

Chemical/physical nature

Palatal U 570 TV-01 V is an unsaturated polyester based on orthophthalic acid and standard glycols, dissolved in styrene. Palatal U 570 TV-01 V contains barrier forming agents to reduce styrene emission and a thixotropic agent.

The resin is pre-accelerated.

Palatal U 570 TV-01 V has a high reactivity and a low viscosity.

Major applications

Palatal U 570 TV-01 V is well suited for hand lay-up and spray techniques.

It is mainly suitable for the production of thin laminates and laminates with a moderate thickness (≤ 10 mm). It readily impregnates the reinforcing materials during lay-up and does not run off inclined laminates. An outstanding feature of Palatal U 570 TV-01 V is its low level of styrene emission and as a consequence reduced exposure to styrene in the workplace.

Approvals

Cured unreinforced Palatal U 570 TV-01 V conforms to type 1140 according to DIN 16946/2 and is classified in group 1 according to DIN 18820/1.

Product specifications upon delivery

Property	Range	Unit	TM
Viscosity, Physica, 20 s ⁻¹ , 23°C	490 - 560	mPa.s	2313
Viscosity, Physica, 50 s ⁻¹ , 23°C	320 - 520	mPa.s	2313
Appearance	hazy	-	2265
Solids content, IR	55 - 58	%	2033
Cure time from 25 to 35°C	23 - 28	Min	2625
Cure time from 25°C to peak	34 - 44	Min	2625
Peak temperature	120 - 150	°C	2625

Remarks

Reactivity determined with 1.5 g Butanox M 50 (AKZO-Nobel) added to 100 g resin

Properties of the liquid resin (typical values)

Property	Value	Unit	TM
Density, 20°C	appr. 1120	kg/m ³	-
Flash point	appr. 33	°C	2800
Stability, no init., dark, 25°C	3	Mon	-

Typical values of cast unfilled resin

Property	Value	Unit	TM
Tensile strength	80	MPa	ISO 527-2
Mod. of elasticity in tension	4.4	GPa	ISO 527-2
Elongation at break	2.4	%	ISO 527-2
Flexural strength	150	MPa	ISO 178
Mod. of elasticity in bending	4.5	GPa	ISO 178
Impact res. - unnotched sp.	13	kJ/m ²	ISO 179
Heat deflection temp. (HDT)	90	°C	ISO 75-A
Glass transition temp. (Tg)	122	°C	DIN 53445

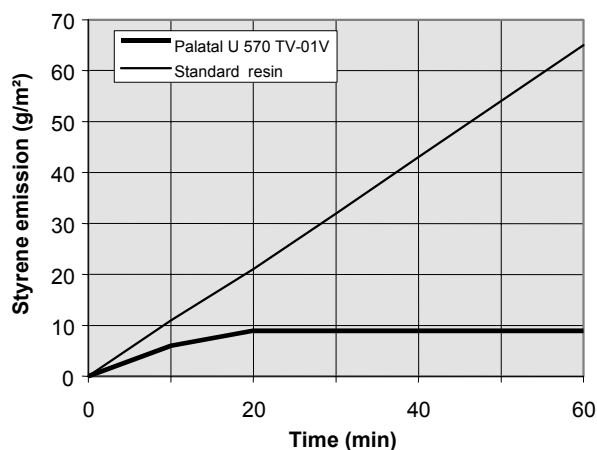
Curing conditions

Mechanical properties determined on resin not containing thixotropic agent.

Cured with 1 ml MEKP-HA 2 (Peroxid-Chemie GmbH) and 0.2 ml Co-oct. solution (1% Co in styrene) added to 100 g resin. Cured 24 h at room temperature and post-cured 24 h at 80 °C.

Specimen size for HDT measurement: 1/4" x 1/2"x5"

Graph showing reduced styrene emission



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Processing

Palatal U 570 TV-01 V contains barrier forming agents to reduce emission of styrene. These agents may reduce the bonding strength of overlaminates. Good strength can be obtained with overlamination of the base laminate within 24 hours, if the surface is not too resin rich. In other cases, the surface might need sanding.

Palatal U 570 TV-01 V normally exhibits tack-free cure. Nevertheless, the surface may not be cured wholly. To ensure complete cure of surfaces exposed to air, suitable additives (e.g. a paraffin solution) should be added.

The final state of cure may be optimized by post-curing at elevated temperatures (e.g. 80 °C) for several hours.

Guidelines before use

The resin should be conditioned at a well defined, application dependant temperature (usually 15 °C minimum for a cure with MEKP). Stir the product thoroughly before use.

Storage guidelines

The resin should be stored indoors in the original, unopened and undamaged packaging, in a dry place at temperatures between 5°C and 30°C.

Shelf life is reduced at higher temperatures and the properties of the resin might change during storage. The shelf life of styrene containing unsaturated polyesters will be significantly reduced when exposed to light. Store in dark and in 100% light tight containers only.

Material Safety

A Material Safety Data Sheet of this product is available on request.

Test methods

Test methods (TM) referred to in the table(s) are available on request.

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