

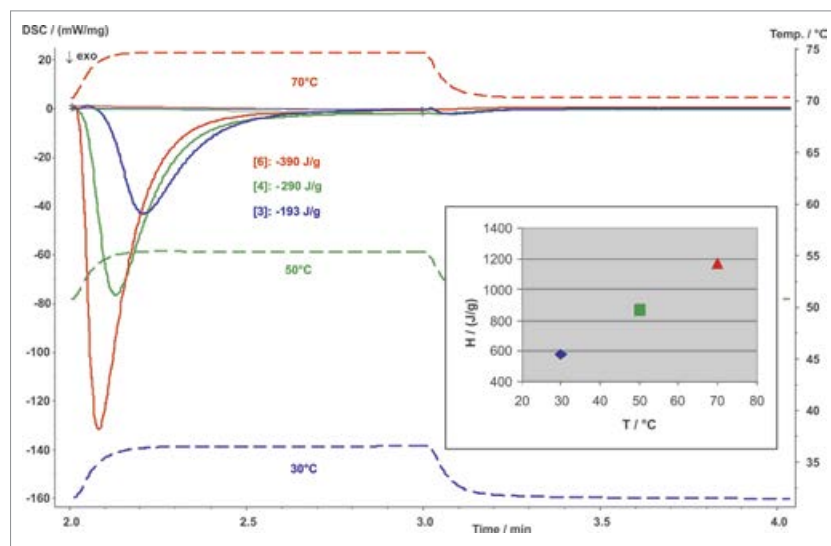
# APPLICATION SHEET

## POLYMERS – ADHESIVES

### 1-COMPONENT EPOXY RESIN DELO-KATIOBOND KB 554

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 400-500 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.



#### Instrument

Photo DSC 204 **F1** Phoenix®

#### Test Conditions

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

#### 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 temperature, the UV light source was activated for 60 seconds causing a slight 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 are released during the UV-light-induced curing process. At 70°C, the reaction enthalpy is significantly higher (390 J/g).