

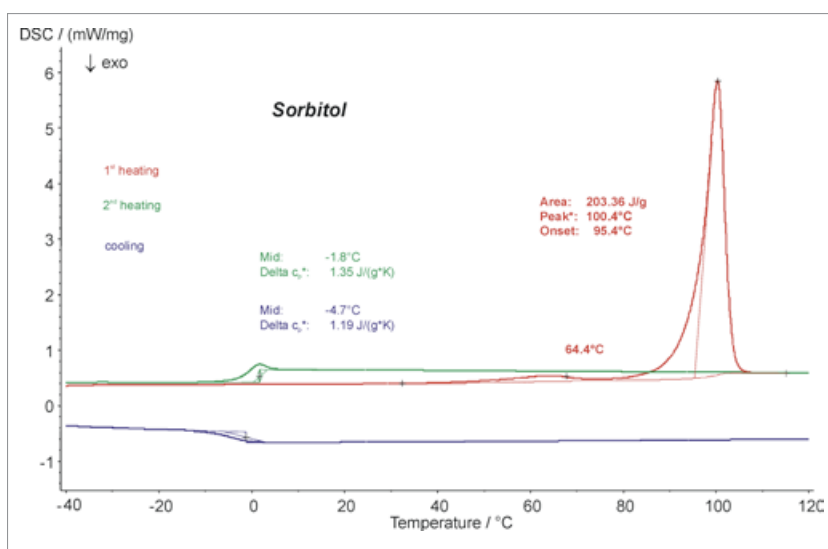
APPLICATION SHEET

ORGANICS – FOOD INDUSTRY

SORBITOL – PHASE TRANSITION

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).



Instrument

DSC 204 **F1** Phoenix®

Test Conditions

Temperature range	-50 ... 200°C
Heating rate	10 K/min
Atmosphere	Nitrogen
Sample mass	6.14 mg
Crucible	Aluminum, pierced lid
Purge gas flow rate	40 ml/min

Results

The ratio of amorphous to crystalline can be changed by temperature treatment. With fast cooling rates, the crystallization can be suppressed, whereas slow cooling rates usually allow the material to crystallize. An entirely crystalline sorbitol sample was measured starting from sub-ambient temperature up to 120°C (above the melting point). During cooling at 10 K/min, the crystallization is suppressed and the sample remains completely amorphous indicated by the glass transition. Furthermore during the second heating, only a glass transition but no melting was detected.