

ECOMID® B HH GF30 BK 9005/1P - PA6

Description

30% Glass Reinforced, Heat Stabilized, Utility Grade, PA6

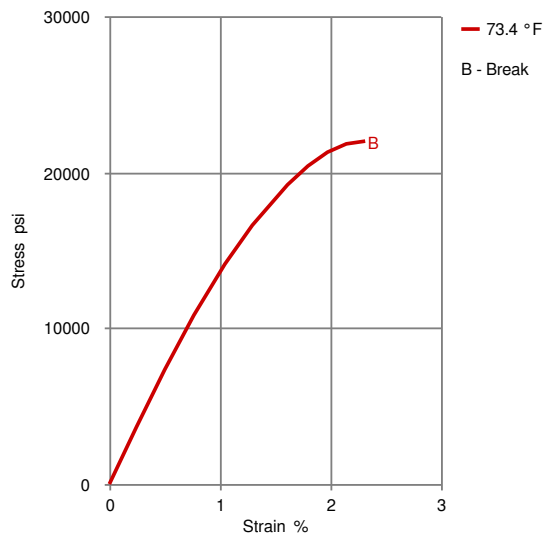
Physical properties	Value	Unit	Test Standard
Density	84.9	lb/ft ³	ISO 1183
Melt volume rate, MVR	40	cm ³ /10min	ISO 1133
MVR temperature	527	°F	ISO 1133
MVR load	11	lb	ISO 1133
Molding shrinkage, parallel (flow)	0.2	%	ISO 294-4, 2577
Molding shrinkage, transverse normal	0.7	%	ISO 294-4, 2577

Mechanical properties	Value	Unit	Test Standard
Tensile modulus	1.45E6/870228	psi	ISO 527-1, -2
Tensile stress at break, 5mm/min	19900/12300	psi	ISO 527-1, -2
Tensile strain at break, 5mm/min	1.8/8	%	ISO 527-1, -2
Poissons ratio	0.39	-	ISO 527-1, -2
Flexural modulus, 23°C	1.23E6/725000	psi	ISO 178
Flexural strength, 23°C	30500/17400	psi	ISO 178
Charpy impact strength, 23°C	23.8/-	ft-lb/in ²	ISO 179/1eU
Charpy notched impact strength, 23°C	2.85/5.71	ft-lb/in ²	ISO 179/1eA
Izod impact notched, 23°C	2.85/-	ft-lb/in ²	ISO 180/1A
Izod impact unnotched, 23°C	19/-	ft-lb/in ²	ISO 180/1U
Rockwell hardness (M-Scale)	95	M-Scale	ISO 2039-2

Thermal properties	Value	Unit	Test Standard
Melting temperature, 20°C/min	428	°F	ISO 11357-1/-3
DTUL at 1.8 MPa	399	°F	ISO 75-1, -2
DTUL at 0.45 MPa	426	°F	ISO 75-1, -2
Flammability @1.6mm nom. thickn.	HB	class	UL 94
CLTE below Tg, parallel	0.121	E-4/°F	ISO 11359-2
Start Temp	-22	°F	ISO 11359-2
End Temp	131	°F	ISO 11359-2
CLTE above Tg, parallel	0.0772	E-4/°F	ISO 11359-2
Start Temp	131	°F	ISO 11359-2
End Temp	302	°F	ISO 11359-2
CLTE below Tg, normal	0.414	E-4/°F	ISO 11359-2
Start Temp	-22	°F	ISO 11359-2
End Temp	131	°F	ISO 11359-2
CLTE above Tg, normal	0.741	E-4/°F	ISO 11359-2
Start Temp	131	°F	ISO 11359-2
End Temp	302	°F	ISO 11359-2

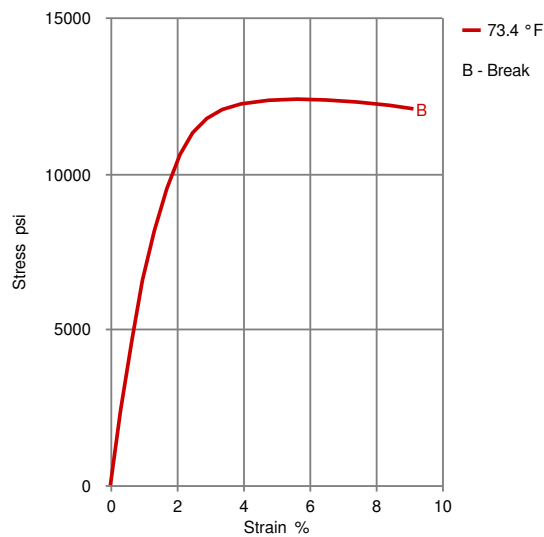
Diagrams

Stress-strain (dry)



