









## Kormax Acetal

## Kormax Material Document

Kormax Acetal [technical name Polyoxymethylene] generally comes in either natural white or black colour. Acetal has low moisture absorption [stable in humid environments], excellent machinability and its FDA compliance allows for direct contact with food stuffs. The black has improved UV resistance and is the preferred choice for outdoor / applications in direct sunlight. It has good dimensional stability but should not be used in temperatures operating above 80°C.

	<b>Max Continuous Operating Temperature</b>	<b>90°C</b>		<b>Density</b>	<b>1.41</b>
	<b>Tensile Strength</b>	<b>19 MPa</b>		<b>Outside in Sunlight</b>	<b>Yes</b>
	<b>Suitability for Food Contact</b>	<b>Yes</b>		<b>Moisture Absorption</b>	<b>0.8%</b>
	<b>Coefficient of Friction to Steel</b>	<b>Low</b>		<b>Machinability</b>	<b>Excellent</b>

### Physical Properties

	Test Method	Unit	Value
Specific gravity ( $\rho$ )	ISO 1183	g/cm <sup>3</sup>	1.39
Water absorption <sup>9</sup>	ISO 62	%	0.8
Humidity absorption <sup>9</sup>	ISO 62	%	0.2
Maximum permissible service temp. <sup>9</sup>	UL746B	°C	100
Lower permissible service temp. <sup>9</sup>	UL746B	°C	-40

### Mechanical Properties

	Test Method	Unit	Value
Tensile strength at yield ( $\sigma_S$ )	ISO 527	MPa	67
Elongation at yield ( $\xi_S$ )	ISO 527	%	22
Tensile strength at break ( $\sigma_R$ )	ISO 527	MPa	65
Elongation at break ( $\xi_S$ )	ISO 527	%	28
Impact strength ( $a_n$ )	ISO 179	kJ/m <sup>2</sup>	n.b.
Notch impact strength ( $a_k$ ) <sup>9</sup>	ISO 179	kJ/m <sup>2</sup>	6
Ball indentation ( $H_k$ )/Rockwell hardness <sup>9</sup>	ISO 2039	MPa	125
Shore-D	ISO 868	-	83
Flexural strength ( $\sigma_{B_{3.5\%}}$ ) <sup>9</sup>	ISO 178	MPa	-
Modulus of elasticity ( $E_t$ )	ISO 527	MPa	2855

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Thermal Properties <sup>9</sup>		Test Method	Unit	Value
Vicat-softening point	VST/B/50	ISO 306	°C	150
	VST/A/50	ISO 306	°C	-
Heat deflection temperature	HDT/B	ISO 75	°C	155
	HDT/A	ISO 75	°C	95
Coef. of linear thermal expansion ( $\alpha$ )		ISO 11359	K <sup>-1</sup> * 10 <sup>-4</sup>	1.2
Thermal conductivity at 20°C ( $\lambda$ )		ISO 22007-4	W/(m * K)	-
Glass transition temperature (T <sub>g</sub> )		ISO 3146	°C	-65
Melting temperature (T <sub>m</sub> )		ISO 3146	°C	166

Electrical Properties		Test Method	Unit	Value
Volume resistivity ( $\rho_D$ ) <sup>8</sup>		IEC 60093	$\Omega$ *cm	$\geq 10^{13}$
Surface resistivity (R <sub>o</sub> ) <sup>8</sup>		IEC 60093	$\Omega$	$\geq 10^{13}$
Dielectric constant at 1MHz ( $\epsilon_r$ ) <sup>9</sup>		IEC 60250	-	38
Dielectric loss factor at 1 MHz (tan $\delta$ ) <sup>9</sup>		IEC 60250	-	0.005
Dielectric strength <sup>9</sup>		IEC 60243-1	kV/mm	40
Tracking resistance <sup>9</sup>		IEC 60112	V	CTI 600

Additional Data		Test Method	Unit	Value
Bondability		-	-	-
Physiological indifference <sup>5</sup> according		EEC	-	+
		FDA	-	+
Flammability <sup>8 9</sup>		UL 94	-	HB
Limiting Oxygen Index (LOI) <sup>8 9</sup>		ASTM D2863	%	18
UV stabilisation <sup>6 8 9</sup>		-	-	-

<sup>1</sup> The physical data contained in this table are typical values and reflect the current state of our knowledge. The data are arithmetic average values which are tested by test specimens made out of rods ( $\varnothing$  40-60 mm). These have to be understood as guidelines, and shall not be used for specification purposes for finished parts. Missing data are completed by data of the raw materials.

<sup>5</sup> Physiological indifferences are valid for nature coloured materials on the raw material side. There are also approvals for our semi-finished products available or in preparation. Please check this separately with us. <sup>6</sup> Valid for nature coloured materials. An additional UV protection can be taken over by special pigments e.g. carbon black. <sup>7</sup> Test results without UL registration <sup>8</sup> Data are only valid for natural colours <sup>9</sup> Data taken from raw material \*Self-assessment without test certificate \* Own classification without official test report n.b. = No break + = yes o = Limited - = no / no data available

### Notes for the user:

The technical data given in this sheet correspond to our current state of knowledge and should not be construed as an agreement or guarantee regarding certain properties of our products. The decision on the suitability of a particular material for a specific application is up to the user. We reserve the right to modify the given data. Errors of the given data are reserved. The document was produced by machine and is valid without signature.