Walmart RFID Label Selection Guide
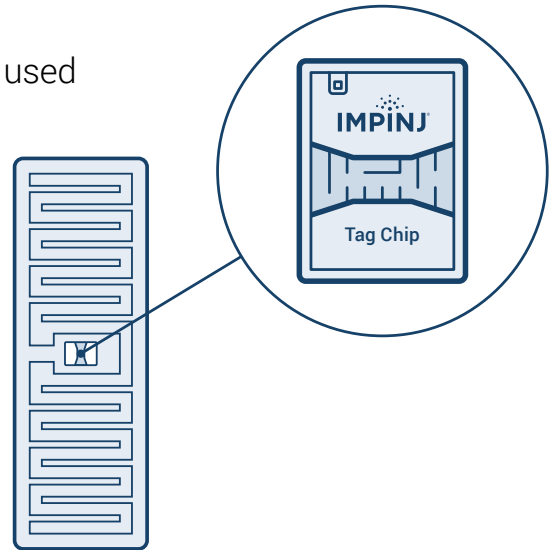
How to choose RAIN RFID labels for the Walmart RFID mandate

Start your RAIN RFID labeling journey

Complying with Walmart's RFID mandate can be daunting, especially when you are new to the technology and facing strict deadlines. At Impinj, our goal is to help you navigate compliance and develop an RFID solution that enables you to virtualize, analyze, and optimize your business.

Impinj is the leading provider and pioneer of RAIN RFID, used by Walmart and other retailers to enable connectivity for more than 100 billion items. Together with our global partner ecosystem, we help businesses tag items and implement RAIN solutions that enable them to work efficiently and make smart decisions.

We're here to ensure you have the guidance, connections, and solutions necessary to meet Walmart's RFID labeling requirements and transform your business.

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Tag Chip

Get started

Step 1 Understand the RFID tagging ecosystem

Step 2 Identify a packaging provider

Step 3 Determine tagging specifications for your products

Step 4 Choose an approved label
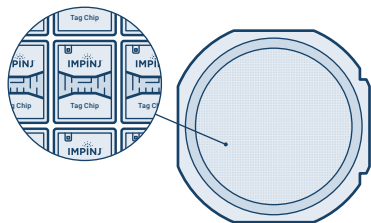
Step 5 Let Impinj connect you

Finished RFID labels, or "tags," are available in a wide variety of form factors, including stickers, hangtags, and fabric tags. To ensure your project's success, it's important to understand what's inside a tag during the selection process.

At a glance: Inlays, tags, and labels

RFID inlays are the basic building blocks, consisting of a tag chip (sometimes called an integrated circuit, or IC) and a connected antenna, typically protected by plastic film and attached to an adhesive backing.
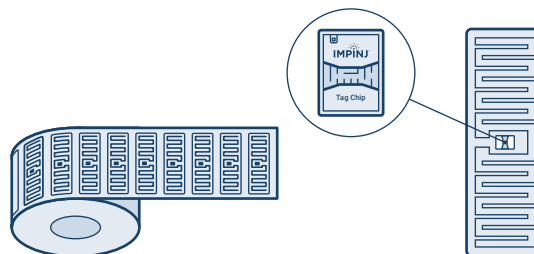
RFID tags generically refer to RFID inlays that have been converted or sandwiched between a printed label and adhesive backing or inserted into a more durable structure. These complete tag assemblies are ready to be embedded in an item or turned into a customer-facing label.

RFID labels are what consumers typically see attached to products, usually in the form of paper hangtags or stickers with RFID tags embedded inside. RFID labels often include printed words, graphics, barcodes, or pricing information. The terms "RFID tag" and "RFID label" are often used interchangeably.
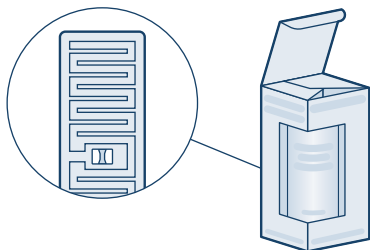

Tag chip provider

Tag chip providers, like Impinj, design and manufacture the RFID tag chips that serve as unique identifiers for items. Tag chips' quality and readability have a direct impact on a project's success.
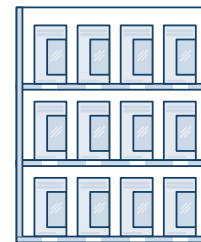

Inlay manufacturer

Creates an inlay by attaching an individual tag chip to an antenna. A high-quality tag chip allows for a smaller antenna size, reducing the overall tag size while maintaining optimal performance and read distance.

