

APPLICATION SHEET

Organics – Food Industry

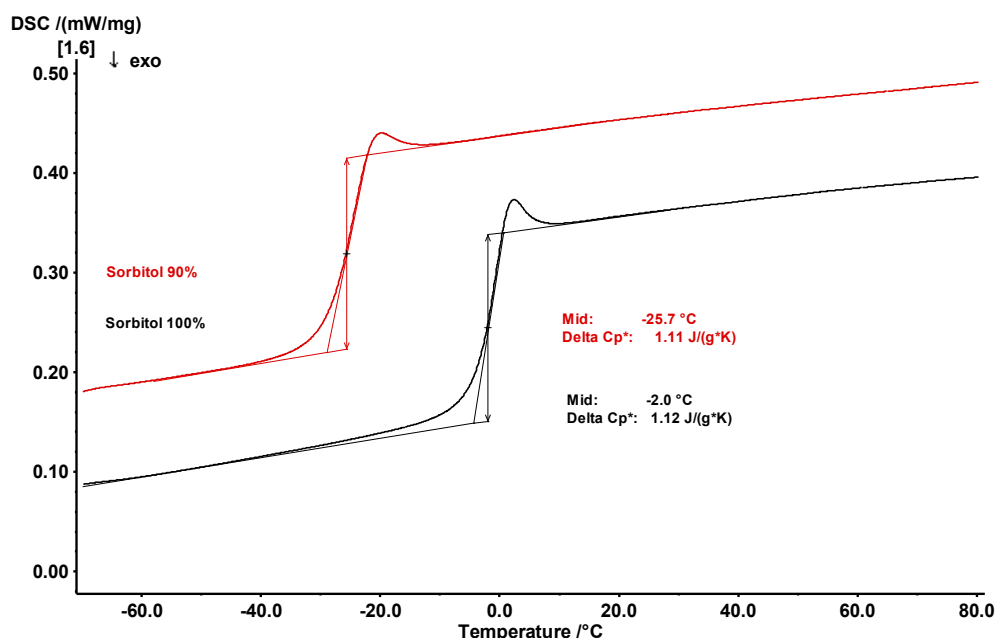
DSC 204 **F1 Phoenix**[®]

Sorbitol – Determination of the Glass Transition

Introduction

Sorbitol, also known as glucitol, is a sugar alcohol the body metabolises slowly. It is obtained by hydrogenation

of glucose taking the aldehyde group to an additional hydroxyl group hence the name sugar alcohol. Sorbitol is a sugar substitute often used in diet foods (including diet drinks).



Test Conditions

Temperature range: -50°C ... 200°C
Heating/cooling rates: 10 K/min
Atmosphere: Nitrogen at 40 ml/min
Sample mass: 12.0 ± 1 mg
Crucible: Aluminum, pierced lid
Purge gas flow: 40 ml/min

Test Results

The most common plasticizer for polymers and organics is water. Material properties can, of course, significantly change with addition of even slightest amounts of those additives. The glass transition of sorbitol is also sensitive to the water content. Adding a few percent of humidity, the glass transition temperature is considerably shifted to lower values. As can be seen, when 10% water is added to Sorbitol, the glass transition temperature is shifted from -2°C (pure sorbitol) to -26°C (sorbitol + 10% water).