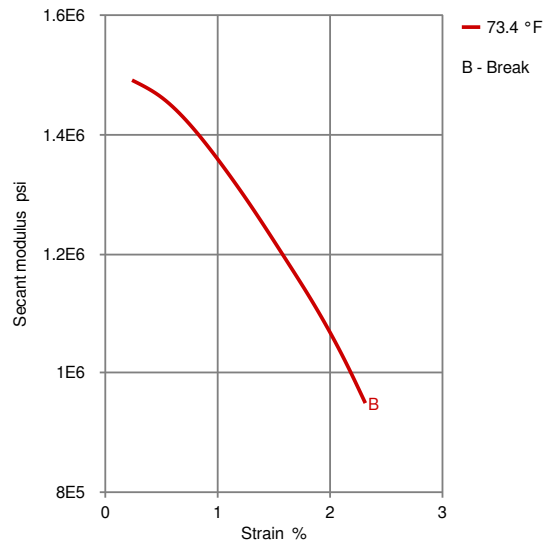
Dry sample dry as molded
Conditioned sample conditioned according to ISO 1110

Stress-strain (cond.)

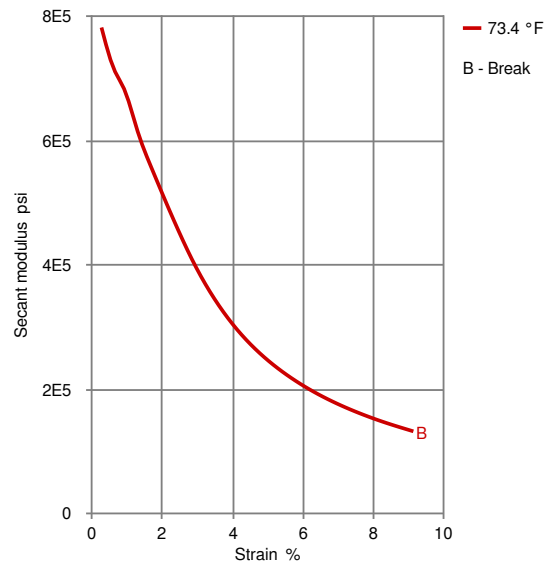


Dry sample dry as molded
Conditioned sample conditioned according to ISO 1110

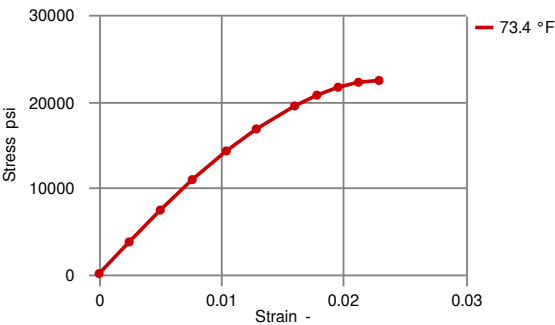
Secant modulus-strain (dry)



Secant modulus-strain (cond.)



True Stress-strain (dry)

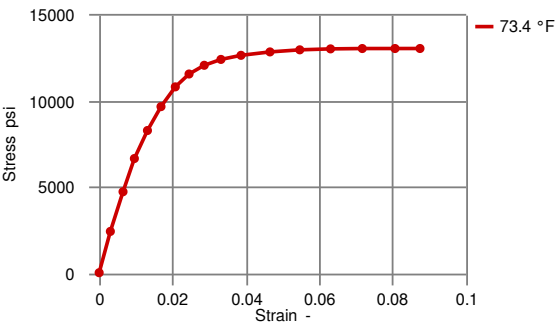


Dry sample dry as molded
23°C dry: No yield

Condition sample conditioned according to ISO 1110
23°C conditioned: Yield at 0.05479 strain, 89.059 stress

Poisson's ratio used is 0.39

True Stress-strain (cond.)

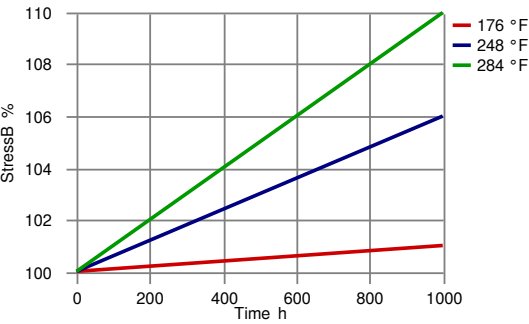


Dry sample dry as molded
23°C dry: No yield

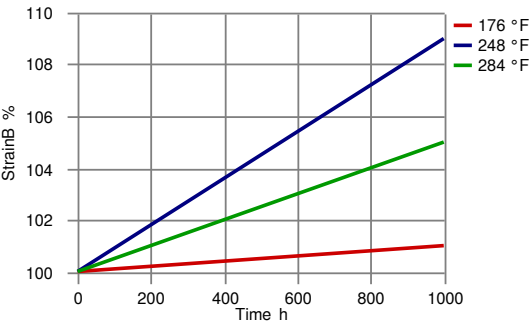
Condition sample conditioned according to ISO 1110
23°C conditioned: Yield at 0.05479 strain, 89.059 stress

