

APPLICATION SHEET

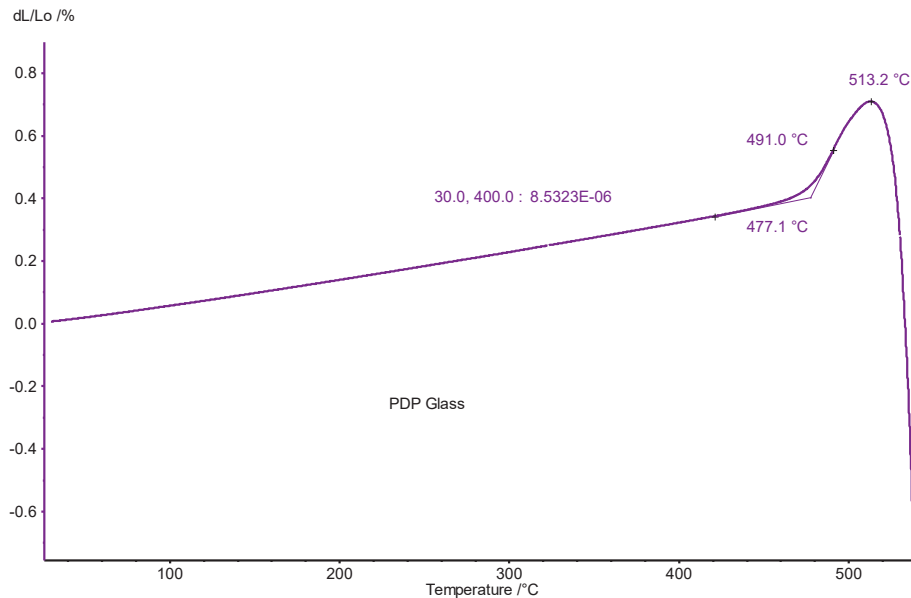
Ceramics · Electronics
DIL 402

Glass for Plasma Display Panel

Introduction

PDPs (Plasma Display Panel) are bright, have a wide color gamut, and can be produced in fairly large sizes, up to 260 cm (102 inches) diagonally. They have a very high "dark-room" contrast, creating the "perfect black" desirable for watching movies. The display panel is only 6 cm

(2 1/2 inches) thick, while the total thickness, including electronics, is less than 10 cm (4 inches). The used glass material has to fulfill certain optical, mechanical and electrical specifications. Dilatometry is a very versatile tool for the characterization of glass material and can also be used for quality control of the raw glass.



Test Conditions

Temperature range: RT ... 600°C
Heating rate: 5 K/min
Atmosphere: Air, static
Sample length: 25 mm
Crucible: Alumina

Test Results

The thermal expansion (technical value) between 30 and 400°C was determined to 8.53×10^{-6} 1/K. The dilatometric softening point was detected at 513°C with an inflection point at 491°C and an extrapolated onset at 477°C (glass transition temperature). These values are suitable for quality control purposes of the glass composition. With the automatic softening point detection of the NETZSCH dilatometer software, heating of the furnace can be stopped at a given shrinkage. This prevents the sample holder from sticking to the "molten" glass.