

Coefficient of Thermal Expansion

ASTM D696 “Coefficient of Linear Thermal Expansion of Plastics Between -30°C and +30°C with a vitreous Silica Dilatometer”

Measurements were made using a calibrated dial caliper. The length of the sample is measured at ambient conditions, and then again at -30°C (-22°F) and +30°C (86°F). Calculations in D696 are used to determine the value. An alcohol and liquid nitrogen bath was used to lower the temperature of the sample to -30°C. After measuring, the sample is placed within a water bath at +30°C, and measured again once temperature stabilizes.

Sample	Coefficient of Thermal Expansion (in./in. °C)
1	5.5×10^{-5}
2	7.4×10^{-5}
3	5.5×10^{-5}