

Organic Application Note

Moisture and Ash Determination in Flour

Instrument

TGA701

Accessories

621-331 Large Ceramic Crucibles

Sample Mass

~ 1.4 to 1.7 grams

Analysis Time

~ 4 hours

Method General Parameters

Crucible Type	Ceramic
Crucible Density	3.00
Cover Density	3.00
Sample Type	Flour
Sample Density	1.50
System	
Significant Digits	F6
Barometric Pressure	760
Cover Open Half	800
Cover Open Full	450
Furnace Over Temp.	1200
Increment Sample Names	Disable
Crucible Locations	Auto Find
Temperature Check	False
Alarm On Errors	True
Cover Option	Half Open
Carousel Option	Weigh Position
Batch Mode	False
Enable Lid Dispenser	False

Balance

Readability	4
Balance Environment	Stable
Balance Constancy	Absolute Weight (grams)
Minimum Weight	1.4000
Maximum Weight	1.7000
Zero Deviation	0.0005
Retake Initial Weights	False



TGA701

Method Step Parameters

<u>Parameter</u>	<u>Moisture</u>	<u>Ash</u>
Covers	No	No
Start Temp. °C	25	130
End Temp. °C	130	600
Ramp Rate	10	20
Ramp Time (h:m)	00:10	00:23
Hold Time (h:m)	00:30	00:30
Total Time (h:m)	00:40	00:53
Max Time (h:m)	00:00	00:00
Atmosphere	Air	Air
Flow Rate	High	High
Window	3	3
Comparator	0.0005	0.0005
Final Weight	At Constancy	At Constancy

Method Equation Parameters

<u>Equation Name</u>	<u>Equation Text</u>
Moisture	$(([\text{Initial Mass}] - [\text{Moisture Mass}]) / [\text{Initial Mass}]) * 100$
Ash	$([\text{Ash Mass}] / [\text{Initial Mass}]) * 100$
Ash Dry	$[\text{Ash}] * (100 / (100 - [\text{Moisture}]))$

Procedure

1. Create and/or select a method using the parameters for the Standard Method listed above following the procedure outlined in the TGA701 Instruction Manual.
2. Login and load samples following the procedure outlined in the TGA701 Instruction Manual.

Typical Results

Sample	Mass g	% Moisture	% Ash	Sample	Mass g	% Moisture	% Ash
LECO	1.6177	9.17	1.84	LECO	1.6640	10.43	0.34
502-274	1.6661	9.15	1.84	501-563	1.6685	10.42	0.35
Wheat Flour	1.6515	9.17	1.84	Corn Flour	1.6866	10.43	0.34
	1.6778	9.16	1.85		1.6166	10.42	0.34
	1.6324	9.15	1.87		1.6691	10.44	0.31
	1.6806	9.15	1.83		1.6753	10.42	0.33
	X =	9.16	1.85		X =	10.43	0.33
	s =	0.010	0.015		s =	0.006	0.015

LECO	1.6346	4.31	5.41
501-561	1.5813	4.28	5.44
Soy Flour	1.6091	4.32	5.40
	1.6485	4.27	5.41
	1.6138	4.31	5.42
	1.6120	4.31	5.41
	X =	4.30	5.42
	s =	0.018	0.015



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