

(Approved Body of the Ministry of Textiles, Govt. of India) Lal bahadur Shastri Marg, Ghatkopar (West), Mumbai - 400086.

Phones: 022 - 6202 3636 / 6202 3600





BTRA TEST LABORATORIES
TEST REPORT

Report Details : **BTL/TR/B2401757/MWO/1/A/2024**ULR No : **TC694124000001757F**Date : **12-04-2024**

Anant Polymers

Plot No.26, Vartej GIDC, Vartej,

Bhavnagar

Pincode: 364060

Contact Person: Anant Polymers

THE FOLLOWING SAMPLE(S) WAS/WERE SUBMITTED AND IDENTIFIED BY/ON BEHALF OF THE CUSTOMER AS:

Sample No : B2401757-1 Product Description : PVC Pipe
Received on : 18-03-2024 To 08.04.2024 To 18.03.2024 To 08.04.2024 Reference : Letter dtd.14.3.2024

Despatched on : Sample Type : MWO
Project Name : Page : 1/6

TEST RESULTS

Test Material : PVC Pipe

Sample Modification : Pipe cut open to create flat surface.

Date Of Test : 13/06/2023

Name Of Test : Test for antibacterial activity and efficacy of plastic, metal,

ceramic products (control req.) JIS Z 2801

Media Used : Nutrient broth, SCDLP Broth, Plate Count Agar

Test Organism : Staphylococcus aureus ATCC 6538P

Escherichia coli ATCC 8739

Incubation Conditions : $37\pm 2^{\circ}$ C for 24-48 hrs

Procedure : Diluents: Phosphate buffer solution, Phosphate buffered

physiological saline

Culture density: 2.5 - 10 x10⁵ CFU/ml Volume of test inoculum inoculated: 0.4 ml

Copper Treated Anti Microbial Pipe

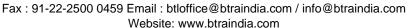


(Authorised Signatory)



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Fig. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.				
Test organism: Staphylococcus aureus ATCC 6538P				
No. of bacteria from Untreat	ted sample at 0 hour: $N(U_0)$ =	$Log N(U_o) = 4.15$		
No. of bacteria from Untreat	ted sample at 24 hr : $N(U_t) =$	1.32×10^4	$Log N(U_t) = 4.12$	
Sample Code	No. of bacteria from	$Log N(A_t)$	Antimicrobial activity	
1	Treated Sample at 24 hr			
	$N(\hat{A}_t)$		$R = U_t - A_t$	
B2401757-1	14.17	1.15	2.97	
(PVC Pipe)				

Test organism: Escherichia coli ATCC 8739				
No. of bacteria from Untreated sample at 0 hour: $N(U_0) = 1.07 \times 10^4$			$Log N(U_0) = 4.03$	
No. of bacteria from Untreat	ed sample at 24 hr : $N(U_t) =$	1.04×10^4	$Log N(U_t) = 4.02$	
Sample Code	No. of bacteria from Treated Sample at 24 hr N(A _t)	Log N(A _t)	Antimicrobial ${ m activity}$ ${ m R}={ m U_t}$ - ${ m A_t}$	
B233572-1	16.67	1.22	2.80	
(PVC Pipe)				



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TEST REPORT

P.S. : The value of Antimicrobial activity (R) obtained by the testing methods

of this standard shall not be less than 2.0 for the antimicrobial products.

Conclusion : The Sample B2401757-1 (PVC Pipe) showed Antibacterial activity

Value of **2.97** against *Staphylococcus aureus* ATCC 6538P, **2.80** against *Escherichia coli* ATCC 8739 at given time intervals, when tested by JIS

Z 2801: 2010 Method.

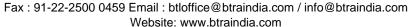
-- End of the Report --





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BTRA TEST LABORATORIES

TEST REPORT

Report Details : **BTL/TR/B2401757/MWO/3/A/2024**ULR No : **TC694124000001757F**Date : **12-04-2024**

Anant Polymers

Plot No.26, Vartej GIDC, Vartej,

Bhavnagar

Pincode : 364060

Contact Person: Anant Polymers

THE FOLLOWING SAMPLE(S) WAS/WERE SUBMITTED AND IDENTIFIED BY/ON BEHALF OF THE CUSTOMER AS:

Sample No : **B2401757-3** Product Description : **Pipe**

Received on : 18-03-2024 Total Number of Samples in Order: 3
Testing Period : 18.03.2024 To 08.04.2024 Reference : Letter dtd.14.3.2024

Despatched on : Sample Type : MWO
Project Name : Page : 4/6

TEST RESULTS

Test Material : PVC Pipe

Sample Modification : Pipe cut open to create flat surface.

Date Of Test : 13/06/2023

Name Of Test : Test for antibacterial activity and efficacy of plastic, metal,

ceramic products (control req.) JIS Z 2801

Media Used : Nutrient broth, SCDLP Broth, Plate Count Agar

Test Organism : Staphylococcus aureus ATCC 6538P

Escherichia coli ATCC 8739

Incubation Conditions : $37\pm 2^{\circ}$ C for 24-48 hrs

Procedure : Diluents: Phosphate buffer solution, Phosphate buffered

physiological saline

Culture density: 2.5 - 10 x10⁵ CFU/ml Volume of test inoculum inoculated: 0.4 ml

Ordinary Pipe

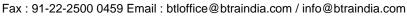
Morekas

Ashwini Govekar Microbiology (Authorised Signatory)



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BTRA TEST LABORATORIES TEST REPORT

Report Details: BTL/TR/B2401757/MWO/3/A/2024 ULR No : TC694124000001757F Date : 12-04-2024

Test organism: Staphylococcus aureus ATCC 6538P				
No. of bacteria from Untreated sample at 0 hour: $N(U_0) = 1.41 \times 10^4$			$Log N(U_0) = 4.15$	
No. of bacteria from Untreat	ed sample at 24 hr : $N(U_t) =$	1.32 x 10 ⁴	$Log N(U_t) = 4.12$	
Sample Code	No. of bacteria from	$Log N(A_t)$	Antimicrobial activity	
_	Treated Sample at 24 hr	-		
	$N(A_t)$		$R = U_t - A_t$	
B2401757-3	1462.5	3.17	0.95	
(Pipe)				

Test organism: Escherichia coli ATCC 8739				
No. of bacteria from Untreated sample at 0 hour: $N(U_0) = 1.07 \times 10^4$			$Log N(U_0) = 4.03$	
No. of bacteria from Untreat	ted sample at 24 hr : $N(U_t) =$	$Log N(U_t) = 4.02$		
Sample Code	No. of bacteria from Treated Sample at 24 hr N(A _t)	Log N(A _t)	Antimicrobial $activity$ $R = U_t - A_t$	
B233572-3	1460.44	3.16	0.86	
(Pipe)				





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TEST REPORT

P.S. : The value of Antimicrobial activity (R) obtained by the testing methods

of this standard shall not be less than 2.0 for the antimicrobial products.

Conclusion : The Sample B2401757-3 (Pipe) showed Antibacterial activity Value of

0.95 against *Staphylococcus aureus* ATCC 6538P, **0.86** against *Escherichia coli* ATCC 8739 at given time intervals, when tested by JIS

Z 2801: 2010 Method.

-- End of the Report --

