



WOLF

Datasheet

Material: INKUPAL-20CV200

EN 02/12

Properties	Symbol Unit	Standard	Value
Information			
Material code		Internal Standard	B7L
Colour			-
Density	ρ kg/dm ³	ISO 1183	1,23
Mechanical			
Compressive modulus	E_c MPa	DIN EN ISO 604	-
Elastic limit	σ_{el} MPa	Internal Standard	-
Compressive stress at yield	σ_y MPa	DIN EN ISO 604	-
Compressive strength	σ_M MPa	DIN EN ISO 604	-
Compressive stress at 3,5% strain	$\sigma_{3,5\%}$ MPa	DIN EN ISO 604	-
Compressive strength (0,01 h)	σ_M MPa	Internal Standard	-
Compressive strength (100 h)	σ_M MPa	Internal Standard	-
Compressive strength (10000 h)	σ_M MPa	Internal Standard	-
Compressive stress at break	σ_B MPa	DIN EN ISO 604	-
Elastic compression limit	ϵ_{el} %	Internal Standard	-
Nominal compressive yield strain	ϵ_{cy} %	DIN EN ISO 604	-
Nominal compressive strain at compressive strength	ϵ_{cM} %	DIN EN ISO 604	-
Nominal compressive strain at break	ϵ_{cR} %	DIN EN ISO 604	-
Modulus in tension (tensile modulus)	E_t MPa	DIN EN ISO 527	14000
Elastic limit	σ_{el} MPa	Internal Standard	-
Tensile stress at yield	σ_y MPa	DIN EN ISO 527	-
Tensile strength	σ_M MPa	DIN EN ISO 527	206
Tensile stress at break	σ_B MPa	DIN EN ISO 527	-
Elastic yield point	ϵ_{el} %	Internal Standard	-
Yield strain	ϵ_y %	DIN EN ISO 527	-
Elongation at maximum force	ϵ_M %	DIN EN ISO 527	2
Tensile elongation at break	ϵ_R %	DIN EN ISO 527	-
Modulus in flexure	E_f MPa	DIN EN ISO 178	12000
Outer fibre stress at 3,5% outer fibre strain	$\sigma_{f3,5}$ MPa	DIN EN ISO 178	-
Flexural strength	σ_{fM} MPa	DIN EN ISO 178	320
Flexural stress at break	σ_{fB} MPa	DIN EN ISO 178	-
Elongation at flexural yield stress	ϵ_M %	DIN EN ISO 178	3,4
Flexural elongation at break	ϵ_R %	DIN EN ISO 178	-
Creep modulus at 1% deformation after 1000h	E N/mm ²	DIN 53444	-
Stress at 1% deformation after 1000h	$\sigma_{1\%}$ N/mm ²	DIN 53444	-
Creep resistance		Relative value	-
Ball indentation hardness H358/30 (H132/30) [H49/30]	HB	N/mm ² DIN 2039	-
Shore A hardness		Shore DIN 53505	-
Shore D hardness		Shore DIN 53505	-
Impact strength Charpy not notched		kJ/m ² EN ISO 179/1eU	39
Impact strength Charpy notched		kJ/m ² EN ISO 179/1eA	14
Loss tangent (1Hz)	$\tan\delta$	1	Internal Standard
Fatigue strength at 20°C, 106 stress cycles, 1 Hz		MPa	Internal Standard
Thermal			
Continuous operating temperature (long term)	RTi °C	UL 746B	102
Short term operating temperature (3 h)		°C Internal Standard	157
Maximum RTi temperature for bushings when pressed		°C Internal Standard	-
Melting temperature	T_m °C	DSC	-
Glass transition temperature	T_g °C	DSC	-
Coefficient of thermal expansion up to 100°C	α 10 ⁻⁵ /K	ISO E 830	1,8
Coefficient of thermal expansion up to 150°C	α 10 ⁻⁵ /K	ISO E 831	-
Heat distortion temperature HDT/A 1,8 MPa	HDT(A) °C	DIN EN ISO 75	-
Thermal conductivity	λ W/(m*K)	DIN 52612	0,9
Specific heat capacity	c_p kJ/(kg*K)	DSC	-
Fire behaviour (3,2mm) UL94		UL 94 HB	V
Limiting oxygen index (LOI)	%	LOI DIN EN ISO 4589	-

