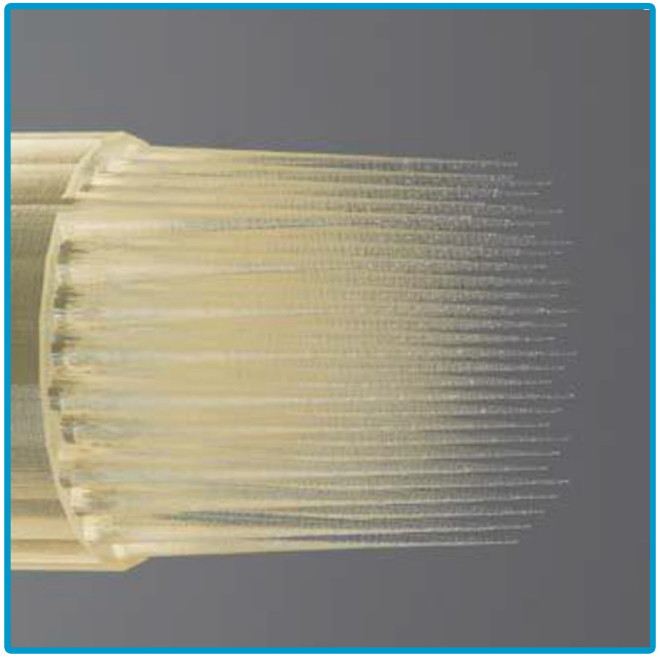
standard printmaterial KS-1



layer thickness
15 µm resolution

min. wall thickness
start 0,2 mm

high flexibility at smallest wall thickness
for the realisation of snap noses

very strong component part with high strength

quick assessment of assemblies thanks to
transparent view of printed part

long durability and form stability for the
fixture construction and gagemaking

Material Characteristics

Description		Unit	ASTM	Result
Tensile Test	Ultimate Tensile Strength	MPa	D638	40-55
	Tensile Modulus			1800 – 2100
	Elongation at Break	%		5 – 35
	Poisson's ratio	-		0,37
Elastic Modulus	Tensile Test	MPa	-	1870-2181
	Shear Modulus (also Rigidity Modulus, Modulus of Torsion)		-	657-766
Bending Test	Flexural Strength	MPa	D-790	60-80
	Flexural Modulus of Elasticity			1900-2400
High-Pressure Test	Compressive Strength	MPa	D-695	70-80
	Compressive Modulus	MPa	-	2307-2692
Shock Test	Impact Strength	kJ/m^2	D-256	1,7-2,1
Hardness Test (Shore durometer) [Unit D]		-	D-2240	85-86
Rockwell (hardness) [Unit R]		-	D-785	119 - 122
Heat Deflection Temperature	Heat Deflection Temperature °C at 0,45 Mpa	°C	D-648	52-54
	Heat Deflection Temperature °C at 1,8 Mpa			45-50
Glass Transition Temperature/ Transformation Point T_G		°C	-	77-80
Thermal Conductivity		W/m·K	ISO/CD 22007-2 (not ASTM)	0,166-0,167
Inflammability		-	UL94HB (not ASTM)	passed
Water Absorption		%	D570-98	0,35
Cured Mass Density		kg/m^3 bei 23 °C	-	1111

Electrical Characteristics

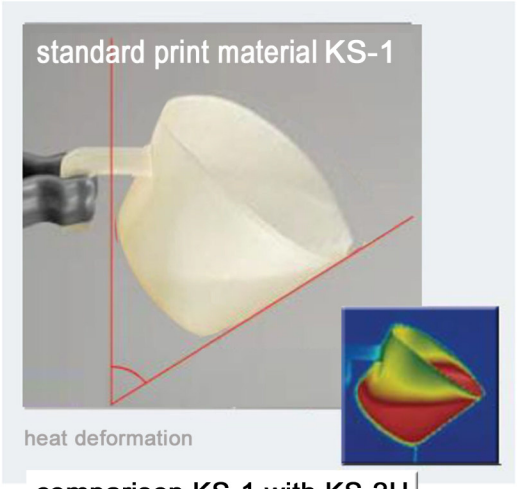
Description	Unit	ASTM	Result
Relative Permittivity (1 Mhz)	-	D-150	2,99 – 3,01
Dissipation Factor (1 Mhz)	-	D-150	$1{,}14*10^{-2}$ – $1{,}22*10^{-2}$
Specific Resistance	Ω · cm	D-257	$6{,}1\cdot10^{15}$ – $7{,}6\cdot10^{15}$
Specific Surface Resistance	Ω	D-257	$3{,}8\cdot10^{15}$ – $4{,}9\cdot10^{15}$
Dielectric Strength	kV/mm	D-149	34,2 – 39,0

