

# Torelina™ A400MA1

## PPS

### TECHNICAL DATA

#### Product Description

High filler, Good silicone adhesion

**Uses** • Automotive Applications • Automotive Electronics

**Processing Method** • Injection Molding

**ISO Designation** • >PPS-(GF+MD)60<

**Type** • PPS/GF+Mineral filler reinforced

#### ASTM & ISO Properties

	Nominal Value	Unit	Test Method
<b>Physical</b>			
Density (23°C)	1.91	g/cm <sup>3</sup>	ISO 1183
Spiral Flow <sup>1</sup>	105	mm	Internal Method
Molding Shrinkage <sup>2</sup>			Internal Method
Across Flow : 3.00 mm	0.74	%	
Flow : 3.00 mm	0.18	%	
Water Absorption <sup>3</sup> (24 hr, 23°C)	0.020	%	ISO 62
<b>Mechanical</b>			
Tensile Strength (23°C)	140	MPa	ISO 527-2
Tensile Strain (Break, 23°C)	1.0	%	ISO 527-2
Flexural Modulus (23°C)	19000	MPa	ISO 178
Flexural Stress (23°C)	220	MPa	ISO 178
<b>Impact</b>			
Charpy Notched Impact Strength (23°C)	6.0	kJ/m <sup>2</sup>	ISO 179
Charpy Unnotched Impact Strength (23°C)	23.0	kJ/m <sup>2</sup>	ISO 179
<b>Hardness</b>			
Rockwell Hardness (R-Scale)	122		ISO 2039-2
<b>Thermal</b>			
Deflection Temperature Under Load			ISO 75-2/A
1.8 MPa, Unannealed	> 260	°C	
Melting Temperature	278	°C	ISO 11357-3
CLTE			ISO 11359-2
Flow	1.9	cm <sup>-5</sup> /cm/°C	
Transverse	2.6	cm <sup>-5</sup> /cm/°C	
<b>Electrical</b>			
Volume Resistivity	1.0E+14	ohms·m	IEC 60093
Electric Strength	24	kV/mm	IEC 60243-1
Dielectric Constant (23°C, 1 MHz)	4.9		IEC 60250
Dissipation Factor (23°C, 1 MHz)	0.002		IEC 60250
<b>Flammability</b>			
Flame Rating <sup>4</sup> (Equivalent)	V-0		Internal Method

#### Notes

<sup>1</sup> Melt Temperature: 320°C, Injection Pressure: 980 bar, 1.00 mm

<sup>2</sup> 80x80x3mm

<sup>3</sup> in water

<sup>4</sup> UL94

## Remarks for Handling Torelina™

### Safety Precautions

1. Refer to the Material Safety data sheet for TORELINA™ before use.
2. Small amount of hazardous gases which may irritate eyes, nose and throat may be released. Use adequate local exhaust ventilation during drying and molding.
3. Sweep up and dispose of spilled pellets to prevent slipping.
4. Don't pile bags too high in order to avoid injury caused by falling of the product.

### Care in Handling

1. The figures described herein are representative values of natural colors obtained based on the specific test method, and are NOT guaranteed values.
2. For our colored products, the figures described herein will vary depending on the type and amount of pigment, dye, and additive used.
3. The information contained herein is currently information we can reasonably obtain. The information may be revised without notice.
4. The information contained herein, including but not limited to application examples, does NOT represent, warrant or guarantee the quality or safety of your products. When using our products for your or third party's products, in consideration of various relevant laws and regulations, industrial property rights, product standards, self-regulatory standards, etc., please conduct product test etc. and confirm the quality or safety by yourself.
5. The basis that show the combustion resistance described herein is only the evaluation result in the test performed on the test piece prepared by the procedure in accordance with each specific standard. It can NOT be applied to the risk assessment in an actual fire. Note: For UL certification values, please refer to the Yellow card issued by UL (File No. E41797).
6. When using with medical devices, food packages, safety instruments or toys for infant, and so on, consult us about the concrete application and usage beforehand by all means. Do NOT use our products for any medical internal implantation.
7. Regarding export of our products and exports of products incorporating our products, please comply with relevant laws and regulations such as foreign exchange and foreign trade laws.
8. Under the chemical substance management system of each country, the chemical substance used in our products is regulated, and it may be necessary to apply separately or it may not be possible to import or export. If you are an exporter or importer of our products, please contact us for regulatory compliance in your country.
9. Refer to Safety Data Sheet for this our product before use.
10. We make NO representation, warranty or guarantee whether expressed or implied, in respect of fitness for a particular purpose and safety of our products for your products. You will be responsible for ascertaining the suitability of our products for your purpose and safety.
11. During drying and molding, volatile components which can irritate eyes, nose, and throat may be released. When such heat treatment is performed, appropriate local ventilation measures should be taken.
12. Sweep up and dispose of spilled pellets to prevent slipping.
13. Don't pile stocks too high in order to avoid injury caused by the product falling.