Arkema Group VOLTALEF® 302 PCTFE

Category : Polymer , Thermoplastic , Fluoropolymer , Polychlorotrifluoroethylene (PCTFE); Molded

Material Notes:

VOLTALEF® 302 is a chlorotrifluoroethylene dense powder. Used in particular for compression molding, non-flammable. Information provided by Arkema Group

Order this product through the following link:
http://www.lookpolymers.com/polymer_Arkema-Group-VOLTALEF-302-PCTFE.php

Physical Properties	Metric	English	Comments
Density	2.11 - 2.16 g/cc	0.0762 - 0.0780 lb/in³	ASTM D1050-68
Apparent Bulk Density	1.00 g/cc	0.0361 lb/in³	
Particle Size	700 µm	700 µm	
Deformation	1.0 %	1.0 %	7 MPa load for 24 hrs at 25°C; ASTM D621
	2.5 %	2.5 %	7 MPa load for 24 hrs at 70°C; ASTM D621
	12 %	12 %	7 MPa load for 24 hrs at 125°C; ASTM D621

Mechanical Properties	Metric	English	Comments
Hardness, H358/30	80.0 MPa	11600 psi	DIN 53456
Hardness, Shore D	75 - 90	75 - 90	ASTM D676
Tensile Strength, Ultimate	32.0 - 40.0 MPa	4640 - 5800 psi	ASTM D638
	13.0 - 16.0 MPa @Temperature 120 °C	1890 - 2320 psi @Temperature 248 °F	ASTM D638
Tensile Strength, Yield	34.0 - 50.0 MPa	4930 - 7250 psi	ASTM D638
	3.00 - 6.00 MPa @Temperature 120 °C	435 - 870 psi @Temperature 248 °F	ASTM D638
Elongation at Break	100 - 250 %	100 - 250 %	ASTM D638
Tensile Modulus	1.40 GPa	203 ksi	ASTM D638
Flexural Modulus	1.40 GPa	203 ksi	ASTM D790-80
Compressive Yield Strength	11.0 - 14.0 MPa	1600 - 2030 psi	1% deformation; ISO 604
	40.0 - 45.0 MPa	5800 - 6530 psi	0.2% off set; ISO 604

Mechanical Properties	Metric	English	Comments
Compressive Modulus	1.40 GPa	203 ksi	ASTM D638
Izod Impact, Notched	0.800 J/cm	1.50 ft-lb/in	ASTM D256-81
Coefficient of Friction	0.26 - 0.45	0.26 - 0.45	on polished steel

Thermal Properties	Metric	English	Comments
CTE, linear	55.0 µm/m-°C @Temperature -80.0 - 70.0 °C	30.6 µin/in-°F @Temperature -112 - 158 °F	ASTM D686-79
	250 µm/m-°C @Temperature 70.0 - 150 °C	139 µin/in-°F @Temperature 158 - 302 °F	ASTM D686-79
Specific Heat Capacity	0.900 J/g-°C	0.215 BTU/lb-°F	
Thermal Conductivity	0.135 W/m-K	0.937 BTU-in/hr-ft²-°F	F 433
Maximum Service Temperature, Air	150 °C	302 °F	continuous service
	200 °C	392 °F	peak
Oxygen Index	100 %	100 %	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	1.20e+18 ohm-cm	1.20e+18 ohm-cm	ASTM D257-78
Dielectric Constant	2.4 - 3.0 @Frequency 100 - 1.00e+8 Hz	2.4 - 3.0 @Frequency 100 - 1.00e+8 Hz	ASTM D150
Dielectric Strength	15.0 kV/mm @Thickness 3.20 mm	381 kV/in @Thickness 0.126 in	stepwise tension increase; ASTM D149-75
	21.0 kV/mm @Thickness 1.60 mm	533 kV/in @Thickness 0.0630 in	continuous tension; ASTM D149-75
	48.0 kV/mm @Thickness 0.760 mm	1220 kV/in @Thickness 0.0299 in	stepwise tension increase; ASTM D149-75
	200 kV/mm @Thickness 0.130 mm	5080 kV/in @Thickness 0.00512 in	stepwise tension increase; ASTM D149-75
Arc Resistance	360 sec	360 sec	ASTM D495-73

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