Properties	Symbol Unit	Standard	Value
Electrical			
Volume resistivity	R_D Ω *cm	IEC 60093	<1E5
Surface resistance	R_C Ω	IEC 60093	<1E3
Penetration resistance	E kV/mm	IEC 243	-
Tracking resistance	V	IEC 112	-
Dielectric constant (110Hz)		1	IEC 250
Dissipation factor (110Hz)	$\tan\delta$	1	IEC 112
PV values			
Max. surface pressure v=1m/min	p_{zul} N/mm ²		-
Max. surface pressure v=10m/min	p_{zul} N/mm ²		-
Max. surface pressure v=100m/min	p_{zul} N/mm ²		-
Max. surface pressure v=200m/min	p_{zul} N/mm ²		-
Evolution of heat with v=1m/min	°C	Internal test radial bushing	-
Evolution of heat with v=10m/min	°C		-
Evolution of heat with v=100m/min	°C		-
Evolution of heat with v=200m/min	°C		-
Friction			
μ static 20° C dry operation	μ_{stat}	1	Internal Standard
μ dynamic 20° C dry operation	μ_{dyn}	1	inclined plane
μ dynamic 100° C dry operation	μ_{dyn}	1	
Wear			
Wear factor at 20°C		mm/100 km	Internal test
Wear factor at 100°C		mm/100 km	periodic transla-
Wear factor at 200°C		mm/100 km	tive movement
Wear factor at 240°C		mm/100 km	under load
Available as			
Tubes (hollow rods) up to ϕ (de)			-
Sheets up to max. thickness			-
Rods up to ϕ (de)			-
Plastic granules			-
Injection moulded parts			-
Machined parts			-
Precision			
Dimensional stability with moisture absorption		Relative value	-
Water absorption 23°C / RMC 93%	%	DIN EN ISO 62	<1
Water absorption until an equilibrium moisture content	%	DIN EN ISO 62	-
Dimensional stability with temperature variation		Relative value	-
High precision bushings (negative clearance)			-
Alignment adjustment		Relative value	-
Environmental influences			
Suitable for use in water			-
Resistance against hot water	°C		-
Resistance against dust, dirt, abrasive substances		Relative value	-
UV rays resistance		Relative value	-
Suitable for outdoor use		Relative value	-
Resistance to chemicals		Relative value	-
FDA compliant			-
Suitable for vacuum			-
Rate of desorption	a_{1h} mbar*1/(s/cm ²)		-
ROHS / WEEE			-
Free from silicone			-
Free from PTFE			-
Sterilization			
Resistant against disinfectant			-
Moist heat sterilization		Relative value	-
Gamma-rays radiation sterilization		Relative value	-
Chemical sterilization		Relative value	-
UV-sterilization		Relative value	-



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Legal Information

All the tests are been made with a standard conditioning atmosphere of 23°C (at the moment no other temperature is available). The specified values are established from average values of several tests and they correspond to our today's knowledge. They are only to be used as information about our products and as help for the material selection. With these values, we do not ensure specific properties, or the suitability for certain application, therefore we do not assume any legal responsibility for an improper usage. The used test pieces have been machined from extruded semi-finished material. Since the plastics' properties depend on the manufacturing process (extrusion, injection moulding), on the dimensions of the semi finished material and on the degree of crystallinity, the actual properties of a specific product may slightly deviate from the tested ones. For information about divergent properties do not hesitate to contact us. On request we advise you regarding the most appropriate component design and the definition of material specifications more suitable to your application data. Notwithstanding, the customer bears all the responsibility for the thorough examination of suitability, efficiency, efficacy and safety of the chosen products in pharmaceutical applications, medical devices or other end uses.

Legend

- ① Low
- ⊗ High
- ✓ Applicable
- ✗ Not applicable
- (✓) Limited
- k.Br. No break
- n.d. Not feasible
- Not determined
- n.v. Non-existent