

# TECACOMP PPA LDS black 1014979 - Compounds

## Chemical Designation

PPA (Polyphthalamide)

## Colour

black

## Density

1.96 g/cm<sup>3</sup>

former material REZ-RS-4108

## Main features

- developed for the LPKF-LDS® process
- high adhesive strength
- good heat deflection temperature

## Target Industries

- automotive industry
- electrical engineering
- LED lighting technology
- mechanical engineering

Mechanical properties	parameter	value	unit	norm	comment
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Tensile strength		76	MPa	DIN EN ISO 527-1	
Modulus of elasticity (tensile test)		9200	MPa	DIN EN ISO 527-1	
Elongation at break (tensile test)		1,2	%	DIN EN ISO 527-1	
Impact strength (Charpy)		25	kJ/m <sup>2</sup>	DIN EN ISO 179-1eU	

Thermal properties	parameter	value	unit	norm	comment
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Glass transition temperature		120	°C	-	1) (1) literature value
Melting temperature		315	°C	-	2) (2) literature value
Heat distortion temperature		237	°C	ISO-R 75 Method A	3) (3) literature value
Service temperature	short term	250	°C	-	4) (4) literature value
Service temperature	long term	150	°C	-	
Thermal expansion (CLTE)	longitudinal (at 50 - 100 °C)	43	10 <sup>-6</sup> K <sup>-1</sup>	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	transverse (at 50 - 100 °C)	47	10 <sup>-6</sup> K <sup>-1</sup>	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	longitudinal (at 100 - 150 °C)	62	10 <sup>-6</sup> K <sup>-1</sup>	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	transverse (at 100 - 150 °C)	71	10 <sup>-6</sup> K <sup>-1</sup>	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	longitudinal (at 150 - 200 °C)	97	10 <sup>-6</sup> K <sup>-1</sup>	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	transverse (at 150 - 200 °C)	112	10 <sup>-6</sup> K <sup>-1</sup>	DIN EN ISO 11359-1;2	
Thermal conductivity	through-plane	0,9	W/(K*m)	ISO 22007-4:2008	
Thermal conductivity	in-plane	1,2	W/(K*m)	ISO 22007-4:2008	

Electrical properties	parameter	value	unit	norm	comment
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surface resistivity		10 <sup>15</sup>	Ω	DIN EN 61340-2-3	
volume resistivity		10 <sup>15</sup>	Ω*m	DIN EN 61340-2-3	
Dielectric loss factor	test frequency of 1 GHz	0,013	-	-	
Dielectric constant	test frequency of 1 GHz	4,1	-	-	
Resistance to tracking (CTI)		550	V	DIN EN 60112	

Other properties	parameter	value	unit	norm	comment
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Molding shrinkage	longitudinal	1,67	%	DIN EN ISO 294-4	
Molding shrinkage	transverse	1,45	%	DIN EN ISO 294-4	
Water absorption		0,35	%	DIN EN ISO 1110	
Flammability (UL94)	3,2 mm	HB	-	-	

Processing parameter	parameter	value	unit	norm	comment
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processing temperatures		300 - 340	°C	-	
Mould temperature		90 - 160	°C	-	

→ This material can be processed as a thermoplastic taking the normal technical provisions into account. The above mentioned information refers exclusively to the injection moulding process.

→ Back pressure and injection rate should be adjusted to the component geometry accordingly. The optimum processing temperature depends upon the respective geometry of the moulded part and can be different from machine to machine.

Pre-drying	parameter	value	unit	norm	comment
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Permissible residual moisture content		0,05	%	-	
Drying temperature		120	°C	-	
Drying time		4 - 8	h	-	

→ To achieve optimum mechanical properties, it is recommended to pre-dry the material with the above mentioned parameters.

→ Information on storage and shelf life: The granules must be stored in dry, normally tempered rooms and in closed containers. For moisture-sensitive materials, the granules must be sealed airtight. Protection against direct sunlight must be guaranteed. The granules are usually subject to the requirements of no shelf life limitation. Shelf Life may be limited by some additives.

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