KRAIBURG TPE

Datasheet

AD/PA Series

THERMOLAST® K

The AD/PA Series is your material solution for applications with excellent adhesion to PA. The compounds are available in natural and black colors.

Typical applications

- Cable clips
- Function and design elements
- Grommets
- Handles (hand tools and power tools etc.)
- Seals
- Thumb wheels

Material advantages

- Adhesion to PA6 and PA6.6 up to 50 % glass fiber
- Easy coloring (compounds in natural colors)
- Excellent adhesion
- Excellent processing behavior
- Insert molding possible
- Pleasant surface feel (Soft touch)
- UL 94 HB listed
- UV resistance
- Wide hardness range 25-80 Sh A

Processing Method: Injection Molding

	Color / RAL DESIGN	Hardness DIN ISO 7619-1 ShoreA	Density DIN EN ISO 1183-1 g/cm3	Tensile Strength [1] DIN 53504/ISO 37 MPa	Elongation at Break [1] DIN 53504/ISO 37 %	Tear Resistance ISO 34-1 Methode B (b)(Graves) N/mm	CS 72 h/23 °C DIN ISO 815-1 Method A %	CS 24 h/70 °C DIN ISO 815-1 Method A %	CS 24 h/100 °C DIN ISO 815-1 Method A %	Adhesion to PA 6 [2] VDI 2019 two-component injection molding N/mm	Adhesion to PA6.6 [2] VDI 2019 two-component injection molding N/mm
TC2PAN	natural	23	1.150	1.0	450	8.0	31	73	87	1.0 (A)	1.5 (A)
TC2PAZ	black	24	1.150	1.5	450	8.5	31	73	87	1.0 (A)	1.5 (A)
TC3PAN	natural	29	1.150	1.5	500	8.0	35	72	80	1.5 (A)	2.0 (A/D)
TC3PAZ	black	32	1.150	1.5	450	8.0	35	73	80	2.0 (B)	2.0 (D)
TC4PAN	natural	42	1.150	2.0	450	10.0	30	70	80	3.0 (D)	3.0 (B/D)
TC4PAZ	black	39	1.150	2.0	450	10.0	32	70	80	2.5 (D)	3.0 (B/D)
TC5PAN	natural	48	1.150	2.5	450	13.0	27	78	80	4.0 (B/D)	4.0 (D)
TC5PAZ	black	48	1.150	2.5	450	13.0	33	79	80	4.0 (B/D)	4.0 (D)
TC6PAN	natural	60	1.150	3.5	450	19.5	29	78	80	6.0 (D)	6.0 (D)

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TC6PAZ	black	58	1.150	3.0	400	16.0	29	80	81	5.5 (D)	5.5 (D)
TC7PAN	natural	68	1.150	3.5	350	17.0	33	78	80	6.0 (D)	5.5 (D)
TC7PAZ	black	71	1.150	3.5	350	17.0	35	76	80	6.0 (D)	6.0 (D)
TC8PAN	natural	80	1.150	5.5	350	29.0	29	78	90	9.0 (D)	9.0 (D)
TC8PAZ	black	80	1.150	5.5	350	27.0	38	80	80	9.0 (D)	8.5 (D)

[1] Deviating from ISO 37 standard test piece S2 is tested with a traverse speed of 200 mm/min.

[2] The adhesion quality depends on mold design, product geometry and process parameters.

All values published in this data sheet are rounded average values.

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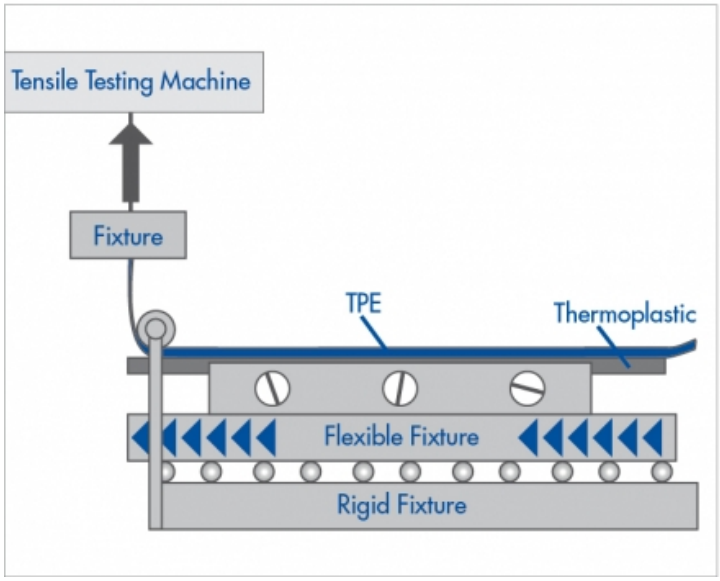
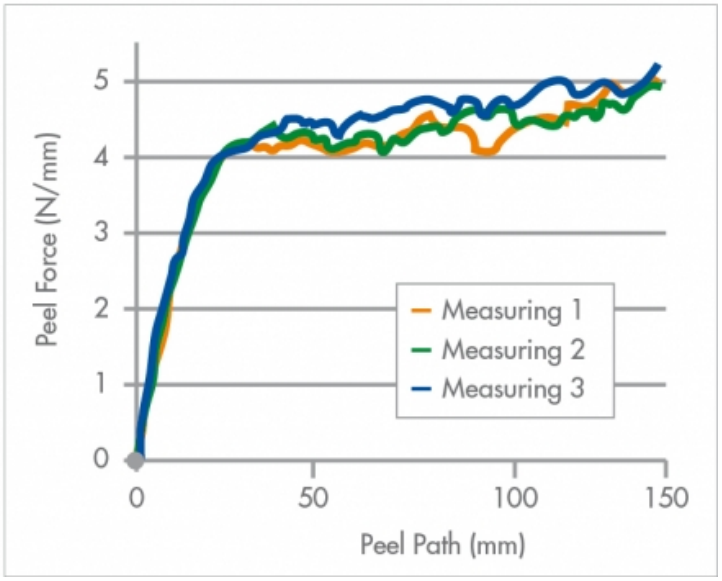
Description peel test

