

Test Report

Report No : TUV(I)/5311/17-18/0081700489-0490

Date : 23 Aug 2017

Name & Address of Customer : Hindalco Industries Ltd.
Century Bhavan, 3rd floor
Dr. Annie Besant Road
Worli, Mumbai 400030

Reg No. : 5311/17-18
CA No. : 0081700489-0490
Date of sample receipt : 03 Aug 2017
Date(s) of analysis : 04 Aug 2017 -22 Aug 2017
Sample Drawn by : Customer

TUV INDIA PRIVATE LIMITED
TUV India House,
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We were submitted a pack of Freshwrapp aluminium foil 14 micron and 18 micron by the client to detect the penetration of the pathogenic bacteria, Fungus and yeast into packets of aluminium foil over a period of time.

TEST METHOD:

Freshly growing broth cultures of pathogenic bacteria namely Escherichia coli, Staphylococcus aureus, Salmonella typhimurium, fungus Aspergillus niger and yeast Candida albicans were used.

Sterile rehydrated sponges of dimension 1.5 x 3 inch were packed in aluminium foil. Sterile rehydrated sponges simulate food material. In vitro studies are done using sterile rehydrated sponges (simulant of food material) to avoid contamination while handling packets and further analysis. These packets were individually placed in sterile petri plates and 2 ml of the freshly growing broth culture of each test organism individually was put onto the packets and kept at room temperature. Penetration of the test organism over a contact period of 1 hour, 3 hours, 6 hours, 12 and 24 hours was studied using the sponge and our observations are given below.

A negative control was prepared to exhibit the absence of the pathogen in the sponge by itself. A positive control (sponge inoculated with the two pathogenic bacteria and one fungus individually) was incubated along with the test samples to show that the food product supported the growth of the pathogens and was not inhibitory to them.

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Observation:

Sample Foil 18 micron
CA No : 0081700490

Contact time/Controls	<i>Escherichia coli</i>	<i>Staphylococcus aureus</i>	<i>Salmonella typhimurium</i>	<i>Aspergillus niger</i>	<i>Candida albicans</i>
Original count	1.2 x 10 ⁹ cfu/ml	3.2 x 10 ⁹ cfu/ml	2.3 x 10 ⁹ cfu/ml	9 x 10 ⁵ cfu/ml	5.7 x 10 ⁷ cfu/ml
Negative Control	Nil				
Positive Control	Growth				
1 hr	nil	nil	nil	nil	nil
3 hrs	nil	nil	nil	nil	nil
6 hrs	nil	nil	nil	nil	nil
12 hrs	nil	nil	nil	nil	nil
24 hrs	nil	nil	nil	nil	nil

Sample Foil 14 micron
CA No : 0081700489

Contact time/Controls	<i>Escherichia coli</i>	<i>Staphylococcus aureus</i>	<i>Salmonella typhimurium</i>	<i>Aspergillus niger</i>	<i>Candida albicans</i>
Original count	1.2 x 10 ⁹ cfu/ml	3.2 x 10 ⁹ cfu/ml	2.3 x 10 ⁹ cfu/ml	9 x 10 ⁵ cfu/ml	5.7 x 10 ⁷ cfu/ml
Negative Control	Nil				
Positive Control	Growth				
1 hr	nil	nil	nil	nil	nil
3 hrs	nil	nil	nil	nil	nil
6 hrs	nil	nil	nil	nil	nil
12 hrs	nil	nil	nil	nil	nil
24 hrs	nil	nil	nil	nil	nil

Conclusion: From the above experiment we can conclude that Freshwrap 14-micron aluminium foil and Freshwrap 18- micron aluminium foil under test did not permit the penetration of concentrated broth culture of standard microorganisms e.g. *Escherichia coli*, *Staphylococcus aureus*, *Salmonella typhimurium*, *Aspergillus niger* and *Candida albicans* into the packet upto a contact period of 24 hrs.





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Verified by
Prachi
Prachi Deshpande
Sr. Microbiologist



Authorized by
Shairne
Shairne Premkumar
In charge - Microbiology

"This report is electronically generated & does not require signature"

-- End of Report --

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