

TÜV Rheinland AIMEX Ltd.

TEST REPORT

Report Number: 15-0826-045-01-B

Date Received: 2015/08/26

Applicant: You Yuan Technology Co., LTD

Sample Name: Nano-Silver Yarns (Ag+)Active Antimicrobial Spray

Test Period: 2015/08/26 ~ 2015/10/11

Sample Info: New

Date Issued: 2016/09/06

Applicant Address: No.116, Zhongshan Rd., Toufen Township, Miaoli County 351, Taiwan (R.O.C.)

Item(s)

Result(s)

Remark(s)

Antimicrobial test of Escherichia coli

Antimicrobial test of Staphylococcus aureus

Shown as the table

Silver (Ag)

~~~The End~~~

Method:

Reference customer's specific testing method.

Test procedure:

Control bacterial count: Measured diluted type culture strain (*Escherichia coli (E. coli*): BCRC 11634, *Staphylococcus aureus (S. aureus)*: BCRC 12154) and calculated control bacterial count.

Test: Inject 200 mL of water into the sample bottle (Nano-Silver Yarns (Ag+) Active Antimicrobial Spray). Allow to stand for 0 minute, 30 minutes, and 24 hours. When each point time's up, shaking the bottle 5 times and taking 20 mL Ag-released liquid to test the content of silver. For the antimicrobial test, adding measured culture strain (*E. coli*: BCRC 11634, *S. aureus*: BCRC 12154) into these 20 mL Ag-released liquid and waiting for 5 minutes, then performing the test.

Calculate antimicrobial rate: Antimicrobial rate (%) = (control bacterial count-final bacterial count)/control bacterial count x 100%



- 1. Samples and names were provided by the client. The lab was responsible for analysis only.
- 2. The analysis results are only effective for the samples in this report.
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- 5. This report will be rendered invalid if altered.
- 6. N.D. means Non Detected.
- 7. Positive means Detected. Negative means Non Detected.



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### Result:

#### E. coli: BCRC 11634

| antimicrobial rate (%)           | 0.0%                | 58.2%               | 71.8%               |
|----------------------------------|---------------------|---------------------|---------------------|
| final bacterial count (CFU/mL)   | 2.2*10 <sup>6</sup> | 9.2*10 <sup>5</sup> | 6.2*10 <sup>5</sup> |
| control bacterial count (CFU/mL) | 2.2*10 <sup>6</sup> | 2.2*10 <sup>6</sup> | 2.2*10 <sup>6</sup> |
| time                             | 0 minute            | 30 minutes          | 24 hours            |

### S. aureus: BCRC 12154

| time                                | 0 minute            | 30 minutes          | 24 hours            |
|-------------------------------------|---------------------|---------------------|---------------------|
| control bacterial count<br>(CFU/mL) | 2.8*10 <sup>4</sup> | 2.8*10 <sup>4</sup> | 2.8*10 <sup>4</sup> |
| final bacterial count (CFU/mL)      | 2.8*10 <sup>4</sup> | 1.9*10 <sup>4</sup> | 1.1*10 <sup>4</sup> |
| antimicrobial rate (%)              | 0.0%                | 32.1%               | 60.7%               |

## E. coli: BCRC 11634 + S. aureus: BCRC 12154

| time                                | 0 minute            | 30 minutes          | 24 hours            |
|-------------------------------------|---------------------|---------------------|---------------------|
| control bacterial count<br>(CFU/mL) | 2.2*10 <sup>6</sup> | 2.2*10 <sup>6</sup> | 2.2*10 <sup>6</sup> |
| final bacterial count<br>(CFU/mL)   | 2.2*10 <sup>6</sup> | 1.4*10 <sup>6</sup> | 8.3*10 <sup>5</sup> |
| antimicrobial rate (%)              | 0.0%                | 37.2%               | 62.7%               |

## Authorized Representative:

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## Result:

### Silver (Ag)

| time      | 0 minute | 30 minutes | 24 hours |
|-----------|----------|------------|----------|
| Ag (mg/L) | -        | 0.033      | 0.093    |

## sample photo:



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