SYNOCURE® 589 S 75

GENERAL INDUSTRY / PROTECTIVE & MARINE COATINGS **ARKEMA COATING RESINS**

Product Application details

SYNOCURE® 589 S 75 is a high solids hydroxy functional acrylic resin suitable for the formulation of high build low VOC (below 420 g/l at spray viscosity) two-component coatings, both solid colours and clearcoats.
SYNOCURE® 589 S 75 is recommended for high performance protective and marine finishes, A.C.E., transport and vehicle refinishing.

Performance Benefits

- Good flexibility
- Good impact resistance
- Excellent durability

Polymer Type

- Solventborne Acrylic

Sales Specifications

Solid Content at 125°C, % (ISO 3251)	71.5 - 74.5
Viscosity at 25°C, mPa.s (ISO 12058-1)	5000 - 7000
Colour, Gardner scale (ISO 4630)	2 max
Acid value, mg KOH/g (ISO 2114)	2 - 7

Other Characteristics[1]

Volatile	2:1 Butyl acetate : Aromatic hydrocarbon, boiling range 160°C - 180°C
Flash point, °C (ISO 3679)	37
Density / Specific Gravity at 20°C, g/ml (ISO 2811)	1.06
Hydroxyl Content, %	4.9
Hydroxyl Equivalent weight	350

Note: Acid value and/or Hydroxyl value quoted relative to solid resin

1 The data provided for these properties are typical values, intended only as guides, and should not be construed as sales specifications

Formulation Guidelines

RECOMMENDATIONS FOR USE

SYNOCURE® 589 S 75 should be mixed with the selected polyisocyanate just prior to application. Stoichiometric mixing ratios are recommended to obtain optimum performance.
The reaction ratio is calculated from the respective equivalent weight or hydroxyl and isocyanate content of the reactants. The relationship is:

$$\text{Hydroxyl equivalent weight} = \frac{17 \times 100}{\%\,\text{OH}}$$

$$\text{Isocyanate equivalent weight} = \frac{42 \times 100}{\%\,\text{NCO}}$$

Using Tolonate™ HDT-LV (1), the recommended ratios would be:

	on solid resin	as supplied
SYNOCURE® 589 S 75	350	467
Tolonate™ HDT-LV (1)	183	183

Alternative ratios may be suitable for some applications, but should be evaluated by the coating formulator beforehand.Conventional polyisocyanates such as Desmodur® N 75 series (2) and Tolonate™ HDB 75 MX (1) can be used successfully but for the highest solids content at application a low viscosity type such as Tolonate™ HDT-LV (1) is recommended.
SYNOCURE® 589 S 75 reacted with Tolonate™ HDT-LV (1) in stoichiometric proportions has a usable pot life at spraying viscosity in excess of a full working day at normal room temperature. Although the use of catalysts or higher temperatures will reduce this storage period, paints will still remain usable for several hours.

To increase the initial rate of cure of SYNOCURE® 589 S 75 based paints, at both ambient temperature and under low bake conditions, the use of tin catalyst in the form of dibutyl tin dilaurate is strongly recommended. The level used will depend on specific requirements, but the recommended minimum level would be 0.0015% tin calculated on total solid resin plus isocyanate.

SOLUBILITY

The solvents chosen for paints and lacquers based on SYNOCURE® 589 S 75 should be free of water and should not contain groups that react with isocyanates. SYNOCURE® 589 S 75 is completely soluble in esters, ketones and aromatic hydrocarbons and is insoluble in aliphatic hydrocarbons.

OTHER ADDITIVES

To optimise the performance of SYNOCURE® 589 S 75, when used in a clear varnish formulation, the use of Tinuvin® 1130 (3) and Tinuvin® 292 (3) in a 1:1 ratio is recommended.

Notes: (1) Vencorex Chemicals, (2) Bayer MaterialScience, (3) Ciba

Product Safety

Please refer to the corresponding Safety Data Sheet.

Storage & Handling

SYNOCURE® 589 S 75 should be stored indoors in the original, unopened and undamaged container, in a dry place at a temperature not exceeding 30°C. Exposure to direct sunlight should be avoided.
In the above mentioned storage conditions the shelf life of the resin will be 12 months from the shipping date

Arkema Coating Resins
420, rue d'Estienne d'Orves
92705 Colombes Cedex - France
arkema.com - **arkemacoatingresins.com**