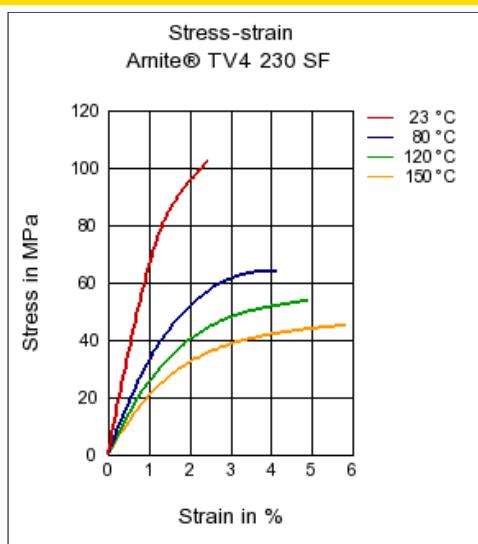


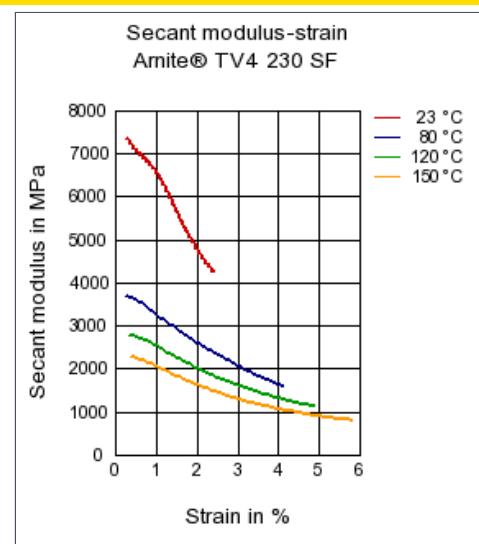
Arnite® TV4 230 SF																																																																			
PBT-GF15 FR(17)	DSM Engineering Plastics																																																																		
Product Texts																																																																			
15% Glass Reinforced, Flame Retardant, High Flow																																																																			
ISO 1043 PBT-GF15 FR(17)																																																																			
Arnite website																																																																			
<table border="1"> <thead> <tr> <th>Mechanical properties</th><th>Value</th><th>Unit</th><th>Test Standard</th></tr> </thead> <tbody> <tr> <td colspan="4">ISO Data</td></tr> <tr> <td>Tensile Modulus</td><td>7000</td><td>MPa</td><td>ISO 527-1/-2</td></tr> <tr> <td>Stress at break</td><td>95</td><td>MPa</td><td>ISO 527-1/-2</td></tr> <tr> <td>Strain at break</td><td>2.5</td><td>%</td><td>ISO 527-1/-2</td></tr> <tr> <td>Charpy impact strength (+23°C)</td><td>40</td><td>kJ/m²</td><td>ISO 179/1eU</td></tr> <tr> <td>Charpy impact strength, -30°C</td><td>40</td><td>kJ/m²</td><td>ISO 179/1eU</td></tr> <tr> <td>Charpy notched impact strength (+23°C)</td><td>6</td><td>kJ/m²</td><td>ISO 179/1eA</td></tr> <tr> <td>Charpy notched impact strength, -30°C</td><td>6</td><td>kJ/m²</td><td>ISO 179/1eA</td></tr> </tbody> </table>				Mechanical properties	Value	Unit	Test Standard	ISO Data				Tensile Modulus	7000	MPa	ISO 527-1/-2	Stress at break	95	MPa	ISO 527-1/-2	Strain at break	2.5	%	ISO 527-1/-2	Charpy impact strength (+23°C)	40	kJ/m ²	ISO 179/1eU	Charpy impact strength, -30°C	40	kJ/m ²	ISO 179/1eU	Charpy notched impact strength (+23°C)	6	kJ/m ²	ISO 179/1eA	Charpy notched impact strength, -30°C	6	kJ/m ²	ISO 179/1eA																												
Mechanical properties	Value	Unit	Test Standard																																																																
ISO Data																																																																			
Tensile Modulus	7000	MPa	ISO 527-1/-2																																																																
Stress at break	95	MPa	ISO 527-1/-2																																																																
Strain at break	2.5	%	ISO 527-1/-2																																																																
Charpy impact strength (+23°C)	40	kJ/m ²	ISO 179/1eU																																																																
Charpy impact strength, -30°C	40	kJ/m ²	ISO 179/1eU																																																																
Charpy notched impact strength (+23°C)	6	kJ/m ²	ISO 179/1eA																																																																
Charpy notched impact strength, -30°C	6	kJ/m ²	ISO 179/1eA																																																																
<table border="1"> <thead> <tr> <th>Thermal properties</th><th>Value</th><th>Unit</th><th>Test Standard</th></tr> </thead> <tbody> <tr> <td colspan="4">ISO Data</td></tr> <tr> <td>Melting temperature (10°C/min)</td><td>225</td><td>°C</td><td>ISO 11357-1/-3</td></tr> <tr> <td>Temp. of deflection under load (1.80 MPa)</td><td>190</td><td>°C</td><td>ISO 75-1/-2</td></tr> <tr> <td>Temp. of deflection under load (0.45 MPa)</td><td>215</td><td>°C</td><td>ISO 75-1/-2</td></tr> <tr> <td>Coeff. of linear therm. expansion, parallel</td><td>50</td><td>E-6/K</td><td>ISO 11359-1/-2</td></tr> <tr> <td>Coeff. of linear therm. expansion, normal</td><td>80</td><td>E-6/K</td><td>ISO 11359-1/-2</td></tr> <tr> <td>Burning behav. at 1.5 mm nom. thickn.