

TYPE

Hydroxy functional acrylic resin designed for crosslinking with polyisocyanates

FORM OF DELIVERY (f.o.d.)

60 % in solvent mixture (60LG)

SPECIAL PROPERTIES AND USE

**Excellent mechanical properties and chemical resistance, high gloss.
Fast drying two pack systems, in particular for primer surfacers for car repairs and for general industrial applications.**

Average hydroxyl content (solid resin)

approx. 3.6 %

PRODUCT DATA

Determined per batch:

Dynamic Viscosity DIN EN ISO 3219
dynamic viscosity [mPa.s] 2400 - 4000
(25 1/s; 23 °C)

Colour Scale (Hazen) DIN EN ISO 6271-1
Hazen colour value <= 50

Hydroxyl Value (cat.) DIN EN ISO 4629
hydroxyl value [mg KOH/g] 110 - 130
(nfA)

Non-Volatile Matter DIN EN ISO 3251
non-volatile matter [%] 58 - 62
(1 h; 125 °C; 2 g; ethyl acetate)

Not continually determined:

Colour / Appearance VLN 250
colour colourless
appearance clear

Density (Liquids) DIN EN ISO 2811-2
density [g/cm³] 1,01
approx. (20 °C)

Flash Point DIN EN ISO 1523
flash point [°C] 27
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
○ = substantial dilutability

⊙ = limited dilutability
○ = very limited or no dilutability

COMPATIBILITY

% Macrynal SM 513	90	75	50	25	10
% other binder	10	25	50	75	90

Alkyd resins

Vialkyd AC 290, Vialkyd AN 950	●	●	●	●	●
Vialkyd AC 451n	●	●	●	○	●
Vialkyd AF 342	●	●	○	○	○

Acrylic resins

Viacryl SC 121	●	○	○	●	●
Viacryl SC 370	●	●	●	●	●
Macrynal SM 510, SM 510n, SM 515, SM 516	●	●	●	●	●
Macrynal SM 500, SM 540	○	○	○	○	○
Macrynal SM 548	●	●	●	○	○

Polyisocyanates

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

Other binders

Beckopox EP 140, EP 301	●	●	●	●	●
Ucar solution vinyl resin VAGH	●	●	●	●	●
Hostaflex CM 158	○	○	○	○	●
Hostaflex CM 620	○	○	○	○	○
CAB-551-0.2, CAB-381-0.1	○	○	○	○	●
Nitrocellulose 24 E	●	●	●	●	●

● = definite compatibility

○ = very limited or no compatibility

SUGGESTED USES

In combination with aliphatic polyisocyanates Macrynal SM 513/60LG is recommended for at ambient temperature drying or forced drying two pack systems. The principal application field is automotive refinishing and high-grade industrial paints.

Due to its rapid initial drying Macrynal SM 513 is especially useful for the formulation of primer surfacers. Automotive refinishing clearcoats based on Macrynal SM 513 must be stabilized with light stabilizers.

PROCESSING

As a two pack system Macrynal SM 513 must be combined with polyisocyanates. Dried at room temperature the coatings reach their optimum properties after 10 to 12 days. If forced dried, 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 513 (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 achieve optimal properties it is necessary to have complete crosslinking. Over - or under - crosslinking is possible within certain limits.

Pigmentation

Inert pigments and extenders are suitable for pigmentation. 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 and mixtures 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 510n Macrynal SM 513 shows faster initial drying. In Terms of outdoor durability Macrynal SM 513 does not achieve the high performance of Macrynal SM 510n, however.

Producers:

Desmodur N, L (Covestro)

Ucar solution vinyl resin VAGH (Union Carbide)

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