

# Panlite Spotlight

Third Quarter 2013 Highlights

Teijin Kasei Europe B.V.

## This quarter's spotlight: MN-3600 series

In this quarter, the spotlight is on MN-3600 series. We will share with you the unique properties and benefits of this series.

### What is MN-3600 series?

MN-3600 series is a PC/Filler, non-halogen, high heat resistant type material (in terms of flammability, GWFI and ball pressure temperature). It consists of MN-3600H, MN-3600HA, and the latest addition to the series, MN-3600HS and MN-3670.

### What is the difference?

Grade	Material Origin	Properties			
		Flammability	GWFI	Ball Pressure Test	
MN-3600 series	MN-3600H	Asia	V-1 (1.0mm) V-0 (1.5mm) 5VB (2.0mm)	960°C	125°C
	MN-3600HA	Asia			
	MN-3600HS	EU			
MN-3670 series	MN-3670	EU	V-1 (1.0mm) V-0 (1.2mm)	960°C	125°C
	MN-3670A	Asia			

### What are the possible applications for MN-3600 series?

Housing applications

Adaptors (mobile phones, laptops)

## Properties at a glance

Property	Unit	Method	Conditions	MN-3600H	MN-3600HA	MN-3600HS	MN-3670	MN-3670A
Density	kg/m <sup>3</sup>	ISO 1183	-	1190	1190	1190	1190	1190
MVR	cm <sup>3</sup> /10min	ISO 1133	280°C/5kg load * 280°C/2.16kg load	17*	19	19	16	16
Tensile Yield Stress	MPa	ISO 527-1 ISO 527-2	50mm/min	60	65	65	60	60
Tensile Fracture Stress	MPa			50	65	65	60	60
Tensile Fracture Distortion	%			100	108	85	100	100
Flexural Strength	MPa	ISO 178	2mm/min	95	92	90	95	95
Flexural Modulus	MPa			2300	2400	2400	2300	2300
Charpy Impact Strength	kJ/m <sup>2</sup>	ISO 179	Notched	45	60	55	53	55
Heat Deflection Temp	z	ISO 75-1 ISO 75-2	1.80MPa	112	113	114	112	112
Ball Pressure Temp	°C	IEC 60695-10-2	-	125 (3.0mm)				
Flammability	-	UL 94	-	V-1 (1.0mm) V-0 (1.5mm) 5VB (2.0mm)			V-1 (1.0mm) V-0 (1.2mm)	
Relative Temp Index	°C	UL746B	Elec (0.45mm)	95	95	95	85	85
			Imp (0.45mm)	95	95	95	85	85
			w/o imp (0.45mm)	95	95	95	90	90

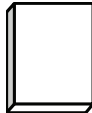


The above figures are specification values, not certified values.

## Chemical Resistance Comparison

Test Conditions

Distortion: 0.7%

Temperature: 90°C

	No change	Craze	Crack
Appearance			
Evaluation	o	Δ	×

Chemicals	Test Conditions	MN-3600HA	MN-3670	MN-3670A	C material
Alcohol	Temp (90°C)	o	o	o	o
	Distortion %	100	100	100	100
Fantastic Cleaner	Temp (90°C)	o	o	o	o
	Distortion %	100	100	100	100
Antifreeze	Temp (90°C)	Δ	Δ	Δ	Δ
	Distortion %	100	30	100	100
10W40 Motor Oil	Temp (90°C)	o	o	o	o
	Distortion %	100	100	100	100
Brake Fluid Dot-3	Temp (90°C)	Δ	Δ	Δ	Δ
	Distortion %	65	50	55	65
Fluid Dextron II	Temp (90°C)	o	o	o	o
	Distortion %	100	80	100	100
Mineral Spirits	Temp (90°C)	o	o	o	o
	Distortion %	100	100	100	100
Lacquer Thinner	Temp (90°C)	×	×	×	×
	Distortion %	85	45	90	80
Turpentine	Temp (90°C)	o	o	o	o
	Distortion %	100	100	100	100
WD40 Lubricant	Temp (90°C)	o	o	o	o
	Distortion %	100	100	100	100
Liquid Wrench	Temp (90°C)	o	Δ	Δ	Δ
	Distortion %	100	100	100	95

