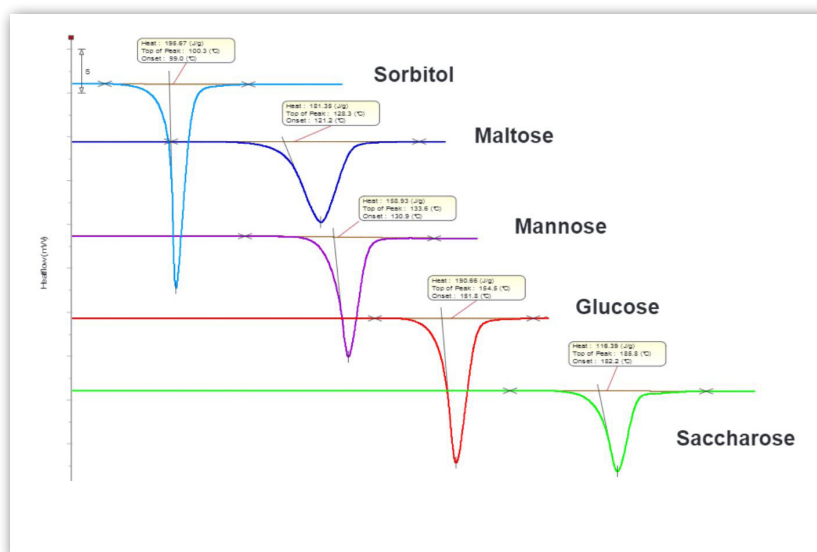


## Melting of different sugars by DSC with SETLINE DSC

### INTRODUCTION

Different types of sugars are present in food products (e.g. sucrose, fructose, maltose, saccharose). Many are used in the food industry, as powders or liquids. During food processing, they are heated, cooled, quenched according to different heat treatments. The DSC test is useful in this case to characterize the thermal behavior of the sugar when heated or cooled, to know if the sugar is in a crystalline or amorphous form according to the preparation.

In the example the melting of four different sugars and a sugar substitute (Sorbitol) were investigated.



### EXPERIMENT

#### Sample:

Analytical grade samples of Sorbitol, Maltose, Mannose, Glucose, Saccharose

#### Experimental conditions:

- Atmosphere: nitrogen, atmospheric pressure
- Sample mass: about 5 mg in a 100µl aluminum crucible

#### Experimental procedure:

Heating at 5°C/min from room temperature until the end of melting for each sample

### RESULTS AND CONCLUSION

Sorbitol has the lowest melting point and saccharose the highest.

	Sorbitol	Maltose	Mannose	Glucose	Saccharose
Melting temp. (°C)	99.0	121.2	130.9	151.8	182.2
Melting Heat (J/g)	195.67	181.35	158.93	190.66	116.39

### INSTRUMENT

#### SETLINE DSC / DSC+

-170 to 700°C



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