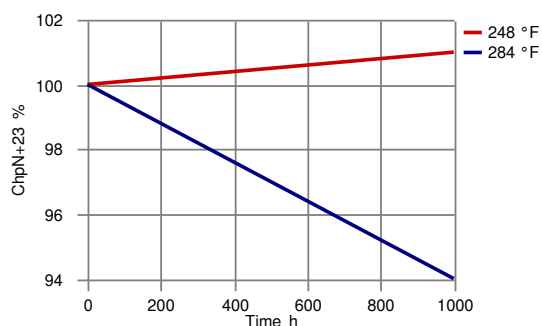
Poisson's ratio used is 0.39

LTHA-Stress at Break Retention 0.16in



LTHA-Strain at Break Retention 0.16in





Typical injection molding processing conditions

Pre Drying	Value	Unit
Necessary low maximum residual moisture content	0.15	%
Drying time	4 - 8	h
Drying temperature	176 - 194	°F
Temperature	Value	Unit
Zone1 temperature	428 - 446	°F
Zone2 temperature	437 - 455	°F
Zone3 temperature	455 - 473	°F
Zone4 temperature	473 - 491	°F
Nozzle temperature	491 - 518	°F
Melt temperature	482 - 518	°F
Mold temperature	140 - 176	°F
Hot runner temperature	491 - 518	°F

Other text information

Injection Molding Postprocessing

PA materials reach their final performance with a water content of about 1.5 to 3.5% by weight, depending on the type. This percentage corresponds to the point of equilibrium between the rates of absorption and desorption of moisture. After molding, in favorable environmental conditions, a part can quickly absorb moisture up to 0.5-1.0%, while the equilibrium will be reached during its life. A conditioning treatment can accelerate further the initial water absorption of the molded parts. Conditioning is usually carried out in hot and humid environment (for example 50 °C, 100% RH), inside climatic chambers. Slight dimensional variations (increase in volume due to the water absorbed) must be considered, especially in unfilled grades. Post-treatments of parts may also include the annealing (60-80 °C in oven, up to four hours). This procedure can be useful to relax any internal stresses.

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Characteristics

Special Characteristics	Heat resistant, Recycled content
Product Categories	Glass reinforced
Processing	Injection molding

Other Approvals

OEM	Specification	Additional Information
VW Group*	VW50134	* best fitting grade to PA6-7-A, not officially approved
VW Group*	VW50125	* best fitting grade to PA6-7, not officially approved

General Disclaimer

NOTICE TO USERS: Values shown are based on testing of laboratory test specimens and represent data that fall within the standard range of properties for natural material. These values alone do not represent a sufficient basis for any part design and are not intended for use in establishing maximum, minimum, or ranges of values for specification purposes. Colorants or other additives may cause significant variations in data values. Properties of molded parts can be influenced by a wide variety of factors including, but not limited to, material selection, additives, part design, processing conditions and environmental exposure. Any determination of the suitability of a particular material and part design for any use contemplated by the users and the manner of such use is the sole responsibility of the users, who must assure themselves that the material as subsequently processed meets the needs of their particular product or use. To the best of our knowledge, the information contained in this publication is accurate; however, we do not assume any liability whatsoever for the accuracy and completeness of such information. The information contained in this publication should not be construed as a promise or guarantee of specific properties of our products. It is the sole responsibility of the users to investigate whether any existing patents are infringed by the use of the materials mentioned in this publication. Moreover, there is a need to reduce human exposure to many materials to the lowest practical limits in view of possible adverse effects. To the extent that any hazards may have been mentioned in this publication, we neither suggest nor guarantee that such hazards are the only ones that exist. We recommend that persons intending to rely on any recommendation or to use any equipment, processing technique or material mentioned in this publication should satisfy themselves that they can meet all applicable safety and health standards. We strongly recommend that users seek and adhere to the manufacturer's current instructions for handling each material they use, and entrust the handling of such material to adequately trained personnel only. Please call the telephone numbers listed for additional technical information. Call Customer Services for the appropriate Materials Safety Data Sheets (MSDS) before attempting to process our products. The products mentioned herein are not intended for use in medical or dental implants.

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