Universal Mini RFID Tag

The only thing “mini” about this tag is its size! With a smaller footprint and lower profile, the Universal Mini RFID Tag easily fits where other tags may be too large and obtrusive and still gives incredible read ranges compared to other tags in its class.

Developed using the same premise as our original Universal RFID Asset Tag, the Universal Mini RFID Tag is a surface-independent tag that uses a patented inlay design and passive RFID technology to obtain excellent read ranges regardless of the surface – metal, plastic, even wood. Along with the Universal Asset Tag, the Universal RFID Hard Tag, Universal Micro RFID Tag and the Universal MC RFID Tag, these products make up a revolutionary product line that allows you to use only one RFID tag for your asset tracking application.

This unique inlay adheres to a subsurface printed label constructed of durable, yet flexible polyester. This process protects the copy, logo and/or barcode against moderate solvents and caustics/acids while our four-color processing capabilities allow you to promote your company with a label that

Features	Smaller footprint and lower profile while still achieving excellent read range sets this product apart from others Patented inlay design obtains excellent read ranges regardless of surface – metal, plastic, even wood Subsurface printing on durable polyester protects printed copy against moderate solvents and caustics/acids Compatible with RFID Tracking Software
Product Print Options	Barcode . Data Matrix . QR Code . RFID . Serial Number . Text
Product Functionality	Abrasion Resistance . Chemical Resistance . Heat Resistance
Popular Applications	Audio / Visual . Inventory . Restoration . Theater . Theme parks . Wineries / Breweries . Hospitals . IT Assets . Manufacturing . Schools
Category	Manufacturing - RFID . Information Technology - RFID . Medical - RFID . Warehouse - RFID . Equipment Rental - RFID . Education - RFID . Asset Tracking - RFID . Tool Tracking - RFID . Work-in-Process - RFID . RFID Tags . Custom Asset Tags . RFID for Metal Surfaces

shows off our company logo. Metalcraft's digital printing process ensures even the most detailed logos will look crisp and clean.

Specifications Data

Material	**Inlay wrapped around 1/32" closed cell foam. Total thickness .047".**
Serialization	Bar code and human-readable equivalent are 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 5.4 CPI (characters per inch). Optional symbology is Code 128.
Label Copy	The label copy may include block type, stylized type, logos or other designs
Colors	Standard colors include black, red, yellow, green, dark blue, orange, purple 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	Pressure-sensitive acrylic adhesive
Frequency Range	Custom designed UHF inlay optimized for use between 902-928 MHz. (UHF, Class I Gen 2)
Sizes	2.75" x .75"
Packaging	Produced and shipped in roll form.

Chemical Testing

The Universal Mini tags were attached to a sheet of glass submerged in various chemicals for a 3 week period. Observations were made at the following intervals: 2 hours, 24 hours, 1 week, 2 weeks, and 3 weeks. A Motorola handheld RFID reader as well as a handheld barcode reader were used to test the samples.

Chemical Test Data

Length of immersion	Water	Glass cleaner	Bathroom Cleaner	Isopropyl alcohol 99%	Acetone	NaOH pH 12.0	HCl pH 1.0	Brake Fluid
2 hours	no effect	no effect	no effect	no effect	no effect	no effect	no effect	no effect
24 hours	no effect	no effect	no effect	no effect	no effect	no effect	no effect	no effect
1 week	no effect	no effect	RFID tag read with difficulty (significantly lower hits/second)	no read	Tag structure weakened	Tag detatched	no effect	no effect
2 weeks	no effect	RFID tag read wtih diffuculty (significantly lower hits/second)	RFID tag read wtih diffuculty (significantly lower hits/second)	no read	no read	tag detached	no read	no effect
3 weeks	tag peeled easily	tag peeled easily	no read; tag peeled easily	no read; tag peeled easily	no read	tag detatched	no read; tag peeled easily	no effect

Destructive Testing

Destructive Test Data

2019 Metalcraft, Inc.
3360 9th St SW Mason City, IA 50401
www.idplate.com |
www.universalrfid.com
Ph: 641-423-9460

Temperature Testing

High-temperature resistance test - These tags were attached to a sheet of glass at raised temperatures for 10 minutes. Tags were then removed from the oven and tested for readability immediately. Low-temperature resistance test - The Universal Mini tags were attached to a sheet of glass at low temperatures outdoors. Tags were then checked for readability with a Motorola handheld RFID reader. Tags survived and were readable for 19 hours in Iowa winter conditions with temperatures between -21 to -26°F with no signs of failure.

Temperature Test Data

Temperature	RFID read test (immediately out of oven)	Appearance of tags
125°F	Reads well	No change
135°F	Reads well	No change
145°F	Reads well	No change
165°F	Reads well	Slight curling at edge
185°F	Reads well	Slight curling at edge
205°F	Reads well	Slight curling at edge
225°F	Reads well	Severe curling at edge - tag discolored
250°F	Test failed	Tag destroyed

Read Range Testing

In many cases the tags read intermittently for longer distances than those indicated, however, the results reported below were for continuously responding reads.

Read Range Test Data

Universal Mini Anechoic Chamber Results

Sample	Metal	Plastic	Cardboard	Wood	Glass
Average	13.47 feet	6.8 feet	6 feet	9.67 feet	13.33 feet

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UNIVERSAL RFID BY METAL CRAFT

Barcode Readibility Testing

Barcode Readability Test Data

Abrasion Testing

Abrasion Test Data

Label Adhesion Testing

Label Adhesion Test Data

Pull Testing

Pull Test Data