

**AD/PA/CS Series**
**THERMOLAST® K**

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

**Typical applications**

- Fastenings
- Grommets
- Membranes
- Seals

**Material advantages**

- Easy coloring (compounds in natural colors)
- Excellent compression set
- Insert molding possible
- UL 94 HB listed

**Processing Method:** Injection Molding

	Color / RAL DESIGN	Hardness DIN ISO 7619 ShoreA	Density DIN EN ISO 1183-1 g/cm <sup>3</sup>	Tensile Strength <sup>1</sup> DIN 53504/ISO 37 MPa	Elongation at Break <sup>1</sup> 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 VDI 2019 N/mm	Adhesion to PA 6.6 VDI 2019 N/mm
<b>TC4PCN</b>	natural	39	1.100	2.5	300	9.0	14	31	43	3.5 (D)	3.5 (D)
<b>TC4PCZ</b>	black	35	1.100	2.5	350	8.5	14	35	49	3.5 (D)	3.5 (D)
<b>TC5PCN</b>	natural	47	1.100	4.0	350	11.5	16	32	45	4.5 (D)	4.5 (D)
<b>TC5PCZ</b>	black	45	1.100	4.0	400	12.5	16	36	45	4.5 (D)	4.5 (D)
<b>TC6PCN</b>	natural	57	1.100	5.0	350	16.0	18	34	46	5.5 (D)	5.5 (D)
<b>TC6PCZ</b>	black	57	1.100	5.0	400	17.0	18	37	47	5.5 (D)	6.0 (D)
<b>TC7PCN</b>	natural	67	1.100	7.0	400	16.0	18	35	56	7.0 (D)	7.0 (D)
<b>TC7PCZ</b>	black	66	1.100	7.5	550	19.0	18	38	50	7.0 (D)	7.0 (D)
<b>TC8PCN</b>	natural	77	1.100	8.5	400	24.0	21	39	58	8.0 (D)	8.5 (D)
<b>TC8PCZ</b>	black	75	1.100	9.0	450	25.5	21	41	61	8.0 (D)	8.5 (D)

This datasheet is an extract of the KRAIBURG TPE program. Please contact KRAIBURG TPE to select the compound suitable for the requirements.

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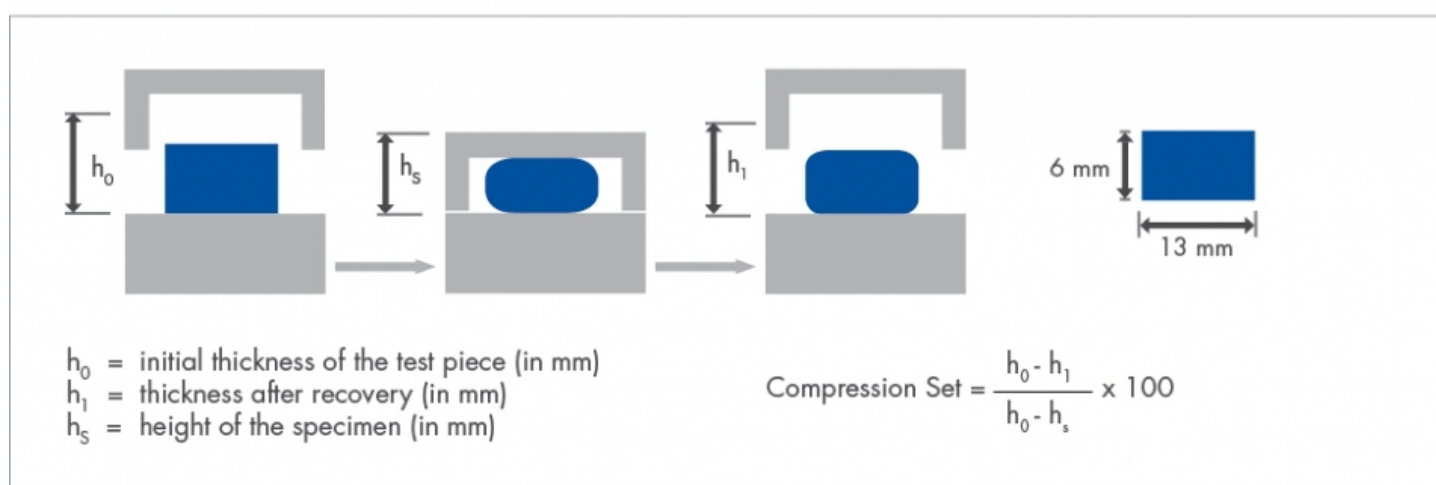
<sup>1</sup> Deviating from ISO 37 standard test piece S2 is tested with a traverse speed of 200 mm/min.

All values published in this data sheet are rounded average values.  
Specification limits are based on three-fold standard deviation from the average value.

## Compression Set

# Compression Set (acc. DIN ISO 815)

For the compression set testing the following specimen is used:  
The specimen is a cylindrical disk shaped 6 mm thick and 13 mm in diameter.



The specimen is compressed by 25%. The compressed specimen is heated to the test temperature. DIN ISO 815 describes two methods.

**Method A:** The specimen is allowed to recover immediately after its aging in the oven and then cooled down to room temperature. After 30 minutes the thickness of the specimen is measured and the compression set calculated.

**Method B:** The specimen is cooled down to room temperature after its aging in the oven and then allowed to recover.

Test results gained from method B are in general higher than from method A.

