

Application Data Sheet for Moisture Determination Using the Halogen Moisture Analyzer

This data sheet contains details of Halogen Moisture Analyzer settings for drying powdered milk. These settings enable you to develop your own drying method. The settings must be checked individually and adapted to the relevant sample. The reference method data enables you to make comparisons with the Halogen Moisture Analyzer method.

Moisture Determination Method for Powdered Milk

Description/material properties

Rapilait: Powdered skimmed milk (fat-free dry weight: 95% for 3.5 l skimmed milk), 350 g bag
Coarse, homogeneous, yellowish-white powder

Reference Method: Oven

Accessories

METTLER TOLEDO AX205 DR balance, weighing bottles with lid, air-tight sealable plastic can, spoon

Sample preparation/procedure

Empty the entire contents of the original pack into the can and mix well. Weigh 6 g of powdered milk into dried (1 hour at 110°C), pre-weighed weighing bottles with lid and place in a preheated oven to dry at 103°C. Remove the contents after the preset drying time has elapsed, leave to cool in the desiccator and weigh.

Repeat the process until mass constancy is achieved.

Sample weight ($\pm 10\%$):	6	[g]
Drying temperature:	103	[°C]
Drying times:	3/16/2	[hour(s)]
Moisture content (average of 6 measurements):	3.91	[%]
Standard deviation:	0.05	[%]

Important notes/bibliography

No other specific settings are required.



Halogen Moisture Analyzer Method for Powdered Milk

Accessories

METTLER TOLEDO HR73 Halogen Moisture Analyzer, aluminum sample pans for the HR73, spoon, air-tight sealable plastic can

Sample preparation/procedure

Empty the entire contents of the original pack into the can and mix well. Set the HR73. Weigh 2 g of powdered milk into the HR73 aluminum pan and distribute evenly in the pan. Start measuring.

Device settings (HR73, software version 1.10)

Drying program:	Standard	
Switch-off criterion:	5	1 (1 mg/10 s), 2 (1 mg/20 s), 3 (1 mg/50 s), 4 (1 mg/90 s), 5 (1 mg/140 s)
End temperature:	110	[°C]
Sample weight ($\pm 10\%$):	2	[g]
Ramp [min]:	N/A	Timer [min]: N/A
Time 1 [min]:	N/A	Temp. 1 [°C]: N/A
Time 2 [min]:	N/A	Temp. 2 [°C]: N/A
Free switch-off criterion:	N/A	[mg] / N/A [s]

Results

Moisture content (average of 6 measurements):	3.89	[%]
Standard deviation:	0.08	[%]
Average drying time:	10	[min]

Important notes

No other specific settings are required.

Disclaimer:

We carefully tested this method with a METTLER TOLEDO HR73 Halogen Moisture Analyzer. However, the application data sheets do not absolve you from personally testing the application's suitability for your intended methods, instruments and purposes. Because the use and transfer of an application example are beyond our control, we cannot accept responsibility therefor. When chemicals and solvents are used, the general safety rules and the directions of the producer (e.g., operations manuals) must be observed.