KERONE

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ELECTRO MAGNETIC innovative technologies

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Batch Convection Heat Treatment for Moisture Analysis of Capsules

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

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Customer :	**SciTech Centre**
Process :	**Batch Convection Heat Treatment for Moisture Analysis of Capsules**

TEST REPORT No: 47/KRDC/LAB/17 Mum 23/12/2020

Date Sample reception : 26/10/2020
ID : 47/LAB/180

SAMPLE DESCRIPTION:

Sampling : As Requested
Sample Condition : Acceptable
Quantity : 2 nos. of bags
Samples opening date : 26/11/2020
Product : Green Capsules
Start Date test : 23/01/2021
End Date test : 23/01/2021

LABORATORY EXPERIMENTAL SET UP:

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LAB BATCH CONVECTION HEATING SYSTEM SPECIFICATIONS:

Heating Zone (width*height*depth)	510*480*410 mm
No. of Heaters	6
Total Heater Power	6 kW
Motor	0.5 HP
No. of trays	6
Tray size (width*height*depth)	560 x 435 x 25
Centrifugal Exhaust Blower	1440 rpm

ENVIRONMENT-LABORATORY AMBIENT CONDITIONS:

Temperature (^oC)	26^oC (±5^oC)
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

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EQUIPMENTS USED:

Name of Equipment	Picture of Equipment	Specifications
Compact Thermal Imaging Camera		Model: FLIR E-30 Resolution: 160x 120 IR 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

SAMPLE PREPARATION AND METHOD/PROCEDURE:

The experiment has been performed on green Capsules to analyze the moisture content of the product. For this experimental run, given 1gm of capsule sample has been placed in small dish inside oven for 4hrs at 105°C. Treated samples placed in Aluminium plate and covered with another plate kept at 25°C room temperature for natural cooling.

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ANALYTICAL RESULTS:

Green Capsules
Setting Temperature: 105°C
Time Cycle: 4 Hrs.

Sr. No.	Sample	Initial Weight noted with plates (grams)	Final Weight noted with plates (grams)	Capsule Weight (grams)	Moisture Calculation ([initial wt-final wt]/capsule wt)*100) (%)
1.	Untreated	13.806	13.642	1.026	15.98
2.	15mins	15.849	15.690	1.013	15.69
3.	45mins	15.668	15.512	1.004	15.53
4.	60mins	15.847	15.690	1.006	15.6

OBSERVATIONS:

The drying behavior of blue capsules has been investigated under the convection heating system. The drying rate is found to be increasing with respect to increase in time. It has been found that the moisture content on the dry basis (%) decreases with respect to increase in drying time. As per physical investigation, it has been observed that required moisture analyzation results has been achieved.

Miss Komal Bhoite
Tested By