

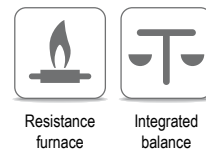
# Moisture and ash determination in milk

## Suitable analyzers

- TGA Thermostep

## Used accessories

- Ceramic crucible (26063)
- Spatula (23111)
- Quartz sand (90840)



Settings	Step Moisture ----->	Step Ash
■ Temperature:	105 °C	600 °C
■ Speed:	0 °C (= automatic)	0 °C (= automatic)
■ Type:	Stop by deviation	Stop by deviation
■ Time:	0 sec	0 sec
■ Deviation:	0.001	0.001
■ Gas:	Nitrogen	Oxygen

## Formulas

- Dry mass:  $100 - ((X[0] - (X[1] - Y[1])) / X[0] * 100)$
- Ash (as analyzed):  $(X[2] - Y[2]) / X[0] * 100$
- Ash (dry base):  $(X[2] - Y[2]) / X[1] * 100$

## Procedure

- Prepare and clean the ELTRA analyzer (e.g. remove ash from the crucibles)
- Check pressure of the oxygen and nitrogen bottle
- Prepare the application according to the recommended settings
- Select this application in the TGA software; log in the sample names and fill approximately 1-2 g of quartz sand (90840) into the crucibles before the weight is taken by the internal balance
- Set the option "Balance Button" to "Yes"
- When the current crucible is placed on the pedestal fill in approximately 1 g of sample
- Remove the crucible carefully from the TGA carousel and mix the quartz with the sample (e.g. with a quartz tube or a small spatula)
- Put the crucible back on the carousel and confirm the weight by pressing the balance button

-> Proceed like this for all samples.

Typical results (1 g Sample weight)		
Milk		
Weight (g)	Dry mass (%)	Ash dry (%)
1.01	10.51	0.85
1.00	10.50	0.80
1.00	10.54	0.85
1.07	10.50	0.79
1.20	10.52	0.81
1.01	10.35	0.88
1.04	10.31	0.82
1.01	10.37	0.84
1.26	10.34	0.84
1.03	10.41	0.81
Average values		
	10.44	0.84
Deviation		
	0.09 / 0.82 %	0.03 / 3.88 %