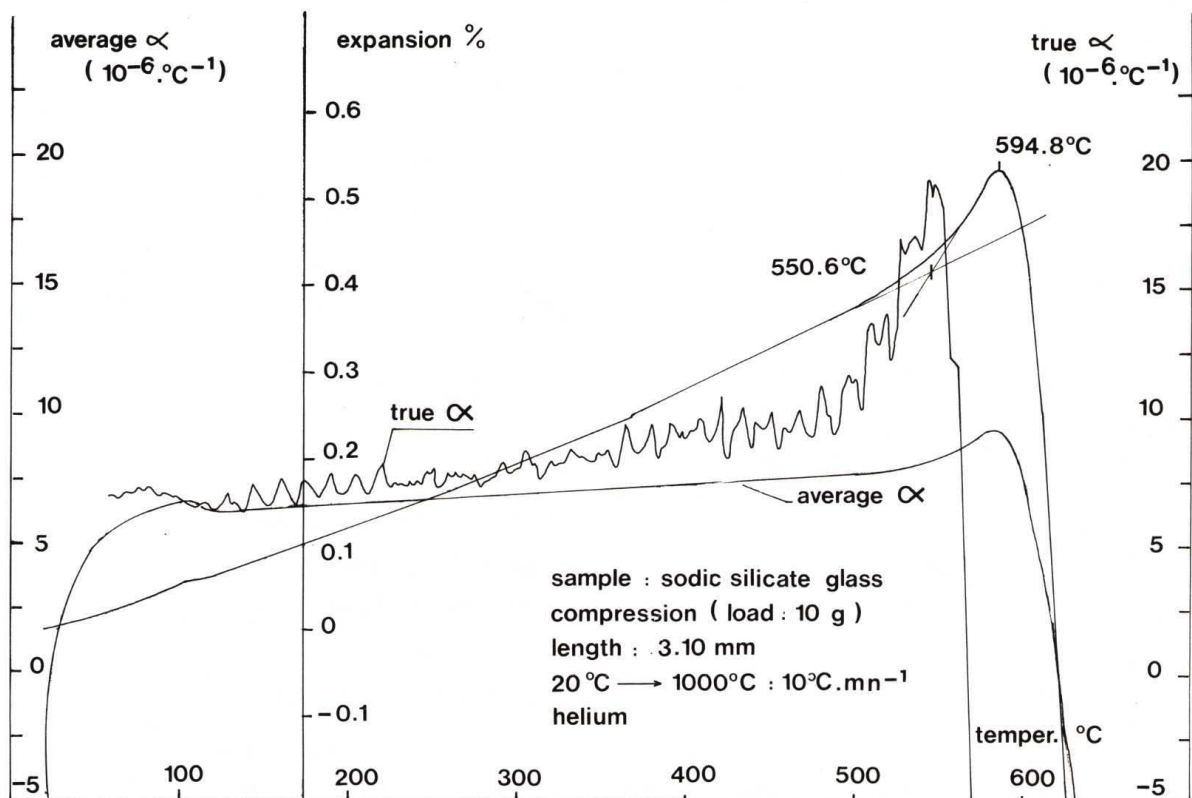


Characterization of glass

Introduction:

The Setsys Evolution, equipped with a furnace composed of a graphite heating element allows experiments to be carried out up to 1750°C. For the best accuracy and sensitivity, it is advised to use a probe made of silica which can be used between ambient and 1000°C. Thus, glasses can be characterized by different parameters such as : the glass transition temperature, the softening point, the true and average coefficients of thermal expansion α .



Experimental:

Sample : Sodic Silicate glass
 Length : 3.10 mm
 Mode : Compression (load : 10g)
 Probe : Silica
 Atmosphere : Helium
 Procedure: 20 → 1000°C (10 K.min⁻¹)

Conclusion:

The glass transition temperature and the softening point are found to be 550.6°C and 594.8°C respectively. Between 100 and 500°C the average coefficient of thermal expansion increases from 6.5 up to 8.10⁻⁶ K⁻¹.

Instrument:
 SETSYS Evolution TMA
 -150°C to 2400°C



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