Packaging provider/service bureau

Converts inlays into finished labels and/or provides printing and encoding of data to identify a product.

Walmart and supplier

Use RFID readers to identify, inventory, and/or verify RFID-labeled products on conveyors, at dock doors, and/or within Walmart stores or distribution centers.

Learn the fundamentals: *Guide to Walmart's RFID Mandate: 5 Steps to Compliance*

Products have unique packaging considerations that affect RFID label selection and how the label can be applied.

Work with a packaging provider that specializes in integrating certified RFID labels for your merchandise categories to ensure your products are tagged according to Walmart requirements. Beyond fulfilling the mandate, a successful partnership can also help create a RAIN tagging program that maximizes the benefits of RFID within your own organization.

Walmart works with the Auburn University RFID Center (ARC) to ensure that RFID labels meet specific accuracy and reliability requirements. ARC-approved RFID inlays meet performance standards defined for each Walmart product category.

Packaging providers can assist you with:

- **Sourcing ARC-approved RFID inlays:** Packaging providers can help you choose from a variety of inlay designs that will meet the performance requirements for your product's category, size, and material.
- **Encoding the tags:** Packaging providers can encode, or write, a Universal Product Code (UPC) and unique serial number onto the RFID labels for accurate product identification and inventory tracking.
- **Ensuring proper label placement:** Packaging providers with expertise in your specific product category can guide you on the optimal placement of RFID labels to maximize your product's readability.
- **Submitting samples to ARC:** Packaging providers can help you follow the necessary steps to tag product samples and submit them to ARC for approval, as outlined in the Auburn RFID Submission Guide.

Impinj partners offer comprehensive RAIN RFID solutions from design to deployment to help you comply with Walmart's RFID. We are ready to connect you with qualified packaging providers from our global partner network who can customize a labeling solution for you.

Impinj partners make everything possible

These service bureaus and packaging providers with Walmart labeling expertise are part of our extensive Impinj Partner Network.

Gold IPN Partners

AVERY DENNISON

r-pac International Corp.

Checkpoint

SLS RFID Solutions

Silver IPN Partners

atlasRFIDstore

b&g

DHP DongHong PACKAGING BY ZERO

FineLine TECHNOLOGIES

KOMAX

MAXIM

mcc Premium Label Solutions

Are you a packaging provider looking to incorporate RAIN into your offerings? **Join the Impinj Partner Network**

Your packaging provider will guide you in identifying which ARC program specifications (specs) your products are required to meet. A spec is a standardized document outlining the specific radio-frequency performance requirements the label must meet.

ARC assigns tag specs — such as O, R, or Y2 — to product categories including apparel, sporting goods, and paint. The table below outlines which ARC specs are required for each product category. Visit the ARC website for a more detailed breakdown of product sub-categories.

Product Category	ARC Specs		
	O	**R**	**Y2**
Apparel			
Accessories		●	
Apparel		●	
Footwear		●	
Jewelry		●	
General Merchandise Phase 1			
Bedding & Bath			●
Electronics			●
Furniture			●
Home Decor			●
Kitchen & Dining			●
Home Goods			●
Sporting Goods	●		●
Toys			●
General Merchandise Phase 2			
Automotive			●
Books	●		
Arts & Crafts	●	●	●
Hardware			●
Lawn & Garden			●
Media & Games			●
Paint		●	●
Stationery	●		●

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When selecting an RFID label for your product, you're not just meeting today's Walmart requirements — you're making an investment in your supply chain's future. Consider these critical factors:

Essential selection criteria

- **Label size:** Assess your product's physical dimensions for an appropriate label size.
- **Category coverage:** Ensure the label is qualified in the ARC specs required for your product category. Choosing a label that covers multiple ARC specs can enable economy-of-scale benefits by reducing the need for multiple label types across product categories.
- **Tag chip:** A tag chip's readability and quality have a direct impact on a project's success.

