

WT93

SPRINT®

- **SPRINT® Matrix**
- **Fabric allows air evacuation**
- **Good Outlife at Room Temperature**
- **Diuron Free**
- **Low Exothermic Properties**
- **Cure from 85°C-120°C**
- **Excellent Laminate Quality with low void content**
- **Available in a range of reinforcements**
- **Suitable for automated and hand lay-up**

Introduction

WT93 SPRINT® is part of the WE and WT range of prepreg and SPRINT® products. This unique product range provides technically and commercially competitive engineering materials, ideal for use either solely, or in conjunction with other products from within the product range along with other Gurit products.

WT93 is a hot melt, Diuron free epoxy SPRINT® ideally suited to the manufacture of thick sections. It can be cured at temperatures as low as 85°C, but can also be used for the rapid manufacture of components through its 45-minute cure at 120°C.

WT93 is designed for vacuum bag processing and offers excellent mechanical performance on glass fibre reinforcement by providing a path for air to be quickly and efficiently evacuated from the laminate.

WT93 SPRINT® is available in both single sided and double sided formats

Double sided SPRINT® consists of a 45° skewed glass fabric on either side of a WT93 resin film to give a ±45° biaxial SPRINT® product with a poly backer to protect the product during cutting and handling, and is also available in a backerless format.

Single sided SPRINT® has a bulk resin film on one side of a multiaxial fabric and a tack film on the opposing face

The biaxial SPRINT® is a ± 45° stitched E-glass fabric using a fibre weight of 300, 600, 1000 or 1800g.

The triaxial SPRINT® is a ± 45° biaxial E-glass stitched to unidirectional fabric giving a total fibre weight of 900 or 1200g.

This material can be used as a thick drapable fabric. The triaxial SPRINT® is available with a glass tissue on the biax side, which helps to prevent print-through.

Instructions for Use

WT93 SPRINT® materials can be used with both SPRINT® or prepreg products. It is supplied with a poly backer and can be applied to the substrate with either side against the tool.

In order to maximise the potential of WT93 product range please contact the Gurit Composite Processing Department. Contact details are on the back of this Product Data Sheet.

General SPRINT® / prepreg working practices apply to these products, details of which can be obtained from the Guide to Composites or by contacting the above department.

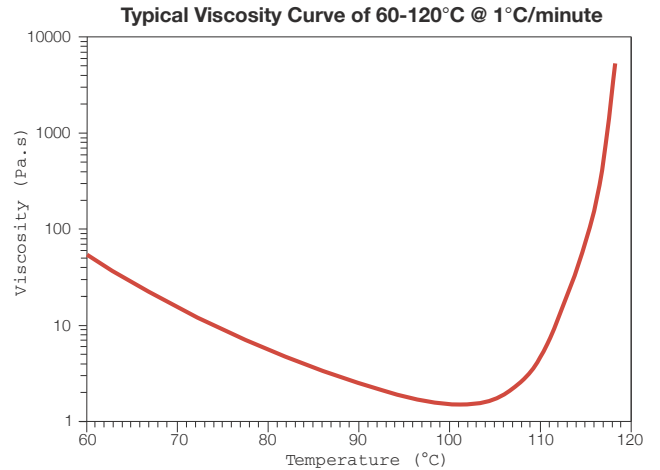
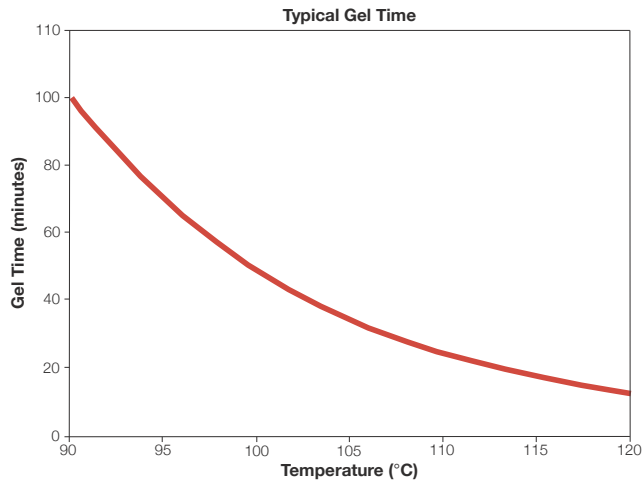
Matrix Properties

Uncured

Thermal properties	
Enthalpy (J/g)	250
Tonset (°C)	138
Tpeak (°C)	150
Cold Tg (°C)	8
Tg ₂ by DSC (90-120°C Cure)	110-120

Time to 95°C	
90°C (minutes)	~400
100°C (minutes)	180
110°C (minutes)	90
120°C (minutes)	45

Rheology		
	30-120°C @ 1°C/minute	30-120°C @ 2°C/minute
Temperature @ minimum Viscosity (°C)	102	112



Cured

Mechanical Properties	
Tensile Strength (MPa)	57
Tensile Modulus (GPa)	3
Tensile Strain (%)	3
Compression Strength (MPa)	125
Compression Modulus (GPa)	4
Matrix density (g/cm³)	1.2

