Automotive labelling and intelligent materials

Solutions for every application.

That’s our promise.

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Speakers

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Automotive

Virtual event - Break out room
Agenda

- Label materials:
  - Where are we in the value chain?
  - Our adhesives
  - Specifications & Label Solutions
- Intelligent labels:
  - What is the value of RFID in Automotive?
  - Automotive use cases including:
    - Parts and Components Management
    - Manufacturing Excellence
    - Distribution and Quality Control
With the latest automotive trends in mind, we offer a full suite of labelling solutions for every application - from compliant under-the-hood label materials to heat-seal seatbelt labels. As a global leader in automotive and transportation labelling, we’re looking toward the future to ensure you have the solutions you need today and tomorrow.
Label specification process in Automotive

Label specification

OEM → Component manufacturer → Label converter / System Integrator → Avery Dennison / Smartrac

Label / material recommendation
Adhesive experts - enablers for OEM specification

- For more than 85 years we’ve been developing new adhesives and adhesive technologies
- With over 400 adhesive scientists working in seven R&D centers globally, we solve the challenges faced by our global customers in real time, offering bespoke adhesive performance to every corner of the world
- R&D leading partner in adhesive technology with 8 different platforms
- Offering more than 50,000 material combinations for any application
- With our deep technical understanding and support we will find the right material for your application
Factors influencing adhesion

- Surface tension
- Surface texture (rough, etc.)
- Chemical resistance
- Environmental stability (UV, temperature, humidity, salt spray)
- Compliance requirements, including flammability, specifications, ...
Main purpose of the specifications - OEM

- The OEMs try to combine all requirements for all labels into one specification
- Normally a distinction is made to differentiate application types, with different requirements and test details

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- Applications are primarily categorized into Interior, Exterior, and Underhood labels
- Many OEMs include applications for tamper resistant and temporary / removable labels
Meeting the challenging requirements - Automotive Durable Label Solutions

Applications:

- Interior, exterior, under-the-hood
- Lightweight, difficult-to-label automotive components, etc.

Components:

- Battery, engine block, seat, sunvisor, tires, airbag, cables / wire harness, fuel cap, bumper, A/C, etc.

Main purposes:

- Tracking, warning, handling and in-process labels, functional, serial & VIN labels, instruction, identification, warning, compliance, security/anti-counterfeit, etc.
Automotive Durable and RFID solutions

Solutions for all possible substrates, compliant with specifications

- Automotive lacquers
- Metals e.g. alu, stainless steel
- Low surface energy plastics, like ABS, PP GF, PP talk, PA6, etc.
- Rough and smooth substrates
- Cable & wire harness labelling (e.g. flag cable label)
- Technical textiles (e.g. carpets, seats, airbags, etc.)
- Solutions for EV, Batteries and Battery Management System
- The constructions to fulfill diverse OEM specifications
- Testing in-house (incl. test report), cooperation with certified institutes
- Compliant materials (UL, Flame retardant, ESD ... )
- Consultation and education, on-site label audits
- Enabling the RFID label solutions
How do we combine label materials with RFID technology?

- Avery Dennison RFID solutions are designed for Automotive applications and can be adapted on demand
- Mixing & Matching on demand - combining any
  - Facestock
  - Adhesive
  - Liner
  - RFID inlay
=> to comply with OEM specifications
Why RFID in Automotive?

- Automation of all processes in the supply chain
- Co-ordinated collaboration with suppliers and service providers based on harmonised and reliable standards
- Explore and recommend technologies for capturing, storage and exchange of information concerning transport means, packaging and transport units and goods on their way to logistics destinations and assuring the required quality (e.g. by capturing transport and storage conditions such as humidity, shock, temperature etc.)
- Supporting the planning and control of physical flows, protecting genuine parts against counterfeiting and guaranteeing safety by controlling critical parts
**Limited Supply Chain Transparency**

1. Full visibility from component manufacturing to car assembly line.
2. Automated shipping and receiving processes of bulk items.
3. Full traceability for recall process in case of quality deviations.

