

# Organic Application Note

## Moisture and Ash on Wheat and Bran Products

### Accessories

529-047 Ceramic Crucible, 778-891 Quartz (optional)

### Sample Weight

~2 g

### Analysis Time

~5 hours

### Calibration Standard

No calibration necessary; check balance.

### General Settings

Crucible Density: 3.00 (Crucible density should be set at 2.2 if quartz crucible is used)  
Cover Density: 3.00  
Sample Density: 1.00

### Steps Information

	Moisture	Ash
Covers:	Off	Off
Ramp Rate:	6	20
Ramp Time (h:m):	00:17	00:28
Starting Temp (°C):	25	130
Ending Temp (°C):	130	700
Atmosphere:	Air	Air
Flow Rate:	Medium	Medium
Hold Time (h:m):	00:00	00:00

### Constants

	Moisture	Ash
Constant Weight:	0.05%	0.05%
Weight/Time (h:m):	00:09	00:09

### Equations

Initial Weight:  $W[\text{Initial}]$   
Moisture:  $((W[\text{Initial}]-W[\text{Moisture}])/W[\text{Initial}])*100$   
Ash:  $(W[\text{Ash}]/W[\text{Initial}])*100$   
Ash Dry Basis:  $E[\text{Ash}]*(100/(100-E[\text{Moisture}]))$



# TGA-601

## Procedure

1. Check furnace balance with 1 g weight in "sequence test."
2. Select method as described above.
3. Enter ID codes if a PC is used; if not, they will be entered later with the DSP.
4. Press Analyze.
5. Load empty crucibles into the furnace carousel making sure a crucible is in the reference position.
6. Press Start to locate and tare crucibles.
7. The furnace cover opens and each crucible is presented to the operator for sample loading.
8. Load ~2 g sample into the crucible.
9. Press Next to continue.
10. When all crucibles are loaded, analysis begins.

## Typical Results

Sample	Moisture	Ash	Ash Dry Basis
Bran	13.24	6.530	7.527
	13.24	6.523	7.518
	13.24	6.549	7.548
<b>Average</b>	<b>13.24</b>	<b>6.534</b>	<b>7.531</b>
<b>Std. Dev.</b>	<b>0.005</b>	<b>0.013</b>	<b>0.016</b>
<b>n = 3</b>			
Wheat	14.49	1.623	1.898
	14.47	1.630	1.906
	14.50	1.659	1.940
<b>Average</b>	<b>14.49</b>	<b>1.637</b>	<b>1.915</b>
<b>Std. Dev.</b>	<b>0.014</b>	<b>0.019</b>	<b>0.023</b>
<b>n = 3</b>			



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