrene to non-polar polypropylene can be sealed, PET and PLA included. All products comply with international regulations for food contact. DEGACRYL® HS bead polymers can be supplied in paper and big bags. DEGACRYL® HS organic solutions, dispersions as well as aqueous dispersions can be supplied in drums, IBCs or tank trucks.



### YOUR BENEFITS AT A GLANCE

- Excellent seal and peel properties on aluminum foil or film structures
- Outstanding smooth peel effect
- Wide property range: from easy opening to high sealing strength
- Multi-purpose sealing capabilities to various substrates
- Economical and environmental friendly packaging solutions

### ANALYTICAL METHODS

#### Solid Content

Determination according to DIN EN ISO 3251.

#### Viscosity Number

Determination according to DIN 51562 respectively DIN EN ISO 1628-1.

#### Dynamic Viscosity

Determination according to DIN EN ISO 3219.

#### Glass Transition Temperature ( $T_g$ )

Determination according to DIN 53765 respectively DIN EN ISO 11357-1.

#### Molecular Weight ( $M_w$ )

Determination according to DIN 55672-1.

#### Density

Determination according to DIN EN ISO 1183-1.

#### Flash Point

Determination according to DIN EN ISO 1523.



# DEGACRYL® HS provides benefits for a variety of lidding materials

## PAPER/PET LIDDING



- No PVC-copolymer required
- Direct adhesion to PET or aluminum
- Easy to use
- Optimized for low coating weight
- Enables PET mono packaging
- One-step process = cost savings in PET coating
- Seals on common substrates like PS, PET, PVC, PLA & PBT
- High solid content leads to increased productivity

## ALUMINUM LIDDING



- Copolymers free of ethylidene norbornene
- No PVC-copolymer required
- Low dynamic viscosity level
- Improved rub-off resistance
- No restrictions for any filling good
- PVC-free packaging
- High solid content leads to increased productivity
- Less cleaning and more production cycles means more output!



## TRANSPARENT PET LIDDING

- Direct adhesion to PET
- No primer needed
- Low haze binder for high transparency
- One-step process = cost savings in PET coating
- Seals versus common substrates like PET, PS, PVC, PVdC, PLA and PBT
- Recyclability: Enables single PET packaging, e.g. PET-film vs. PET-tray
- Anti-fog properties achievable by adding corresponding additives



## UNIVERSAL LIDDING

- No PVC-copolymer required
- Copolymers free of ethylidene norbornene
- Low dynamic viscosity level
- Improved rub-off resistance
- No restrictions for any filling good
- PVC-free packaging
- High solid content leads to increased productivity
- Less cleaning and more production cycles means more output!



Want to learn more about our tailor-made heat seal coatings for sustainable packaging?

Check out our trainings given by our technical experts.

[degacryl.com/movies](https://degacryl.com/movies)

