

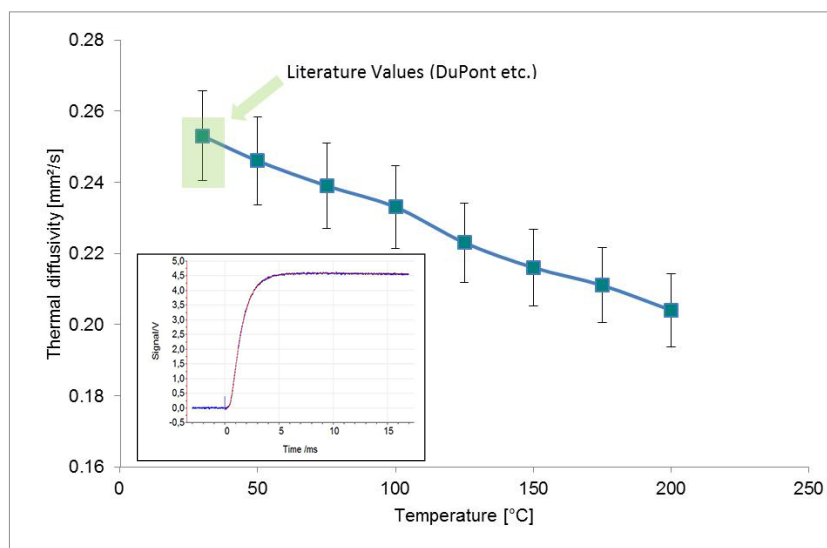
APPLICATION SHEET

Polyimide (Kapton) – LFA 467 *HyperFlash*

Thermal Diffusivity of Thin Polymer Films

Kapton (polyimide film) remains stable across a wide temperature range (-269°C to 400°C) [1]. It is used in e.g., flexible printed circuits, outside layers of space suits, etc. Knowledge of the thermophysical properties is essential especially for the use in electronics components. However,

determination of the thermal diffusivity becomes crucial due to the thickness of the films. The LFA 467 *HyperFlash* particularly allows for the determination of the thermal diffusivity and thermal conductivity on thin films but also on high-conductivity materials.



Polyimide film (50 µm thickness) measured with the LFA 467 *HyperFlash* from RT to 200°C in comparison with literature data (DuPont et al.)

A thin polyimide film of 50 µm (specified by the manufacturer), sputtered with gold, was measured with the LFA 467 *HyperFlash*. The results at room temperature are in very good correlation with the literature data [1].

In addition, the excellent correlation between the detector signal (also called thermal curve, blue) and the fit routine (red) is exhibited in the plot insert. After the rise of the

detector signal, no distortions caused by the sample's surroundings could be detected. Those distortions are usually leading to a further increase of the thermal curve. This was avoided in this example by using *ZoomOptics*.

Literature
[1] DuPont et. al.