

Application Data Sheet for Moisture Determination Using the Halogen Moisture Analyzer

This data sheet contains details of Halogen Moisture Analyzer settings for drying vegetable juice. 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 Vegetable Juice

Description/material properties

Biotta organic vegetable cocktail, 50 cl bottle
Homogenous, red juice

Reference Method: Oven

Accessories

METTLER TOLEDO AX205 DR balance, oven, aluminum pans with 2 cm high side, sea sand, pipette, desiccator with silica gel

Sample preparation/procedure

Pre-dry the aluminum pans with 10 g of sea sand and a small glass stirrer in the oven (1 hour at 110°C) and then leave to cool in the desiccator. Using a pipette, place 10 g of vegetable juice in the pre-weighed aluminum pans and weigh. Leave the samples to thicken in the oven for 30 mins at 90°C and then start drying them at 103°C in the oven. 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 ($\pm 10\%$): | 10 | [g] |
| Drying temperature: | 103 | [°C] |
| Drying times: | 3/1/1 | [hour(s)] |
| Moisture content (average of 6 measurements): | 93.24 | [%] |
| Standard deviation: | 0.01 | [%] |

Important notes/bibliography

Literature: Schweizerisches Lebensmittelbuch (Swiss Food Book) (Issue 5), 28A / 4.1.1



Halogen Moisture Analyzer Method for Vegetable Juice

Accessories

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

Sample preparation/procedure

Set the HR73. Tare aluminum pan with glass-fiber filter. Remove glass-fiber filter. Distribute 4 g of vegetable juice evenly in the pan with the pipette and cover the sample with the glass-fiber filter. Start the drying process.

Device settings (HR73, software version 1.10)

| | | |
|-------------------------------|------|--|
| Drying program: | Fast | |
| Switch-off criterion: | 4 | 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 ($\pm 10\%$): | 4 | [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): | 93.50 | [%] |
| Standard deviation: | 0.06 | [%] |
| Average drying time: | 15 | [min] |

Important notes

Covering the sample with the glass-fiber filter enables very fast yet gentle drying of the product sample.

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.