

RFID Tire Tread Label

Polypropylene Label with General Purpose Zebra-Certified RFID inlay

When implementing RFID to track tires, the most critical element to realizing the benefits and achieving the projected return on investment is the RFID label. Without a correctly engineered label and inlay, operations can come to a halt. Tires have a low-energy, textured surface containing oils and plasticizers, preventing most adhesives from bonding well to it. The aggressive, thick adhesive required for tires can ooze and build up in the print pathway, impacting printer up-time. Plus, the oils and plasticizers can migrate into the label facestock impacting readability of the text and barcode. In addition, the inlay and chipset is critical and must be correctly tuned to ensure reliable readability on the variety of materials used to manufacture tires, and the proximity to other tires in a retail setting. Zebra's Tire Tread RFID Label has been carefully engineered to overcome these challenges to optimize readability, printer up-time and workforce productivity.



Resistant to oils and plasticizers

Our carefully selected direct thermal and thermal transfer polypropylene facestocks coupled with an RFID friendly barrier coat prevents the migration of oils and plasticizers to ensure reliable print quality and durability.

Aggressive adhesive applied to ensure reliable securement with minimal impact to printer up-time

We apply the aggressive, thick adhesive for reliable securement by leaving a "dry edge" to allow space for the adhesive to expand, reducing ooze outside the label. This prevents excessive adhesive build up in the print pathway which can cause printer downtime and premature printhead and platen roller failure. In addition, we selected a liner to prevent the transfer of adhesive during printing.

High performance, specially tuned inlays meet Auburn ARC Spec T

Thorough testing using industry standard Voyantic equipment validates strong, reliable read performance up to 20 m on a variety of tire brands and models. Choose from Avery AD600 or Zebra's ZBR8000 which meet Auburn ARC Spec T, the standard for use in tire tread labeling.

Zebra Certified for consistent and exceptional performance

Our materials and inlays have been pre-tested to ensure quality and durable print, industry-leading read performance, reliable encoding, low instance of printer voids, as well as minimal printer wear and tear. Zebra is ISO 9001 certified and adheres to consistent processes to reduce instances of unsuccessful encoding, adhesive ooze and reliable label performance. No matter when you order, you can count on the same consistent performance.

Unmatched expertise in RFID

Zebra is your trusted expert in all things RFID. We offer end-to-end RFID solutions – including pre-tested RFID supplies made with the right materials and adhesives, along with the highest-performing inlays and chips – customized for your application. We have played a central role in pioneering RFID technologies and defining global standards since the mid-1990's, when smart-label technology first appeared. We hold more than 575 RFID patents and numerous industry firsts in RFID.

Keep operations running at peak performance and maximize the benefits of RFID with Zebra's Tire Tread Label. For more information, please visit www.zebra.com/rfidlabels

Specifications

Product Name	
Direct Thermal Matte Polypropylene Tire Label	
Material Construction	
RM#	10035968RM
Facestock	Direct thermal white matte polypropylene with barrier coat 4 mil
Adhesive	High-tack permanent rubber adhesive 4 mil
Liner	50 lb. semi-bleached kraft stock 3.1 mil
Total Thickness (+/-10%)	11.1 mil
Environment	Indoor use; cold temperature compatible
Temperature Performance	
Minimum Application Temperature	40° F/ 4° C
Service Temperature Range	-20° F to 120° F/-29° C to 49° C
Recommended Printers and Ribbons	
Printers	Direct thermal printer; use Zebra desktop, mid-range and high-performance thermal printers for optimal performance
Ribbons	N/A
Chemical Resistance	
Weak Chemicals	
Blood	Test in Application
Body Fluid	Test in Application
Salt Water	Test in Application
Water	Test in Application
Window Cleaner	Test in Application
Moderate Chemicals	
Alcohol	Not Recommended
Ammonia	Not Recommended
Bleach	Not Recommended
IPA	Not Recommended
Harsh Chemicals	
Gasoline	Not Recommended
Grease	Not Recommended
Oil	Not Recommended
Extreme Chemicals	
Acetone	Not Recommended
IR Reflow	Not Recommended
MEK	Not Recommended
TCE	Not Recommended
Xylene	Not Recommended

Regulatory and Compliance

Contains a barrier coat to prevent migration of oils and plasticizers through facestock. Adhesive is suitable for labeling tire tread.

