

Ultramid® 8253

Polyamide 6

BASF Corporation

Message:

Ultramid 8253 is an unreinforced, impact modified type 6 graft copolymer developed for both injection molding and extrusion applications. It is also available in heat stabilized (Ultramid 8253 HS) and/or pigmented versions. Copolymerization results in improved dry as molded toughness and increased flexibility to meet higher impact performance compared to conventional unreinforced homopolymers. Good nylon thermal and chemical properties are maintained along with good strength and stiffness retention.

Applications

Ultramid 8253 is generally recommended for applications such as plugs, receptacles, flexible connector covers, weed trimmer components, clips, fasteners, flanges, key housings as well as many flexible tubing applications.

General Information	
UL YellowCard	E36632-231134
Additive	Impact Modifier
Features	Copolymer
	Good Chemical Resistance
	Good Flexibility
	Good Impact Resistance
	Good Stiffness
	Good Strength
	Good Toughness
	Impact Modified
Uses	Electrical Parts
	Fasteners
	Housings
	Lawn and Garden Equipment
	Plugs
	Protective Coverings
	Tubing
Agency Ratings	EC 1907/2006 (REACH)
RoHS Compliance	RoHS Compliant
Appearance	Colors Available
Forms	Pellets
Processing Method	Extrusion
	Injection Molding
Multi-Point Data	Shear Modulus vs. Temperature (ISO 11403-1)
	Viscosity vs. Shear Rate (ISO 11403-2)

Physical	Dry	Conditioned	Unit	Test Method
Specific Gravity	1.09	--	g/cm ³	ASTM D792, ISO 1183
Molding Shrinkage - Flow (3.18 mm)	1.2	--	%	
Water Absorption				
24 hr	1.5	--	%	ASTM D570
23°C, 24 hr	1.5	--	%	ISO 62
Saturation	8.1	--	%	ASTM D570
Saturation, 23°C	8.1	--	%	ISO 62
Equilibrium, 50% RH	2.3	--	%	ASTM D570
Equilibrium, 23°C, 50% RH	2.3	--	%	ISO 62
Hardness	Dry	Conditioned	Unit	Test Method
Rockwell Hardness (R-Scale)	82	--		ASTM D785
Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Modulus				ISO 527-2
-40°C	2840	3300	MPa	
23°C	2300	730	MPa	
80°C	400	370	MPa	
121°C	295	220	MPa	
Tensile Strength				
Yield, -40°C	117	116	MPa	ASTM D638, ISO 527-2
Yield, 23°C	65.0	32.0	MPa	ASTM D638
Yield, 80°C	25.0	20.0	MPa	ASTM D638, ISO 527-2
Yield, 121°C	20.0	--	MPa	ASTM D638, ISO 527-2
Yield, 23°C	60.0	32.0	MPa	ISO 527-2
Break, -40°C	100	70.0	MPa	ASTM D638
Break, 23°C	60.0	--	MPa	ASTM D638
Tensile Elongation				
Yield, -40°C	7.0	--	%	ASTM D638
Yield, 23°C	4.0	15	%	ASTM D638, ISO 527-2
Yield, 80°C	29	--	%	ASTM D638
Yield, 121°C	34	30	%	ASTM D638
Break, -40°C	9.0	20	%	ASTM D638
Break, 23°C	> 100	> 100	%	ASTM D638
Nominal Tensile Strain at Break (23°C)	40	> 50	%	ISO 527-2
Flexural Modulus				
-40°C	3050	3150	MPa	ASTM D790
23°C	2210	670	MPa	ASTM D790
65°C	415	--	MPa	ASTM D790
90°C	325	--	MPa	ASTM D790

121°C	260	--	MPa	ASTM D790
23°C	1900	--	MPa	ISO 178
Flexural Strength				
-40°C	148	141	MPa	ASTM D790
23°C	87.0	32.0	MPa	ASTM D790
65°C	25.0	--	MPa	ASTM D790
90°C	20.0	--	MPa	ASTM D790
121°C	14.0	--	MPa	ASTM D790
23°C	65.0	--	MPa	ISO 178
Impact	Dry	Conditioned	Unit	Test Method
Charpy Notched Impact Strength				ISO 179
-30°C	5.0	--	kJ/m ²	
23°C	18	--	kJ/m ²	
Charpy Unnotched Impact Strength (23°C)	No Break	--		ISO 179
Notched Izod Impact				ASTM D256
-40°C	80	64	J/m	
23°C	150 J/m	No Break		
Drop Impact Resistance (23°C)	271	--	J	Internal Method
Thermal	Dry	Conditioned	Unit	Test Method
Deflection Temperature Under Load				
0.45 MPa, Unannealed	168	--	°C	ASTM D648
1.8 MPa, Unannealed	60.0	--	°C	ASTM D648
1.8 MPa, Unannealed	55.0	--	°C	ISO 75-2/A
Peak Melting Temperature	220	--	°C	ASTM D3418, ISO 3146
CLTE				
Flow	9.9E-5	--	cm/cm/°C	ASTM E831
Flow	8.8E-5	--	cm/cm/°C	
Transverse	9.3E-5	--	cm/cm/°C	
RTI Elec				UL 746
0.710 mm	105	--	°C	
0.750 mm	105	--	°C	
1.50 mm	105	--	°C	
3.00 mm	105	--	°C	
6.00 mm	105	--	°C	
RTI Imp				UL 746
1.50 mm	75.0	--	°C	
3.00 mm	75.0	--	°C	
6.00 mm	75.0	--	°C	
RTI Str				UL 746

1.50 mm	85.0	--	°C	
3.00 mm	85.0	--	°C	
6.00 mm	85.0	--	°C	
Electrical	Dry	Conditioned	Unit	Test Method
Volume Resistivity				
1.50 mm	> 1.0E+13	--	ohms·cm	ASTM D257
--	> 1.0E+13	--	ohms·cm	IEC 60093
Comparative Tracking Index	600	--	V	IEC 60112
Flammability	Dry	Conditioned	Unit	Test Method
Flame Rating				UL 94
0.750 mm	HB	--		
1.50 mm	HB	--		
3.00 mm	HB	--		
6.00 mm	HB	--		
Injection	Dry	Unit		
Drying Temperature	80.0		°C	
Drying Time	2.0 to 4.0		hr	
Suggested Max Moisture	0.20		%	
Processing (Melt) Temp	240 to 270		°C	
Mold Temperature	60.0 to 85.0		°C	
Injection Pressure	3.50 to 12.5		MPa	
Injection Rate	Fast			

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Recommended distributors for this material

Susheng Import & Export Trading Co.,Ltd.

Tel: +86 21 5895 8519

Phone: +86 13424755533

Email: sales@su-jiao.com

No. 215, Lianhe North Road, Fengxian District, Shanghai, China

