



## Product overview

Crestomer® Bio 1140PA is a two part pre-accelerated, highly thixotropic structural adhesive based on unsaturated urethane acrylate with greater than 20% bio-derived content and it is completely styrene free. It is used in many structural composite applications and has excellent adhesion to FRP laminates, core materials, wood and some metals. Due to its excellent adhesion to a wide range of materials, Crestomer® Bio 1140PA can also be used as a general purpose adhesive. It can be used for bonding diesel tanks, contour joints in FRP components, to build up damaged areas and to bond “green” FRP.

## Features and benefits

Urethane acrylate base	▶	Improved aesthetics and better surface finish
Excellent retention of toughness	▶	Excellent adhesion and high elongation at break
Highly thixotropic	▶	Non sagging on vertical surfaces
Controlled cure and exotherm behaviour	▶	Excellent fatigue and impact resistance
Excellent fatigue and impact resistance	▶	Perfect gap filling solution
Bio Derived Content – Styrene Free	▶	Excellent environmental impact

Application properties	
Working time <sup>1</sup>	85 minutes
Fixture time <sup>2</sup>	4 hours
Gap filling	1 – 15 mm / 0.04 – 0.06 inch
Colour change (over cure)	None
Recommended application temperature	18°C - 25°C / 64°F - 77°F

Mechanical properties	
Tensile strength <sup>3</sup>	27 - 30 MPa
Tensile modulus <sup>3</sup>	1500 - 1900 MPa
Tensile elongation <sup>3</sup>	>40%
Hardness	66 Shore D
Water Adsorption <sup>4</sup>	0.36%

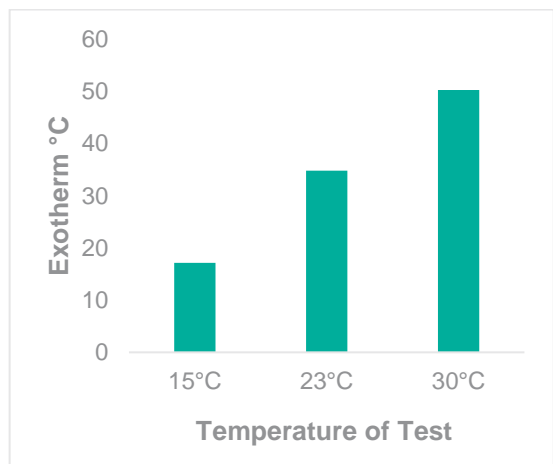
Liquid properties	
Product	Crestomer <sup>®</sup> Bio 1140PA
Viscosity <sup>5</sup>	250,000 - 320,000 cP
Specific gravity	1.05
Volatile Content	35%
Mixed ratio <sup>6</sup> (by volume)	50:1
Appearance	Mauve Gel
Shelf life <sup>7</sup>	6 months

### Recommended substrates

	Recommended substrates	Non - recommended substrates
<b>Metals</b>	Stainless Steel Aluminium	-
<b>Wood</b>	Marine ply Balsa	-
<b>Composites</b>	GRP/FRP Polyester resin DCPD Vinyl ester Epoxy	-

### Exotherm of Crestomers<sup>®</sup>

High exotherm in an adhesive can cause the substrate to distort and give poor aesthetic characteristics to the parts being bonded. The chemistry of Crestomer<sup>®</sup> adhesives ensures that high exotherm temperatures, a characteristic of some other adhesives, does not occur. The graph shows the exotherm temperatures of Crestomer<sup>®</sup> adhesives over a range of test temperatures.



## Surface preparation

Crestomer<sup>®</sup> Bio 1140PA has excellent adhesion to FRP material provided that the surface has been maintained free of dust and grease. This can be guaranteed by the use of proprietary stripable cloths such as peel ply (without lubricant contaminants). If the laminate surface is more than three days old it is recommended that they are lightly abraded and wiped with acetone or styrene on a lint-free, clean cloth prior to bonding.

## Application

Crestomer<sup>®</sup> Bio 1140PA is supplied pre-accelerated. The required hardner is a medium reactivity MEKP catalyst. The catalyst is added at 2% v/w. Crestomer<sup>®</sup> Bio 1140PA can be applied with a spatula or from a dispensing unit, taking care to keep air entrapment to a minimum. The maximum dimensions recommended are gap height 15mm/ 0.6 inch and joint width 40mm/ 1.6 inch. Bulk volumes of Crestomer<sup>®</sup> Bio 1140PA may lead to unsatisfactory cure and reduced mechanical performance. Application should always be carried out at temperatures above 15°C/ 59°F. Recommended temperature range for application is between 18°C and 25°C/ 64°F and 77°F.

## Storage and shelf life

Crestomer<sup>®</sup> Bio 1140PA should be stored in its original container and out of direct sunlight. It is recommended that the storage temperature should be between 15°C and 20°C/ 59°F and 68°F. Ideally containers should be opened only immediately prior to use. Products should never be frozen. The shelf life for Crestomer<sup>®</sup> products is defined from date of manufacture if stored as recommended. The expiry date is indicated on the product labels.

## Packaging

Crestomer<sup>®</sup> Bio 1140PA is supplied in 25Kg/ 55 lbs and 200Kg/ 440lbs containers.

1. Gel time measured with 100g mass of adhesive at 25°C/ 77°F. Using 2% medium reactivity MEKP catalyst.
2. Time taken at 24°C/ 75°F (ambient temperature) to achieve 1.4MPa strength in lap-shear tests according to BS ISO 4587:2003
3. Tested to ASTM D638.
4. Tested to BS EN ISO 62
5. Measured using Brookfield Viscometer at 25°C/ 77°F.
6. Mix ratio based on volume and weight for both machine dispensing and hand mixing.
7. The shelf life for Crestomer <sup>®</sup> products is defined from the date of manufacture if stored as recommended. The expiry date is indicated on the product labels

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