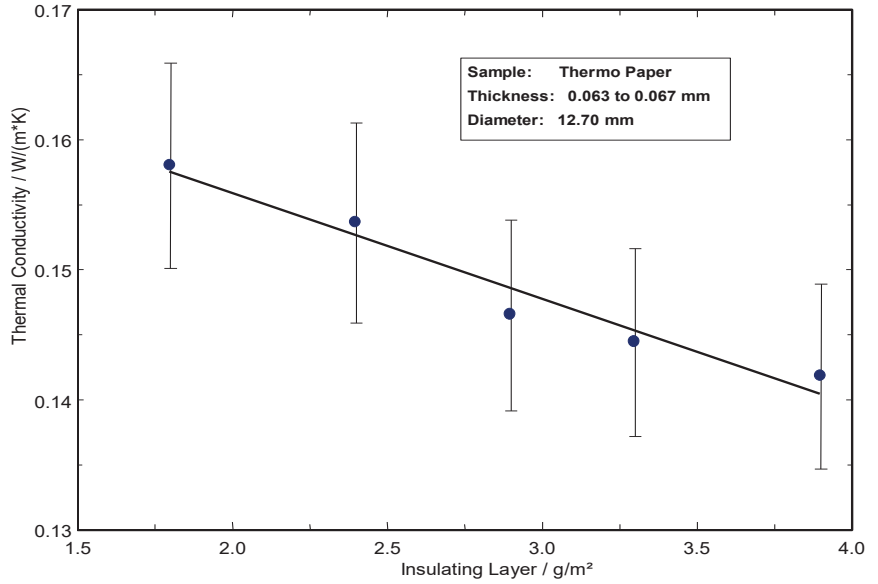
APPLICATION**SHEET**

Organics · Chemistry
LFA 467 *HyperFlash®*

Insulating Coatings on Paper

Introduction

Thin insulating coatings are employed for a wide range of different applications. One typical area is the production of modern thermal paper. Such a paper is a multi-layer arrangement consisting of a paper substrate, an insulating layer, and an active surface coating which changes color from white to black during the printing process. The effective thermal conductivity is a crucial parameter for the quality and performance of thermal paper. A lower thermal conductivity means that the printing process can be carried out faster and the printer's throughput will increase. Therefore, a lot of research is carried out on the effective thermal conductivity, which is mainly determined by the composition and thickness of the insulating layer. The following results show the effective thermal conductivity of the same thermal paper with modified thickness of the insulating



Test Conditions

Temperature range:	RT
Sample holder:	12.7 mm diameter
Sample surface preparation:	Graphite coating

Test Results

While taking an error of 5% on the measurements (error bars) into account, a linear dependence between the thickness of the insulating layer (measured in the amount of material per square meter) and the effective thermal conductivity was found. This is in perfect agreement with current application experiences for printers.

NGB · Application Sheet 086 · E · 0621 · Technical specifications are subject to change.

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