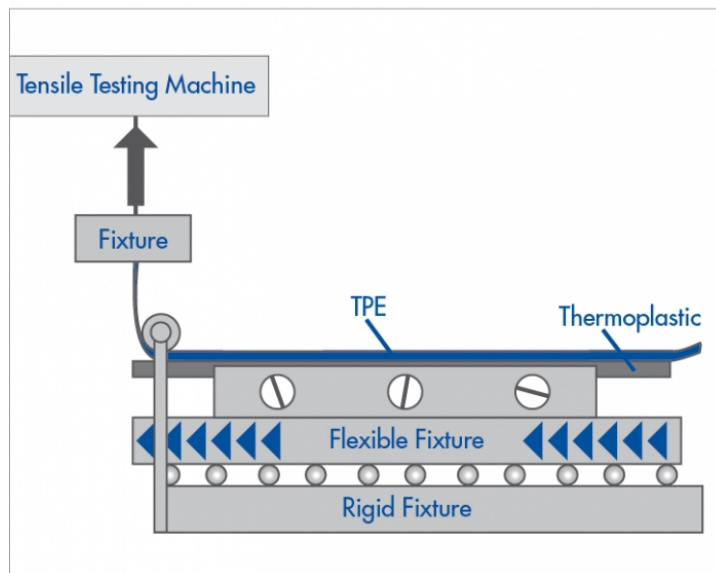
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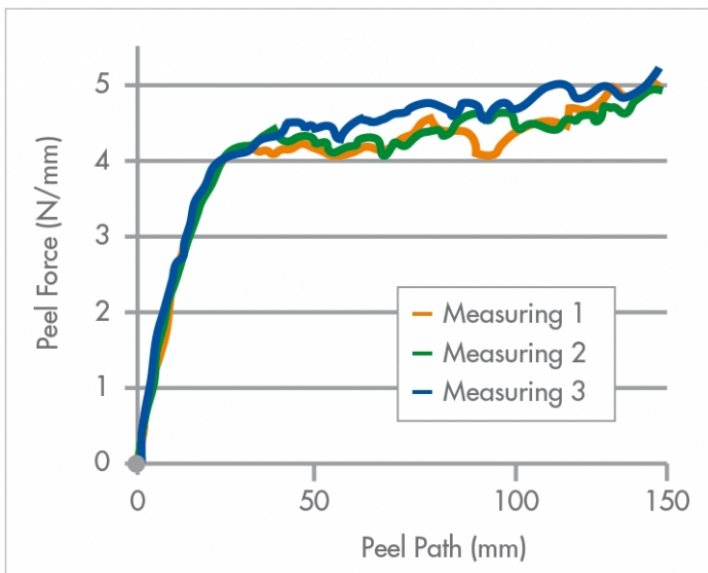
## Description peel test

# Peel test according to VDI guide line 2019

## Test Setup



## Example diagram for results of a peel test



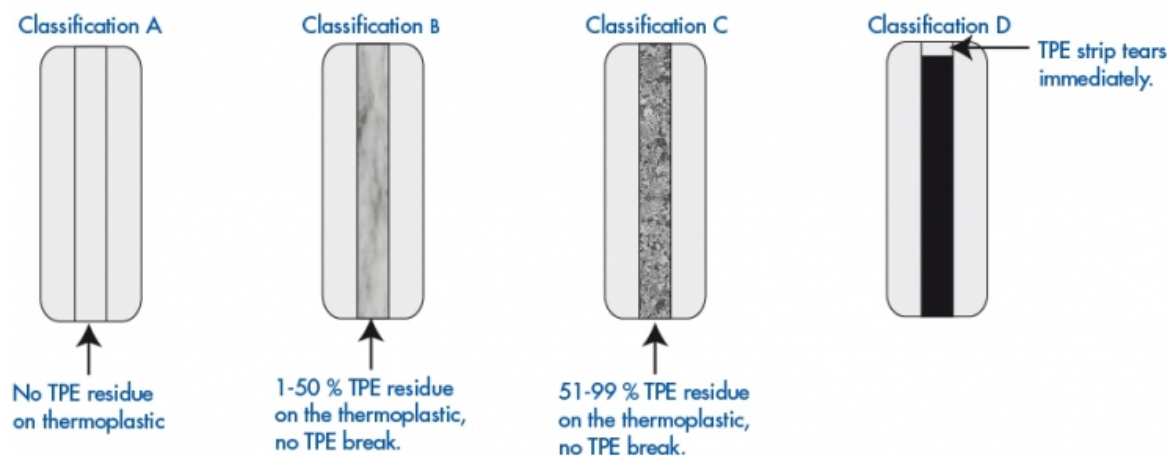
## Classification

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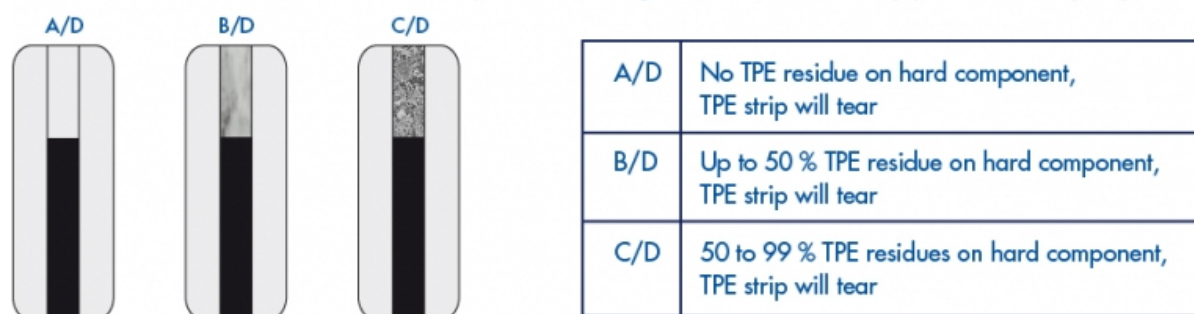
## Peel test according to VDI Guideline 2019

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 colour 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).
Pre drying	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.

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