</td><td>V-0</td><td>class</td><td>IEC 60695-11-10</td></tr> <tr> <td>Thickness tested</td><td>1.5</td><td>mm</td><td>IEC 60695-11-10</td></tr> <tr> <td>UL recognition</td><td>UL</td><td>-</td><td>-</td></tr> <tr> <td>Burning behav. at thickness h</td><td>V-0</td><td>class</td><td>IEC 60695-11-10</td></tr> <tr> <td>Thickness tested</td><td>0.8</td><td>mm</td><td>IEC 60695-11-10</td></tr> <tr> <td>UL recognition</td><td>UL</td><td>-</td><td>-</td></tr> <tr> <td>Burning behav. 5V at thickness h</td><td>5VB</td><td>class</td><td>IEC 60695-11-20</td></tr> <tr> <td>Thickness tested</td><td>1.5</td><td>mm</td><td>IEC 60695-11-20</td></tr> <tr> <td>UL recognition</td><td>UL</td><td>-</td><td>-</td></tr> </tbody> </table>				Thermal properties	Value	Unit	Test Standard	ISO Data				Melting temperature (10°C/min)	225	°C	ISO 11357-1/-3	Temp. of deflection under load (1.80 MPa)	190	°C	ISO 75-1/-2	Temp. of deflection under load (0.45 MPa)	215	°C	ISO 75-1/-2	Coeff. of linear therm. expansion, parallel	50	E-6/K	ISO 11359-1/-2	Coeff. of linear therm. expansion, normal	80	E-6/K	ISO 11359-1/-2	Burning behav. at 1.5 mm nom. thickn.	V-0	class	IEC 60695-11-10	Thickness tested	1.5	mm	IEC 60695-11-10	UL recognition	UL	-	-	Burning behav. at thickness h	V-0	class	IEC 60695-11-10	Thickness tested	0.8	mm	IEC 60695-11-10	UL recognition	UL	-	-	Burning behav. 5V at thickness h	5VB	class	IEC 60695-11-20	Thickness tested	1.5	mm	IEC 60695-11-20	UL recognition	UL	-	-
Thermal properties	Value	Unit	Test Standard																																																																
ISO Data																																																																			
Melting temperature (10°C/min)	225	°C	ISO 11357-1/-3																																																																
Temp. of deflection under load (1.80 MPa)	190	°C	ISO 75-1/-2																																																																
Temp. of deflection under load (0.45 MPa)	215	°C	ISO 75-1/-2																																																																
Coeff. of linear therm. expansion, parallel	50	E-6/K	ISO 11359-1/-2																																																																
Coeff. of linear therm. expansion, normal	80	E-6/K	ISO 11359-1/-2																																																																
Burning behav. at 1.5 mm nom. thickn.	V-0	class	IEC 60695-11-10																																																																
Thickness tested	1.5	mm	IEC 60695-11-10																																																																
UL recognition	UL	-	-																																																																
Burning behav. at thickness h	V-0	class	IEC 60695-11-10																																																																
Thickness tested	0.8	mm	IEC 60695-11-10																																																																
UL recognition	UL	-	-																																																																
Burning behav. 5V at thickness h	5VB	class	IEC 60695-11-20																																																																
Thickness tested	1.5	mm	IEC 60695-11-20																																																																
UL recognition	UL	-	-																																																																