Thermal Properties (cured between 90-120°C)	
DSC T _g (°C)	110-120

SPRINT® Properties

Uncured

Material Properties		
		Notes
Tack	2 (for SPRINT® Film)	Low Tack

Outlife	
At -18°C (months)	18
At 5°C (months)	6
At 21°C (days)	60

SPRINT® Reinforcement		
	±45° 600g SPRINT® Biax	0°, ±45° 1200g Fleece SPRINT® Triax
Format	Double Sided	Single Sided
Sizing Type	Epoxy Compatible	
Resin Content (%)	35	43
Fibre Weight (g/m ²)	635	1200+ 50g/m ² fleece
Aerial Weight (g/m ²)	977	2193
Stitch Type	Polyester Stitch	Polyester Stitch
Fleece	No	Yes
Backer Type	MDPE	MDPE
Packaging Type	Packaging Type is dependant on the length of roll requested	

Cured

SPRINT® Reinforcement			
	600g SPRINT® Biax	1200g SPRINT® Triax	Test Method
Tg1 (°C) (Laminate)	108-112	108-112	DMTA
0° Tensile Strength (MPa)	-	461	BS EN ISO 527
0° Tensile Modulus (GPa)	-	22	BS EN ISO 527
0° Tensile Strain to Failure (%)	-	2.06	BS EN ISO 527
0° Compressive Strength (MPa)	-	503	ISO 14126
0° Compressive Modulus (GPa)	-	22	ISO 14126
0° Compressive Strain to Failure (%)	-	2.3	ISO 14126
0° ILSS (MPa)	-	51	BS EN ISO 14130
45° Tensile Strength (MPa)	505	200	BS EN ISO 527
45° Tensile Modulus (GPa)	26.5	16	BS EN ISO 527
45° Tensile Strain to Failure (%)	1.81	1.25	BS EN ISO 527
45° Compressive Strength (MPa)	599	-	ISO 14126
45° Compressive Modulus (MPa)	28	-	ISO 14126
45° Compressive Strain to Failure (%)	1.72	-	ISO 14126
45° ILSS (MPa)	49	34	BS EN ISO 14130

Health and Safety

The following points must be considered:

1. Skin contact must be avoided by wearing gloves. Gurit recommends the use of disposable nitrile gloves for most applications. The use of barrier creams is not recommended, but to preserve skin condition a moisturising cream should be used after washing.
2. If working in an enclosed area, local extraction and ventilation should be used.
3. Overalls or other protective clothing should be worn when laminating or sanding. Contaminated work clothes should be thoroughly cleaned before re-use.
4. Eye-protection should be worn. If contamination of the eyes occurs then flush the eye with water for 15 minutes, holding the eyelid open, and seek medical attention.
5. If the skin becomes contaminated then the area must be immediately cleansed. The use of resin-removing cleansers is recommended. To finish, wash with soap and warm water. The use of solvents on the skin to remove resins etc. must be avoided.

Washing should be part of routine practice:

- Before eating or drinking
 - Before smoking
 - Before using the lavatory
 - After finishing work
6. The inhalation of sanding dust should be avoided. If it settles on the skin then it should be washed off. After more sanding operations, a shower/bath and hair wash is advised.

Gurit produces a separate full Material Safety Data Sheet (MSDS) for all hazardous products. Please ensure that you have the correct MSDS to hand for the materials you are using before commencing work. A more detailed guide for the safe use of Gurit resin systems is also available and can be found on our website at www.gurit.com. Note: safety datasheet legislation can vary with country of use.

CPDS are also available upon request

Applicable Risk & Safety Phrases

See MSDS

Storage Conditions & Outlife

Storage time and temperature will have an affect on resin reactivity and fibre impregnation. When stored at -18°C SPRINT® can be stored for 18 months without detrimental changes to the product. Storage times at higher temperatures are a function of fabric construction, roll length and resin content. These can be obtained upon request. However, the WT93 matrix resin system has specific properties that enable most combinations of fabric construction, roll length and resin content to be stored at 20°C for up to 28 days.



Transport & Storage

All SPRINT® materials should be stored in a freezer when not in use to maximise their useable life, since the low temperature reduces the reaction of resin and catalyst to virtually zero. However, even at -18°C, the temperature of most freezers, some reaction will still occur. In most cases after some years, the material will become unworkable.

Notice

All advice, instruction or recommendation is given in good faith but Gurit AG (the company) only warrants that advice in writing is given with reasonable skill and care. No further duty or responsibility is accepted by the Company. All advice is given subject to the terms and conditions of sale (the Conditions) which are available on request from the Company or may be viewed at the Company's Website: www.gurit.com/termsandconditions_en.html.

The Company strongly recommends that Customers make test panels and conduct appropriate testing of any goods or materials supplied by the Company to ensure that they are suitable for the Customer's planned application. Such testing should include testing under conditions as close as possible to those to which the final component may be subjected. The Company specifically excludes any warranty of fitness for purpose of the goods other than as set out in writing by the Company. The Company reserves the right to change specifications and prices without notice and Customers should satisfy themselves that information relied on by the Customer is that which is currently published by the Company on its website. Any queries may be addressed to the Technical Services Department.

Gurit are continuously reviewing and updating literature. Please ensure that you have the current version, by contacting Gurit Marketing Communications or your sales contact and quoting the revision number in the bottom right-hand corner of this page.

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