

Physical Properties				Type	High-Modulus					Mid-Modulus		Low Modulus				Opaque				
				Grade	RT18 (RT18XB)	RT31 (RT31XB)	DX845	DX820	DX231	MX004	DX324	MX002	MX002O	MX001	DX310	DX820M	DX560M	MLL411	MBZ230(A)	
	List	Methodology	Measured Condition / Sample Condition	Unit																
Basic Properties	Density	MCI Method	Density Gradient Method / Pellets	kg/m ³	833	833	833	832	832	833	833	834	834	834	834	840	856	834	1100	
	MFR	MCI Method	Applied Force= 5kgf, 260oC / Pellets	g/10 min	26	21	9	180	100	25	25	21	21	27	100	220	33	20	57	
	Melting point	MCI Method	DSC Method / Pellets	°C	232	232	232	233	232	228	227	224	224	223	224	233	222	222	232	
	Water asorption	ISO 62	Test Piece (1mm)	%	≤0.01	≤0.01	≤0.01	≤0.01	0.01	≤0.01	0.01	≤0.01	≤0.01	0.01	0.01	≤0.01	0.04	≤0.01	0.05	
Thermal Properties	Vicat Softening Temperature	ISO 306	Heat Speed: 50oC/hour Applied Load: 10N / Test Piece (4mm)	°C	167	167	167	171	179	161	162	151	149	147	144	140	87	141	169	
	Heat Distortion Temperature	ISO 75	Heat Speed: 120oC/hour Applied Stress: 0.45MPa / Test Piece (4mm)	°C	86	90	93	86	90	80	79	74	72	72	75	85	53	69	91	
	Coefficient of Linear Expansion	ISO 11359-1	Measured Range: -50~150°C Heat Speed5°C/min / Test Piece (4mm)	°C ⁻¹ (x10 ⁻⁴)	1.31	—(※1)	1.72	1.03	—(※1)	1.44	—(※1)	1.53	—(※1)	—(※1)	—(※1)	—(※1)	—(※1)	—(※1)	—(※1)	
Mechanical Properties	Yield Stress	ISO527	Cross Head Speed : 5mm/min / Test Piece (4mm)	MPa	23	24	24	—(※2)	26	18	19	14	14	14	15	—(※2)	—(※2)	9	22	
			Cross Head Speed : 50mm/min / Test Piece (4mm)	MPa	28	29	28	—(※2)	—(※2)	23	22	18	18	18	18	18	—(※2)	7	12	26
	Fractured Stress		Cross Head Speed : 5mm/min / Test Piece (4mm)	MPa	15	17	16	25	26	12	13	12	11	12	11	23	8	11	—(※2)	
			Cross Head Speed : 50mm/min / Test Piece (4mm)	MPa	—(※2)	—(※2)	—(※2)	29	31	—(※2)	—(※2)	10	11	11	10	27	8	12	—(※2)	
	Fractured Strain		Cross Head Speed : 5mm/min / Test Piece (4mm)	%	67	60	83	3	5	155	80	226	189	211	230	3	319	221	29	
			Cross Head Speed : 50mm/min / Test Piece (4mm)	%	32	27	29	3	5	29	31	37	45	46	38	3	238	166	21	
	Tensile Modulus			Cross Head Speed : 1mm/min / Test Piece (4mm)	MPa	1350	1350	1480	1630	1490	770	690	430	510	490	520	1390	170	250	1720
	Flexural Modulus		ISO178	Cross Head Speed : 1mm/min / Test Piece (4mm)	MPa	1530	1530	1520	1600	1550	810	750	530	540	530	550	1450	190	250	1910
	Flexural Strength			MPa	37	40	40	43	41	26	24	18	19	19	20	38	6	10	41	
	Izod Impact Strength		ISO180 (Part MCI Method)	Injection Molded Specimen (Machined Notch) / Test Piece (4mm)	kJ/m ²	2	2	3	2	1	1	1	2	3	2	1	1	NB	NB	9(※3)
Injection Molded Specimen (w/o Notch)/Test Piece (4mm)		kJ/m ²		7	6	7	6	6	14	23(※4)	NB	NB	NB	24(※4)	7	NB	NB	30(※4)		
Rockwell Hardness	ISO2039	HRR Scale	—	80	78	78	94	90	59	55	29	38	37	45	84	—(※2)	—(※2)	73		
Optical Properties	Haze	ISO14782	Light Source : D65 / Test Piece(2mm)	%	2.4	2.4	2.8	3.7	3.6	2.5	2.3	2.3	1.6	1.8	2.2	—(※1)	—(※1)	—(※1)	—(※1)	
	Internal Haze		%	93.0	93.0	93.0	92.0	92.0	93.0	92.0	92.0	92.0	93.0	92.0	92.0	—(※1)	—(※1)	—(※1)	—(※1)	
	Refractive Index	ISO489	Light Source : D Line/ Test Piece(2mm)	—	1.462	1.462	1.463	1.462	1.462	1.463	1.463	1.463	1.463	1.463	1.463	—(※1)	—(※1)	—(※1)	—(※1)	
Electrical Properties	Volume Resitivity	IEC60093	Injection Molded Specimen (2mm thick)	Ω ·cm	>10 ¹⁶	>10 ¹⁶	>10 ¹⁶	>10 ¹⁶	>10 ¹⁶	>10 ¹⁶	>10 ¹⁶	>10 ¹⁶	>10 ¹⁶	>10 ¹⁶	>10 ¹⁶	>10 ¹⁶	>10 ¹⁶	>10 ¹⁶		
	Dielectric Breakdown Voltage	IEC60243-1	Injection Molded Specimen (2mm thick)	kV/mm	30	29	28	31	31	30	28	29	29	28	30	31	30	29	27	
	Relative Dielectric Constant	IEC60250	1MHz /Injection Mold Specimen (2mm thick)	—	2.15	2.12	2.16	2.13	2.12	2.17	2.13	2.19	2.12	2.12	2.12	2.13	2.16	2.12	2.37	
Moldability	Spiral Flow	MCI Method	310°C~320°C Mold Tempeture73°C	cm	51	51	50			53		56	56					48		
	Mold Shrinkagee	MCI Method	Injection Molded Specimen (2mm thick) MD	%	1.6	1.6	1.5			1.7		1.6	1.6					1.5		
			Injection Molded Specimen (2mm thick) TD	%	1.3	1.3	1.4			1.4		1.3	1.3						1.1	
Processing Method	Injection Molding			◎	◎	○	○	○	◎		◎	◎	◎			○		◎		
	Extrusion-Coating						◎	◎			○			◎	◎					
	Extrusion-T-Die Casting	◎:Recommended		○	○	◎			◎		◎	◎	◎			○				
	Extrusion-Profile type, Mandrel, Pipe	○:Applicable		○	○	○			◎	◎	◎	○				◎	◎			
	Extrusion-Fiber Spinning			○	○	○	○	◎		○		○	○							
	Direct Blow Molding					○				○		○	○			○				

Note1 : Figures shown here are representative values but not specified values.

Note2~XB Types are Blue Tint Grade

※1,2 Not Measured / Not Detective

※3 Partially Break

※4 Representative Values due to not specified hammer