

SPECIFICATION

FOR

HIGHLY HEAT RESISTANT PLASTIC OPTICAL FIBER

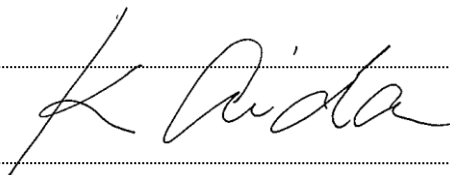
[P/N ; HPOF- 1.5/2.2]

Quantity

Your Ref. No.

Our Ref. No.

Signed by



Kazuhiro Aida

Senior Manager

Engineering Dept. I
Electric Wire & Cable Business Unit

Proterial, Ltd.

Issue and revision record

Rev. No.	Cor. No.	Issue date	Item	Prepared by	Reviewed by	Approved by
1	-	Jan. 26, 2004	1)Heat resistance is added. (130°C × 4500h) 2)Coil Package is added	K.Okino	H.Sasaki	H.Sasaki
2	-	Dec. 9, 2011	1) Specification format is changed. 2) HPOF 1.0/1.8 is deleted. 3) "Control of chemical substances" is added.	Q.Chang	D.Huang	N.Imai
2	1	Dec. 24, 2021	Revised Control of Chemical Substances.	H.Tanaka	N.Ono	K.Aida
2	2	Dec. 19, 2023	1) Revised Control of Chemical Substances. 2) Change of company name on the cover page.	 M.Moriyama	 M.Kobayashi	 K.Aida

Specification changes that are not related to product characteristics are defined as corrections.

1. Scope

This specification covers Highly Heat Resistant Plastic Optical Fiber [HPOF] .

2. Construction and Material

Item		Specified value
Core	Material	Thermo setting acrylic resin
	Diameter	1.5mm
Cladding and Jacket	Material	FEP
	Color	Black
	Diameter	$2.2 \pm 0.1\text{mm}$

3. Characteristics

Item	Value	Condition
Attenuation	Max. 1.0dB/m	at 20°C, at 660nm by cut-back method (5m-1m) source of light : monochromator (halogen lamp)
Max. theoretical NA	0.65	calculated value
Min. permissible bending radius	20mm	180° bending, increase of attenuation : Max. 0.1dB
Heat resistance	150°C × 1500h 130°C × 4500h	heating length : 1m increase of attenuation : Max. 1.0dB at 660nm
humidity resistance	60°C, 90%RH × 1000h	humidity length : 1m increase of attenuation : Max. 1.0dB at 660nm

4. Packing

Standard length : 100m
Packing : coil

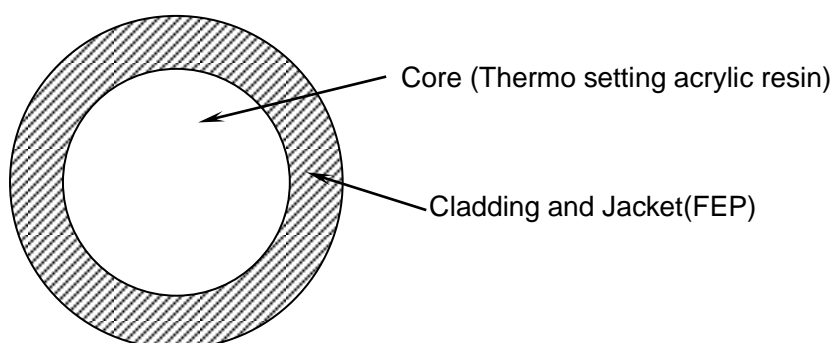


Fig.1 Cross-section of fiber

5. Control of Chemical Substances

Control of Chemical Substances in this product shall be controlled as below.

5.1 RoHS Directive

(1) Applicable standard and statute

Directive of 2011/65/EU

(Directive 2011/65/EU of the European Parliament and of the Council on the Restriction of the use of certain Hazardous Substances in electrical and electronic equipment)

(2) The maximum concentration values for certain hazardous substances.

	Chemical Substances	Concentration value	
		Resin, a paint, and ink	Others
1	Cadmium and Cadmium Compounds	Max. 75ppm	
2	Hexavalent Chromium Compounds	Max. 1000ppm	
3	Lead and Lead Compounds	Max. 100ppm	Max. 1000ppm
4	Mercury and Mercury Compounds	Max. 1000ppm	
5	Polybrominated Biphenyls(PBBs)	Max. 1000ppm	
6	Polybrominated Diphenyl ethers(PBDEs)	Max. 1000ppm	
7	Bis (2-ethylhexyl) phthalate (DEHP) * (CAS No.117-81-7)	Max. 1000ppm	
8	Benzyl butyl phthalate (BBP)* (CAS No. 85-68-7)	Max. 1000ppm	
9	Dibutyl phthalate (DBP)(CAS No. 84-74-2)*	Max. 1000ppm	
10	Diisobutyl phthalate (DIBP)* (CAS No. 84-69-5)	Max. 1000ppm	

Note*) : COMMISSION DELEGATED DIRECTIVE (EU) 2015/863

5.2 Any substances of our Ibaraki works's voluntarily controlled chemical substances.

(1) Applicable Standard

Ibaraki works Green Procurement Standard;document No.HKS01(ver.5.1),

Level A Prohibited Substances Group List.

However, packing materials are excluded.

(2) Maximum concentration value.

Manage in compliance with the reference laws and regulations of HKS01(Ver.5.1).

10 substances of the clause 5.1 shall be controlled as 5.1 (2).