

Metal RFID Tag



The Metal RFID Tag is a revolutionary product combining the durability of a metal nameplate with the power of an RFID tag.

Made of anodized aluminum, the Metal RFID Tag can withstand the harshest of environments without fading, deteriorating or compromising RFID performance.

The unique material and production process ensures each tag will be able to withstand weathering, chemicals, dirt, and abrasion from distorting the tag and making the text unreadable.

Black copy, logos and barcodes are photographically imaged on to the metal for maximum clarity, then sealed beneath the anodic layer on each tag. In fact, with our intensified option, we guarantee the black text and barcode will be readable for the life of the asset or we'll replace the tag at no charge.

The RFID performance of the Metal RFID Tag also is outstanding. Based upon Metalcraft's patented Universal RFID inlay, the Metal RFID Tag provides read ranges of 15-20 feet on metal surfaces, making it a great fit for a wide array of applications including: outdoor equipment, harsh environment and transportation-related industries.

Key Features

- Revolutionary patented design that merges the durability and readability of a metal tag with RFID technology
- Passive, battery-free design with a small footprint (3" x 1")
- Ideal for outdoor, caustic and harsh environment applications
- Provides outstanding read range performance of 15-20 ft. on metal surfaces
- Intensified photo anodized process protects black text, barcodes for 20 years guaranteed

Applications

- Outdoor / High UV areas
- Harsh Chemical Exposure
- Frequent Washdown, Clean Areas
- Abrasive, Rough Environment
- Heavy Equipment / Rental
- Returnable Containers

Not sure what product you need?

Call our trained Experts!

641-423-9460

UNIVERSAL
RFID

3360 9th St. SW
Mason City, IA 50401
www.universalrfid.com

BY **METAL CRAFT**

Licensed Products are licensed under the following patents: United States Patent Nos. 7,768,400; 7,880,619; 8,299,927; 8,264,358; 8,502,678; 9,122,967



Metal RFID Tag

Material: .020" matte anodized aluminum only.

Label Copy: The label copy may include block type, stylized type, logos or other designs. All copy, block type, stylized type, logos, designs, and barcode are photo composed.

Colors: Black only.

Serialization: Barcode, human-readable equivalent are photo imaged, which provides excellent clarity. Code 39 is the standard symbology with a range of 2.7 to 9.4 CPI (characters per inch). Optional linear and 2D symbologies available.

Programming: The barcode and human readable can be programmed into the RFID inlay as long as the information is in decimal or hexadecimal (A-F, 0-9) format. Your information is custom encoded to EPC and user memory banks. Information that differs from the barcode and human readable also can be encoded to the EPC.

Options: Image intensification, holes centered left, right.

Frequency: For use in U.S. (902-928 MHz) FCC band only.

Standard Size: 3" x 1" with 1/8" corner radius

Standard Adhesive: Pressure-sensitive acrylic (MC78), .002" thick supported by a liner. Very high peel strength that provides excellent resistance to heat and chemicals. Withstands temperatures from -40°F to 302°F (intermittent). Shelf life of 24 months when stored at 72°F (22°C)

and 50% relative humidity.

Optional Adhesive: Pressure-sensitive acrylic adhesive (MC778) .0035" thick; pressure-sensitive acrylic adhesive (MC71LE) .002" thick; pressure-sensitive acrylic adhesive (MC53LE) .0035" thick; VHB adhesive (MC60) .002" thick; VHB adhesive (MC69) .005" thick.

Optional Fasteners: When using mechanical fasteners to apply tags, plastic bushing for use with #6-32 screws or 1/8" OD rivets are provided and recommended.

Packaging: Shipped in "work out of" trays for convenient application; 100 tags per tray, nylon bushings for use with holes supplied in packages of 100; both cartons and trays marked to indicate serial numbers of contents.

Shipment: Contact your ID specialist for lead time.

To Order: Call **1-800-437-5283** or **641-423-9460** and ask for an ID Specialist.



Test Description

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.

Accelerated weathering - Using test method ASTM D4329, two tag samples of non-intensified FCC tuned inlays with holes were riveted with aluminum rivets to .063" anodized aluminum and subject to 1000 hours of QUV exposure. No physical defects were observed. Read range remained unchanged after exposure on both samples.

Temperature extremes - Intensified and non-intensified samples with and without holes with FCC tuned inlays were still readable immediately after 24 hours of exposure to -40°F, and no physical defects were observed. Samples were exposed to 200°F for one hour, and edge lift of the nameplate off of the foam spacer was observed, but all samples were still readable with the Alien ALH-9000 handheld RFID reader. After exposure to 300°F for one hour, the tags had melted, and none of the tags were readable.

Chemical soak test - 2 mil MC78 adhesive. Samples applied to .063" aluminum, then immediately immersed in chemicals at room temperature noted below.

Length of Immersion	5% Salt Water	Glass Cleaner	Bathroom Cleaner	Isopropyl Alcohol 99%	Diesel Fuel	NaOH pH 12.0	HNO ₃ pH 1.0	HCl pH 1.0	Brake Fluid
2 Hours	NE	NE	NE	NE	NE	NE	NE	NE	NE
24 Hours	NE	NE	PE	NE	AO	NE	NE	NE	NE
48 Hours	NE	NE	PE	AO	AO	SC	NE	SC	NE

NE = No Effect, AO = Adhesive Ooze, TD = Tag Delaminated, PE = Surface Print Erosion, NR = Tag No Read, CD = Construction Delaminated, SC = Surface Corrosion

Impact resistance test - Using a modified test method EN/IEC 62262, 3 samples of non-intensified FCC tuned samples with holes and 3 without holes were tested. The test consisted of dropping a 10 lb. weight from a height of 15.7". All 6 samples were still readable with the Alien ALH-9000 handheld reader post exposure.

Read range test - Theoretical read ranges in the Voyantic anechoic chamber based on testing 5 samples of intensified and non-intensified FCC tuned inlays with and without holes are as follows.

Metal RFID Plate Anechoic Chamber Results

Sample Average	METAL 15 ft	WOOD 12 ft	GLASS 16 ft	PLASTIC 7 ft	POLYPROPYLENE 8 ft	CORRUGATED 7 ft