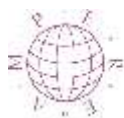




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AIMCAL (USA)



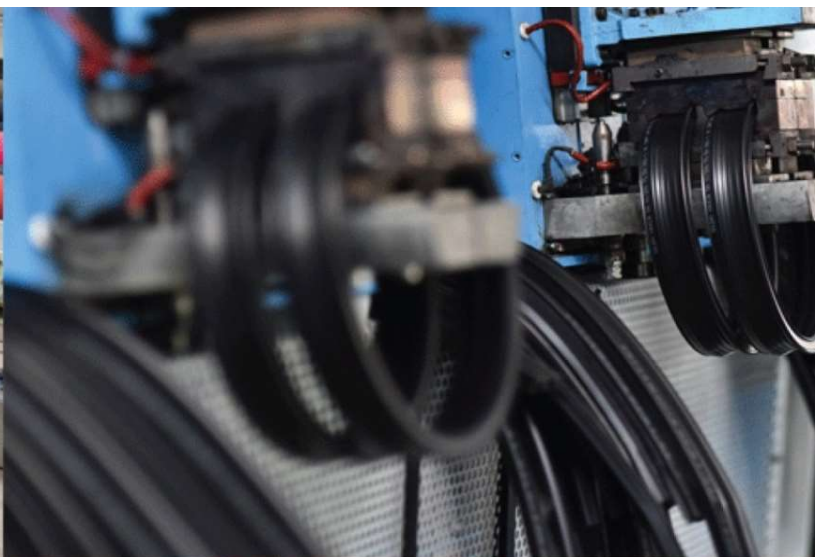
A.M.P.E.R.E (EUROPE)

In Association With



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 Prawns |

### TEST REPORT No: 114/KRDC/LAB/17 Mum 15/07/2022

Date Sample reception : 15/07/2022  
ID : 114/LAB/15

#### SAMPLE DESCRIPTION:

Sampling : As Requested  
Sample Condition : Acceptable  
Sampling date : 15/07/2022  
Product : Prawns  
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 ( $\pm 5^{\circ}\text{C}$ ) |
| Humidity (%)                        | $\leq 70\%$ RH                     |
| Pressure (kN/m <sup>2</sup> 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<br>Resolution: 160x 120IR<br>Thermal sensitivity of 0.10°C  |
| Moisture Analyzer              |  | Make: Axis Balance<br>Description:<br>Moisture range: 1% (sample 0.02/0.05g), 0.1% (Sample 0.5/5g), 0.01%(Sample>5g)   |
| Thermo Hygrometer              |  | Model No: HTC-2<br>Temperature accuracy: $\pm^{\circ}\text{C}$ (1.8°F)<br>Temperature resolution: 0.1°C (0.2°F)<br>Humidity range: 10%~99% RH<br>Humidity accuracy: $\pm 5\%$ RH<br>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: 76.3%

| Cycles | Initial Weight | Specifications of Microwave                          | Cycle Time | Final weight | Remarks.  |
|--------|----------------|--|------------|--------------|---|
| C1     | 100 g          | Set temp. of MW: 80°C;<br>Set temp. of Heater: 150°C | 60 min.    | 45 g         | No charring effect<br>No Colour changed<br>Shell dried as desired<br>Inner parts secreted oils<br>On product temp- (90-100)°C |

Total cycle time: 1 hours

No. of Cycle: 1

Final Moisture: 9 %

**BEFORE AND AFTER TREATMENT PICTURES SPECIMEN SAMPLE:**



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## MOISTURE REPORT:

Drying started

Date :15-07-2022  
Time :11:50:54  
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 : 0.712 g  
Final weight : 0.169 g

Drying time : 00:17:40s  
Sampling interval : 20 sec

Moisture : 76.3 %

NOTE Initial

The analysis performed by:

Signature: *Ajayali*

Drying started

Date :15-07-2022  
Time :19:45:34  
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 : 0.261 g  
Final weight : 0.238 g

Drying time : 00:03:00s  
Sampling interval : 20 sec

Moisture : 9 %

NOTE Final

The analysis performed by:

Signature: *Ajayali*

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### **OBSERVATION:**

The drying behavior of Prawns 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 without any change in the colour.

Ms. Sayali Asole  
(Tested By)