KERONE

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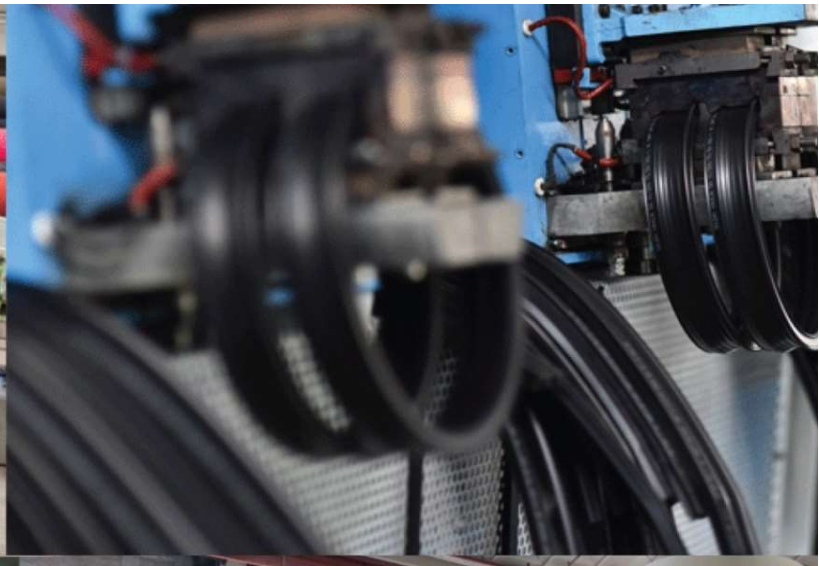
ELECTRO MAGNETIC Innovative Technologies

Kerone Research & Development Centre (KRDC),
B/47, Addl. MIDC. Anand Nagar, Ambernath (East), Thane- 421 506, India
Tel- +91-251-2620542/43/44/45/46, Email-info@kerone.com, www.kerone.com



BATCH MICROWAVE+CONVECTION HEATING SYSTEM

ISO 9001-2008 | ISO 9001-2015 | EMS 14001 | OHSAS 18001
In Association with SVCH-Technologii, Moscow (Russia)

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Customer:	**M/s. INTERNAL**
Process:	**Batch Microwave + Convection Heat Treatment for leaves**

TEST REPORT No: 115/KRDC/LAB/17 Mum 15/07/2022

Date Sample reception : 15/07/2022
ID : 115/LAB/15

SAMPLE DESCRIPTION:

Sampling : As Requested
Sample Condition : Acceptable
Sampling date : 15/07/2022
Product : LEAVES
Start Date test : 15/07/2022
End Date test : 15/07/2022

LABORATORY EXPERIMENTAL SET UP FOR TRIAL:

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ENVIRONMENT-LABORATORY AMBIENT CONDITIONS:

Temperature (degree C)	27.1°C (±5°C)
Humidity (%)	≤70% RH
Pressure (kN/m2 or kPa)	Not recorded

Note for recommendation: Environmental conditions have a direct impact on test results. Accuracy and consistency of test data are affected by the laboratory conditions**.**

EQUIPMENTS USED:

Name of Equipment	Picture of Equipment	Specifications
Compact Thermal Imaging Camera		**Model: FLIR E-30** **Resolution: 160x 120IR** **Thermal sensitivity of 0.10°C**
Moisture Analyzer		**Make: Axis Balance** **Description:** **Moisture range: 1% (sample 0.02/0.05g), 0.1% (Sample 0.5/5g), 0.01%(Sample>5g)**
Thermo Hygrometer		**Model No: HTC-2** **Temperature accuracy: ±°C (1.8°F)** **Temperature resolution: 0.1°C (0.2°F)** **Humidity range: 10%~99% RH** **Humidity accuracy: ±5% RH** **Humidity resolution: 1% RH**

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SAMPLE PREPARATION AND METHOD/PROCEDURE:

The experiment has been performed on Leaves to speed up the heating rate. For this experimental run, given sample has been taken in the crucible and placed in MW + Convection heating system with suitable parameters. Observations are made on the sample weight and appearance.

