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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

Continuous Microwave Heat Treatment for Sterilization of Sesame seeds

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

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Customer :	**Laboratory Experimental Analysis**
Process :	**Continuous Microwave Heat Treatment for Sterilization of Sesame seeds**

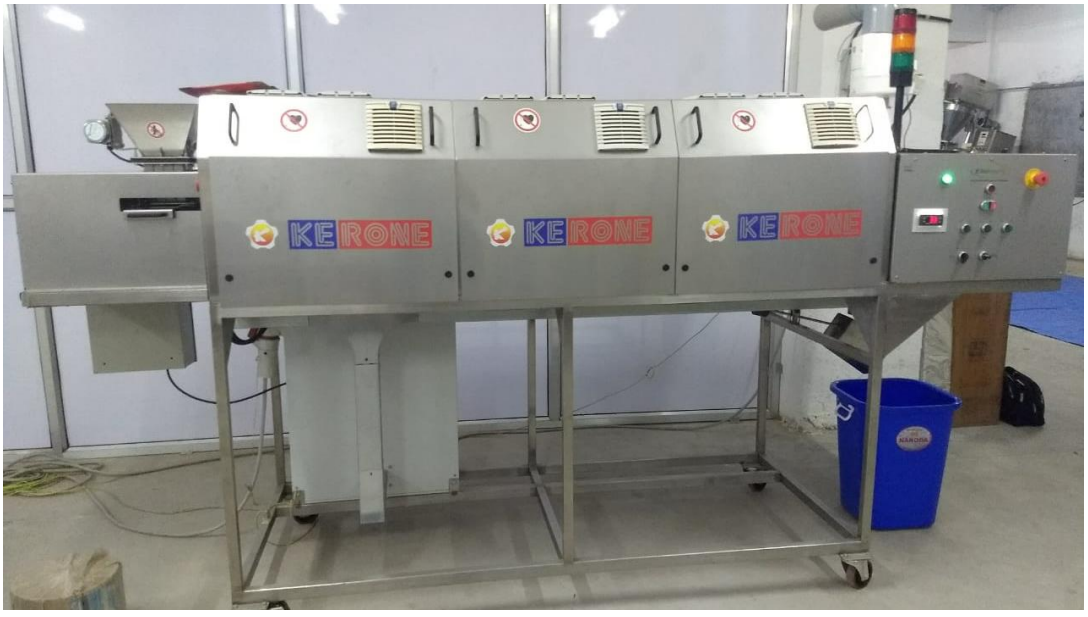
TEST REPORT No: 47/KRDC/LAB/17 Mum 10/09/2018

Date Sample reception : 10/09/2018
ID : 47/LAB/60

SAMPLE DESCRIPTION:

Sampling : As Requested
Sample Condition : Acceptable
Quantity : 25 kg
Sampling date : 27/09/2018
Product : Organic Sesame seeds
Requirement : Sterilization and Disinfection
Start Date test : 27/09/2018
End Date test : 27/09/2018

LABORATORY EXPERIMENTAL SET UP:



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LAB CONTINUOUS MICROWAVE HEATING SYSTEM SPECIFICATIONS:

Microwave Power (CW oscillation) Three Microwave Generators	3 kW
Frequency	2450 ± 50 MHz
Helical Conveyor System	1-10 Hz, 20.1 to 53.6 minute helix
Material Feeding Pipe (Polypropylene)	2100 mm length, feed opening 53.5 mm
Material Feed Sensor	For down mass flow sensing
Honey comb filters	2 numbers
Air extraction system	Adjustable by POT
Loading Hopper with flow regular	Adjustable by metering gauge

ENVIRONMENT-LABORATORY AMBIENT CONDITIONS:

Temperature (degree C)	$36^{o}C$ ($\pm5^{o}C$)
Humidity (%)	≤64% 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
Infrared Thermometer		**Model: FLUKE 566** **Temperature Range: -40°C to 650°C** **Display Resolution: 0.1°**
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 organic sesame seeds without adding any additive to speed up the drying rate for sterilization treatment. For this experimental run, sesame seeds has been passed through conveyorized microwave heating system from hopper. At the exit point, temperature on the surface of sesame seeds has been noted.

ANALYTICAL RESULTS:

Microwave Power: 3 kW
Heating Cycle Time: 3 minutes
Weight of sample: 25 kg
Temperature on Product: 70°C

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PICTURES DURING TRIAL:

OBSERVATIONS:

The Drying behavior of Sesame Seeds has been investigated under the microwave irradiation mode dryer for sterilization treatment. As per physical investigation, it has been observed that there is no colour change and burning effect.

K Komal

Miss Komal Bhoite
Tested By