

FC/AD1/ht Series

THERMOLAST® K

The FC/AD1/ht Series is your highly transparent material solution for applications with food contact. The series features include an excellent adhesion to polar thermoplastics such as PC, ABS and PETG.

Typical applications

- Function and design elements
- Grip applications
- Household articles
- Packaging (for food and careproducts)
- Razors
- Seals
- Toothbrushes
- Toys

Material advantages

- Applications with food contact
- EN71/3
- Excellent adhesion
- Excellent mechanical properties
- Excellent transparency
- FDA compliant
- Halogen-free
- Low density
- Various color options and effects available

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 (ABS) ² N/mm	Adhesion Renault D41 1916 (PC) ² N/mm	Haze Value on 2mm Plaque ASTM D 1003 ³ %
TF5TAA	transparent	47	0.940	14.0	550	38.0	8.0	4.0	15.00
TF6TAA	transparent	56	0.940	19.5	600	47.0	6.0	7.0	11.00
TF7TAA	transparent	65	0.950	19.5	550	42.0	9.5	8.5	13.50
TF8TAA	transparent	77	0.960	20.0	500	43.0	8.0	9.0	14.50

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.

³ Values measured according to ASTM D 1003 with a specimen thickness of 2 mm and the transmission tester Haze-Gard plus (BYK).

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

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

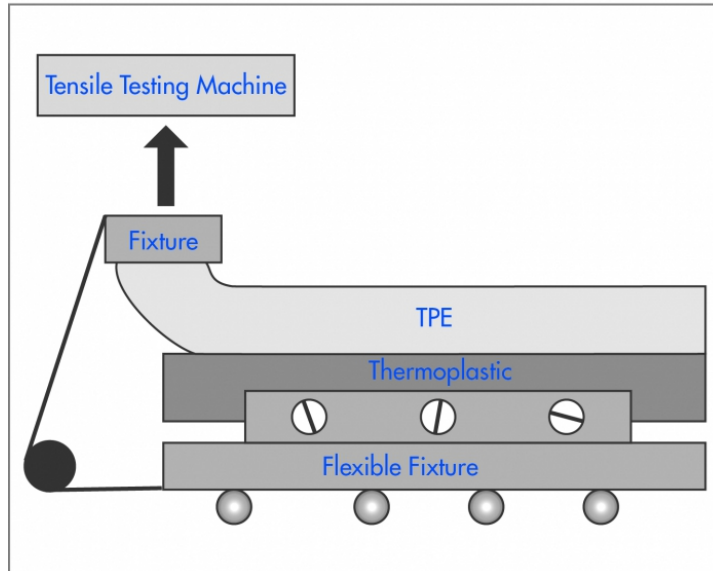
This datasheet is an extract of the KRAIBURG TPE program. Please contact KRAIBURG TPE to select the compound suitable for the requirements.

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.

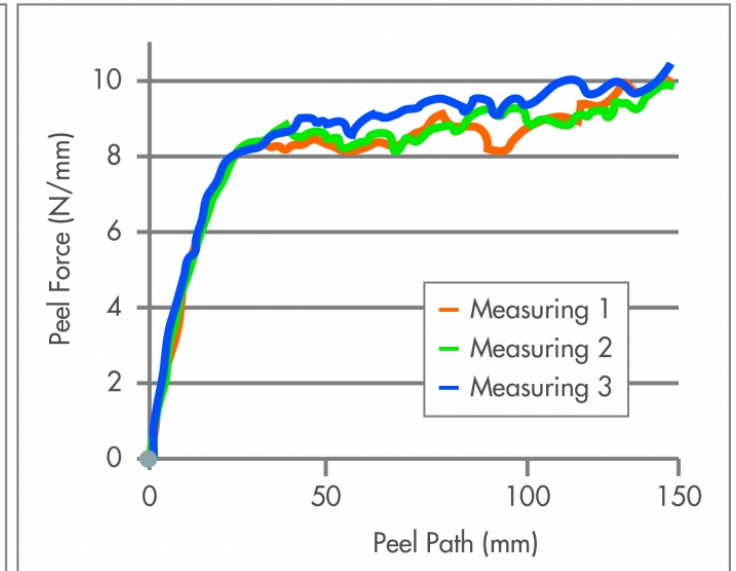
Description peel test

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	240 - 210 - 180 °C max. 250 °C (464 - 410 - 356 °F, max. 482 °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.

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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, drying the material for 2 - 4 hours at 60 - 80 °C (140 - 175 °F) is recommended.
Needle shut-off	With materials < 50 Shore the use of a needle seal 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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