<table border="1"> <thead> <tr> <th>Electrical properties</th><th>Value</th><th>Unit</th><th>Test Standard</th></tr> </thead> <tbody> <tr> <td colspan="4">ISO Data</td></tr> <tr> <td>Relative permittivity, 100Hz</td><td>3.7</td><td>-</td><td>IEC 60250</td></tr> <tr> <td>Relative permittivity, 1MHz</td><td>3.5</td><td>-</td><td>IEC 60250</td></tr> <tr> <td>Dissipation factor, 100Hz</td><td>25</td><td>E-4</td><td>IEC 60250</td></tr> <tr> <td>Dissipation factor, 1MHz</td><td>140</td><td>E-4</td><td>IEC 60250</td></tr> <tr> <td>Volume resistivity</td><td>>1E13</td><td>Ohm*m</td><td>IEC 60093</td></tr> <tr> <td>Electric strength</td><td>28</td><td>kV/mm</td><td>IEC 60243-1</td></tr> <tr> <td>Comparative tracking index</td><td>250</td><td>-</td><td>IEC 60112</td></tr> </tbody> </table>				Electrical properties	Value	Unit	Test Standard	ISO Data				Relative permittivity, 100Hz	3.7	-	IEC 60250	Relative permittivity, 1MHz	3.5	-	IEC 60250	Dissipation factor, 100Hz	25	E-4	IEC 60250	Dissipation factor, 1MHz	140	E-4	IEC 60250	Volume resistivity	>1E13	Ohm*m	IEC 60093	Electric strength	28	kV/mm	IEC 60243-1	Comparative tracking index	250	-	IEC 60112																												
Electrical properties	Value	Unit	Test Standard																																																																
ISO Data																																																																			
Relative permittivity, 100Hz	3.7	-	IEC 60250																																																																
Relative permittivity, 1MHz	3.5	-	IEC 60250																																																																
Dissipation factor, 100Hz	25	E-4	IEC 60250																																																																
Dissipation factor, 1MHz	140	E-4	IEC 60250																																																																
Volume resistivity	>1E13	Ohm*m	IEC 60093																																																																
Electric strength	28	kV/mm	IEC 60243-1																																																																
Comparative tracking index	250	-	IEC 60112																																																																
<table border="1"> <thead> <tr> <th>Other properties</th><th>Value</th><th>Unit</th><th>Test Standard</th></tr> </thead> <tbody> <tr> <td colspan="4">ISO Data</td></tr> <tr> <td>Water absorption</td><td>0.3</td><td>%</td><td>Sim. to ISO 62</td></tr> <tr> <td>Humidity absorption</td><td>0.15</td><td>%</td><td>Sim. to ISO 62</td></tr> <tr> <td>Density</td><td>1560</td><td>kg/m³</td><td>ISO 1183</td></tr> </tbody> </table>				Other properties	Value	Unit	Test Standard	ISO Data				Water absorption	0.3	%	Sim. to ISO 62	Humidity absorption	0.15	%	Sim. to ISO 62	Density	1560	kg/m ³	ISO 1183																																												
Other properties	Value	Unit	Test Standard																																																																
ISO Data																																																																			
Water absorption	0.3	%	Sim. to ISO 62																																																																
Humidity absorption	0.15	%	Sim. to ISO 62																																																																
Density	1560	kg/m ³	ISO 1183																																																																

Diagrams

Stress-strain



Secant modulus-strain



Characteristics

Processing

Injection Molding

Additives

Release agent

Delivery form

Pellets

Special Characteristics

Flame retardant

Other text information

Injection Molding

[Injection Molding Recommendations](#)