

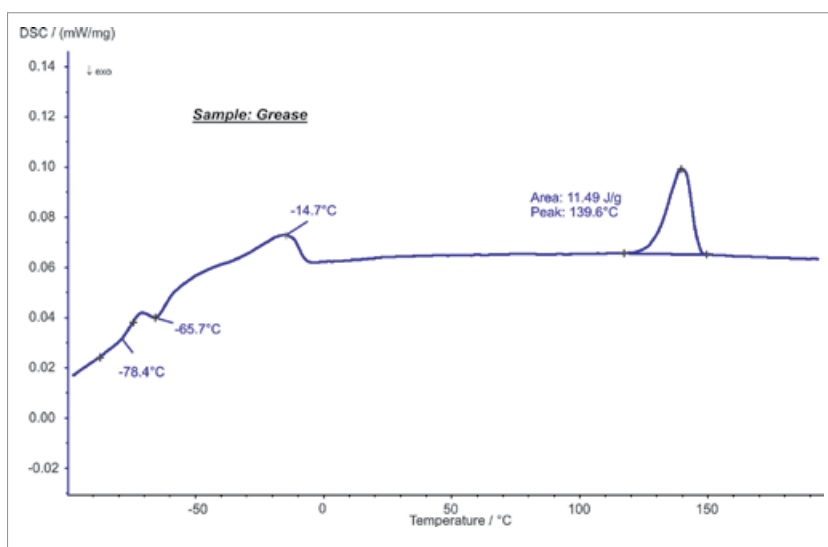
APPLICATION SHEET

ORGANICS – CHEMISTRY

GREASE

Although the word grease originally described the rendered fat of animals, the term is now applied more broadly to mean a lubricant of higher initial viscosity than oil, consisting originally of a calcium, sodium or lithium soap jelly emulsi-

fied with mineral oil. The glass transition of greases can be determined employing the DSC method. Especially modulated DSC can be an ideal tool for separating the various overlapping effects occurring during heating of the material.



Instrument

DSC 204 **F1** Phoenix®

Test Conditions

Temperature range	-120 ... 200°C
Heating rate	2 K/min
Atmosphere	Nitrogen (20 ml/min)
Sample mass	8.92 mg
Crucible	Al, pierced lid

Results

In the measurement without modulation, the change in specific heat detected from -78°C (temperature of onset) is due to the glass transition of the grease. It cannot be evaluated accurately because it is overlapped with an exothermal peak at -65.7°C (peak temperature) that probably results from crystallization. Two melting effects were measured at -14.7°C and 139.6°C (peak temperatures).