

MACRYNAL[®] SM 589/70BAC

TYPE

Hydroxy functional acrylic resin crosslinkable with polyisocyanates

FORM OF DELIVERY (f.o.d.)

70 % in butyl acetate (70BAC)

SPECIAL PROPERTIES AND USE

Air-drying and forced drying two pack systems with high gloss, excellent mechanical properties and excellent chemical resistance for automotive refinishes.

Average hydroxyl content (solid resin)

approx. 4.5 %

PRODUCT DATA

Determined per batch:

Dynamic Viscosity DIN EN ISO 3219
dynamic viscosity [mPa.s] 3600 - 6000
(25 1/s; 23 °C)

Colour Scale (Hazen) DIN EN ISO 6271-1
Hazen colour value <= 80

Hydroxyl Value (cat.) DIN EN ISO 4629
hydroxyl value [mg KOH/g] 140 - 160
(solids)

Non-Volatile Matter DIN EN ISO 3251
non-volatile matter [%] 68 - 72
(1 h; 125 °C; 3 g; EAC)

Not continually determined:

Density (Liquids) DIN EN ISO 2811-2
density [g/cm³] 1,05
approx.
(20 °C)

Flash Point DIN EN ISO 1523
flash point [°C] 25
approx.

DILUTABILITY

white spirit	»	methyl ethyl ketone	}
toluene	}	methyl isobutyl ketone	}
xylene	}	methoxypropyl acetate	}
solvent naphtha 150/180	½	ethyl acetate	}
acetone	}	butyl acetate	}

}

½ = substantial dilutability

¾ = limited dilutability

» = very limited or no dilutability

COMPATIBILITY

% Macrynal SM 589	90	75	50	25	10
% other binder	10	25	50	75	90

Polyisocyanates					
Desmodur N, L	}	}	}	}	}
Beckocoat PU 428	}	}	}	}	}
Alkyd resins					
Vialkyd AC 451n, AC 290, AN 950	}	}	}	}	}
Acrylic resins					
Viacryl SC 121	}	»	»	}	}
Viacryl SC 370	}	}	}	}	}
Macrynal SM 510, SM 510n, SM 513, SM 516	}	}	}	}	}
Macrynal SM 540, SM 500	»	»	»	»	»
Macrynal SM 548	}	}	}	»	»
Other binders					
Beckopox EP 140, EP 301	}	}	}	}	}
Ucar solution vinyl resin VAGH	»	»	}	}	}
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 589 is suggested for air-drying and forced drying two pack high-solids systems. The principal application area is automotive refinishes in particular topcoats.

PROCESSING

As a two pack system Macrynal SM 589 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.

Macrynal SM 589 can also be used in combination with urea resins for the formulation of stoving enamels. The most suitable combination ratios are 60 to 70 parts acrylic resin and 40 to 30 parts urea resin, calculated on solids. 5 - 8 % p-toluene sulphonic acid (calculated on solid urea resin) has proved successful as curing catalyst.

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 589 (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% 47,2 parts by weight

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 510 n varnishes based on Macrynal SM 589 show higher solids content.

Producers:

Desmodur (Bayer)

Ucar solution vinyl resin VAGH (Union Carbide)

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

2.0/17.07.2013 (replaces all previous versions)

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