

Laboratory Testing of Syndicate's UltimoID[®] MED Direct Thermal Antimicrobial Wristbands

This document details the laboratory testing completed on Syndicate's UltimoID[®] MED direct thermal printable antimicrobial-coated wristbands. Independent laboratories and the Syndicate's Research and Development team tested the wristbands to ensure they meet Syndicate's high standards for image durability, scanability and comfort.



The following UltimoID[®] MED wristbands underwent testing:

- UltimoID[®] MED Direct Thermal wristbands with Adhesive closure: **ADULT, CHILD & INFANT**
- UltimoID[®] MED Direct Thermal wristbands with Snap closure : **ADULT**

The following tests were conducted:

- **Image Durability**
Syndicate R&D Laboratory; Test date: February 2014
- **Tensile Strength and Peel Adhesion**
Syndicate R&D Laboratory; Test date: February 2014
- **Effectiveness of anti-microbial coating**
Test Lab of SinanenZeomic Co., Ltd., Japan; Test date: April 30, 2014

Image Durability and Peel Adhesion

Optimum scanning performance and image durability are important, especially regarding the narrow 5mil 128 Subset C bar codes that are printed on today's hospital wristbands. A barcode that fails to scan or requires repeated attempts to scan, can both jeopardize patient safety and staff productivity. Syndicate's R&D team tested the image durability of UltimoID[®] MED direct thermal wristbands to insure optimum image durability and scanning performance.

The image durability of a 5 mil narrow-bar 16 digit Code 128 C barcode printed on a UltimoID[®] MED wristband at Syndicate's recommended darkness and prints peed settings was measured by scanning with a Axicon 6500 Series ANSI/ISO Grade Barcode verifier after exposure to solvents, abrasion and water. For each test performed, a "Pass" or "Fail" designation was noted. Following are definitions of the designations:

- **Pass** = Immediate scan of barcode without repeated attempts
- **Fail** = Failure of barcode to scan or required repeated attempts to scan

Solvents: The following solvents were tested using an AATCC Crock meter, using a crocking cloth and a Crock meter heavy arm:	Scan Result All Wristbands
91% Isopropyl Alcohol: 50x rubs with a soaked cloth on a 5 mil narrow-bar 16 digit Code 128 C barcode.	Pass
70% Ethyl rubbing Alcohol: 50 rubs with a soaked cloth on 5 mil narrow-bar 16 digit Code 128C barcode.	Pass
Betadine: 100X rubs with a soaked cloth on a 5 mil narrow-bar 16 digit Code 128 C barcode.	Pass
Purell: 50X rubs with a soaked cloth on a 5 mil narrow-bar 16 digit Code 128 C barcode.	Pass
Abrasion: An abrasion test was conducted using an AATCC Crock meter, using a crocking cloth and a Crock meter heavy arm. 1000X rubs with a dry crocking cloth on a 5 mil narrow-bar 16 digit Code 128 C barcode.	Pass
Water Resistance: The water resistance was tested using a Cimarec Stirring Hot Plate. The 5 mil narrow-bar 16 digit Code 128 C barcode was immersed in 105°F/40° C water, at stir setting 3 for 6 hours.	Pass

Tensile Strength and Peel Adhesion

Tensile Strength

The tensile strength was tested using a Series 500 Force Test Stand, IMADA Dial force gauge station, at a speed of 1.5 inch/minute. This test simulates pulling the wristband off a wrist.

All **Ultimoid MED** wristbands withstand pull force of 41 pounds.

Peel Adhesion

The peel adhesion was tested using a Series 500 Force Test Stand, IMADA Dial force gauge station, at a speed of 12 inches per minute and a peel angle of 180 degrees. This test simulates peeling the wristband apart at the adhesive tab.

All **Ultimoid MED** wristbands withstand peel force of 55 ounces.

Effectiveness of Anti-microbial coating

All **Ultimoid MED** wristbands are anti-microbial coated. The effectiveness of the anti-microbial coating was tested at the test laboratory of Sinanen Zeomic Co., Ltd., Japan.

Test Protocol JIS Z 2801 (2010 edition) was followed.

All samples were impregnated with bacterial strains of Staphylococcus aureus (NBRC 12732) and Escherichia coli (NBRC 3972) and tested for anti-microbial activity.

The wristbands received the following anti-microbial activity rating*

Staphylococcus	A	Escherichia coli	A
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*Rating for antimicrobial activity:

A: Clearly antimicrobial activity compared with the un-treated sample

B: High potential antimicrobial activity compared with the un-treated sample

C: Non antimicrobial activity compared to the un-treated sample

Syndicate Group is a world leader in patient wristband printing, materials management, security, and employee identification. **Syndicate** has the experience, industry knowledge, and specialized products needed for successful hospital implementations.

Visit: www.ultimoid.com for more information about bar code printing solutions for healthcare.