

# Synolite™ 5410-I-1

## Multi-purpose Hand lay-up resin with Easy Processing capability

Synolite™ 5410-I-1 is a versatile Orthophthalic resin for Hand lay-up and Spray-up processes. The resin is particularly suited for Marine applications and is Lloyd's Register approved.

### Benefits

- Easy and robust processing
- Can be used both for making thick and thin laminates
- Suitable for Marine applications (Lloyd's approval)
- Dimensional predictability through low internal laminate stresses
- Reduced crack sensitivity

## Major Applications

Synolite™ 5410-I-1 is well suited for hand lay-up and spray-up techniques, and in particular for making thick laminates (more than 5 mm) and parts which require curing with a low exothermic heat generation.

Synolite™ 5410-I-1 is low viscous and readily impregnates all commonly used reinforcement materials during lay-up without rinsing off from inclined surfaces.

Because of its reactivity and curing behavior Synolite™ 5410-I-1 is particularly suitable for the production of laminates almost free of internal stress.

## Certifications and Approvals

Cured non-reinforced Synolite™ 5410-I-1 resin conforms to type 1120 according to DIN 16946/2. The resin is certified by Lloyd's Register for use in Marine applications.

### Product Specification

Property	Value	Unit	TM
Appearance	Hazy		TM 2265
Solids content	54.5 - 58.5	%	TM 2033
Viscosity 23 °C, 2 s <sup>-1</sup>	950 - 1250	mPa.s	TM 2313
Viscosity 23 °C, 20 s <sup>-1</sup>	300 - 400	mPa.s	TM 2313
Viscosity 23 °C, 250 s <sup>-1</sup>	190 - 230	mPa.s	TM 2313
Gel time 25 until 35 °C	24 - 32	min	TM 2625
Peak time	51 - 61	min	TM 2625
Peak temperature	56 - 80	°C	TM 2625

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

## Unfilled castings typical properties

Property	Value	Unit	TM
Tensile strength	70	MPa	ISO 527-2
Tensile modulus	4.3	GPa	ISO 527-2
Elongation at break	2	%	ISO 527-2
Flexural strength	110	MPa	ISO 178
Flexural E-Modulus	4.3	GPa	ISO 178
Outer fiber strain	2.6	%	ISO 178
HDT ISO 75 Ae	63	°C	ISO 75 Ae
Impact strength	10	kJ/m <sup>2</sup>	ISO 179
Tg DIN	93	°C	DIN 53445

Mechanical values determined with resin not containing thixotropic agent and accelerator. Cured with 1.0 % medium reactive Methyl Ethyl Ketone Peroxide (MEKP) and 0.2 % Cobalt polymer accelerator (1%) added to 100 g of resin. After 24 h at RT followed by post curing for 24 h at 80°C.

## Application Guidelines

Synolite™ 5410-I-1 resin normally exhibits tack-free cure. However, the surface may not be cured completely. To ensure tack-free curing of surfaces exposed to air, suitable additives (e. g. paraffin solution) should be added. The final state of cure may further be optimized by post curing at elevated temperatures (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 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 Polyester resins will be significantly reduced when exposed to light.

Store in dark and in 100% light tight containers only. Exposure to direct sunlight should be avoided.

## 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

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### Contact us for more information

We will help you to choose the right resin solution.

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