

# APPLICATION SHEET

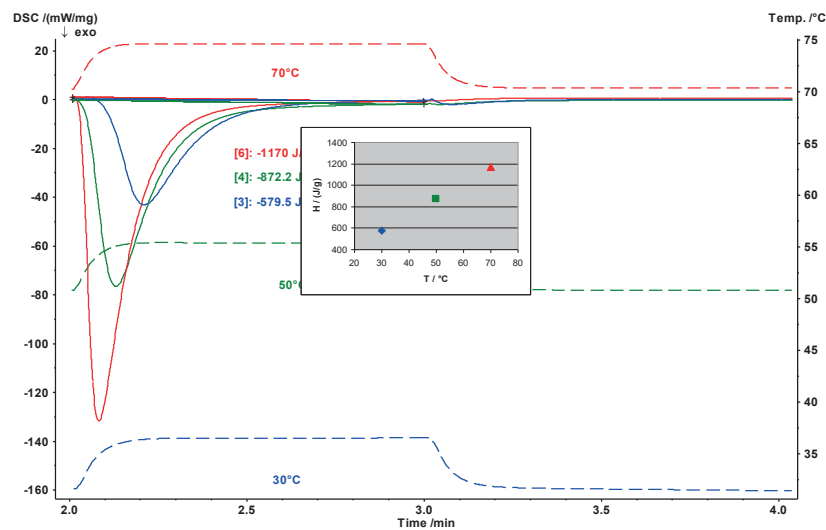
Polymers · Adhesives  
Photo-DSC 204 **F1 Phoenix**®

## One-Component Epoxy Resin Delo-Katiobond KB 554

### Introduction

Epoxy or polyepoxide is a thermosetting epoxide polymer that generally cures when mixed with a catalyzing agent or "hardener". Most common epoxy resins are produced from a reaction between epichlorohydrin and bisphenol-A. KB 554 is a resin that is ultraviolet-curing. The fluorescent resin is activated with UV light or visible light between 400 to

500 nm. A cationic curing mechanism allows the adhesive to cure after assembling components. A higher temperature influences the behavior for this dual curing reaction. Adhesives are used for bonding metals, glass or polymers especially for stress-equalizing bondings or sealings. This test was carried out at three different constant temperatures to analyze the influence of the activation temperature on the reaction of the adhesive.



### Test Conditions

Temperature range: 30°C/50°C/70°C  
Heating/cooling rates: isothermal  
Atmosphere: Nitrogen at 50 ml/min  
Sample mass: approx. 8.5 mg  
Crucible: open Al  
UV device: Delolux 04  
Radiation time: 60 s

### Test Results

Tests were carried out at three different temperatures (30, 50 and 70°C) to evaluate the influence of temperature on the reaction behavior of the adhesive. After reaching the measurement time, the UV light source was activated for 60 seconds causing a light temperature increase (~5 K) of the sample. As can be seen from the plot, an increasing reaction enthalpy was detected at higher temperatures. At 30°C, 193 J/g were released during the UV light-induced curing process. At 70°C, the reaction enthalpy is significantly higher (390 J/g).