"TORAY"
Innovation by Chemistry

Carbon Fiber Reinforced Thermoplastic
TORAYCA

Torayca™ A512 X02 N3
PPS

TECHNICAL DATA

Product Description

CF10%, Low wear and friction, Flame retardant

Uses	• Gears	• Printer	• Valves/Valve Parts
Processing Method	• Injection Molding		
ISO Designation	• >PPS-F-CF10<		
Type	• Short carbon fiber reinforced PPS		

ASTM & ISO Properties

Physical	**Nominal Value**	**Unit**	**Test Method**
Density (23°C)	1.53	g/cm³	ISO 1183
Molding Shrinkage [1]			Internal Method
Across Flow : 3.00 mm	0.80	%	
Flow : 3.00 mm	0.10	%	
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Tensile Strength (23°C)	120	MPa	ISO 527-2
Tensile Strain (Break, 23°C)	1.5	%	ISO 527-2
Flexural Modulus (23°C)	10000	MPa	ISO 178
Flexural Stress (23°C)	170	MPa	ISO 178
Amount of Wear [2]			Suzuki Method
vs. S45C	0.2	mg/hr	
vs. SUS	0.5	mg/hr	
Coefficient of Friction [2]			Suzuki Method
vs. S45C	0.15		
vs. SUS	0.06		
Limiting Pressure Velocity			Suzuki Method
vs. S45C	2.9	MPa·m/s	
vs. SUS	2.0	MPa·m/s	
Impact	**Nominal Value**	**Unit**	**Test Method**
Charpy Notched Impact Strength (23°C)	4.5	kJ/m²	ISO 179
Thermal	**Nominal Value**	**Unit**	**Test Method**
Deflection Temperature Under Load			ISO 75-2/A
1.8 MPa, Unannealed	> 260	°C	
Melting Temperature	278	°C	DSC
CLTE			ISO 11359-2
Flow	2.1	cm^-5/cm/°C	
Transverse	2.9	cm^-5/cm/°C	
Electrical	**Nominal Value**	**Unit**	**Test Method**
Volume Resistivity	1.0E+2	ohms·m	JIS K7194
Surface Resistivity	10000	ohms/cm²	JIS K7194
Flammability	**Nominal Value**	**Unit**	**Test Method**
Flame Rating [3] (Equivalent)	V-0		Internal Method

Notes

[1] 80x80x3mm

[2] 1MPa, 0.33 m/s

[3] UL94

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Remarks for Handling Torayca™

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. 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.
8. Refer to Safety Data Sheet for this our product before use.
9. 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.
10. 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.
11. Sweep up and dispose of spilled pellets to prevent slipping.
12. Don't pile stocks too high in order to avoid injury caused by the product falling.
13. CFRTP polyamide matrix grades are packed in damp-proof packages in dry condition. All the pellets should be used up after unpacking because moisture might affect the quality of the molded parts.
14. Scrap or waste of this product must not be incinerated. If incinerated, product may cause furnace problems or emit fibrous fragments into the air, which may cause electrical problems. The scrap or waste of this product must be landfilled.