



DIFFERENTIAL THERMAL ANALYSIS (DTA)

Glass Technology Services Ltd. is an independent laboratory providing a comprehensive range of services related to glass manufacture and use. Our services are backed by experienced, multi-disciplinary staff specialising in all aspects of glass technology.

DTA detects the release or absorption of heat, which is associated with chemical and physical changes in materials as they are heated or cooled. Such information is essential for understanding thermal properties of materials. Analysis of decomposition of glass batch materials, crystalline phase changes, chemical reactions and glass transition temperature are some of the properties measured with DTA. The temperature range of the instrument is from ambient to 1000° C.

WHAT CAN DTA DO?

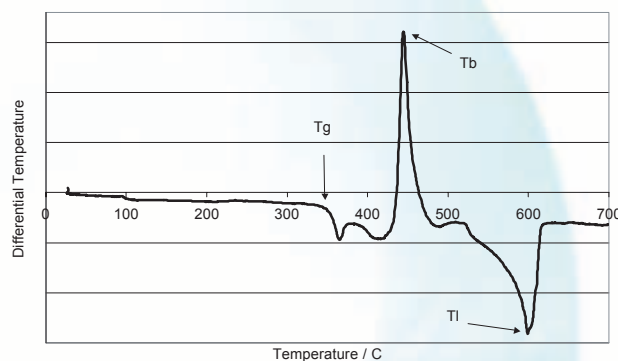
A typical DTA trace like this one means we can identify the glass transition temperature shown as T_g , the bulk crystallisation shown as T_b , the liquidus temperature shown as T_l , and minor crystalline phases and other features occurring as other peaks or troughs in the graph.

This method can give more detailed information on some of these properties than other techniques such as dilatometry.

This service is offered with the expertise and know how of GTS staff, including:

- Fast turnaround
- Interpretation of data,
- Analysis of glasses, ceramics, polymers, batch materials

A customer investigating glass batch conditions wished to measure the temperatures at which certain decompositions took place. A full DTA analysis allowed GTS to provide the required information and advise the customer on the implications for their batch processing.



RELATED SERVICES:

- Dilatometry - For thermal expansion, glass transition values
- Littleton Softening Point - For ASTM standard method C338 and equivalents
- Liquidus Temperature - For crystallisation behaviour of glasses and ceramics
- High Temperature Viscosity - For measurement of the viscosity-temperature curve
- High Temperature Electrical Measurements – For high temperature resistivity

If you would like to know more about these, our other services, or any other aspect of glass technology please contact us.

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