

Application Data Sheet for Moisture Determination Using the Halogen Moisture Analyzer

This data sheet contains details of Halogen Moisture Analyzer settings for drying wood stain. 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 Wood Stain

Description/material properties

Bondex, water-based wood stain, color: pine, for interior

Reference Method: Oven

Accessories

METTLER-TOLEDO AX205 DR balance, oven, aluminum pans with 2 cm high side, sea sand, small glass stirrers, distilled water, pipette, 250 ml beaker, desiccator with silica gel

Sample preparation/procedure

Pre-dry (1 hour at 110°C) and tare the aluminum pans with 20 g of sea sand and a small glass stirrer. Add 5 g of wood stain and weigh. Add 5 g of distilled water and mix well. Leave the samples to thicken in the oven for 30 mins at 90°C. Then start drying the samples at 103°C in the oven. Remove the contents after the preset drying time has elapsed, leave it to cool in the desiccator and weigh. Repeat the process until mass constancy is achieved.

Sample weight ($\pm 10\%$):	5	[g]
Drying temperature:	103	[°C]
Drying times:	4/16/6.5	[hour(s)]
Moisture content (average of 6 measurements):	82.62	[%]
Standard deviation:	0.11	[%]

Important notes/bibliography

No other specific settings are required.



Halogen Moisture Analyzer Method for Wood Stain

Accessories

METTLER TOLEDO Halogen Moisture Analyzer HR73, glass-fiber filter for the HR73, spoon, aluminum sample pans for the HR73, pipette

Sample preparation/procedure

Set the HR73. Tare aluminum pan with a glass-fiber filter. Remove the filter, distribute 3 g of wood stain evenly in the pan with the pipette and cover with the filter. Start measuring.

Device settings (HR73, software version 1.10)

Drying program:	Fast	
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:	140	[°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):	82.58	[%]
Standard deviation:	0.06	[%]
Average drying time:	5	[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.