Product Performance and Suitability

Recommended storage conditions	6 months duration when stored at 68° F to 72° F/22° C at 50% RH
Expected life span in application	Indoor use, for 1 year+
Sample Part Number	N/A

Material Testing in End Application

The information contained in this document is to be used for guidance only and is not intended for use in setting specifications. All purchasers of Zebra products shall be solely responsible for independently determining if the product conforms to all requirements of their unique application.

Footnotes

*Theoretical read range data is meant to be directional. Actual performance will depend on your application and environment. Testing is recommended.

Markets and Applications

Other

- Tire Tread Labeling

Specifications

Product Name	
Thermal Transfer Gloss Polyester Tire Label	
Material Construction	
RM#	05219RM
Facestock	Thermal transfer gloss white polyester 2.0 mil
Adhesive	High-tack permanent rubber adhesive 4.0 mil
Liner	50 lb. semi-bleached kraft liner 3.1 mil
Total Thickness (+/-10%)	8.1 mil
Environment	Indoor use; cold temperature compatible
Temperature Performance	
Minimum Application Temperature	40° F/ 4° C
Service Temperature Range	-20° F to 120° F/-29° C to 49° C
Recommended Printers and Ribbons	
Printers	Thermal transfer printer (ribbon required); use Zebra desktop, mid-range and high-performance thermal printers for optimal performance
Ribbons	Compatible with Zebra 5095 resin ribbon for optimal performance
Chemical Resistance	
Weak Chemicals	
Blood	5095: Recommended
Body Fluid	5095: Recommended
Salt Water	5095: Recommended
Water	5095: Recommended
Window Cleaner	5095: Recommended
Moderate Chemicals	
Alcohol	5095: Recommended
Ammonia	5095: Recommended
Bleach	5095: Recommended
IPA	5095: Recommended
Harsh Chemicals	
Gasoline	5095: Test in your application
Grease	5095: Test in your application
Oil	5095: Test in your application

Extreme Chemicals	
Acetone	5095: Test in your application
IR Reflow	5095: Test in your application
MEK	5095: Test in your application
TCE	5095: Test in your application
Xylene	5095: Test in your application

Regulatory and Compliance

Contains a barrier coat to prevent migration of oils and plasticizers through facestock. Adhesive is suitable for labeling tire tread.

Product Performance and Suitability	
Recommended storage conditions	6 months duration when stored at 72° F/22° C at 50% RH
Expected life span in application	Indoor use, for 1 year+

Material Testing in End Application

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Markets and Applications

Other

- Tire Tread Labeling

Specifications

Product Name	
Zebra ZBR8000	
Technical Information	
Chip	NXP® UCODE 9
EPC memory	96-bit
User memory	N/A
TID	96 bit factory locked (48 bit unique)
Read Sensitivity	-24dBm
Write Sensitivity	-21dBm
RFID Standards	EPC Gen2v2, ISO 180000-63, RAIN RFID
Read Range	Up to 20 m in free space
Theoretical Read Range: ETSI (865-868 MHz)*	
Air	10 m
Rubber	12 m
BFGoodrich® Rugged Terrain	7 m
Goodyear Wrangler®	14 m
Goodyear Viva® 3 All-Season	6 m
Theoretical Read Range: FCC (902-928 MHz)*	
Air	9 m
Rubber	17 m
BFGoodrich® Rugged Terrain	8 m
Goodyear Wrangler®	16 m
Goodyear Viva® 3 All-Season	10 m
Temperature Performance	
Storage Temperature	72 °F, 50% RH
Operating Temperature	-20° F to 120° F/-29° C to 49° C
Testing and Compliance	
All inlays certified by Zebra have been pre-tested with Zebra printers and readers.	
Certifications	
Auburn ARC T certification in process	

