SYNOCURE® 851 S 60

VEHICLE REFINISHING

ARKEMA COATING RESINS

Product Application details

SYNOCURE® 851 S 60 is a hydroxy functional acrylic designed to crosslink at room temperature or under low-bake conditions with aliphatic polyisocyanates.
SYNOCURE® 851 S 60 is particularly recommended for use in vehicle refinishing, and for all high performance industrial applications where high quality is required.

Performance Benefits

- Excellent weathering performance
- Excellent application properties
- Excellent chemical resistance

Polymer Type

- Solventborne Acrylic

Sales Specifications

Solid Content at 125°C, % (ISO 3251)	58 - 62
Viscosity at 25°C, mPa.s (ISO 12058-1)	2000 - 3000
Colour, Hazen scale (ISO 6271)	70 max
Acid value, mg KOH/g (ISO 2114)	10 max

Other Characteristics[1]

Volatile	2:1 Xylene : Butyl acetate
Flash point, °C (ISO 3679)	24
Density / Specific Gravity at 20°C, g/ml (ISO 2811)	1.02
Hydroxyl Content, %	4.5
Hydroxyl Equivalent weight	380
Free of particles	

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® 851 S 60 should be mixed with the selected polyisocyanate just prior to application. The mixing ratio is not critical although it is preferable to use stoichiometric ratios 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™ HDB 75 MX (1), the recommended ratios would be:

	on solid resin	as supplied
SYNOCURE® 851 S 60	380	633
Tolonate™ HDB 75 MX (1)	191	255

At normal temperatures, the surface drying time of paints and varnishes based upon this combination is typically 20 minutes, with hard dry in 6 hours.
To increase the initial rate of cure of SYNOCURE® 851 S 60 based paints and varnishes, at both ambient temperatures and under low bake conditions, the use of tin or zinc catalysts in the form of dibutyl tin dilaurate or zinc octoate is recommended. The levels will depend on the specific requirements but typical metal contents calculated on total solid resin would be 0.001% tin or 0.02% zinc.

The pot life of coatings based upon SYNOCURE® 851 S 60 / Tolonate™ HDB 75 MX (1) in the recommended proportions gives a full working days use. Lacquers prepared at 23 seconds flow cup 4 at 20°C will double in viscosity after 30 hours. With a catalyst level of 0.001% tin on total solid resin this will be reduced to 10 hours. The catalyst used is dibutyl tin dilaurate.

SOLUBILITY

The solvents chosen for paints and laquers based on SYNOCURE® 851 S 60 should be free from water and not contain groups that react with isocyanates. Esters and ketones are true solvents and are recommended for use in combination with aromatic hydrocarbon diluents such as xylene.

OTHER ADDITIVES

To optimise the performance of SYNOCURE® 851 S 60, when used in a clear varnish formulation, we recommend the use of Tinuvin® 900 (2) and Tinuvin® 292 (2) in a 2:1 ratio.

Notes: (1) Vencorex Chemicals, (2) Ciba

Product Safety

Please refer to the corresponding Safety Data Sheet.

Storage & Handling

SYNOCURE® 851 S 60 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

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