

Momentive Performance Materials Type 214 Fused Quartz Tubing

Category : Ceramic , Glass , Oxide , Silicon Oxide

Material Notes:

Used for clear fused quartz lamp tubing. GE 214 is a high purity, high transmittance, high temperature material with a low hydroxyl (OH-) content. It is suitable for a broad range of mercury, halogen, and other quartz lamp applications. Softening point 1683°C. Annealing point 1215°C. Strain point 1120°C. Data provided by GE Quartz. GE Quartz became a part of Momentive Performance Materials in 2006.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Momentive-Performance-Materials-Type-214-Fused-Quartz-Tubing.php

| Physical Properties | Metric | English | Comments |
|---------------------|-------------------------|---------------------------|----------|
| Density | 2.20 g/cc | 0.0795 lb/in ³ | |
| Viscosity | 7.60e+14 cP | 7.60e+14 cP | |
| | @Temperature 1100 °C | @Temperature 2010 °F | |

| Mechanical Properties | Metric | English | Comments |
|----------------------------|-------------|---------------|--|
| Knoop Microhardness | 570 | 570 | kg/mm ² |
| Hardness, Mohs | 5.5 - 6.0 | 5.5 - 6.0 | |
| Tensile Strength, Ultimate | 48.0 MPa | 6960 psi | design tensile strength |
| Modulus of Elasticity | 72.0 GPa | 10400 ksi | Young's Modulus |
| Compressive Strength | >= 1100 MPa | >= 160000 psi | Lower limit of design compressive strength |
| Poissons Ratio | 0.17 | 0.17 | |
| Shear Modulus | 31.0 GPa | 4500 ksi | |

| Thermal Properties | Metric | English | Comments |
|--------------------|--------------------------|--------------------------|----------|
| CTE, linear | 0.400 Åµm/m-Å°C | 0.222 Åµin/in-Å°F | |
| | @Temperature 20.0 Å°C | @Temperature 68.0 Å°F | |
| | 0.450 Åµm/m-Å°C | 0.250 Åµin/in-Å°F | |
| | @Temperature 1000 Å°C | @Temperature 1830 Å°F | |
| | 0.600 Åµm/m-Å°C | 0.333 Åµin/in-Å°F | |
| | @Temperature 500 Å°C | @Temperature 932 Å°F | |
| | 0.700 Åµm/m-Å°C | 0.389 Åµin/in-Å°F | |

| Thermal Properties | Metric @ Temperature 250 Â°C | English @ Temperature 482 Â°F | Comments |
|------------------------|---|--|----------|
| Specific Heat Capacity | 0.670 J/g-Â°C @ Temperature 0.000 - 50.0 Â°C | 0.160 BTU/lb-Â°F @ Temperature 32.0 - 122 Â°F | |
| Thermal Conductivity | 1.40 W/m-K | 9.72 BTU-in/hr-ftÂ²-Â°F | |
| Softening Point | 1683 Â°C | 3061 Â°F | |
| Annealing Point | 1215 Â°C | 2219 Â°F | |
| Strain Point | 1120 Â°C | 2050 Â°F | |

| Optical Properties | Metric | English | Comments |
|-----------------------|--|--|--|
| Refractive Index | 1.4585 | 1.4585 | |
| Transmission, Visible | 92 % | 92 % | Entire visible spectrum; 1 mm thickness (includes surface reflection losses) |
| IR Transmittance | 93 % @ Wavelength 1000 - 3000 nm, Thickness 1.00 mm | 93 % @ Wavelength 1000 - 3000 nm, Thickness 0.0394 in | Cutoff is at 5000 nm; (includes surface reflection losses). |
| UV Transmittance | 80 % @ Wavelength 190 - 290 nm, Thickness 1.00 mm | 80 % @ Wavelength 190 - 290 nm, Thickness 0.0394 in | Cutoff is at 160 nm; (includes surface reflection losses). |

| Electrical Properties | Metric | English | Comments |
|------------------------|---|---|-----------|
| Electrical Resistivity | 7.00e+7 ohm-cm @ Temperature 350 Â°C | 7.00e+7 ohm-cm @ Temperature 662 Â°F | |
| Dielectric Constant | 3.75 @ Frequency 1e+6 Hz | 3.75 @ Frequency 1e+6 Hz | |
| Dielectric Strength | 4.00 kV/mm | 102 kV/in | 1 MHz |
| | 50.0 kV/mm | 1270 kV/in | at 100 Hz |
| Dissipation Factor | <= 0.00010 | <= 0.00010 | |

| Descriptive Properties | Value | Comments |
|------------------------|-------|----------|
| Color | Clear | |

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