

VDA CAMPUS® Datasheet
TESTAMID® 1234
PA66-I-(GF+MD)25 FR(17)
TEST AG - 2009-11-10
Physical properties

	I	M	E ¹⁾			
Melt volume-flow rate	X	X	X	22.3	cm ³ /10min	ISO 1133
Temperature	X	X	X	220	°C	ISO 1133
Load	X	X	X	2.16	kg	ISO 1133
Viscosity number	X	X	X	97	cm ³ /g	ISO 307, 1157, 1628
Molding shrinkage (parallel)	X	X	X	1.8	%	ISO 294-4, 2577
Molding shrinkage (normal)	X	X	X	2.2	%	ISO 294-4, 2577
Humidity absorption	X	X	X	0	%	Similar to ISO 62
Water absorption	X	X	X	2.8	%	Similar to ISO 62
Density	X	X	X	1060	kg/m ³	ISO 1183
Type and amount of reinforcement	X	X	X	GF25		ISO 3451-1

Mechanical properties

	I	M	E ¹⁾			
Tensile modulus	X	X	X	33000	MPa	ISO 527-1/-2
Yield stress	X	X	X	33	MPa	ISO 527-1/-2
Stress at break	X	X	X	*	MPa	ISO 527-1/-2
Yield strain	X	X	X	15	%	ISO 527-1/-2
Strain at break	X	X	X	*	%	ISO 527-1/-2
Charpy impact strength (+23°C)	X	X	X	20	kJ/m ²	ISO 179/1eU
Charpy notched impact strength (+23°C)	X	X	X	15P	kJ/m ²	ISO 179/1eA
Charpy impact strength (-30°C)	X	X	X	150	kJ/m ²	ISO 179/1eU
Charpy notched impact strength (-30°C)	X	X	X	10	kJ/m ²	ISO 179/1eA
Puncture - ductile/brittle transition temperature	X	X		-150	°C	ISO 6603-2

Thermal properties

	I	M	E ¹⁾			
Melting temperature (10°C/min)	X	X	X	280	°C	ISO 11357-1/-3
Temp. of deflection under load (1.80 MPa)	X	X	X	235	°C	ISO 75-1/-2
Temp. of deflection under load (0.45 MPa)	X	X	X	180	°C	ISO 75-1/-2
Temp. of deflection under load (8.00 MPa)	X	X	X	*	°C	ISO 75-1/-2
Vicat softening temperature (50°C/h 50N)	X	X	X	177	°C	ISO 306
Coeff. of linear therm. expansion -40°C to +100°C (parallel)	X	X	X	54	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion -40°C to +100°C (normal)	X	X	X	46	E-6/K	ISO 11359-1/-2
Burning rate (Thickness 1 mm)	X			5.5	mm/min	ISO 3795 (FMVSS 302)
Burning Behav. at 1.5mm nom. thickn.		X	X	V-0	class	IEC 60695-11-10

Emission / Odor

	I	M	E ¹⁾			
Emission of organic compounds	X			1.2	µg C/g	VDA 277
Thermal desorption analysis of organic emissions	X			1.3	µg/g	VDA 278
Odor test	X	X ²⁾		1.4	class	VDA 270

¹ I=Interior parts, M=Parts in motor compartment, E=Exterior parts

² air-ducting parts with contact to interior

Long term / Aging

	I	M	E ¹⁾			
Thermal stability in air (Charpy at 50% decrease, 3000 h)	X	X	X	200	°C	DIN/IEC 60216-1
Test specimen				unnotched	-	

LTHA - Charpy notched impact strength (23°C): No data available.

Weather stability, ISO 4892-2, Method A

	I	M	E ¹⁾		
Weather stability delta l		X		0.1	- DIN 53236
Weather stability delta a		X		0.2	- DIN 53236
Weather stability delta b		X		0.3	- DIN 53236
Weather stability delta E		X		0.4	- DIN 53236
Weather stability grey scale		X		1	- ISO 105-A02

Light stability, ISO 4892-2, Method B

	I	M	E ¹⁾		
Light stability delta l	X	X		0.1	- DIN 53236
Light stability delta a	X	X		0.2	- DIN 53236
Light stability delta b	X	X		0.3	- DIN 53236
Light stability delta E	X	X		0.4	- DIN 53236
Light stability grey scale	X	X		1-2	- ISO 105-A02

