



The Chemical Company

Ultramid® 1503-2 (Dry)
BASF Corporation - Polyamide 66

Friday, July 28, 2006

General Information

Product Description

Ultramid 1503-2 is a 33% glass reinforced, heat stabilized injection molding PA6/6.

General

Material Status	<ul style="list-style-type: none"> Commercial: Active
Availability	<ul style="list-style-type: none"> North America
Test Standards Available	<ul style="list-style-type: none"> ASTM ISO ISO 10350
Filler/Reinforcement	<ul style="list-style-type: none"> Glass fiber reinforcement, 33 % Filler by Weight
Additive	<ul style="list-style-type: none"> Heat Stabilizer
Features	<ul style="list-style-type: none"> Heat Stabilized
Automotive Specifications	<ul style="list-style-type: none"> ASTM D4066 PA012 G35 CHRYSLER MS-DB41 CPN1900 Color: Black CHRYSLER MS-DB41 CPN2008 Color: ND3709 Color as Noted on Drawing CHRYSLER MS-DB41 CPN2043 Color: Natural CHRYSLER MS-DB41 CPN2224 Color: Color as Noted on Drawing DELCO PROD DPM 2804 DELPHI DX300293 Color: Black DELPHI DX300293 Color: Natural DELPHI DX300334 Color: Black DELPHI DX300334 Color: Natural FORD ESB-M4D89-A FORD ESB-M99P22-A2 Color: Black FORD ESE-M4D287-B Color: Black FORD ESE-M4D287-B Color: ND3267 FORD ESE-M4D341-A2 FORD ESH-M4D287-C FORD WSK-M4D663-A Color: Black FORD WSK-M4D663-A Color: Natural GM GMP.PA66.013(N) Color: Black GM GMP.PA66.013(N) Color: Natural GM GMP.PA66.054 Color: Black GM GMP.PA66.054 Color: Natural SAE J1639 PA1116 SAE J1639 PA1166 VALEO VMS-2804 Color: Black VALEO VMS-2804 Color: Natural
Forms	<ul style="list-style-type: none"> Pellets
Processing Method	<ul style="list-style-type: none"> Injection Molding
Multi-Point Data	<ul style="list-style-type: none"> Isothermal Stress vs. Strain (ISO 11403-1) Secant Modulus vs. Strain (ISO 11403-1)

ASTM and ISO Properties ¹

Physical	Nominal Value Unit	Test Method
Density -Specific Gravity	1.40 sp gr 23/23°C	ASTM D792
Density	1.40 g/cm ³	ISO 1183
Mold Shrink, Linear-Flow (0.125 in)	0.0040 in/in	ASTM D955
Water Absorption @ Sat.	5.7 %	ASTM D570
Water Absorption Sat/23C	5.7 %	ISO 62
Water Absorption @ Equil	1.7 %	ASTM D570
Water Absorption 23C/50RH	1.7 %	ISO 62

Mechanical	Nominal Value Unit	Test Method
Tensile Modulus (73 °F)	1.57E+6 psi	ISO 527-1, -2
Tensile Strength @ Break (73 °F)	28000 psi	ASTM D638
Tensile Stress at Break (73 °F)	30500 psi	ISO 527-1, -2
Tensile Elongation @ Brk (73 °F)	3.0 %	ASTM D638
Tensile Strain at Break (73 °F)	3.0 %	ISO 527-1, -2
Flexural Modulus (73 °F)	1.20E+6 psi	ASTM D790
Flexural Modulus (73 °F)	1.44E+6 psi	ISO 178
Flexural Strength (73 °F)	40000 psi	ASTM D790

Impact	Nominal Value Unit	Test Method
Charpy Notched Impact Strength (-22 °F)	5.23 ft-lb/in ²	ISO 179
(73 °F)	5.71 ft-lb/in ²	
Charpy Unnotched Impact Strength (-22 °F)	35.7 ft-lb/in ²	ISO 179
(73 °F)	42.8 ft-lb/in ²	
Notched Izod Impact (73 °F)	2.20 ft-lb/in	ASTM D256
Notched Izod Impact Strength (73 °F)	5.23 ft-lb/in ²	ISO 180

Thermal	Nominal Value Unit	Test Method
DTUL @66psi - Unannealed	567 °F	ASTM D648
HDT B (0.45 MPa) Unannealed	507 °F	ISO 75B-1, -2
DTUL @264psi - Unannealed	485 °F	ASTM D648
HDT A (1.80 MPa) Unannealed	491 °F	ISO 75A-1, -2
Melting Point	495 °F	

ISO 10350 Properties ²

Rheological properties	Nominal Value Unit	Test Method
Molding shrinkage (parallel)	0.40 %	ISO 2577

Mechanical properties 23°C/50%r.h.	Nominal Value Unit	Test Method
Tensile modulus	1.57E+6 psi	ISO 527-1, -2
Stress at break	30000 psi	ISO 527-1, -2
Strain at break	3.0 %	ISO 527-1, -2
Charpy impact strength (+23°C)	42.8 ft-lb/in ²	ISO 179 /1eU
Charpy impact strength (-30°C)	35.7 ft-lb/in ²	ISO 179 /1eU
Charpy notched impact strength (+23°C)	5.71 ft-lb/in ²	ISO 179 /1eA
Charpy notched impact strength (-30°C)	5.23 ft-lb/in ²	ISO 179 /1eA

Thermal properties	Nominal Value Unit	Test Method
Melting temperature (10°C/min)	505 °F	ISO 11357-1, -3
Temp. of deflection under load (1.80 MPa)	491 °F	ISO 75-1, -2
Temp. of deflection under load (0.45 MPa)	507 °F	ISO 75-1, -2

Other properties	Nominal Value Unit	Test Method
Water absorption	5.7 %	ISO 62
Humidity absorption	1.7 %	ISO 62
Density	0.0506 lb/in ³	ISO 1183

Test specimen production	Nominal Value Unit	Test Method
Processing conditions acc. ISO	ISO 1874-2	
Injection Molding, melt temperature	550 °F	ISO 294
Injection Molding, mold temperature	176 °F	ISO 10724
Injection Molding, injection velocity	8 in/sec	ISO 294
Injection Molding, pressure at hold	11600 psi	ISO 294

Processing Information

Injection	Nominal Value	Unit
Drying Temperature	140	°F
Drying Time	1.0 to 2.0	hr
Processing (Melt) Temp	550 to 581	°F
Mold Temperature	140 to 212	°F
Injection Pressure	5080 to 18100	psi
Injection Rate	Fast	
Back Pressure	0.00 to 50.8	psi
Screw Speed	40 to 80	rpm
Screw Compression Ratio	3.0:1.0 to 4.0:1.0	

Notes

¹ Typical properties: these are not to be construed as specifications.

² Typical properties: these are not to be construed as specifications. Additional ISO 10350 data and disclaimer information may be found on ISO 10350 Data Sheet.

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