ANALYTICAL RESULTS:

TRIAL-1:

Initial moisture: 61.1%

Cycles	Initial Weight	Specifications of Microwave	Cycle Time	Final weight	Remarks.
C1	140 g	Set temp. of MW: 80°C; Set temp. of Heater: 150°C	20 min.	85g	Drying started Initially water condensation effect observed 0n product temp- (50-60)°C
C2	85 g	Set temp. of MW: 80°C; Set temp. of Heater: 150°C	20 min.	55 g	Moisture evaporated as desired No charring effect Sample dried as desired 0n product temp- (60-70)°C

Total cycle time: 40 mins.
No. of Cycle: 1
Final Moisture: 2.5%

BEFORE AND AFTER TREATMENT PICTURES SPECIMEN SAMPLE:

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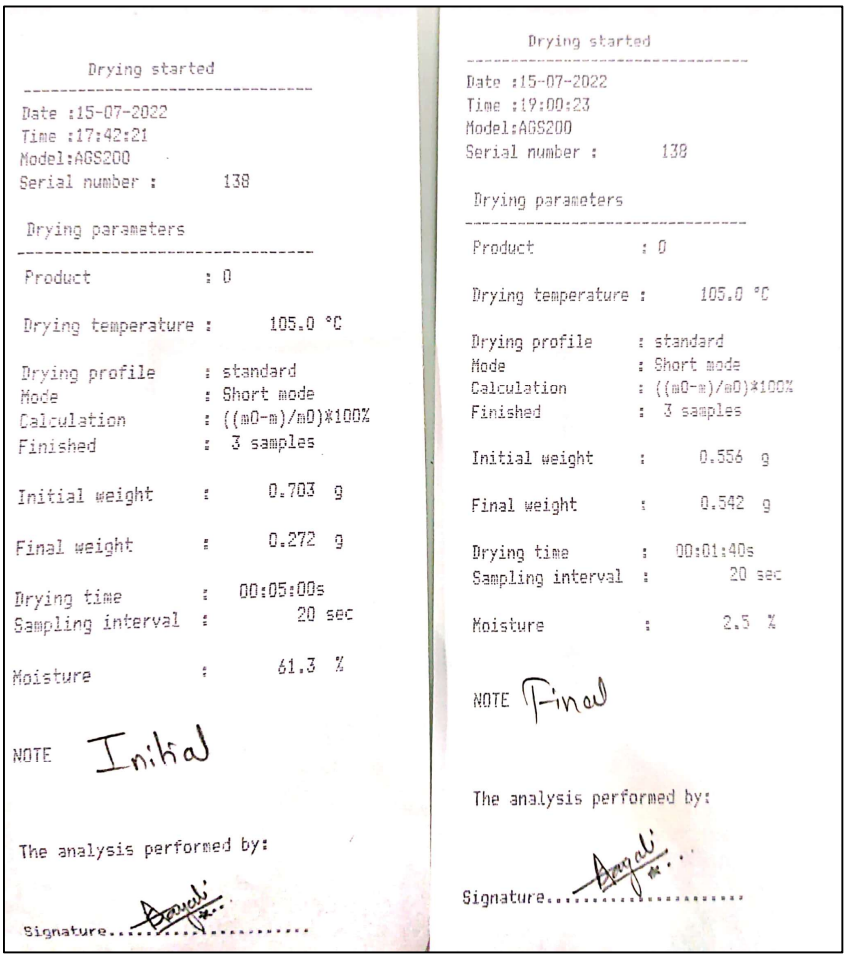
MOISTURE REPORT:



Drying started

Date :15-07-2022
Time :17:42:21
Model:AGS200
Serial number : 138

Drying parameters

Product : 0

Drying temperature : 105.0 °C

Drying profile : standard
Mode : Short mode
Calculation : ((m0-m)/m0)*100%
Finished : 3 samples

Initial weight : 0.703 g

Final weight : 0.272 g

Drying time : 00:05:00s
Sampling interval : 20 sec

Moisture : 61.3 %

NOTE Initial

The analysis performed by:

Signature.....

Drying started

Date :15-07-2022
Time :19:00:23
Model:AGS200
Serial number : 138

Drying parameters

Product : 0

Drying temperature : 105.0 °C

Drying profile : standard
Mode : Short mode
Calculation : ((m0-m)/m0)*100%
Finished : 3 samples

Initial weight : 0.556 g

Final weight : 0.542 g

Drying time : 00:01:40s
Sampling interval : 20 sec

Moisture : 2.5 %

NOTE Final

The analysis performed by:

Signature.....

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OBSERVATION:

The drying behavior of Leaves has been investigated under the Microwave + Convection heating system. The heating rate is found to be increasing with respect to an increase in time. As per the physical investigation, it has been observed that there is no charring effect. Moisture content was obtained as desired.

Ms. Sayali Asole
(Tested By)