

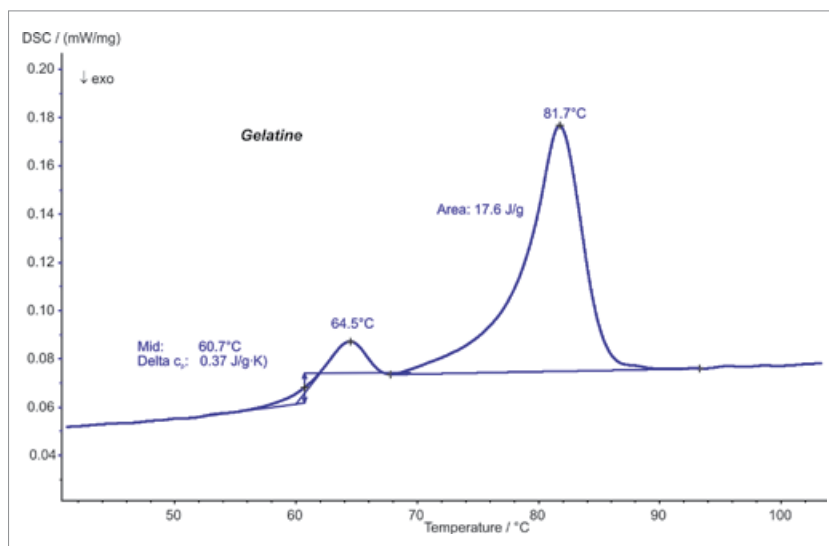
# APPLICATION SHEET

## ORGANICS – PHARMACEUTICALS

### GELATINE

Gelatine is a translucent, colorless, brittle, nearly tasteless solid substance, produced by partial hydrolysis of the protein collagen extracted from the bones and connective tissues of animals. Gelatine is considered and classified as a natural food stuff. It is commonly used in food (gummy

bears, marshmallows), pharmaceutical (shells of pharmaceutical capsules), photography, and cosmetic manufacturing. Glass transition of gelatines yields important information for their processing and is dependent on the water content. It can be measured by means of DSC.



#### Instrument

DSC 204 **F1** Phoenix®

#### Test Conditions

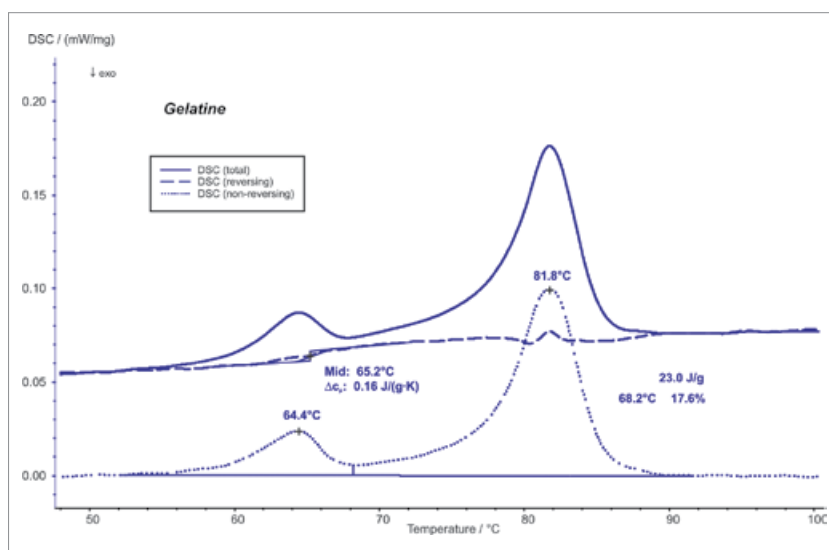
Temperature range	20 ... 120°C
Heating/cooling rates	2 K/min
Atmosphere	Nitrogen at 20 ml/min
Sample mass	8.50 mg
Crucible	Aluminum, closed

#### Results

The endothermic change in specific heat detected at 60.7°C (midpoint) during heating is due to the glass transition of the sample (see figure). It is overlapped with a relaxation effect (peak at 64.5°C) and melting of the gel (peak temperature at 81.7°C).

# APPLICATION SHEET

## ORGANICS – PHARMACEUTICALS



### Instrument

DSC 204 **F1** Phoenix®

### Test Conditions

Temperature range	20 ... 120°C, period 40 s
Heating/cooling rates	2 K/min
Amplitude	+ 0.3 K
Atmosphere	Nitrogen at 20 ml/min
Sample mass	8.50 mg
Crucible	Aluminum, closed

### Results

Modulated DSC measurement allows separation of the glass transition from the relaxation peak in order to carry out accurate evaluation of both effects. The glass transition is due to the reversing signal and relaxation peak in the non-reversing signal. The glass transition of gelatine was detected at 65.2°C with a change in specific heat of 0.16 J/(g\*K).