



# DuPont™ Tyvek® Medical Packaging Transition Project (MPTP)

Phantom Protocol Printing Trials

April 9, 2015

# Phantom Protocol Printing Assessment

- Two printing technologies commonly used in the medical packaging industry have been assessed:
  - Flexography
  - Thermal transfer
- The test has been run on versatile test equipment which can be switched from one printing technology to another in a few minutes by simply changing the printing modules:
  - Module for Flexography (Amaco DV131)
  - Module for Thermal transfer (Amaco TT15)
- Printing study objective:
  - Demonstrate that 1073B Transition Protocol Material performs similar to, or better than, current Tyvek® 1073B by performing barcode readability tests

# Barcode Readability Test

For the barcode readability test, 3 different types of barcode readers have been used

## Regular 1D laser scanner

A standard range laser barcode scanner can only be used for reading 1D barcodes by pointing the laser beam over the barcode horizontally.

The model that was used: Motorola LS3008.



## 2D barcode imager

A 2D barcode imager operates as a camera with barcode decoding capabilities. An illuminated square (often red) indicates the area where it reads. This illuminated square is often marked with highlighted corners or a marker in the middle for easier aiming. Within the illuminated square, the 2D image can read both 1D and 2D codes.

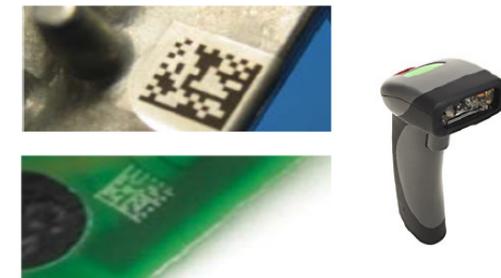
In these tests, the Microscan HS-21 was used.



## 2D DPM reader (Direct Part Marking)

The core of a DPM reader is the same as a regular 2D imager. The differences are found in the reader's optics, decoding software and illumination which are altered specifically for DPM codes to read contrast on these difficult materials. DPM codes are often applied on reflective surfaces such as metal and plastic.

In these tests, the Microscan HS-41X was used.



# Barcode Readability Testing Protocol

## ■ ■ Barcode readability:

- Result is a pass or a fail
- 4 different barcodes have been tested
- The barcodes have been selected according to GS1 standards; size and details are listed in the Barcode Readability Results tables
- 6 samples per barcode type have been scanned
- 6P/6 means: Six Pass for 6 scanned barcodes
- 0P/6 means: Zero Pass for 6 scanned barcodes

## ■ ■ Functional equivalence criteria has been defined as follows:

“Transition Protocol material should not exhibit more than a “1P” difference less than current material.”

# Barcode Readability Results

Barcode readability with handheld barcode scanner	Flexographic printing			GS1 128			GS1 Datamatrix			GS1 Datamatrix		
	1073B Transition Protocol Material	Current Tyvek® 1073B	CONCLUSION	1073B Transition Protocol Material	Current Tyvek® 1073B	CONCLUSION	1073B Transition Protocol Material	Current Tyvek® 1073B	CONCLUSION	1073B Transition Protocol Material	Current Tyvek® 1073B	CONCLUSION
Regular 1D laser scanner	6P/6	6P/6	equivalent	0P/6	0P/6	equivalent	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
2D barcode imager	6P/6	6P/6	equivalent	5P/6	6P/6	equivalent	6P/6	6P/6	equivalent	5P/6	5P/6	equivalent
2D DPM reader	6P/6	4P/6	equivalent	0P/6	0P/6	equivalent	6P/6	6P/6	equivalent	5P/6	5P/6	equivalent

Barcode readability with handheld barcode scanner	Thermal transfer printing			GS1 - Datamatrix		
	1073B Transition Protocol Material	Current Tyvek® 1073B	CONCLUSION	1073B Transition Protocol Material	Current Tyvek® 1073B	CONCLUSION
Regular 1D laser scanner	6P/6	6P/6	equivalent	N.A.	N.A.	N.A.
2D barcode imager	6P/6	6P/6	equivalent	6P/6	6P/6	equivalent
2D DPM reader	6P/6	6P/6	equivalent	6P/6	6P/6	equivalent

Note: 6P/6 means six pass for 6 scanned barcodes; 0P/6 means zero pass for 6 scanned barcodes. Functional equivalence criteria defined as “Transition Protocol material should not exhibit more than a “1P” difference less than current material.”

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