



## Features

Semi-rigid polyester construction offers increased durability and strength over other RFID tags  
Optional subsurface printing protects against extreme solvents, caustics, acids, and abrasion.  
Ideal for high wear applications including returnable pallets, containers, utilities and embedding within injected molded products  
IP68 Ingress Protection  
Average read range 22-24 ft.

## Product Print Options

Barcode . Data Matrix . QR Code . RFID .  
Serial Number . Text

## Product Functionality

Abrasion Resistance . Chemical Resistance . Heat Resistance .  
UV/Outdoor Durability

## Popular Applications

Oil & Gas . Supply Chain . Transportation / Logistics . Utilities . Warehouse / Distribution Centers . Manufacturing

## Category

RFID Pallet Tags . RFID Tags

The Flex Hard Tag has been specifically designed for assets that need a rugged, yet flexible, polymer RFID tag that is more cost effective than traditional hard tags and has reliable, consistent read range performance.

Reusable containers, pallets and other mobile assets are exposed to a wide variety of environment and working conditions.

Abrasion, UV exposure, dirt and moisture can affect the durability and longevity of your RFID tags. The Flex Hard Tag is made of high performance, pliable polyester that provides more strength and rigidity than a traditional RFID polyester label but is more formable than a metal or hard plastic tag.

The Flex Hard Tag is ideal for returnable pallets, plastic crates, containers, utility poles or for embedding in injected molded products. Along with a RFID read range of 22-24 ft. on most applications, the Flex Hard Tag is versatile and durable enough for almost any returnable container or harsh environment RFID tracking project.



## Specifications Data

<b>Material</b>	<b>.002" or .003" polyester for subsurface printing, .007" polyester inlay covering, .007" polyester base. Approximate .020" total product thickness.</b>
Serialization	Barcode and human-readable equivalent is produced using the latest high-resolution digital technology available, which provides excellent clarity and easy scanning. Code 39 is the standard symbology with a range of 2.7 to 9.4 CPI.
Label Copy	The label copy may include block type, stylized type, logos or other designs. All copy, block type, stylized type, logos, designs, and bar code are subsurface printed. This unique process provides excellent resistance to environmental factors.
Colors	Standard colors include black, red, yellow, green or blue. Custom spot colors are also available at no additional charge. Due to contrast needed for the bar code scanner, all bar codes are black.
Standard Adhesive	High performance adhesive
Frequency Range	860-960 MHz
Sizes	Various sizes available
Packaging	Shipped in "work-out- of" cartons for convenient application.
Shipment	14 business days



## Chemical Testing

Test of label structure and printed image as well as readability of inlay.

### Chemical Test Data

Immersion Time	2 Hrs	24Hrs	48 Hrs
DI Water	no effect	no effect	no effect
Salt Water	no effect	no effect	no effect
Bathroom Cleaner	no effect	no effect	no effect
Glass Cleaner	no effect	no effect	no effect
Isopropanol	no effect	Adhesive Ooze Around Perimeter of Tag	Adhesive Ooze Around Perimeter of Tag
Brake Fluid	no effect	no effect	no effect
Acetone	Adhesive Ooze Around Perimeter of Tag	Adhesive Ooze Around Perimeter of Tag/Tag Delaminated	Adhesive Ooze Around Perimeter of Tag/Tag Delaminated/Inlay no read
Diesel Fuel	no effect	Adhesive Ooze Around Perimeter of Tag	Adhesive Ooze Around Perimeter of Tag
Nitric Acid	no effect	no effect	no effect
Hydrochloric acid	no effect	no effect	no effect
Sodium Hydroxide	no effect	no effect	no effect
Skydrol	no effect	Adhesive Ooze Around Perimeter of Tag	Adhesive Ooze Around Perimeter of Tag

## Destructive Testing

Pressure Washer Test: Labels were applied to a polypropylene test panel and allowed to wet out for 24 hrs. High pressure washing consisting of spraying room temperature water for 30 seconds. Spray was directed at the edges of the label to force delamination. No delamination occurred, no other defects were observed and the inlay read after exposure.



## Temperature Testing

High Temperature Test: All samples were applied to glass test panels and subject to 10 minutes of cumulative exposure to 150°F, 200°F, 250°F, and 300°F. The results were taken immediately after removal from the oven. No adhesion loss to substrate, warping, or delamination was observed, and all inlays read post-exposure. Low

Temperature Test: All samples were applied to polypropylene and subject to -1.3°F for 24 hours. The results were taken immediately after removal from the freezer. No adhesion loss to the polypropylene was observed, and all inlays read correctly.

## Abrasion Testing

Samples were tested on the Taber 5130 abrader with CS-10 wheels with a wheel load of 500g each (1000g total). All samples survived 20,000 revolutions.



VULCAN RFID

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