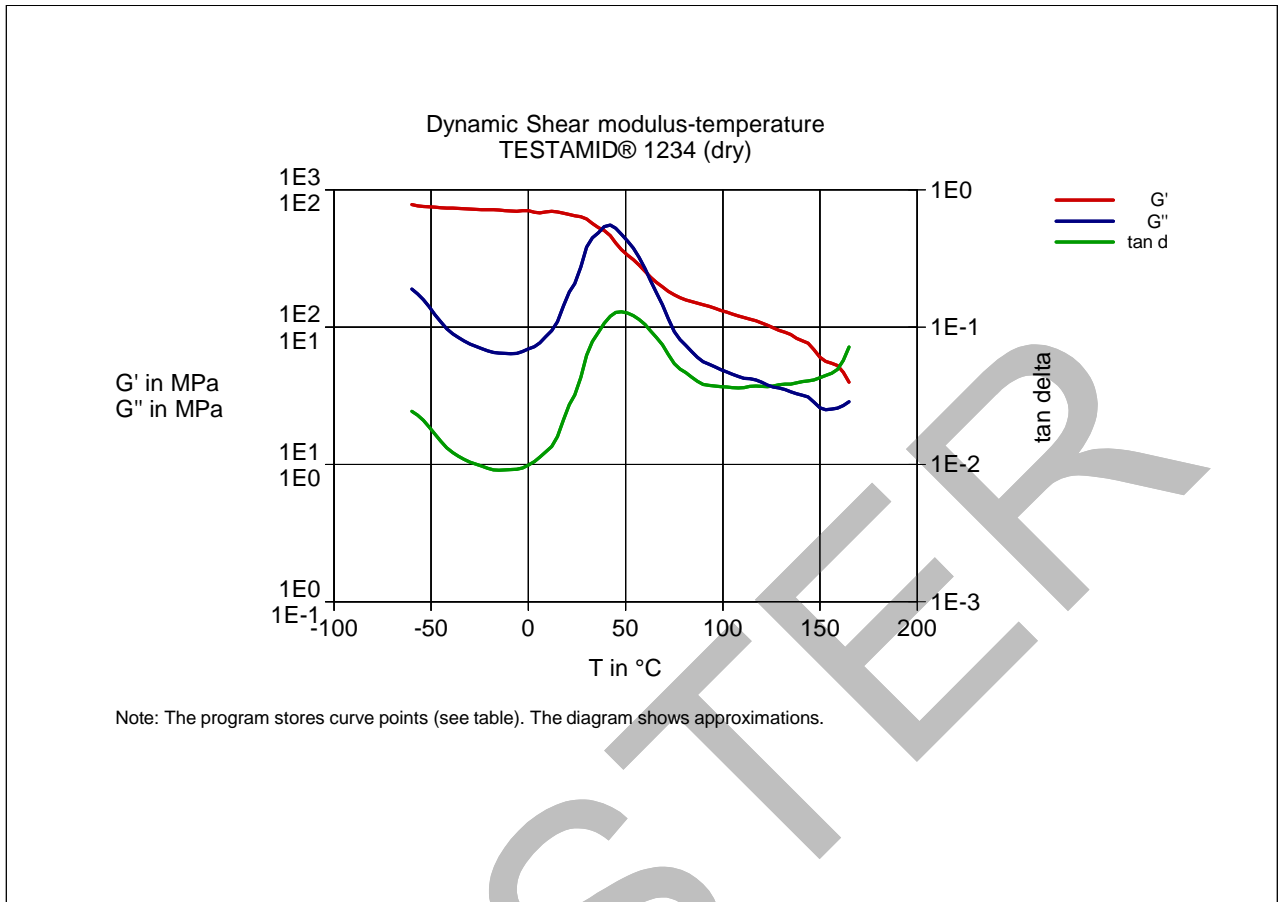
Aging in media (M)¹⁾

Charpy notched impact strength (+23°C) in kJ/m²

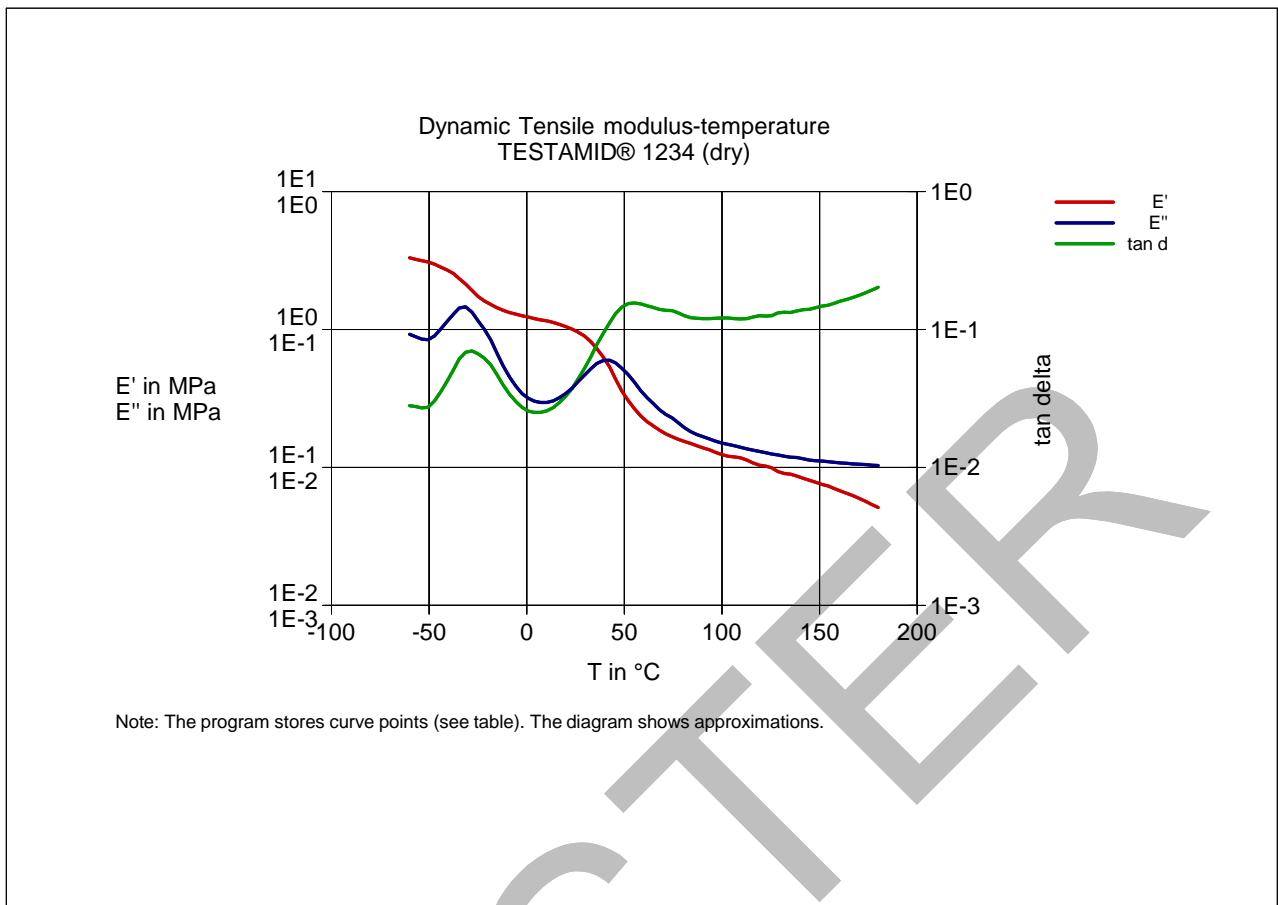
Aging Time	0 h	250 h	500 h	1000 h
ISO 1817 Liquid 2, 85°C	-	-	-	-
Diesel EN 590, 85°C	-	-	-	-
Coolant Glysantin G48, 1:1 in water, 130°C	-	-	-	-
DOT No. 4 Brake fluid, 120°C	-	-	-	-
Motor oil OS206 304 Ref.Eng.Oil, ISP, 140°C	-	-	-	-
Automatic hypoid-gear oil Shell Donax TX, 140°C	110	109	101	95
Hydraulic oil Pentosin CHF 202, 125°C	-	-	-	-

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Dynamic mechanical analysis (I,M,E)¹⁾



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