**Product Information**

	<b>Properties</b>						<b>Aluminum Adhesion</b>	<b>PET Adhesion</b>	<b>Paper Adhesion</b>	<b>Sealing Substrate</b>						
	<b>Solvent</b>	<b>Solid Content [%]</b>	<b>Viscosity Number [cm<sup>3</sup>/g]</b>	<b>Dynamic Viscosity [mPa·s]</b>	<b>Dilutability <sup>1)</sup></b>	<b>Glass Transition Temperature (T<sub>g</sub>) [°C]</b>				<b>Direct D/Indirect I <sup>2)</sup></b>	<b>Direct D/Indirect I <sup>3)/4)</sup></b>	<b>Direct D/Indirect I</b>	<b>PS</b>	<b>PVC</b>	<b>PET</b>	<b>PLA</b>
<b>Organic Dispersion</b>																
<b>555</b>	n-Butyl acetate/ Methyl ethyl ketone 70/30	44 - 46	163	500 - 1,500	E, K	-48; 29	I	I <sup>3)</sup>	D	●	●	●	●	●	●	●
<b>4150 E</b>	n-Propyl acetate/ Ethyl acetate/Isooctane 54/36.5/9.5	42 - 44	147	800 - 2,500	E, K	-48; 33	I	I <sup>3)</sup>	D	●	●	●	●	●	●	●
<b>4250 E</b>	n-Propyl acetate/Ethyl acetate/ Isooctane 52/39/9	44 - 46	144	800 - 3,500	E, K	-55; 45	I	I <sup>3)</sup>	D	●	●	●	●	●	●	●
<b>666</b>	n-Butyl acetate/ Methyl ethyl ketone 70/30	44 - 46	157	1,000 - 3,500	E, K	-51; 29	D	I <sup>3)</sup>	D	●	●	●	●	●	●	●
<b>4151 E</b>	n-Propyl acetate/ Ethyl acetate/Isooctane 47.8/43.8/8.4	39 - 42	142	500 - 2,000	E, K	-51; 30	D	I <sup>3)</sup>	D	●	●	●	●	●	●	●
<b>4251 E</b>	n-Propyl acetate/ Ethyl acetate/Isooctane 53/38/9	44 - 46	142	1,000 - 4,000	E, K	-51; 44	D	I <sup>3)</sup>	D	●	●	●	●	●	●	●
<b>4313 E</b>	n-Propyl acetate	44 - 46	71	500 - 3,000	E, K	-54; 42	D	D	D	●	●	●	●			●
<b>4315 E <sup>5)</sup></b>	Ethyl acetate/Cyclohexane 88/12	44 - 46	64	500 - 3,000	E, K	-64; 26	D	D	D	●	●	●	●			●
<b>4322 E <sup>6)</sup></b>	n-Propyl acetate/Methyl ethyl ketone/ i-Propanole 75/19/6	39 - 41	48	2,000 - 8,000	E, K	57	D	D	D	●	●	●	●			●
<b>4174 E</b>	n-Propyl acetate/ Ethyl acetate/Isooctane 64/25.9/10.1	46 - 48	171	1,000 - 3,500	E, K	-48; 33	D	D	D	●	●	●	●	●	●	●
<b>4294 E</b>	n-Propyl acetate/Ethyl acetate/n-Heptane/ tert-Butyl acetate 64/26/5/5	50 - 53	136	800 - 3,500	E, K	-52; 43	D	D	D	●	●	●	●	●	●	●
<b>4296 E</b>	n-Propyl acetate/Ethyl acetate/n-Heptane/ tert-Butyl acetate 64/26/5/5	50 - 53	109	800 - 3,500	E, K	-55; 63	D	D	D	●	●	●	●	●	●	●
<b>Organic Solution</b>																
<b>4792 L</b>	Methyl ethyl ketone	53 - 57	40	1,500 - 4,000	E, K	48	I	I <sup>4)</sup>	D	●	●					●
<b>4799 L</b>	Ethyl acetate	53 - 57	40	< 4,000	E, K	48	I	I <sup>4)</sup>	D	●	●					●
<b>Bead Polymer</b>																
<b>4862 P</b>		100	50-60	450 <sup>7)</sup>	E, K	43	I	I <sup>4)</sup>	D	●	●					●
<b>Aqueous Dispersion</b>																
<b>4240 D</b>	Water	49,5 - 52	not determined	100 - 1,000	W	15; 49	D		D	●	●		●			●
<b>4241 D <sup>5)</sup></b>	Water	46 - 48	not determined	< 1,000	W	15; 49	D		D	●	●		●			●

<sup>1)</sup> E = Esters, K = Ketones, W = Water

<sup>2)</sup> Priming or formulation with PVC adhesion promotor like Vinnol® terpolymer grade from e.g. Wacker Chemie AG, Burghausen, Germany

<sup>3)</sup> Priming with polyester adhesion promotor like Dynapol® L 206 or L 208 from Evonik Industries AG, Marl, Germany

<sup>4)</sup> Formulation with PVC terpolymer required to achieve good adhesion on primed PET-film (e.g. VINNOL® from Wacker Chemie AG, Burghausen, Germany)

<sup>5)</sup> New products subject to minor modification, development stage

<sup>6)</sup> Transparent coating

<sup>7)</sup> 40% solution in methyl ethyl ketone

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