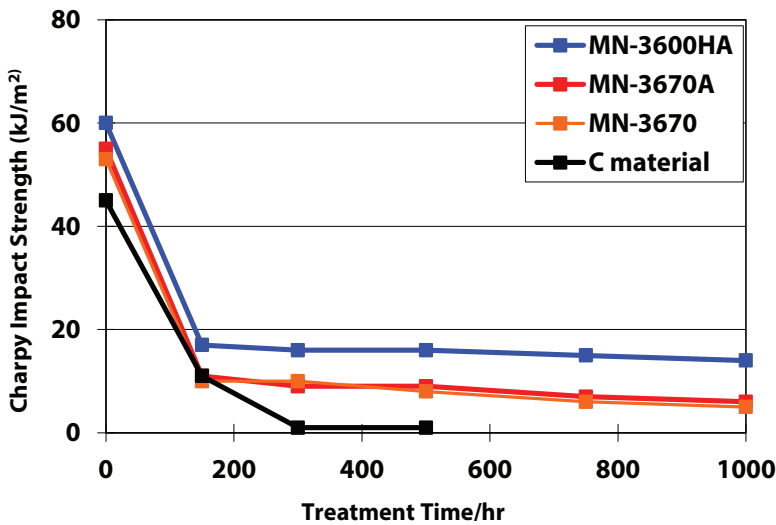
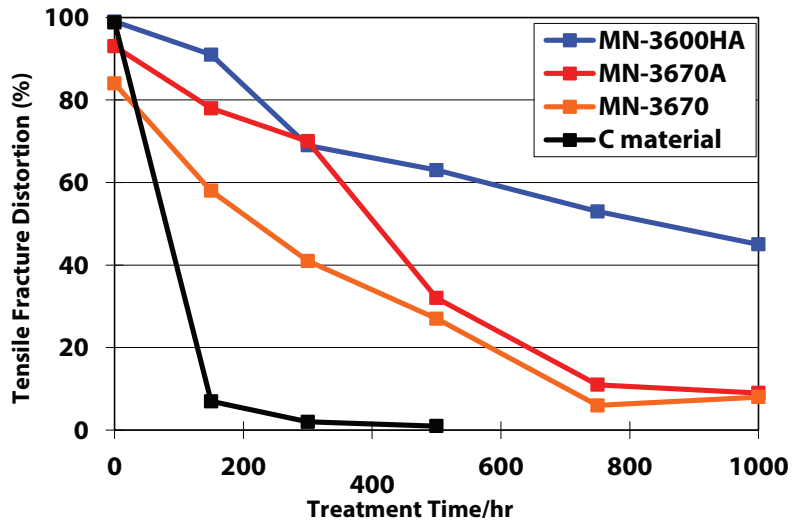
The above test results are based on in-house test methods conducted by Teijin Limited.

## Humidity Resistance Comparison

Test Conditions

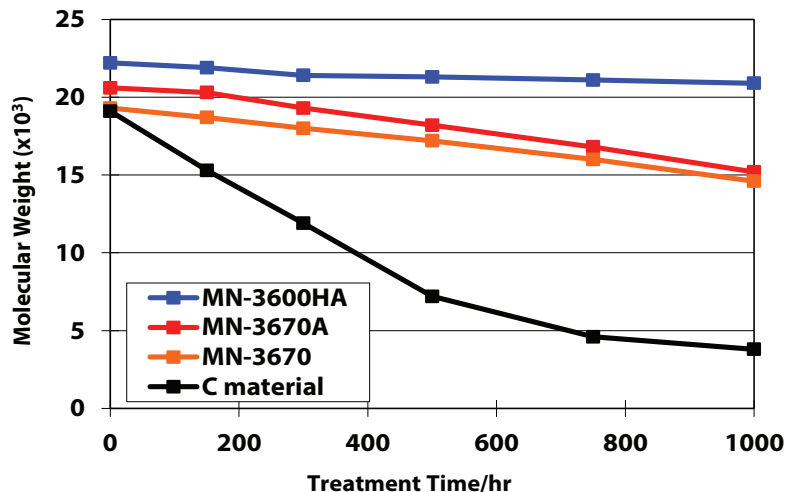
80°C × 85%RH × 1000h

Tensile Fracture Distortion



Charpy Impact (Notched)

