

PRELIMINARY PRODUCT INFORMATION

TYPE

Hydroxy functional acrylic resin crosslinkable with polyisocyanates

FORM OF DELIVERY (f.o.d.)

70 % in butyl acetate (70 BAC)

DEVELOPMENT PRODUCT

This product is serving for trial purposes only. Deviations which might occur during transfer into manufacturing in a commercial scale are possible and do not constitute any material defect.

SPECIAL PROPERTIES AND USE

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

Average hydroxyl content (solid resin)

approx. 4.5 %

TENTATIVE PRODUCT DATA

Determined per batch:

Dynamic Viscosity DIN EN ISO 3219

dynamic viscosity (25 1/s; 23 °C)	[mPa.s]	7000 - 11000
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Colour Scale (Hazen) DIN EN ISO 6271-1

Hazen colour value		<= 70
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Hydroxyl Value (cat.) DIN EN ISO 4629

hydroxyl value (solid matter content)	[mg KOH/g]	140 - 160
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Non-Volatile Matter DIN EN ISO 3251

non-volatile matter (1 h; 125 °C; 2 g; EAC)	[%]	68 - 72
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Not continually determined:

Density (Liquids) DIN EN ISO 2811-2

density approx. (20 °C)	[g/cm ³]	1,05
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Flash Point (CCCFP) ASTM D 6450

flash point approx.	[°C]	39
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SUGGESTED USES

In combination with aliphatic polyisocyanates Macrynal SM 2516 is suggested for air-drying and forced drying two pack high-solids systems. The principal application area is high quality automotive refinishes.

PROCESSING

As a two pack system Macrynal SM 2516 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 2516 (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.

For stoichiometric (equivalent) crosslinking (NCO : OH = 1 : 1) 100 parts per weight Macrynal SM 516 (f.o.d.) require 47,2 parts per weight Desmodur N/75 %.

Catalysis

Drying can be accelerated by the addition of suitable catalysts, like dibutyl tin dilaurate (0.2- 0.5 % of a 1 % solution, based on solid resin), in combination with amines like diethyl amino ethanol (approx. 0.2 %, based on solid resin). Potlife is thereby reduced, however.

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, aromatic hydrocarbons like 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 varnishes based on Macrynal SM 2516 show higher solids content.

Producers:

CAB-551-0.2, CAB-381-0.1 (Eastman)
Vinyl VAGH (Union Carbide)
Desmodur (Covestro)

REMARK:

Data contained in this publication are based on careful investigations (and are intended for information only). Due to scale up of this product there is not yet sufficient experience concerning serial production. We can therefore not exclude, that based on future knowledge product data and other indicated properties in upcoming Technical Data Sheets will be subject to change. We reserve the right to leave the product name unchanged, even if product data or other indicated properties will vary from the present product info. Regardless of the data contained in this publication any user is obliged to carry out tests under his own responsibility as to the suitability of the product for a particular use and to investigate the possible violation of industrial property rights of third parties. Information is therefore not binding and cannot be construed as guaranteeing specific properties of products. We apply our General Sales Conditions.