

Ertacetal® H 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)

PROPERTIES	UNITS	VALUE
Density	g/cm ³	1.43
Water Absorption	after 24/96 h in water of 23° C	%
	at saturation in air of 23° C / 50% RH	%
	at saturation in water of 23° C	%
		18/36
		0.20
		0.85
THERMAL PROPERTIES		
Melting point	°C	175
Thermal Conductivity at 23°C	W/(K.m)	.31
Coefficient of linear thermal expansion:		
	Average value between 23 and 60°C	m/(m.K)
	Average value between 23 and 100°C	m/(m.K)
		95 x 10 ⁻⁶
		110 x 10 ⁻⁶
Deflection temperature under flexural load: method A: 1.8N/mm ²	°C	135
Max allowable surface temperature in air:		
	Short periods, a few hrs at a low load	°C
	Continuously: 5000/20000 hours	°C
		150
		105/90
Minimum service temperature	°C	-50
Flammability: ASTM (Oxygen index)	%	15
MECHANICAL PROPERTIES @ 23°C		
Tensile stress at yield	dry test specimen	N/mm ²
	Test specimens standard atmosphere 23°C/50% RH	N/mm ²
		80/-
		80/-
Tensile strain at break	dry test specimen	%
	Test specimens standard atmosphere 23°C/50% RH	%
		30
		30
Tensile modulus of elasticity	dry test specimen	N/mm ²
	Test specimens standard atmosphere 23°C/50% RH	N/mm ²
		3300
		3300
Compression test 1% offset yield strength	dry test specimen	N/mm ²
		70
Creep test in tension; stress to produce 1% strain in 1000 hrs	dry test specimen	N/mm ²
	Test specimens standard atmosphere 23°C/50% RH	N/mm ²
		16
		16
Impact strength – Charpy	dry test specimen	kJ/m ²
	Test specimens standard atmosphere 23°C/50% RH	kJ/m ²
		No break
		10
Notched impact strength Charpy	dry test specimen	kJ/m ²
	Test specimens standard atmosphere 23°C/50% RH	kJ/m ²
		10
		10
- Izod	dry test specimen	kJ/m ² : J/m
	Test specimens standard atmosphere 23°C/50% RH	kJ/m ² : J/m
		10 ; 100
		10 ; 100
Ball indentation hardness H358/30 or H 961/30	N/mm ²	160
Rockwell hardness		M90
ELECTRICAL PROPERTIES		
Dielectric strength	dry test specimen	kV/mm
	Test specimens standard atmosphere 23°C/50% RH	kV/mm
		20
		20
Volume resistivity	dry test specimen	Ohm.cm
	Test specimens standard atmosphere 23°C/50% RH	Ohm.cm
		10 ¹⁴
		10 ¹⁴
Surface resistivity	dry test specimen	Ohm
	Test specimens standard atmosphere 23°C/50% RH	Ohm
		10 ¹⁵
		10 ¹⁵
Dielectric constant: @ 50Hz	dry test specimen	-
	Test specimens standard atmosphere 23°C/50% RH	-
		3.6
		3.6
@ 1MHz	dry test specimen	-
	Test specimens standard atmosphere 23°C/50% RH	-
		3.6
		3.6
Dissipation factor tan @ 50Hz	dry test specimen	-
	Test specimens standard atmosphere 23°C/50% RH	-
		0.003
		0.003
@ 1 MHz	dry test specimen	-
	Test specimens standard atmosphere 23°C/50% RH	-
		0.008
		0.008
Resistance to racking	dry test specimen	-
	Test specimens standard atmosphere 23°C/50% RH	-
		CTI 600
		CTI 600