

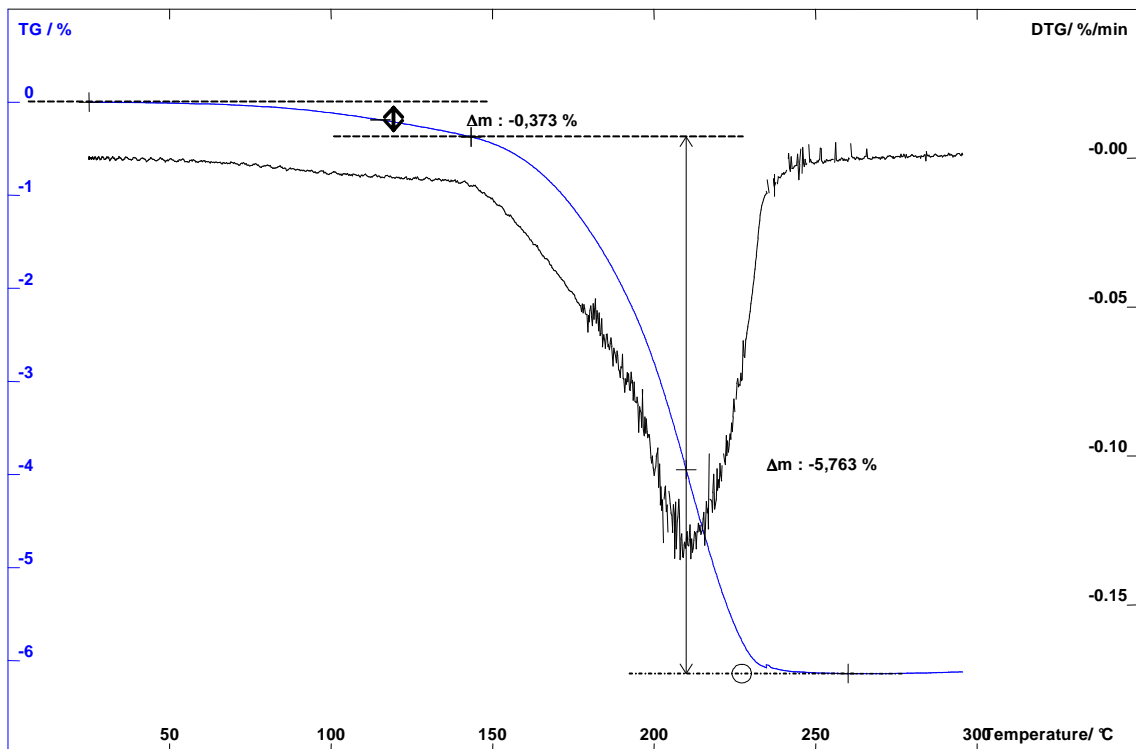
Analysis of plaster with high volume TG

Introduction:

High volume thermogravimetry may be of great interest, because it makes possible the analysis of samples having some heterogeneity. It is especially interesting in the case of natural raw materials or ores, because with a larger sample size, the sampling (does the sample represent really the material to analyze ?) is not so critical.

Using large volume of sample is also a way to obtain measurements with better accuracy : it can be especially interesting if the mass variation is less than 1%.

With the 96 Line, it is possible to use crucible with a volume of 18 mL. If a solid sample is used its maximal sizes are : $\varnothing = 22$ mm, $h = 50$ mm.



Experimental:

- A sample of plaster is analyzed in TG mode only with TG96.
- Sample mass : 13.35 g
- The temperature is programmed from ambient to 300°C at 1 K.min⁻¹.
- Atmosphere : air

Results:

The figure shows that we can separate the mass loss in two steps :
 between ambient and 145°C : a mass loss of 0.373 % is measured : it is due to the dehydration of gypsum.
 Between 145°C and 250°C : a mass loss of 5.763 % is measured : it is due to the dehydration of plaster.

Instrument:

**96 line TGA
from ambient to 2700°C**



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