ASTM = American Society for Testing and Materials

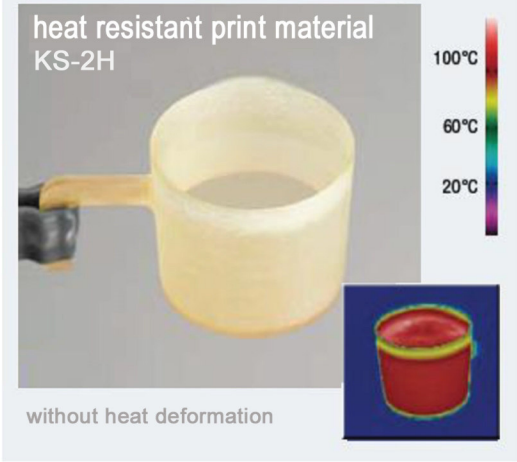
layer thickness
20µm resolution

min. wall thickness
start 0,8 mm

temperature resistant up to 100°C/212°F
reliable component testing under
difficult conditions possible



comparison KS-1 with KS-2H



heat-resistant print material KS-2H

BERG
www.berg-maschinenbau.de

Material Characteristics

Description		Unit	ASTM	Value / Result before temper	Value / Result after temper
Tensile Test	Ultimate Tensile Strength	MPa	D638	16,1 - 31,4	15,4 - 38,4
	Tensile Modulus			2188 - 2365	2110 - 2447
	Elongation at Break	%		0,8 - 1,5	0,7 - 1,8
	Poisson's ratio	-		-	0,34
Elastic Modulus	Tensile Test	MPa	-	-	1673-1940
	Shear Modulus (also Rigidity Modulus, Modulus of Torsion)		-	-	787-913
Bending Test	Flexural Strength	MPa	D-790	60,6 - 85,9	43,6 - 65,6
	Flexural Modulus of Elasticity			2866 - 2987	2766 - 2829
High-Pressure Test	Compressive Strength	MPa	D-695	87,7 - 89,9	97,3 - 100,1
	Compressive Modulus	MPa	-	-	2198-2549
Shock Test	Impact Strength	kJ/m^2	D-256	1,48 - 2,17	1,50 - 1,78
Hardness Test (Shore durometer) [Unit D]		-	D-2240	86,7 - 87,1	86,9 - 87,8
Rockwell (hardness) [Unit R]		-	D-785	123,7 - 125,4	126,3 - 127,5
Heat Deflection Temperature	Heat Deflection Temperature °C at 0,45 Mpa	°C	D-648	67,4 - 72,3	103
	Heat Deflection Temperature °C at 1,8 Mpa			63,5 - 64,3	73,9 - 77,1
Glass Transition Temperature/ Transformation Point T_G		°C	-	98	99,8
Thermal Conductivity		W/m·K	ISO/CD 22007-2 (not ASTM)	-	0,147-0,160
Inflammability		-	UL94HB (not ASTM)	-	passed
Water Absorption		%	D570-98	0,33 - 0,38	0,37
Cured Mass Density		kg/m^3 bei 23 °C	-	1104	1103

Electrical Characteristics

Description	Unit	ASTM	Result after temper
Relative Permittivity (1 Mhz)	-	D-150	2,77 - 2,84
Dissipation Factor (1 Mhz)	-	D-150	$1,16*10^{-2}$ - $1,23*10^{-2}$
Specific Resistance	Ω · cm	JIS K6911	$3,7*10^{15}$ - $4,5*10^{15}$
Specific Surface Resistance	Ω	JIS K6911	$8,0*10^{15}$ - $2,8*10^{16}$
Dielectric Strength	kV/mm	JIS C2110-1	32,3 - 38,4

ASTM = American Society for Testing and Materials
JIS = Japan Industrial Standard