KRAIBURG TPE

Datasheet

FC Series

THERMOLAST® K

The FC Series is your natural-colored and translucent material solution for applications with food contact. The series is characterized, among other things, by its excellent adhesion to PP.

Typical applications

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

Material advantages

- Adhesion to PP
- Applications with food contact
- Easy coloring (compounds in natural colors)
- EN71/3
- Excellent mechanical properties
- Excellent processing behavior
- FDA - Code of Federal Regulations (CFR), Title 21
- Halogen-free
- In natural or translucent available
- Pleasant surface feel (Soft touch)
- Recyclable
- Regulation (EU) No 10/2011

Processing Method: Extrusion, 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 %
TF2CGN	natural	21	1.100	3.5	700	10.0	11	34	69
TF2CGT	translucent	18	0.880	5.0	800	13.0	12	21	55
TF3CGN	natural	30	1.100	5.0	800	10.0	14	25	60
TF3CGT	translucent	30	0.880	6.0	900	10.0	14	27	56
TF4CGN	natural	40	1.100	5.5	850	11.0	14	27	60
TF4CGT	translucent	38	0.880	7.0	850	10.0	18	30	60
TF5CGN	natural	49	1.100	6.0	850	14.0	18	30	62
TF5CGT	translucent	50	0.880	7.5	800	13.0	21	34	59

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TF6CGN	natural	60	1.100	6.5	750	17.0	23	41	71
TF6CGT	translucent	60	0.880	6.5	750	16.0	25	42	73
TF7CGN	natural	70	1.100	6.5	700	20.0	31	43	70
TF7CGT	translucent	68	0.880	7.5	650	19.0	28	41	68
TF8CGN	natural	78	1.100	6.0	600	23.0	37	51	78
TF8CGT	translucent	79	0.880	7.0	550	25.0	36	54	76
TF9CGN	natural	88	1.100	5.5	400	30.0	44	56	81
TF9CGT	translucent	88	0.880	5.5	300	27.0	42	63	83

[1] 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.

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Processing Guideline Injection Molding	
Cylinder temperature	180 - 200 - 220 °C, max. 250 °C (360 - 390 - 430 °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	25 - 40 °C (77 - 104 °F)
Predrying	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).
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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Processing Guideline Extrusion	
Cylinder temperature	160 - 180 - 200 °C, max. 250 °C (320 - 360 - 390 °F; max. 480 °F)
Screw geometry	Standard three-zone screw (e.g. polyolefin screw). The screw must be able to provide sufficient shearing.
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 mm (<= 0,12 in.)
Extruder Head	Ca. 200 °C (390 °F)
Die temperature	Ca. 200 - 230 °C (390 - 450 °F)
Predrying	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).
Calibration	Generally not necessary; support elements may be required when extruding THERMOLAST® compounds with high hardness or when coextruding with standard thermoplastics.
Cleaning recommendation	For cleaning and purging of the machine it is appropriate to use polypropylene or polyethylene. Machine must be PVC-free.