



大恭化學工業股份有限公司

TAH KONG CHEMICAL INDUSTRIAL CORP.

7TH FLOOR 778, PA TE ROAD, SEC.4,

TAIPEI, REPUBLIC OF CHINA

台北市八德路四段七七八號

新矽谷大樓七樓

TEL:(02)7859081-7

TLX:25217 TKCPIGMENT

CABLE:TKCHEMIAL TAIPEI

FAX:(02)7850907

Anti-Microbial Master Batch

Introduction:

Our anti-microbial master batch is composed of silver-based inorganic antibacterial agent and PE resin which has the advantages of good dispersion and processability.

Mechanism: In the humid environment, trace amount of silver ions will be released from antimicrobial master batch slowly. The negatively charged of bacteria will attract the positively charged silver ions to its surface and break the charge balance. Finally, the process results in the damage to bacterial cell wall.

1. Description

Item Code: TPA NC 7E533

Appearance: Pellet

Composition: Antibacterial & PE Resin

2. Application

Blow molding, Injection, Extrusion for PE and PP productions.

3. Properties

Good anti-microbial effect

No influence to the properties of the applied plastic material

Good transparency

4. Test Result of TPA NC 7E533

Test result of Anti-microbial effect against Escherichia coli/Staphylococcus aureus(The test was executed in accordance with JIZ Z 2801(2010).

a. Anti-microbial effect of PE plate:

<i>E. coli</i> NBRC 3972	Number of living bacteria per cm ² of test sample		Anti-microbial activity value against blank	Anti-microbial effect (%)
	At starting	After 24hours		
Blank	1.5*10 ⁴	2.1*10 ⁶	-----	-----
TPA NC 7E533: 4%	1.5*10 ⁴	< 6.3	> 5.5	99.999

<i>S. aureus</i> NBRC 12732	Number of living bacteria per cm ² of test sample		Anti-microbial activity value against blank	Anti-microbial effect (%)
	At starting	After 24hours		
Blank	1.3*10 ⁴	8.1*10 ⁴	-----	-----
TPA NC 7E533: 4%	1.3*10 ⁴	< 6.3	> 4.1	99.99



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b. Anti-microbial effect of PE film:

<i>E. coli</i> NBRC 3972	Number of living bacteria per cm ² of test sample		Anti-microbial activity value against blank	Anti-microbial effect (%)
	At starting	After 24hours		
Blank	1.5*10 ⁴	1.6*10 ⁶	-----	-----
TPA NC 7E533: 4%	1.5*10 ⁴	< 6.3	> 5.4	99.999

<i>S. aureus</i> NBRC 12732	Number of living bacteria per cm ² of test sample		Anti-microbial activity value against blank	Anti-microbial effect (%)
	At starting	After 24hours		
Blank	1.3*10 ⁴	6.3*10 ⁴	-----	-----
TPA NC 7E533: 4%	1.3*10 ⁴	< 6.3	> 4.0	99.99

Remark: Anti-microbial efficacy was according to anti-microbial activity value > 2.

5. Consistent properties on the applied plastic:

Physical property Test Condition	Test Method	Tensile Strength	
		Tensile Strength (kg/cm ²)	Percent Elongation (%)
Blank (without adding antimicrobial master batch)	ASTM D412	164.8	68.4
TPA NC 7E533: 4% addition	ASTM D412	170.8	68.4

Remark: The above data and results are based on controlled or lab work and must be confirmed by buyer by testing for the intended conditions of use.

6. The Recommended dosage is 4% , please contact us for any query.