



# Technical Datasheet 53B231E

## Product Description

Tricel Composites GB 53B231E is a two component structural methacrylate adhesive, designed for the high strength bonding of metal and composite applications. 53B231E has been formulated from innovative technology, including our revolutionary adhesion system. This unique system enables the 53B231E to achieve the ultimate balance of mechanical strength and high impact resistance whilst still remaining both simple and quick to use.

## Typical Applications

Tricel Composites GB 53B231E is very versatile, and can bond a wide variety of substrates without the need for surface primers or conditioners. Typical examples shown below:

- Bonding metal fasteners to moulded composite parts.
- Bonding aluminium and stainless steel lettering in the sign manufacturing industry.
- Bonding automotive carbon fibre body panels.
- Bonding GRP and stainless steel in the marine industry.
- Bonding dissimilar metals for trailer fabrication.

## Properties of Uncured Material

Resin	Methyl Methacrylate
Colour	Yellow/White
Appearance	Thixotropic Gel
Viscosity Brookfield T Bar	400,000 to 600,000cps
Cure System	Exothermic
Open Time	7 Minutes @20°C 10g Mass
Handling Strength	12 Minutes @20°C 10g Mass
SG Part A	0.96
SG Part B	0.91

## Performance of Cured Material

ASTM D1002 Lapshear	(Average over 16 tests)
Aluminum	20.4 Nmm <sup>2</sup>
Stainless Steel	38.4 Nmm <sup>2</sup>
Mild Steel	32.8 Nmm <sup>2</sup>
GRP	Substrate Failure
ABS	Substrate Failure
Acrylic	Substrate Failure
ASTM D638 Tensile Strength	Up to 30 Nmm <sup>2</sup>
Gap Fill	4mm
Standard Temperature Range	-55°C to 120°C
Paint Bake Cycle Approval**	20 Minutes @ 220°C
Aluminum lapshear following moist catapasm 7 days @ 70°C	26.7 MPA
Peel Strength Aluminium	6 KN/m
Shore Hardness	75 Shore D

## Compatible Substrates\*

Aluminum	Wood
Stainless Steel	Granite
Mild Steel	Marble
UPVC	Urethanes
Polyesters	Vinyl Esters
ABS	Glav/Zinc Coated
Acrylic	Thermoset Plastics
FRP	Gelcoats
GRP	Epoxy laminate

The data, information and values contained in this Technical Data Sheet has been obtained by conducting various tests in a controlled laboratory environment, and should be used for guidance purposes only. Although we believe them to be reliable and accurate, users should always conduct their own tests in their specific working conditions to ensure that the product is suitable and effective for use. It is the users sole responsibility to determine the suitability of the product for the application. Tricel Composites GB Ltd cannot be held responsible for the results of procedures undertaken elsewhere, nor for the safeguarding of personnel or property, all of which is the duty of the user. Suitability of products or methods is discretionary. Therefore, warranties or implied usage obligations should not be attributed to, and are not the responsibility of, Tricel Composites GB Ltd. Tricel Composites GB Ltd are not liable for any financial loss or other damages incurred by the user as a result of the use of this product.

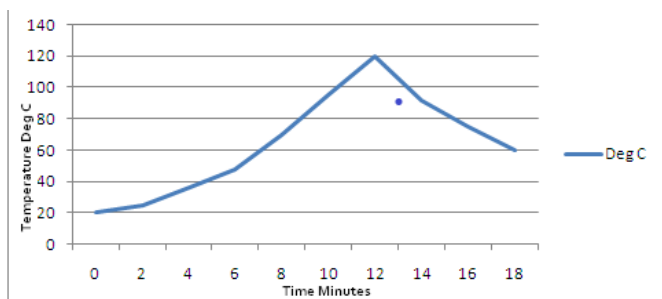
## Instructions For Use

1. Always consult MSDS before using 53B231E for the first time.
2. Carry out surface preparation where required. \*
3. Remove cap, and attach mixer nozzle.
4. Dispense sufficient adhesive to ensure equal mix.
5. Apply adhesive to one surface and assemble components carefully, clamping if required.
6. It is always easier to remove any excess adhesive prior to cure using a suitable cleaner \*
7. Allow the adhesive sufficient time to achieve handling strength before moving or unclamping components.

## Curing Cycle

Once mixed at the 1:1 ratio the working time of the 53B231E is the period whereby the adhesive remains fluid and is easily transferrable between two or more mating surfaces. Temperature, volume and substrate have a direct effect on the length of this period as the Tricel Composites GB 53B231E cures by an exothermic reaction. Higher temperatures and larger volumes speed the reaction causing a reduction in open and cure time. Lower temperatures and smaller volumes slow the reaction time extending both the open time and ultimate full cure time.

Typical Exotherm Graph for 53B231E 10g at 20 °C



## Clean Up

Following dispense any excess adhesive should be removed prior to cure with the appropriate Tricel Composites GB cleaner.

## Packaging

Tricel Composites GB 53B231E is available in 25ml syringes and 50ml, 250ml Universal and 400ml Nylon cartridges for use with a dispensing gun. 53B231E is also available in 20 litre pails and 200 litre drums, for use with our BC1 dispensing system.

## Storage & Shelflife

Tricel Composites GB 53B231E should be stored unopened in suitable hazardous storage conditions for flammable adhesives that are cool, dry location and out of direct sunlight. Stored correctly, this grade can offer a 12 month shelf life from its manufacture in the UK.

## Health and Safety in Use

**Tricel Composites GB 53B231E is a methyl methacrylate and should not be used without consulting the MSDS, which contains full information regarding the use of this product, including Transport, Disposal, Toxicological, Exposure Controls, Accidental Release and First Aid measures essential to the safe use of this product.**

***\*Contact your Tricel Composites GB representative for full information and usage instructions.***

***\*\* Temperature resistance relates directly to bond size, thickness of adhesive and subjected load.***

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