

AD2 Series
THERMOLAST® K

The AD2 Series is your material solution for applications with excellent adhesion to polar thermoplastics such as SAN, ASA, PMMA. The compounds are available in natural and black colors.

Typical applications

- Bumpers
- Door sills
- Function and design elements
- Grommets
- Handles (hand tools and power tools etc.)
- Seals
- Thumb wheels

Material advantages

- Easy coloring
- Excellent adhesion
- Excellent processing behavior
- Insert molding possible
- Pleasant surface feel (Soft touch)
- Suitable for automotive-interior
- UV resistance

Processing Method: Extrusion, Injection Molding

	Color	Hardness Shore A DIN ISO 7619 ShoreA	Density DIN EN ISO 1183-1 g/cm ³	Tensile Strength ¹ DIN 53504/ISO 37 MPa	Elong. at Break S2 ¹ DIN 53504 / ISO 37 %	Tear Resistance DIN ISO 34-1 N/mm	Adhesion Renault D41 1916 (ASA) ² N/mm	Adhesion Renault D41 1916 (SAN) ² N/mm	Adhesion Renault D41 1916 (PMMA) ² N/mm
TP5NLB	natural	48	1.100	3.5	350	10.0	2.3	2.1	1.1
TP5NLZ	black	48	1.100	3.5	350	10.0	3.0	3.5	2.5
TP6NLB	natural	55	1.100	6.5	500	10.0	6.2	10.2	1.1
TP6NLZ	black	56	1.100	6.0	500	12.0	13.0	13.0	2.5
TP7NLB	natural	65	1.100	8.5	550	12.0	20.0	18.0	2.5
TP7NLZ	black	66	1.100	8.5	550	19.0	22.0	18.0	2.0
TP8NLB	natural	76	1.100	13.0	500	24.0	15.0	24.0	3.0
TP8NLZ	black	76	1.100	13.0	550	25.0	14.0	20.0	2.5

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.

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

Disclaimer: The information provided in this documentation corresponds to our knowledge on the subject at the date of its publication and may be subject to revision as new knowledge and data becomes available. All values reported are typical values based on sample test results and are not a guarantee of performance. The responsibility to conduct testing to determine suitability of use for the particular process or end-use application remains with the customer. KRAIBURG TPE does not warrant or assume any liability with regards to the use of the information presented in this document.

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Specification limits are based on three-fold standard deviation from the average value.

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

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2014-06-27

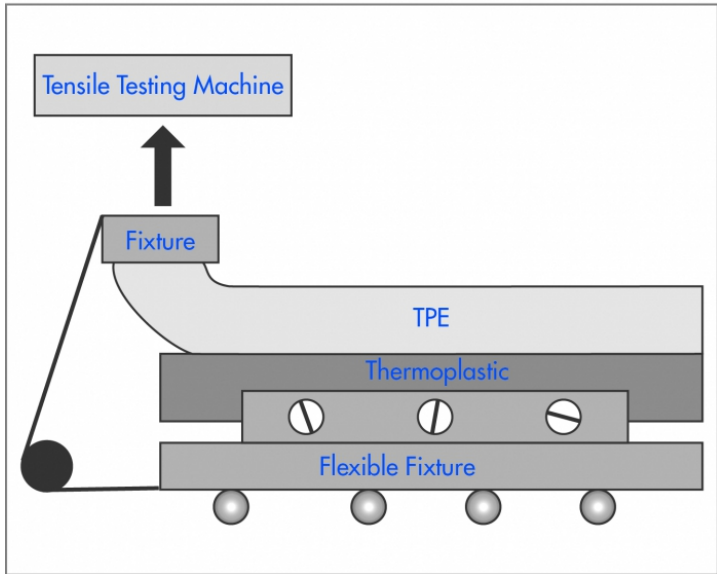
CUSTOM-ENGINEERED TPE AND MORE

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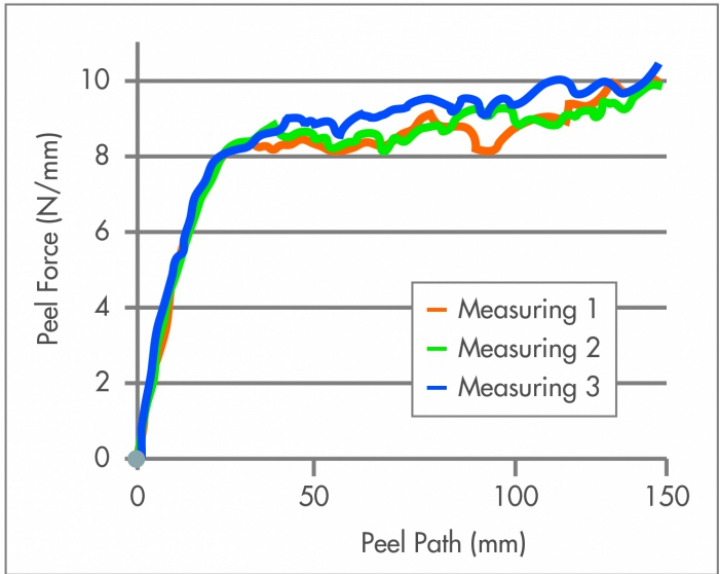
Description peel test

Peel test according to „Renault D41 1916“ standard

Test Setup



Example Diagramm as result of a peel test



The peel force is measured by a tensile testing machine in N/mm , in relation to the peel path. Test piece dimensions: Thermoplastic part: 130 x 22 x 2 mm, TPE part: 130 x 20 x 2 mm.

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Processing Guideline Extrusion

Cylinder temperature	160 - 180 - 200 °C; max. 230 °C (320 - 356 - 392 °F; max. 446 °F).
L/D ratio	At least 25
Compression ratio	At least 3.5 : 1
Screens / breaker plate	A breaker plate and a screen pack are generally recommended in the extruder configuration in order to increase pressure.
Die land	3 - 5 mm (0,12 - 0,16 in.)
Extruder Head	Ca. 180 °C (355 °F)
Die temperature	Ca. 190 - 180 °C (374 - 410 °F)
Screw geometry	Standard three-zone screw (e.g. polyolefin screw). The screw must be able to provide sufficient shearing.
Calibration	Generally not necessary; support elements may be required when extruding THERMOLAST® compounds with high hardness or when coextruding with standard thermoplastics.
Pre drying	Pre drying of the material is not necessary; if surface moisture forms as a result of changes in temperature, the material should be dried for 2 - 4 hours at 60 - 80 °C (140 - 175 °F).

Processing Guideline Injection Molding

Cylinder temperature	200 - 180 - 160 °C, max. 220 °C (392 - 356 - 320 °F, max. 428 °F)
Hotrunner	Hot runner temperatures: 180 - 220 °C (356 - 428 °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.

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Processing Guideline Injection Molding

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 - 50 bar (285 - 710 psi); 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 the following procedures have to be kept: a. Material has to be predried efficiently. Air dryer - at least 4h/80 °C (4h/175 °F), residual moisture < 0,02%. b. Material has to be processed immediately after drying. Avoid moisture absorption in the funnel (funnel must be covered). c. Before opening the bag, material has to be at room temperature in order to avoid condensation due to cold material. d. Keep the filling level in the funnel low.
Needle shut-off	The use of a needle valve nozzle 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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