

The CS Series is your material solution for sealing applications, providing an excellent compression set. The compounds are available in natural and black colors.

**Typical applications**

- Fastenings
- Grommets
- Membranes
- Seals

**Material advantages**

- Adhesion to PP
- Easy coloring
- Excellent compression set
- Excellent heat stability

**Processing Method:** Extrusion, Injection Molding

	Color	Hardness Shore A 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	Elong. at Break S <sub>2</sub> <sup>1</sup> DIN 53504 / ISO 37 %	Tear Resistance DIN ISO 34-1 N/mm	Compr. Set 72h/RT DIN ISO 815 %	Compr. Set 24h/70°C DIN ISO 815 %	Compr. Set 24h/100°C DIN ISO 815 %	Compr. Set 24h/120°C DIN ISO 815 %
TC3CSN	natural	27	1.100	4.0	550	12.0	8	16	31	58
TC3CSZ	black	30	1.100	3.5	550	12.0	8	16	31	58
TC4CSN	natural	38	1.100	5.0	550	10.0	9	18	34	60
TC4CSZ	black	37	1.100	4.0	550	12.5	9	18	36	60
TC5CSN	natural	46	1.100	7.0	550	16.0	10	20	34	64
TC5CSZ	black	50	1.100	6.0	500	15.5	10	20	32	64
TC6CSN	natural	56	1.100	8.0	600	17.0	12	22	41	70
TC6CSZ	black	58	1.100	7.0	500	17.0	12	22	34	70
TC7CSN	natural	68	1.100	8.0	500	21.0	15	28	48	73
TC7CSZ	black	69	1.100	8.0	500	20.0	15	28	41	73
TC8CSN	natural	79	1.100	9.0	500	26.5	22	42	57	75
TC8CSZ	black	78	1.100	9.0	500	26.5	22	42	54	75

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.

**CS Series**
**THERMOLAST® K**

	<b>Color</b>	<b>Hardness Shore A</b> DIN ISO 7619 ShoreA	<b>Density</b> DIN EN ISO 1183-1 g/cm <sup>3</sup>	<b>Tensile Strength</b> <sup>1</sup> DIN 53504/ISO 37 MPa	<b>Elong. at Break S2</b> <sup>1</sup> DIN 53504 / ISO 37 %	<b>Tear Resistance</b> DIN ISO 34-1 N/mm	<b>Compr. Set 72h/RT</b> DIN ISO 815 %	<b>Compr. Set 24h/70°C</b> DIN ISO 815 %	<b>Compr. Set 24h/100°C</b> DIN ISO 815 %	<b>Compr. Set 24h/120°C</b> DIN ISO 815 %
<b>TC9CSN</b>	natural	86	1.100	10.0	500	35.0	25	45	65	78
<b>TC9CSZ</b>	black	87	1.100	10.0	500	35.0	25	45	60	78

<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.

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**CS Series**
**THERMOLAST® K**
**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	220 - 200 - 180 °C max. 250 °C (428 - 392 - 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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CS Series

THERMOLAST® K

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	25 - 40 °C (77 - 104 °F)
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).
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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