# MACRYNAL® VSM 2760/50BAC

Technical Datasheet

## TYPE

Hydroxy functional acrylic resin, cross-linkable with polyisocyanates

## FORM OF DELIVERY (f.o.d.)

50 % in butyl acetate (50BAC)

**Average hydroxyl content (solid resin)**

approx. 2.1 %

## PRODUCT DATA

**Determined per batch:**

| | | |
|---|---|---|
| **Dynamic Viscosity DIN EN ISO 3219** | | |
| dynamic viscosity (25 1/s; 23 °C) | [mPa.s] | 2000 - 4000 |
| **Colour Scale (Hazen) DIN EN ISO 6271-1** | | |
| Hazen colour value | | <= 100 |
| **Hydroxyl Value (cat.) DIN EN ISO 4629** | | |
| hydroxyl value (solid matter content; potentiometric) | [mg KOH/g] | 60 - 80 |
| **Non-Volatile Matter DIN EN ISO 3251** | | |
| non-volatile matter (1 h; 125 °C; 2 g; ethyl acetate) | [%] | 48 - 52 |

**Not continually determined:**

| | | |
|---|---|---|
| **Density (Liquids) DIN EN ISO 2811-2** | | |
| density approx. (20 °C) | [g/cm³] | 1,01 |
| **Flash Point DIN EN ISO 1523** | | |
| flash point approx. | [°C] | 26 |

## COMPATIBILITY

| % Macrynal VSM 2760 | 90 | 75 | 50 | 25 | 10 |
|---|---|---|---|---|---|
| % other binder | 10 | 25 | 50 | 75 | 90 |
| **Alkyd resins** | | | | | |
| Vialkyd AY 140 | ● | ● | ● | ● | ● |
| Vialkyd AC 406, AC 433 | ○ | ○ | ○ | ○ | ○ |
| **Acrylic resins** | | | | | |
| Macrynal SM 506 | ● | ● | ● | ● | ● |
| **Polyisocyanates** | | | | | |
| Desmodur N, L | ● | ● | ● | ● | ● |
| Desmodur HL | ● | ● | ○ | ○ | ○ |
| Desmodur IL | ● | ● | ● | ○ | ○ |
| **Other binders** | | | | | |
| nitrocellulose 24E | ● | ● | ● | ● | ● |
| CAB-551-0.2, CAB-381-0.5 | ● | ● | ● | ● | ● |
| Ucar solution vinyl resin VAGH | ● | ● | ● | ● | ● |

● = definite compatibility ○ = very limited or no compatibility

## SPECIAL PROPERTIES

- high elasticity
- very good chemical resistance
- non-yellowing
- good drying properties

## SUGGESTED USES

Macrynal VSM 2760 is suitable for the formulation of high quality two-component coatings for furniture and parquet, even on a industrial scale. Macrynal VSM 2760 can also be used in lacquers for metal- and plastic substrates. In combination with polyisocyanate hardeners e.g. Desmodur N or Desmodur L, clear and pigmented lacquers for furniture can be formulated, which exhibit high chemical resistance, light fastness and quick drying velocity. On dark stained wood high gloss coatings can be obtained. For industrial applications aliphatic polyisocyanates like Desmodur N should be preferably selected as hardeners. Such combinations yield in highly resistant lacquers, which exhibit excellent drying properties, high mechanical strength and high surface hardness after spray application.

## PROCESSING

**Curing with polyisocyanates**

For an equivalent reaction of the reactive groups (NCO : OH = 1 : 1) the following equation applies, to the calculation of the necessary quantity of polyiscoyanate, calculated on 100 parts by weight of Macrynal (solid resin):

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

42 = molecular weight of the NCO-group
17 = molecular weight of the OH-group

For 100 parts by weight of Macrynal VSM 2760 (f.o.d.) the following quantities of polyisocyanate are necessary for a 100 % crosslinking reaction:

| *polyisocyanates* | *parts by weight* |
|---|---|
| Desmodur N/75 % | 15.7 |
| Desmodur L/75 % | 19.5 |
| Desmodur IL/51 % | 32.4 |
| Desmodur HL/60 % | 24.7 |

For stoichiometric crosslinking, calculated from the equivalent weights (NCO : OH = 1 : 1), approx. 1620 parts by weight of Macrynal VSM 2760 (f.o.d.). requires ca. 255 parts by weight of Desmodour N/75 %.

**Pigmentation**

Suitable materials for the pigmentation of Macrynal VSM 2760 are inert pigments and fillers such as titanium dioxide, lithopone and iron oxide, as well as organic pigments, barytes, talcum, quartz powder etc. Care should be taken, however, that all additional substances used are absolutely dry. Suitability of pigments and fillers should be checked by preliminary tests in every individual case.

**Dilution**

It is important to make sure that only solvents free from hydroxyl groups and water are used in combination of Macrynal VSM 2760 with polyisocyanates. The most current diluents are propylene glycol ether acetates such as methoxypropyl acetate, esters such as ethyl acetate and butyl acetate, or ketones such as methyl ethyl ketone and methyl isobutyl ketone.

**Additives**

Initial and through-drying of Macrynal VSM 2760 occur so rapidly that addition of catalysts will hardly speed up these processes. For obtaining open-cell wood varnishes of high quality, combinations with nitrocellulose or copolymerisates are possible.

## 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 506 and Macrynal SM 508, Macrynal VSM 2760 is more flexible.

Producers:

Desmodur N, L, IL, HL (Covestro)
CAB-551-0.2, CAB-381-0.5 (Eastman)
Ucar solution vinyl resin VAGH (Union Carbide Benelux NV)