Peel test according to VDI guide line 2019

Test Setup



Example diagram for results of a peel test



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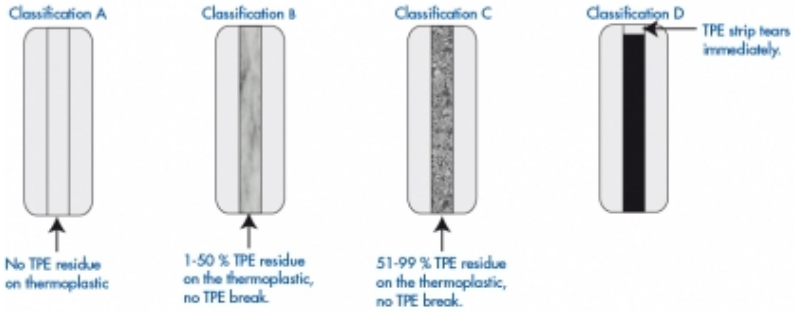
Classification

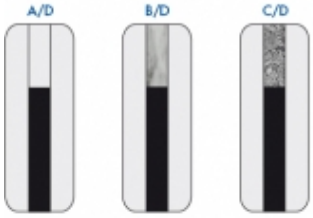
Peel test according to VDI Guideline 2019

For the VDI peel test we add two characters to the peelforce value.
The first character describes the TPE residue on the hard component.



A	No TPE residue on hard component
B	Up to 50 % TPE residue on hard component
C	50 to 99 % TPE residue on hard component
D	TPE strip tears immediately

The second character describes if the TPE strip will tear during the measurement at any position on the peel path.



A/D	No TPE residue on hard component, TPE strip will tear
B/D	Up to 50 % TPE residue on hard component, TPE strip will tear
C/D	50 to 99 % TPE residues on hard component, TPE strip will tear

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Processing Guideline Injection Molding	
Cylinder temperature	PA 6: 230 - 250 - 260 °C , max. 270 °C (450 - 480 - 500 °F, max. 520 °F) PA 6.6: 245 - 260 - 270 °C , max. 280 °C (470 - 500 - 520 °F, max. 540 °F)
Hotrunner	Hot runner temperatures: PA6 max. 270 °C (520 °F); PA6.6 280 °C (540 °F) The runner should be empty after a maximum of 2 - 3 shots.
Injection pressure	200 - 1000 bar (2900 - 14504 psi) (depending on the size and weight of the part).
Injection rate	In general, the fill time should not be more than 1–2 seconds.
Hold pressure	We recommend to derive the optimum hold pressure from determining the solidification point, starting with 40 % - 60 % of the required injection pressure.
Back pressure	20 - 100 bar; if color batches are used, higher back pressure is necessary.
Screw retraction	If an open nozzle is used processing with screw retraction is advisable.
Mold temperature	The mold temperature depends on the hard component. A temperature exceeding 80 °C (175 °F) should be avoided. The common temperature is 40 - 60 °C (105 - 140° F).
Predrying	To achieve optimum mechanical values, drying the material for 2 - 4 hours at 60 - 80 °C (140 - 175 °F) is recommended.
Needle valve	With materials < 50 Shore A the use of a needle valve is advisable.
Screw geometry	Standard 3-zone polyolefine screw.
Residence time	The residence time is to be set as short as possible with a maximum of 10 minutes.
Cleaning recommendation	For cleaning and purging of the machine it is appropriate to use polypropylene or polyethylene. Machine must be PVC-free.