

Liquid Crystal Polymer (LCP)

**LAPEROS®**

A410

VF2001/BK010P

High Strength, High  
Toughness

# General Properties of A410

table1-1 General Properties (ISO)

Item	Unit	Test Method	High Strength, High Toughness
			A410
			Low Warpage, High Stiffness
Color			VF2001/BK010P
ISO(JIS)quality-of-the-material display:		ISO11469 (JIS K6999)	>LCP-(GF+MD)50<
Density	g/cm <sup>3</sup>	ISO 1183	1.84
Water absorption (23°C,24hrs,1mmt)	%	ISO 62	0.02
Tensile strength	MPa	ASTM D638	155
Tensile elongation	%	ASTM D638	1.6
Flexural strength	MPa	ISO 178	230
Flexural modulus	MPa	ISO 178	18,500
Flexural strain	%	ISO 178	2.0
Charpy notched impact strength (23°C)	kJ/m <sup>2</sup>	ISO 179/1eA	7
Temperature of deflection under load (1.8MPa)	°C	ISO 75-1,2	235
Temperature of deflection under load (0.45MPa)	°C	ISO 75-1,2	-
Electric strength (1mmt)	kV/mm	IEC 60243-1	66
Electric strength (3mmt)	kV/mm	IEC 60243-1	22
Volume resistivity	Ω·cm	IEC 60093	1 × 10 <sup>16</sup>
Volume resistivity (Our standard)	Ω·cm		-
Relative permittivity (1kHz)		IEC 60250	4.4
Relative permittivity (1MHz)		IEC 60250	4.0
Dielectric dissipation factor (1kHz)		IEC 60250	0.02
Dielectric dissipation factor (1MHz)		IEC 60250	0.02
Tracking resistance (CTI)	V	IEC 60112	175
Arc resistance	s	ASTM D495	163
Mold Shrinkage (80×80×1mmt, Flow direction, Inj. pressure 60MPa)	%	Our standard	0.10
Mold Shrinkage (80×80×1mmt, Transverse direction, Inj. pressure60MPa)	%	Our standard	0.35
Mold Shrinkage (80×80×1mmt, Flow direction, Inj. pressure79MPa)	%	Our standard	-
Mold Shrinkage (80×80×1mmt, Transverse direction, Inj pressure 79MPa)	%	Our standard	-
Rockwell hardness	M(Scale)	ISO2039-2	90
Flammability		UL94	V-0

Item	Unit	Test Method	High Strength, High Toughness
			A410
			Low Warpage, High Stiffness
The yellow card File No.			E106764
Appropriate List number of Ministerial Ordinance for Export Trade Control			Item 16 of Appendix -1

All figures in the table are the typical values of the material and not the minimum values of the material specifications.

## **NOTES TO USERS**

- All property values shown in this brochure are the typical values obtained under conditions prescribed by applicable standards and test methods.
- This brochure has been prepared based on our own experiences and laboratory test data, and therefore all data shown here are not always applicable to parts used under different conditions. We do not guarantee that these data are directly applicable to the application conditions of users and we ask each user to make his own decision on the application.
- It is the users' responsibility to investigate patent rights, service life and potentiality of applications introduced in this brochure. Materials we supply are not intended for the implant applications in the medical and dental fields, and therefore are not recommended for such uses.
- For all works done properly, it is advised to refer to appropriate technical catalogs for specific material processing.
- For safe handling of materials we supply, it is advised to refer to the Safety Data Sheet "SDS" of the proper material.
- This brochure is edited based on reference literature, information and data available to us at the time of creation. The contents of this brochure are subject to change without notice upon achievement of new data.
- Please contact our office for any questions about products we supply, descriptive literatures or any description in this brochure.

LAPEROS® is a registered trademark of Polyplastics Co., Ltd. in Japan and other countries.

## **POLYPLASTICS CO., LTD.**

JR Shinagawa East Bldg.,  
18-1, Konan 2-chome, Minato-ku, Tokyo, 108-8280 Japan  
Tel: +81-3-6711-8610 Fax: +81-3-6711-8618

<http://www.polyplastics.com/en/>