Why the tag chip matters: beyond compliance

A missed tag read doesn't just affect Walmart — it can lead to lost revenue, inefficient operations, and failed shipments for your business. The right chip delivers:

- **Revenue maximization:** Prevent missed reads that can lead to stock-outs on store shelves, failed shipment validations, and lost sales opportunities.
- **Operational efficiency:** Reduce the time and labor spent managing inventory while reducing errors.
- **Future readiness:** Support emerging retail technologies and requirements.

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M800 Series

The Impinj M800 series advantage

Impinj M800 series RAIN RFID tag chips deliver unmatched readability, quality, and reliability to help you and Walmart read the right tag at the right place at the right time.

When choosing a label with an Impinj M800 series RAIN RFID tag chip, you get:

- **A "one-label-fits-all" solution:** A single ARC-approved label that works across your entire product line, eliminating the need for multiple tag types and unlocking economies of scale.
- **Smallest available size:** Superior performance in the industry's smallest footprint, enabling flexible placement even on small, hard-to-tag items.
- **Best-in-class performance:** Exceptional accuracy at high speeds and greater distances, supported by Impinj Gen2X features, delivers superior readability, reduces solution cost, and ensures reliable inventory tracking.
- **Future-proof investment:** Global compatibility, sustained supply availability, and advanced capabilities prevent costly re-tagging as retail requirements evolve and new mandates emerge.

Step 5 — Let Impinj connect you

Whether you're learning about RAIN RFID for the first time or are a seasoned RFID user, complying with Walmart's RFID requirements can be a challenge. At Impinj, we're committed to setting you up for a successful RFID implementation that not only meets these requirements but goes beyond the mandate to unlock powerful item-level visibility and streamline your operations.
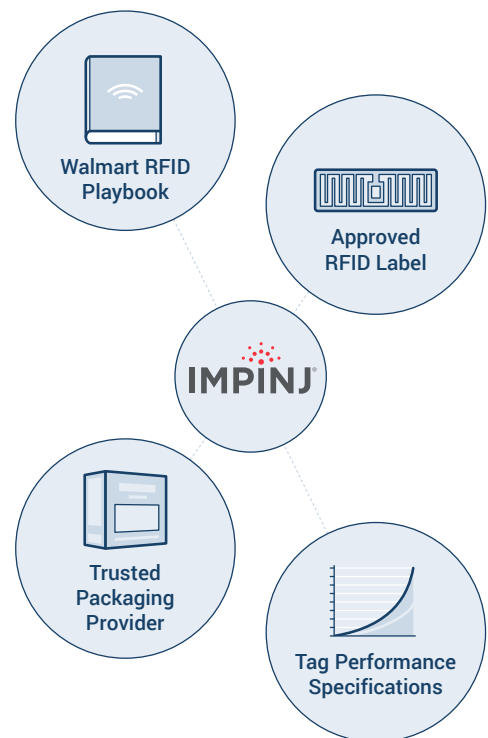
Why Impinj?

As RAIN RFID pioneers with 25 years of innovation and more than 100 billion items connected worldwide, we're experts in helping brand owners transform their operations. Our advanced suite of best-in-market products — including tag chips, reader chips, readers, software and services — enables seamless integration and unparalleled performance.

Compliance is just the beginning. At Impinj, we're committed to enabling you to leverage RAIN RFID to its fullest potential. Through our extensive global partner network, we connect you with the right partners to meet Walmart's mandate and unlock the broader advantages of RAIN RFID — driving efficiencies, enhancing visibility, and maximizing your operational capabilities.

Your path to success

As an industry leader, Impinj is your one-stop shop for embarking on your labeling journey. When you reach out to us, we will connect you with trusted partners from our global ecosystem who can:

- Assess your specific product labeling needs
- Recommend an ARC-approved M800 series-based label
- Design an RFID strategy that benefits your operations
- Implement a solution that meets Walmart's requirements
- Help you achieve the best ROI from your RFID investment

Walmart RFID Playbook

Approved RFID Label

Trusted Packaging Provider

Tag Performance Specifications

Ready to get connected? Contact us today