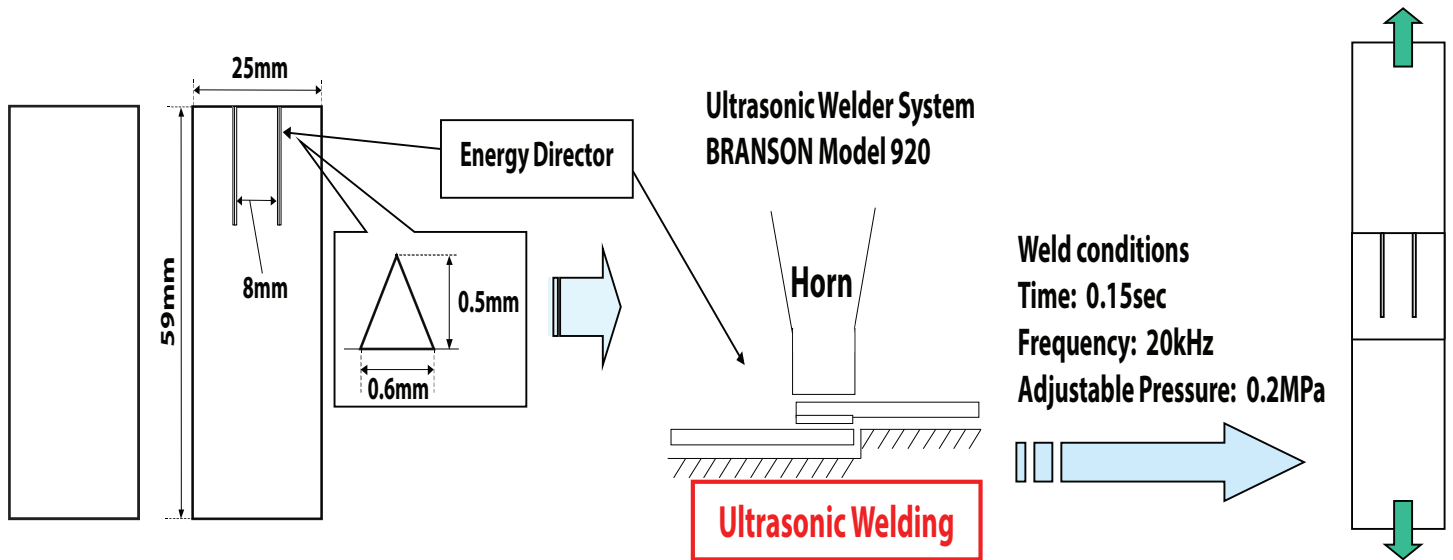
Molecular Weight



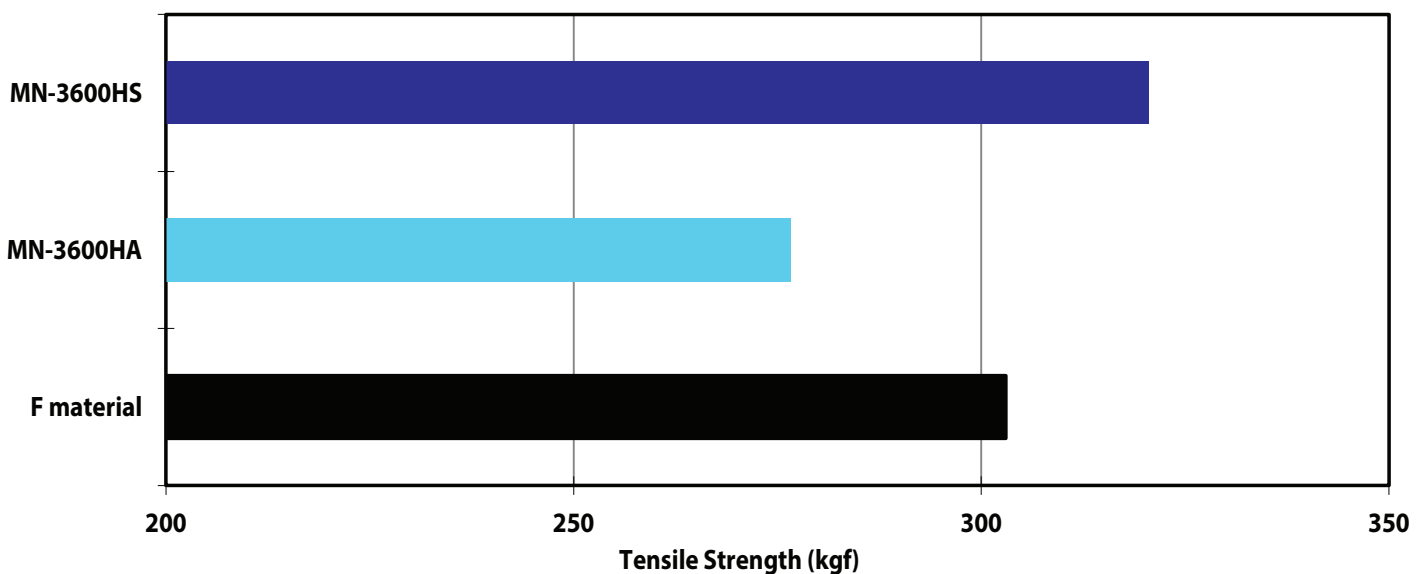
The above test results are based on in-house test methods conducted by Teijin Limited.

## Ultrasonic Welding Performance Comparison

Test Method



Tensile strength results after going through ultrasonic welding



The above test results are based on in-house test methods conducted by Teijin Limited.

## Who are we?

Teijin Kasei Europe B.V. (TKE) has been in Europe for more than 10 years, serving all customers in the EU region.

TKE offers sales and technical support from Venlo, The Netherlands.

Our headquarters is located in Tokyo, Japan.

## Where is our production site?

Most of our materials are compounded locally in EU.

Other production sites include Japan, China and Singapore.

## How to buy?

Contact the distributor who sent you this newsletter or write to us at [info@teijin.nl](mailto:info@teijin.nl).

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### Disclaimer:

All information found in this newsletter is provided by Teijin Kasei Europe B.V. in good faith and without any form of guaranty. Material properties are taken using in-house test methods.

We recommend our customers to test our materials to their own suitability for their own intended usage.

The information is subject to change without any prior notice.