

UV/AD1 Series
THERMOLAST® A

The UV/AD1 Series is your material solution for applications requiring a high UV resistance and adhesion³ to polar thermoplastics such as PC, ABS, PC/ABS. It is particularly appropriate for automotive exterior components.

Typical applications

- Handles (hand tools and power tools etc.)
- Window encapsulations

Material advantages

- Easy flowing
- Excellent resistance against oil and grease
- Perfect surface finish
- UV resistance

Processing Method: Injection Molding

	Color / RAL DESIGN	Hardness DIN ISO 7619-1 ShoreA	Density DIN EN ISO 1183-1 g/cm ³	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	Adhesion to ABS ² VDI 2019 two-component injection molding N/mm	Adhesion to PC ² VDI 2019 two-component injection molding N/mm	Adhesion to PC/ABS VDI 2019 two-component injection molding N/mm
TA4AOZ	black	38	1.150	2.0	500	8.5	1.0 (A)	2.5 (D)	2.5 (D)
TA5AOZ	black	47	1.150	3.0	600	13.0	1.0 (A)	3.5 (D)	3.5 (D)
TA6AOZ	black	59	1.150	3.5	550	16.0	5.0 (D)	5.0 (D)	5.0 (D)
TA7AOZ	black	70	1.150	5.5	550	25.0	4.0 (D)	7.0 (D)	7.0 (D)
TA8AOZ	black	80	1.150	6.0	450	23.0	6.5 (D)	8.5 (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.

³To secure a stable adhesion performance, additional mechanical anchoring is recommended.

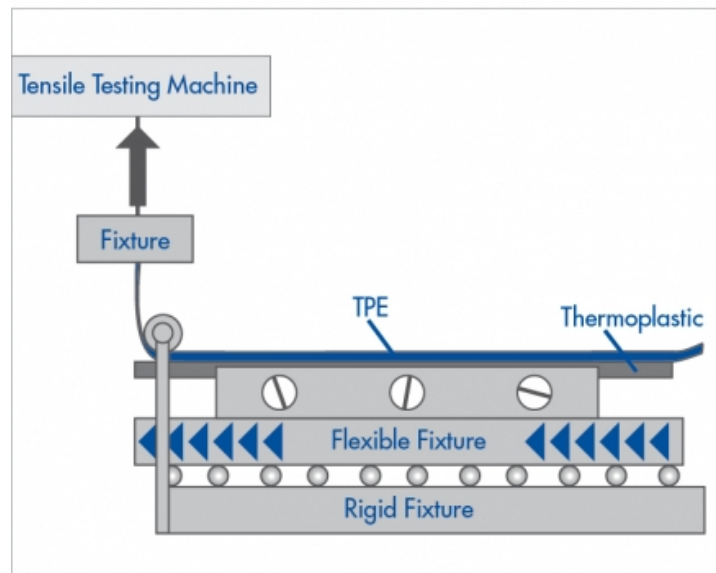
All values published in this data sheet are rounded average values.



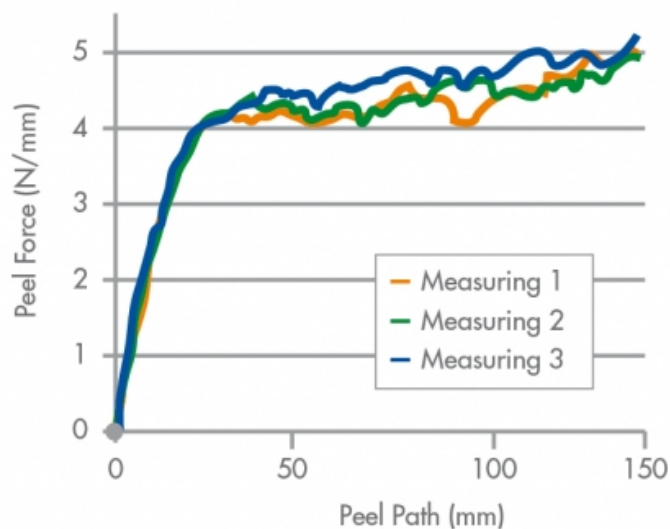
Description peel test

Peel test according to VDI guide line 2019

Test Setup



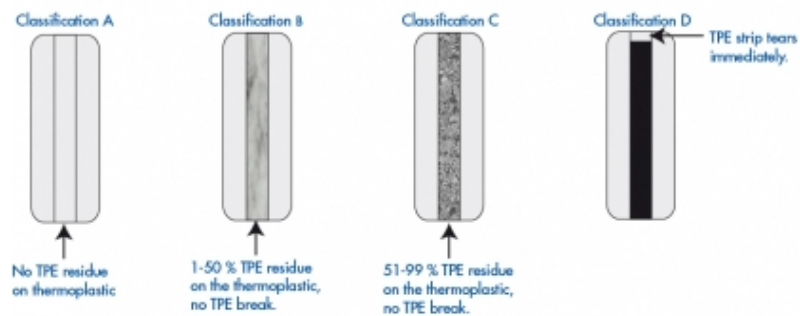
Example diagram for results of a peel test



Classification

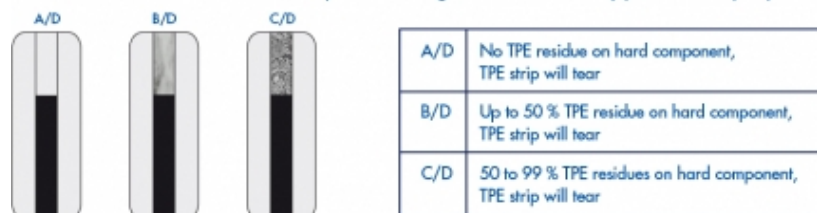
Peel test according to VDI Guideline 2019

For the VDI peel test we add two characters to the peel force 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	180 - 210 - 240 °C, max. 250 °C (360 - 410 - 460 °F, max. 480 °F)
Hotrunner	Hot runner temperatures: 200 -250 °C (390 - 480 °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.