Material Testing in End Application

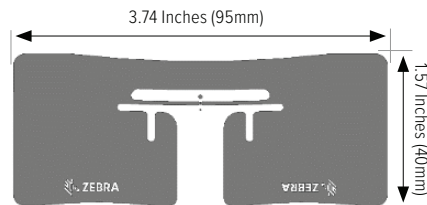
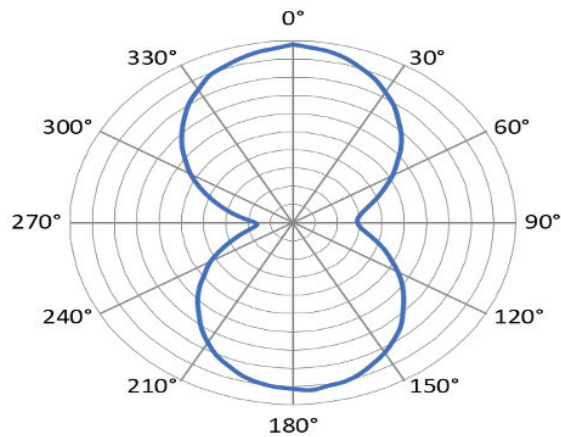
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Footnotes

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Radiation Pattern

**Read range drops 23% of maximum when inlay is perpendicular (90° and 270°) to the reading antenna. To learn more about radiation pattern, visit zebra.com/rfidlabels



Markets and Applications

Other

- Tire Tread Labeling

Specifications

Product Name	
Avery Dennison AD-600	
Technical Information	
Chip	NXP® UCODE 8
EPC memory	96-bit
User memory	N/A
TID	96 bit factory locked (48 bit unique)
Read Sensitivity	-23dBm
Write Sensitivity	-18dBm
RFID Standards	EPC Gen2v2, ISO 180000-63, RAIN RFID
Read Range	Up to 17 m in free space

Theoretical Read Range: ETSI (865-868 MHz)*	
Air	9 m
Rubber	11 m
BFGoodrich® Rugged Terrain	5 m
Goodyear Wrangler®	11 m
Goodyear Viva® 3 All-Season	5 m

Theoretical Read Range: FCC (902-928 MHz)*	
Air	9 m
Rubber	13 m
BFGoodrich® Rugged Terrain	4 m
Goodyear Wrangler®	12 m
Goodyear Viva® 3 All-Season	10 m

Temperature Performance	
Storage Temperature	72 °F, 50% RH
Operating Temperature	-20° F to 120° F/-29° C to 49° C

Testing and Compliance

All inlays certified by Zebra have been pre-tested with Zebra printers and readers.

Material Testing in End Application

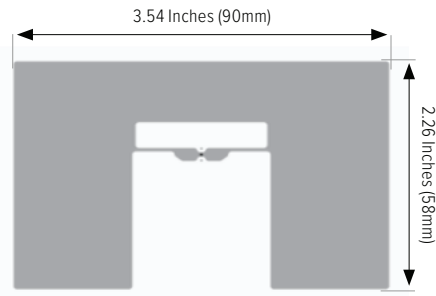
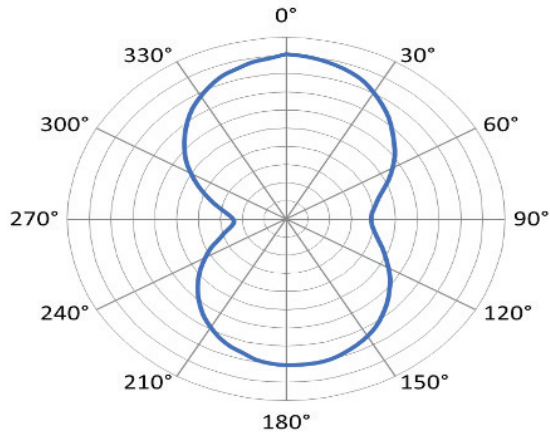
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Footnotes

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Radiation Pattern

**Read range drops 35% of maximum when inlay is perpendicular (90° and 270°) to the reading antenna. To learn more about radiation pattern, visit zebra.com/rfidlabels



Markets and Applications

- Other**
- Tire Tread Labeling



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