MACRYNAL® SM 2810/75BAC

Technical Datasheet

TYPE

Hydroxy functional acrylic resin designed for crosslinking with polyisocyanates

FORM OF DELIVERY (f.o.d.)

75 % in butyl acetate (75BAC)

Average hydroxyl content (solid resin)

approx. 4.2 %

PRODUCT DATA

Determined per batch:

Dynamic Viscosity DIN EN ISO 3219		
dynamic viscosity (25 1/s; 23 °C)	[mPa.s]	4500 - 6000
Colour Scale (Hazen) DIN EN ISO 6271-1		
Hazen colour value		<= 100
Hydroxyl Value (cat.) DIN EN ISO 4629		
hydroxyl value (solid matter content)	[mg KOH/g]	130 - 150
Non-Volatile Matter DIN EN ISO 3251		
non-volatile matter (1 h; 125 °C; 2 g; ethyl acetate)	[%]	73 - 77

Not continually determined:

Density (Liquids) DIN EN ISO 2811-2		
density approx. (20 °C)	[g/cm³]	1,04
Flash Point DIN EN ISO 1523		
flash point approx.	[°C]	28

SPECIAL PROPERTIES

Macrynal SM 2810 is meant for high solids two pack coatings with outstanding overall properties, such as chemical resistance, mechanical properties and outdoor stability.

SUGGESTED USES

In combination with aliphatic polyisocyanates, such as Desmodur N 3390, Macrynal SM 2810 is used for air-drying and forced drying high-solids two pack coatings. The principal application areas are car refinish, ACE (agricultural, construction and earthmoving equipment) as well as high quality industrial coatings. Paints based on Macrynal SM 2810 display a low content of volatile organic compounds (VOC).

PROCESSING

As a two pack system Macrynal SM 2810 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. The addition of cellulose acetobutyrate speeds up physical drying.

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 2810 (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.

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.

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 565, formulations based on Macynal SM 2810 lead to a higher solid content as well as better drying speed.