

# Synolite™ 5700-P-1

## Multi-purpose Hand lay-up resin with Low Styrene Emission capability

Synolite™ 5700-P-1 is a versatile Ortho resin for Hand lay-up and Spray-up processes with Low Styrene Emission (LSE) system.

The resin is DNV and Lloyd's Register approved and makes it suitable for Marine. The resin is also well suited for making tanks and pipes.

### Benefits

- Easy and robust processing
- Can be used both for making thick and thin laminates
- DNV and Lloyd's certified
- Reduced Styrene emissions compared to equivalent Ortho resins

## Major Applications

Synolite™ 5700-P-1 has been specially developed for hand lay-up and spray-up applications to produce a variety of constructional laminates. The resin is particularly suitable for laminates with low and medium thickness.

Synolite™ 5700-P-1 features medium reactivity. The low viscosity of Synolite™ 5700-P-1 enables excellent fiber wetting for impregnating readily different glass fiber reinforcement materials. The resin does not run off inclined laminates.

An outstanding feature of Synolite™ 5700-P-1 is the low level of styrene emission and as a consequence reduced exposure to styrene in the workplace.

## Certifications and Approvals

Synolite™ 5700-P-1 conforms to type 1140 according to 16946/2 and is classified in group 1 according to DIN 18820/1. The resin is approved by Lloyd's Register and DNV-GL for use in Marine applications.

### Product Specifications

Property	Value	Unit	TM
Appearance	Hazy		TM 2265
Viscosity 23 °C, 20 s <sup>-1</sup>	490 - 560	mPa.s	TM 2313
Viscosity 23 °C, 50 s <sup>-1</sup>	320 - 520	mPa.s	TM 2313
Viscosity 23 °C, 250 s <sup>-1</sup>	300 - 350	mPa.s	TM 2313
Gel time 25 until 35 °C	23 - 28	min	TM 2625
Peak time	34 - 44	min	TM 2625
Peak temperature	120 - 150	°C	TM 2625
Stability 120 °C	75	min	TM2300C

Viscosity measurement: Physica Z2/23°C. Reactivity measurement: 1.5 g Medium reactive Methyl Ethyl Ketone Peroxide (MEKP) added to 100 g resin

Liquid			
Property	Value	Unit	TM
Density 20 °C	1120	kg/m <sup>3</sup>	TM 2160
Flash point	33	°C	TM 2800
Stability (Solid, dark, 25 °C)	3	month	

Solid Unfilled			
Property	Value	Unit	TM
Tensile strength	80	MPa	ISO 527-2
Tensile modulus	4.4	GPa	ISO 527-2
Elongation at break	2.4	%	ISO 527-2
Flexural strength	150	MPa	ISO 178
Flexural E-Modulus	4.5	GPa	ISO 178
HDT	90	°C	ISO 75A
Barcol Hardness	45	-	TM 4515
Impact strength	13	kJ/m <sup>2</sup>	ISO 179
Tg	125	°C	DIN 53445

Mechanical properties determined on resin not containing thixotropic agent. Cured with 1.0 ml high reactive Methyl Ethyl Ketone Peroxide (MEKP) added to 100 g of resin. After 24h at RT Post cured 4 h at 80 °C and 1 h at 125 °C.

## Application Guidelines

Synolite™ 5700-P-1 contains barrier forming agents to reduce emission of styrene. These agents may reduce the bonding strength of over laminates. Good strength can be obtained when delaying the over laminating of a base laminate if the surface of the base laminate is not resin rich. In other cases the surface might need sanding.

Surfaces of Synolite™ 5700-P-1 cured in contact with air normally exhibit tack-free cure, nevertheless the surface may not be cured completely. To ensure complete cure of surfaces exposed to air, suitable additives (e.g. a paraffin solution) should be added. The final stage of cure may be optimized by post curing at elevated temperature (e.g. 80 °C) for several hours.

Before use, the resin should be conditioned at a well-defined application dependent temperature (usually 15 °C minimum for a MEKP / Cobalt cure). Stir the resin well before use.

## Storage Guidelines

The resin should be stored in a dark and dry place in the original, unopened and undamaged packaging 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.

## ISO 9001:2015 Certified

The Quality Management Systems at every AOC manufacturing facility have been certified as meeting ISO 9001:2015 standards. This certification recognizes that each AOC facility has an internationally accepted model in place for managing and assuring quality. We follow the practices set forth in this model to add value to the resins we make for our customers.

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### Contact us for more information

We will help you to choose the right resin solution.

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