

TYPE

Hydroxy functional acrylic resin, cross-linkable with polyisocyanates

FORM OF DELIVERY (f.o.d.)

50 % in solvent naphtha 150/180 (50SNA)
(containing also 5 % butyl acetate)

SPECIAL PROPERTIES AND USE

Fast drying two-pack systems.
In combination with polyisocyanates for air-drying as well as forced drying two-component lacquers for industrial applications.

Average hydroxyl content (solid resin)

approx. 2.0 %

PRODUCT DATA

Determined per batch:

Dynamic Viscosity DIN EN ISO 3219
dynamic viscosity [mPa.s] 650 - 950
(25 1/s; 23 °C)

Colour Scale (Hazen) DIN EN ISO 6271-1
Hazen colour value <= 70

Hydroxyl Value (cat.) DIN EN ISO 4629
hydroxyl value [mg KOH/g] 60 - 70
(solid matter content)

Non-Volatile Matter DIN EN ISO 3251
non-volatile matter [%] 48 - 52
(1 h; 125 °C; 2 g; ethyl acetate)

Not continually determined:

Density (Liquids) DIN EN ISO 2811-2
density [g/cm³] 0,98
approx.
(20 °C)

Flash Point DIN EN ISO 1523
flash point [°C] 30
approx.

DILUTABILITY

white spirit	○	methyl ethyl ketone	●
toluene	●	methyl isobutyl ketone	●
xylene	●	methoxypropyl acetate	●
solvent naphtha 150/180	●	ethyl acetate	●
acetone	●	butyl acetate	●

● = unlimited dilutability ⊙ = limited dilutability
 ○ = substantial dilutability ○ = very limited or no dilutability

COMPATIBILITY

% Macrynal SM 548	90	75	50	25	10
% other binder	10	25	50	75	90

Alkyd resins

Vialkyd AC 290	●	●	○	○	○
Vialkyd AN 950	○	○	○	○	○

Acrylic resins

Viacryl SC 121	○	○	○	○	○
Viacryl SC 370	●	●	●	●	●
Macrynal SM 513, SM 515, SM 516	●	●	●	●	●
Macrynal SM 500, SM 540	●	●	●	●	●
Macrynal SM 510	○	○	○	○	○

Polyisocyanates

Desmodur L, N	●	●	●	●	●
Beckocoat PU 428, PU 432	○	○	●	●	●

Other binders

Beckopox EP 140, EP 301	○	○	○	○	○
Hostaflex CM 158	○	○	○	●	●
Vinyl VAGH	●	●	●	●	●
CAB-551-0.2, CAB-381-0.1	○	○	○	○	○
nitrocellulose 24 E	●	●	●	●	●

● = definite compatibility ○ = very limited or no compatibility

SUGGESTED USES

In combination with polyisocyanates Macrynal SM 548 is suggested for fast drying two-pack systems. Compared to Macrynal SM 540 coatings based on Macrynal SM 548 show higher film hardness. By using blends of Macrynal SM 540/Macrynal SM 548 elasticity and film hardness are adjustable.

PROCESSING

As a two-pack system Macrynal SM 548 must be combined with polyisocyanates. Crosslinked at room temperature the coatings reach their optimum properties after 10 to 12 days. If forced drying is employed, a time of 30 min at 80 °C is sufficient for complete curing.

Curing with polyisocyanates

Based on 100 % conversion of reactive groups the following equation can be used to calculate the quantity of polyisocyanate needed for crosslinking 100 parts Macrynal SM 548 (on solids):

$$\text{polyisocyanate (f.o.d.)} = \frac{42 \times 100 \times \text{OH\% (solid resin)}}{17 \times \text{NCO\% (f.o.d.)}}$$

42 = molecular weight of the NCO group

17 = molecular weight of the OH group

To ensure that optimal properties are obtained it is necessary to have complete crosslinking. Over - or under - crosslinking is possible within certain limits.

Desmodur N/75%ig 15 parts

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For stoichiometric (equivalent) crosslinking (NCO : OH = 1 : 1) - calculated from the equivalent weights - approx. 1700 parts per weight Macrynal SM 548/50SNA require approx. 255 parts per weight Desmodur N/75%.

Pigmentation

Inert pigments and extenders are suitable for pigmentation. Pigments containing soluble metal compounds can catalyze the crosslinking reaction and shorten potlife. Care should be taken that the material selected is free of water. Suitability should be established by preliminary testing.

Dilution

Suitable diluents are butyl acetate, methyl isobutyl ketone, 2-methoxypropyl acetate, xylene, aromatic hydrocarbons and blends of these solvents. Anhydrous solvents as well as solvents free of hydroxy functional groups should be used in the presence of isocyanates.

STORAGE

At temperatures up to 25 °C storage stability packed in original containers amounts to at least 730 days.

DISTINGUISHING FEATURES

Compared to Macrynal SM 540 coatings based on Macrynal SM 548 show higher film hardness and faster drying.

Producers:

Desmodur (Covestro)

Vinyl VAGH (Union Carbide)

CAB-551-0.2, CAB-381-0.1 (Eastman)