

## Introduction

Crestafire® P1-3001E is a filled, fire retardant unsaturated polyester resin. It incorporates a special grade of Alumina Trihydrate (ATH) which makes it suitable to produce laminates where excellent resin flow, fire retardancy and low levels of smoke & toxic fumes are required. Crestafire® P1-3001E is extra stabilised for transport, storage and use in higher temperature climates.

Crestafire® P1-3001E is halogen free and does not contain heavy metals.

## Approvals

Properly cured laminates produced with Crestafire® P1-3001E resin and gelcoat Crestafire® GCS 1001E can achieve a rating of **HL2 - R1/R7/R10/R17** according to rail standard EN 45545-2:2013.

## Applications

Crestafire® P1-3001E can be used for both hand lay and closed mould applications, including RTM and vacuum infusion, due to its favourable viscosity profile.

Its excellent fire, smoke and toxicity properties allow Crestafire® P1-3001E to be used for the most demanding applications in the rail, building & construction, and other public transportation industries.

### Typical Properties

Property	Unit	Liquid resin
Appearance	-	Pale Pink
Viscosity, ICI cone & plate, 25°C	Poise	5
Viscosity, Brookfield Spindle 2 at 12 RPM, 25°C	mPa.s	TBC
Geltime, 2% Accelerator G + 2% Butanox M50, 25°C	Minutes	20
Volatile Content	%	24
Specific Gravity, 25°C	-	1.5
Stability from date of manufacture when stored in accordance with storage recommendations	Months	3

Property*	Test Method	Unit	Cured resin
Barcol Hardness (Model GYZJ 934-1)	EN59	-	55
Water Absorption, 24 hours, 23°C	BS EN ISO 62 part 6.2	mg	16
Heat Deflection Temperature (1.8MPa) †	BS EN ISO 75-2 (1996)	°C	78
Elongation at Break	BS EN ISO 527-2	%	0.53
Tensile Strength	BS EN ISO 527-2	MPa	34.23
Tensile Modulus	BS EN ISO 527-2	GPa	8.33

\* Curing Schedule – 24hrs at 20°C + 3hrs at 80°C

† Curing Schedule – 24hrs at 20°C + 5hrs at 80°C + 3hrs at 120°C

## Additives

The addition of fillers or pigments to Crestafire® P1-3001E will adversely affect the fire performance, flow properties and cure of this material and is therefore not recommended. It incorporates anti-settling additives to minimise filler settlement during storage and promote easy filler re-dispersion. Mild settling may occur after prolonged storage, so it is always recommended to stir the resin before use to ensure uniform filler distribution.

## Before Use

Crestafire® P1-3001E should be allowed to attain a working temperature of 20-25°C before use.

Crestafire® P1-3001E is not accelerated so requires the addition of both, a cobalt-based accelerator, and medium reactivity MEKP type catalyst to start the curing reaction.

The recommended accelerator is Scott Bader Crystic® Accelerator G which should be added to the resin at 1–2%. Medium reactivity MEKP type catalyst should also be added at 1–2% into the resin.

The catalyst and accelerator should be thoroughly incorporated into the resin one at a time, using a low shear mechanical stirrer where possible.

Where rapid demould times are required, up to 0.1% DMA can be added into the resin in addition to the above recommended cure system. Also, the MEKP catalyst may be substituted for an AAP type catalyst to speed up the cycle times even further.

For more information please consult Scott Bader's Technical Support Team.

**N.B.** Catalyst and accelerator must not be mixed directly together as they can react with explosive violence.

Due to the high specific gravity of Crestafire® P1-3001E, a resin to glass ratio of roughly 2.5 : 1 is recommended for hand lay applications.

## Post Curing

For many applications, Crestafire® P1-3001E will perform adequately when cured at workshop temperature (20°C - 25°C). However, for optimum properties, and to achieve the highest fire performance, the components should be allowed to cure for 24 hours at 20°C, and then be oven-cured for either 16 hours at 40°C or 3 hours at 80°C.

## Storage

Crestafire® P1-3001E should be stored between 5°C and 25°C in the original, unopened container in a dry, well-ventilated place. Protect from freezing and direct sunlight. Avoid contact with oxidising agents. Stored outside of these recommendations, shelf life will be significantly reduced.

## Packaging

Crestafire® P1-3001E is supplied in 25kg & 225kg containers.

## Health and Safety

Please see separate Safety Data Sheet.

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