

Ertacetal® C Product Information

MAIN CHARACTERISTICS

- High mechanical strength, stiffness and hardness
- Excellent resilience
- Good creep resistance
- High impact strength, even at low temperatures
- Very good dimensional stability
- Good sliding properties
- Excellent machinability
- Physiologically inert (suitable for food contact)

ERTACETAL C

Natural (white) / black POM C

ERTACETAL H

Natural (white) POM H

These are ERTA's virgin copolymer (POM C) and homopolymer (POM H) acetal grades. The acetal copolymer is more resistant against hydrolysis, strong alkalis and thermal-oxidative degradation than the acetal homopolymer.

The latter, however, has higher mechanical strength, stiffness, hardness and creep resistance as well as lower thermal expansion rate and very often it also presents a better wear resistance.

ERTACETAL is very well suited for machining on automatic lathes and is particularly recommended for mechanical precision parts.

Applications

- Gear wheels with small modulus
- Cams
- Heavily loaded bearings and rollers
- Bearings and gears with small clearance
- Valve seats
- Snapfit assemblies
- Dimensionally stable precision parts for machine construction
- Insulating components for electrical engineering
- Parts which operate in water of 60-80°C (ERTACETAL C)

	UNITS	VALUE	
Density	g/cm ³	1.41	
Water Absorption	after 24/96 h in water of 23° C	%	20/37
	at saturation in air of 23° C / 50% RH	%	0.20
	at saturation in water of 23° C	%	0.85
THERMAL PRPERTIES			
Melting point	°C	165	
Thermal Conductivity at 23°C	W/(K.m)	.31	
Coefficient of linear thermal expansion:			
	Average value between 23 and 60°C	m/(m.K)	110 x 10 ⁻⁶
	Average value between 23 and 100°C	m/(m.K)	125 x 10 ⁻⁶
Deflection temperature under flexural load: method A: 1.8N/mm ²	°C	110	
Max allowable surface temperature in air:			
	Short periods, a few hrs at a low load	°C	140
	Continuously: 5000/20000 hours	°C	115/100
Minimum service temperature	°C	-50	
Flammability: ASTM (Oxygen index)	%	15	
MECHANICAL PROPERTIES @ 23°C			
Tensile stress at yield	dry test specimen	N/mm ²	70/-
	Test specimens standard atmosphere 23°C/50% RH	N/mm ²	70/-
Tensile strain at break	dry test specimen	%	30
	Test specimens standard atmosphere 23°C/50% RH	%	30
Tensile modulus of elasticity	dry test specimen	N/mm ²	3300
	Test specimens standard atmosphere 23°C/50% RH	N/mm ²	3300
Compression test 1% offset yield strength	dry test specimen	N/mm ²	63
Creep test in tension; stress to produce 1% strain in 1000 hrs		N/mm ²	14
	Test specimens standard atmosphere 23°C/50% RH	N/mm ²	14
Impact strength – Charpy	dry test specimen	kJ/m ²	No break
Notched impact strength	Charpy dry test specimen	kJ/m ²	8
	Test specimens standard atmosphere 23°C/50% RH	kJ/m ²	8
	- Izod dry test specimen	kJ/m ² : J/m	8 ; 80
	Test specimens standard atmosphere 23°C/50% RH	kJ/m ² : J/m	8 ; 80
Ball indentation hardness H358/30 or H 961/30		N/mm ²	140
Rockwell hardness			M86
ELECTRICAL PROPERTIES			
Dielectric strength	dry test specimen	kV/mm	20
	Test specimens standard atmosphere 23°C/50% RH	kV/mm	20
Volume resistivity	dry test specimen	Ohm.cm	10 ¹⁵
	Test specimens standard atmosphere 23°C/50% RH	Ohm.cm	10 ¹⁵
Surface resistivity	dry test specimen	Ohm	10 ¹⁵
	Test specimens standard atmosphere 23°C/50% RH	Ohm	10 ¹⁵
Dielectric constant:	@ 50Hz dry test specimen	-	3.6
	Test specimens standard atmosphere 23°C/50% RH	-	3.6
	@ 1MHz dry test specimen	-	3.6
	Test specimens standard atmosphere 23°C/50% RH	-	3.6
Dissipation factor tan	@ 50Hz dry test specimen	-	0.003
	Test specimens standard atmosphere 23°C/50% RH	-	0.003
	@ 1 MHz dry test specimen	-	0.008
	Test specimens standard atmosphere 23°C/50% RH	-	0.008
Resistance to racking	dry test specimen	-	CTI 600
	Test specimens standard atmosphere 23°C/50% RH	-	CTI 600

- CNC
- 3D Printing
- 3D Scanning
- Consulting
- Designing
- Engineering

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