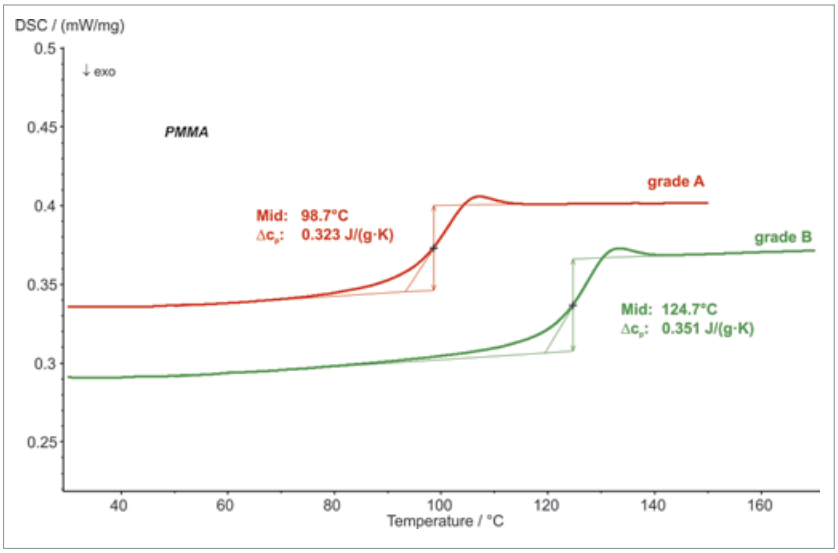
APPLICATION**SHEET**

POLYMERS – POLYMER INDUSTRY

PMMA (POLYMETHYL METHACRYLATE)

COMPARISON OF THE GLASS TRANSITION OF 2 PMMA GRADES

Polymethyl methacrylate (PMMA) or poly(methyl 2-metyhlpropenoate) is the amorphous polymer of methyl methacrylate. This polymer can be processed as thermoplastic above its glass transition temperature. PMMA is transparent, comparatively scratch resistant and exhibits a good weatherability. It can be used in the automotive industry for lenses, light guides and display covers; in the building industry PMMA is used in floor coats, glazing parts and as additive for concrete.



Instrument

DSC 200 ***F3*** *Maia*®

Test Conditions

Temperature range	RT ... 170°C
Heating rates	10 K/min
Atmosphere	Nitrogen at 20 ml/min
Sample mass	7.5 mg and 8.0 mg
Crucible	Al, pierced lid

Results

The two investigated PMMA grades showed different glass transition temperatures. The glass transition for grade A was detected at 98.7°C (midpoint). The change in specific heat capacity was 0.323 J/g·K. Grade B showed a higher glass transition temperature at 124.7°C (midpoint) with a change in specific heat of 0.351 J/g·K. The glass transition limits the application field of PMMAs. Grades with a higher glass transition temperature are therefore preferred for applications where operation temperatures play an important role.

NGB · AS · 197-2009 · EN · 07/13 · Technical specifications are subject to change.

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