# Universal RFID Hard Tag

An RFID tag that truly lives up to its name. The Universal RFID Hard Tag features surface-independent tags with a patented inlay design used to obtain excellent read ranges regardless of the surface – metal, plastic, even wood. Along with the Universal RFID Asset Tag, these two products make up a revolutionary product line that allows you to use only one RFID tag for your asset tracking application.

The Universal RFID Hard Tag features impact-resistant housing combined with an ultrasonically welded seal that protects the subsurface printed label and RFID inlay from harsh environments including harmful UV rays. This durable product also withstands heavy impact and will read after resurfacing from submersion in over 20' of water. The housing comes standard with two holes for mechanical fasteners; however, permanent pressure-sensitive adhesive is also available as an optional affixing method.

Unlike other RFID hard tags on the market, the Universal RFID Hard Tag's clear housing allows customers to see the customized label inside. Our four-color processing capabilities allow you to promote your company with a label that shows off your company name or logo. Metalcraft's digital printing process ensures even the most detailed logo will look crisp and clean.

## Key Product Features

- Patented inlay design obtains excellent read range regardless of surface – metal, plastic, even wood

- Impact-resistant housing protects RFID inlay from harmful UV rays

- Ultrasonically welded seal protects RFID inlay from caustics/acids

- Digital printing process provides for greater print capability with detailed logos or special designs

- Choice of up to four standard or custom colors

- Affixing methods include mechanical fasteners (standard) and/or adhesive (optional)

Not sure what product you need?

Call our trained Experts!

866-792-0031

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# Universal RFID Hard Tag Specifications

**Construction:** .002" thick polyester label adhered to proprietary inlay wrapped around 1/16" closed cell foam encased in impact-resistant polycarbonate housing.

**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 solvents, caustics, acids and moderate abrasion.

**Colors:** Standard colors include black, red, yellow, green and blue. Due to contrast needed for the bar code scanner, all bar codes are black.

**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 and optional symbology is Code 128.

**Programming:** The bar code and human readable can be programmed into the RFID inlay as long as the information is in decimal or hexadecimal format. Metalcraft can encode up to 24 characters into the RFID inlay. If desired, Metalcraft can encode information that differs from the bar code and human readable.

**Locking:** All Universal RFID tags are password locked. The password can be designated by Metalcraft, or, if desired, the customer can designate their own specific password.

**Frequency:** Custom designed UHF inlay uses Alien Higgs 3 chip optimized for use at 915 MHz.

**Standard Sizes:** 4 1/8" x 1 3/4"

**Standard Adhesive:** Mechanical fasteners (standard) and/or permanent pressure-sensitve adhesive (optional)

**To Order:** Call **1-866-792-0031** and ask for customer service.

## Test Results

These tests were conducted for a limited period of time in strict laboratory conditions. In order to achieve maximum satisfaction we highly recommend that any customer considering use of this product test the labels in the environment in which they will be used.

**Heat Testing** - Product withstood temperatures up to 240°F (115°C) for short term (10 minute) periods. They will withstand temperatures up to 160°F (71°C) for extended periods (tested for six hours with no degradation). The tests demonstrated that when the transponder was not readable at temperatures above 185°F (85°C), but resumed function when temperatures were once again reduced below 185°F (85°C).

**Cold Testing** - Tags were tested outdoors at 0°F and were readable, but read distance was reduced to half of the read distance observed at 60°F (15°C).

| Length of Immersion | Water | Glass Cleaner | Bathroom Cleaner pH 10.0 | Isop. Alcohol 99% | Acetone 100% | NaOH pH 12.0 | HNO₃ pH 1.0 | HCl pH 1.0 | Brake Fluid |
|---|---|---|---|---|---|---|---|---|---|
| 2 Hours | N.E. | N.E. | N.E. | N.E. | Surface of housing slightly cloudy | N.E. | N.E. | N.E. | N.E. |
| 24 Hours | N.E. | N.E. | N.E. | N.E. | Plastic housing softened, but RFID tag still readable* | N.E. | N.E. | N.E. | N.E. |
| 1 Week | N.E. | N.E. | N.E. | P.S. Adhesive softened | Plastic housing brittle, opaque, but RFID tag still readable* | N.E. | N.E. | N.E. | N.E. |
| 3 Weeks | N.E. | N.E. | N.E. | P.S. Adhesive softened | Plastic housing softened, but RFID tag still readable* | N.E. | N.E. | N.E. | N.E. |

N.E. = No Effect

*In all casses, after 3 weeks soaking in these chemicals, all the tags and labels responded properly when interrogated with a handheld RFID reader, and all the bar codes except those soaked in acetone were readable with a standard bar code reader. NOTE: Samples tested with adhesive.

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

| Device Used | Test Results (all at 30 dBm) | | | |
|---|---|---|---|---|
| | METAL | PLASTIC | CARDBOARD | WOOD |
| Handheld Convergence CS-101 Universal RFID Hard Tag | 10 feet | 5 feet | 5 feet | 5 feet |

Want to see the Universal RFID Tag in action? Download QR code reader app to your smart phone and scan this bar code to view the Metalcraft Universal RFID Tag video.