

# Oupital

Properties	Test Method	Terms	Units	Standard	Lubricant	Lubricant
				F20 - 18	FX - 18J	WA-18H
				Medium Viscosity		
Percentage of filler and reinforcing material	-	-	-			
	-	-	%			
<b>Physical properties</b>						
Density	ISO 1183	-	g/cm <sup>3</sup>	<b>1.41</b>	<b>1.39</b>	<b>1.39</b>
Water absorption	-	23degC, Underwater	%	<b>0.22</b>	<b>0.22</b>	<b>0.22</b>
<b>Rheological properties</b>						
Melt Mass-flow Rate	ISO 1133	Temperature Load	g/10min	<b>9.0</b>	<b>53</b>	<b>29</b>
Melt Volume-flow Rate			cm <sup>3</sup> /10min	<b>7.7</b>	<b>46</b>	<b>25</b>
			degC	<b>190</b>	<b>190</b>	<b>190</b>
			kg	<b>2.16</b>	<b>2.16</b>	<b>2.16</b>
Moulding shrinkage(1mmt)	-	MD TD	%			
Moulding shrinkage(3mmt)	-	MD TD	%	<b>2.0</b> -	<b>2.1</b> -	<b>2.1</b> -
<b>Mechanical properties</b>						
Tensile modulus	ISO 527-1 , 527-2	-	MPa	<b>2900</b>	<b>2700</b>	<b>2900</b>
Yield stress			<b>64</b>	<b>55</b>	<b>58</b>	
Yield strain			%	<b>8.5</b>	<b>7.5</b>	<b>8.0</b>
Nominal strain at break			<b>30</b>	<b>25</b>	<b>21</b>	
Stress at 50% strain			MPa	-	-	-
Stress at break			%	-	-	-
Strain at break						
Flexural strength	ISO 178	-	MPa	<b>90</b>	<b>81</b>	<b>89</b>
Flexural modulus				<b>2600</b>	<b>2500</b>	<b>2800</b>
Charpy impact strength	ISO 179-1 , 179-2	23 degC	kJ/m <sup>2</sup>	<b>250</b>	<b>100</b>	<b>150</b>
Charpy notched impact strength		23 degC	kJ/m <sup>2</sup>	<b>7.0</b>	<b>5.0</b>	<b>5.0</b>
<b>Thermal properties</b>						
Melting temperature	ISO 11357-3		degC	<b>166</b>	<b>166</b>	<b>170</b>
Temperature of deflection under load	ISO 75-1 , 75-2	1.80MPa 0.45MPa	degC	<b>105</b> <b>156</b>	<b>95</b> <b>156</b>	<b>100</b> -
Coefficient of Linear thermal expansion	ISO 11359-2	MD TD	1/degC	<b>1.1E-04</b> <b>1.1E-04</b>	<b>1.1E-04</b> <b>1.1E-04</b>	<b>1.1E-04</b> <b>1.1E-04</b>
Flammability	UL94	0.8mmt	-	<b>HB</b>	<b>HB</b>	<b>HB</b>
<b>Electrical properties</b>						
Relative permittivity	IEC 60250	1MHz	-	<b>3.9</b>	-	-
Dissipation factor	IEC 60250	1MHz	-	<b>0.007</b>	-	-
Volume resistivity	IEC 60093	-	ohm-m	<b>1.E+12</b>	<b>1.E+12</b>	<b>1.E+12</b>
Surface resistivity	IEC 60093	-	ohm	<b>1.E+16</b>	<b>1.E+16</b>	<b>1.E+16</b>
Electric strength	IEC 60243-1	1mmt	MV/m	<b>32</b>	<b>36</b>	-
		2mmt		<b>19</b>	<b>19</b>	-
		3mmt		<b>19</b>	<b>19</b>	-
Comparative tracking index	IEC 60112	-	-	<b>600</b>	<b>600</b>	-

The listed properties are portrayed as general information only and are not product specifications.

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