**Incomplete Control of Manufacturing Processes**

1. Ensuring right parts, components and tools are at right location in time.
2. Avoid production line stops due to parts arriving late or missing.
3. Works where optical codes fail, e.g. body parts in paint shops.

**Counterfeiting and Diversion of Aftermarket Parts and Components**

1. Encrypted digital ID cannot be copied.
2. Can be attached or embedded, visibly or invisibly.
3. Verification can be remote bulk reading or with any smartphone.
Automotive Use Cases

- Parts and Components Management
- Manufacturing Excellence
- Distribution and Quality Control
- Automotive Leakage Detection
- Tire Tagging

Automotive is one of our focus areas.

Avery Dennison is the only company offering especially designed RFID transponders for all automotive use cases.
Parts and Components Management

Automotive manufacturers are actively looking for improved material handling, automated production processes and product traceability.

RFID tags can be used with all automotive components. Bumpers, seats, airbags, windshields, dashboards and gearboxes are often tagged.

RFID offers great visibility to the whole supply chain starting from component manufacturing all the way to assembly line or to an end user.

Applications:

- Faurecia Bumper Tracking with Siemens
- Daimler mirror identification
- Rehau Bumper tagging with ShortDipole
- Duerrkopp’s logistic solution for Faurecia
Our high temperature products are offering superb reliability even in the most demanding paint shop environment.

We offer PI high temperature inlays as well as RAIN RFID and HF hard tags.

All high temperature products are specially designed for paint shops where peak temperature is often 190 - 230°C.

Hard tags are often attached directly on a car body or skid. Maxdura® Case has been tested to survive 1 000 heat cycles. High temperature PI inlays are normally converted with Nomex layers by Smartrac’s qualified partners.

RFID offers real time visibility for OEM’s production, full traceability and automated identification for warehouses.

Applications:

- [Efficient Automotive Production at Audi Neckarsulm](#)
Logistics and Quality Control

RAIN RFID is a standard technology for vehicle logistics. RFID offers reliable visibility for vehicle transportation from a factory all the way to a dealer. Automated shipping notices enable companies to offer better service and without additional efforts.

We offer high end RFID transponders for many logistic and quality control applications.

Applications:

- Audi Vehicle Identification
- Seat Vehicle Logistics
- Porsche Prototype Tracking
- Faurecia production control and logistic with ShortDipole
Automotive Leakage Detection

- Sensor Tadpole recognizes water reliably directly on car body.
- Sensors are inserted on car body under insulations and carpets.
- Car goes through high pressure shower.
- Sensors are read before and after the shower.
- Sensor code difference between reading points indicates possible leakages.
- Our partners have finalized solution for automotive OEM's.
- Special tails direct water flow and absorb water to a sensor.

100% inline quality control
The fully automated quality control in the production line reliably excludes user faults resulting from manual operations. Faulty vehicles are immediately detected and removed. All detected data is available directly in the MES and ERP system of the user.

Considerable cost reduction
With the current test methods for leakage tests, some faulty vehicles are not detected and delivered to the customers. The 100% detection ensures that each vehicle is leak proof when it leaves the production hall. Any costly rework is no longer required.

Greater customer satisfaction
As only checked vehicles which have been verified as leak-proof are delivered to the customer, complaints from the customer about leaks are a thing of the past. Thus both the customer and the brand can benefit from the increased level of quality.

Turnkey system solution
Once the initial test phase is successfully completed at the user and the feasibility determined in the actual application, AD’s solution partners can offer turn key solutions for OEM’s.
Tire tags

Tire identification with RAIN RFID has increased rapidly during the last years. Tire manufacturers are looking for better product traceability and automatic logistic processes.

ISO standardization and new legislation in Asia have speed up RFID tire tagging applications.

Inlays for logistic labels:

- Dogbone
- AD8600

Hard-Tag for embedding inside rubber

- Smartrac Tire Tag
  - Product can be offered with primer and overcoat.
  - Tested to survive tire manufacturing process and offer identification over tire's lifetime.
Contact Us

For more information visit

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INTELLIGENT LABELLING
Thank you