ams Laboratories Pty Ltd
Striving for Excellence - "bringing science and commerce together"

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Certificate of Analysis
Dated: 10/03/2014

CLIENT: HPM Legrand 4/44 Lyn Parade Prestons NSW 2170	**OUR REF:** 1402504R, This CofA supersedes CofA No 1402504 dated 24-02-2013
ATTN: Ben Miles	**ORDER NO:** Not given
SAMPLE DESCRIPTION: Sample 1: PC/ PBT material	**DATE RECEIVED:** 13/02/14 **DATE COMMENCED:** 18/02/14
EXAMINATION: JISZ 2801:2010	**Dilution**: Neat
Recovery Broth: 0.1% Peptone Water +0.5% Tween80 (PTW)	**Recovery volume:** 50mL/ sample

Method Description:

Six (6) pieces of untreated and three (3) pieces of treated specimen were transferred aseptically into sterile petri dishes separately facing up. Top surface of each test piece was inoculated with 2.0 mL of challenge organism and covered with sterile film to spread the inoculum. Three inoculated pieces each of treated and untreated specimen were incubated at 37°C.

Counts were performed on 3 untreated materials soon after inoculation. Each inoculated test material was transferred into a stomacher bag and 50mL of PTW was added into it. Stomacher bag was sealed using a heat sealer and shaken for 1 minute. Appropriate dilutions (-2 to -3 for untreated specimen soon after inoculation and -1 to -5 for specimen after incubation) were performed using phosphate buffer physiological saline. The plates were poured with TSA and incubated at 37°C for 24 $\pm$1 hour. Counts were performed at the end of incubation period for both treated and untreated materials.

Challenge Organisms: *Staphylococcus aureus* ATCC 6538

Escherichia coli ATCC 8739

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RESULTS:

Table 1: Antibacterial Activity result on PC/ PBT material against *S. aureus*.

Challenge organism:		*S. aureus*		Sample:	PC/ PBT	
Specimen:	Test condition	CFU / mL				Condition of a valid test
	Temp. / incubation period	Replicate 1	Replicate 2	Replicate 3	Mean	
Control	immediately after inoculation	5.4×10^5	4.0×10^5	4.4×10^5	4.6×10^5	≤0.2
Log value		**5.73**	**5.60**	**5.64**	**5.66**	0.02
Control	after 24hrs ± 1hr incubation @ 37°C	2.2×10^7	2.6×10^7	1.9×10^7	2.2×10^7	-
Log value		**7.34**	**7.41**	**7.28**	**7.34**	-
Treated	after 24hrs ± 1hr incubation @ 37°C	50	50	300	133	**Log reduction**
Log value		**1.70**	**1.70**	**2.48**	**2.12**	**5.22**

Table 2: Antibacterial Activity result on PC/ PBT material against *E. coli*.

Challenge organism:		*E.coli*		Sample:	PC/ PBT	
Specimen:	Test condition	CFU / mL				Condition of a valid test
	Temp. / incubation period	Replicate 1	Replicate 2	Replicate 3	Mean	
Control	immediately after inoculation	6.0×10^5	6.3×10^5	6.1×10^5	6.1×10^5	≤0.2
Log value		**5.78**	**5.80**	**5.79**	**5.76**	0.00
Control	after 24hrs ± 1hr incubation @ 37°C	2.1×10^8	2.3×10^8	2.2×10^8	2.2×10^8	-
Log value		**8.32**	**8.36**	**8.33**	**8.34**	-
Treated	after 24hrs ± 1hr incubation @ 37°C	50	25	50	42	**Log reduction**
Log value		**1.70**	**1.40**	**1.70**	**1.62**	**6.72**

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FINAL RESULTS:

When tested in accordance with JIS Z 2801:2010 **"PC/ PBT materials"** have shown significant antibacterial activity by achieving a log reduction of 5.22 and 6.72 respectively when tested against *Staphylococcus aureus* and *Escherichia coli*. This equates to 99.999% kill for *Staphylococcus aureus* and 99.9999% kill for *Escherichia coli*.

Medium Used:
Tryptic Soy Agar -060814
0.1% PTW -110514
Peptone Water: 210514
Nutrient Broth 190514

Signed:
Imtiaz Ahmed
Sterile Products Testing Manager