SYNOCURE® 857S-60

GENERAL INDUSTRY

ARKEMA COATING RESINS

Product Application details

SYNOCURE® 857S-60 is a hydroxyl functional acrylic resin developed for use in compliant two component systems when cured with polyisocyanate.
SYNOCURE® 857S-60 is recommended for the formulations, where economy in use is a major factor. Excellent flexibility is a key feature of SYNOCURE 857S-60.

Performance Benefits

- Good hardness
- Excellent gloss and Adhesion
  Good Durability
- Excellent durability

Polymer Type

- Solvent borne Acrylic

Sales Specifications

Solid Content at 125°C, % (ISO 3251, 1gm, 1h, 125°C)	58 - 62
Viscosity in Poise at 25°C,Brookfield Viscometer(ISO3219)	35 - 45
Colour, Gardner scale (ISO 4630)	1 Max
Acid value, mg KOH/g (ISO 2114)	8 Max

Other Characteristics[1]

Volatile	Xylene/Cellosolve Acetate (1:1)
Flash point, °C (ISO 3679)	31
Density / Specific Gravity at 20°C, g/ml (ISO 2811)	1.03
Hydroxyl Content, %	1.20
Hydroxyl Equivalent weight	1400

Note: Acid value and/or Hydroxyl content 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® 857S-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 Desmodur N-75(1), the recommended ratios would be:

	on solid resin	as supplied
SYNOCURE® 857S-60	1400	2355
Desmodur N- 75 (1)	191	255

SYNOCURE® BY ARKEMA

To increase the initial rate of cure of SYNOCURE® 857S-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® 857S-60 / Desmodur N 75 (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® 857S-60 should be free from water and not contain groups that react with isocyanates.

OTHER ADDITIVES
To optimize the performance of SYNOCURE® 857S-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) Bayer, (2) Ciba

Product Safety

Please refer to the corresponding Safety Data Sheet.

Storage & Handling

SYNOCURE® 857S-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 conditions the shelf life of the resin will be 12 months from the date of manufacturing.

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