SYNOCURE® 861 X 55

GENERAL INDUSTRY

ARKEMA COATING RESINS

Product Application details

SYNOCURE® 861 X 55 is a hydroxy functional acrylated polyester designed for crosslinking at both room temperature and low stoving temperatures with suitable polyisocyanates.
SYNOCURE® 861 X 55 is primarily intended for use in vehicle refinishing applications, both as a medium for excellent primer surfacers and for finishing coats.

Performance Benefits

- High solids at application viscosity
- Excellent gloss
- Good sanding properties
- Excellent metal control in polychromatic finishes

Polymer Type

- Solventborne Polyester

Sales Specifications

Solid Content at 125°C, % (ISO 3251)	54 - 56
Viscosity at 25°C, mPa.s (ISO 12058-1)	1500 - 2500
Colour, Hazen scale (ISO 6271)	150 max
Acid value, mg KOH/g (ISO 2114)	12 max

Other Characteristics[1]

Volatile	Xylene
Flash point, °C (ISO 3679)	24
Density / Specific Gravity at 20°C, g/ml (ISO 2811)	1.0
Hydroxyl Content, %	4.1
Hydroxyl Equivalent weight	415

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® 861 X 55 should be mixed just prior to application with the selected polyisocyanate. 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:

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

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

Using Desmodur® N 75 series (1) or Tolonate™ HDB 75 MX (2), the recommended ratios would be:

	on solid resin	as supplied
SYNOCURE® 861 X 55	415	755
Desmodur® N 75 series (1) or Tolonate™ HDB 75 MX (2)	191	255

At normal temperatures, the surface drying time of paints based on this combination is typically 25 min, with hard dry in 75 min.

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SYNOCURE® 861 X 55 reacted with Desmodur® N 75 series (1) or Tolonate™ HDB 75 MX (2) in stoichiometric proportions has a usable pot life at spraying viscosity in excess of a full working day at normal room temperature. The use of catalysts or higher temperatures will reduce this storage period.
To increase the initial rate of cure of SYNOCURE® 861 X 55 paints, at both room temperature 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 used will depend on specific requirements, but typical metal contents calculated on total solid resin would be 0.001% tin or 0.0015% zinc.

SOLUBILITY

The solvents chosen for paints and lacquers based on SYNOCURE® 861 X 55 should be free of water and should not contain groups that react with isocyanates.
Esters and ketones are true solvents for this type of system and are recommended for use in conjunction with aromatic hydrocarbon diluents such as xylene.

OTHER ADDITIVES

Byk®-P 104 S (3) has been successfully used whenever a wetting agent has been necessary.

Suitable flow additives include Byk®-344 (3). There are also a number of polymeric additives which may be used for improving flow.

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

Product Safety

Please refer to the corresponding Safety Data Sheet.

Storage & Handling

SYNOCURE® 861 X 55 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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