



PSA Tapes Key to Manufacturing Quiet, Comfortable Cars

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Automotive engineers and designers have for many decades relied on pressure-sensitive adhesive (PSA) tapes to ensure a quiet, comfortable ride by reducing in-cabin noise, vibration and harshness. Once a focal point for luxury cars, today's consumers have high expectations for comfort in any car, and that makes PSA tapes more important than ever.

The growing prevalence of electric vehicles (EVs) also raises the stakes for controlling noise. EV engines are nearly silent, so they do not mask buzz, squeak, and rattle (BSR) and noise from the road, wind, and more. PSA tapes provide a solution that can be important to wider consumer acceptance of EVs.

Whether powered by electricity or internal combustion, PSA tapes are essential components in nearly every area of a vehicle, from the hood (or frunk if an electric) to the rear end. For OEMs and their suppliers, evaluating PSA options should focus on three key issues.

- Ensuring solutions for a wide range of materials. PSA tape options must be capable of bonding to the full spectrum of surfaces, such as low surface energy plastics, difficult-to-bond foams, and others.
- Improving interior air quality. Given consumer concerns and evolving regulations, OEMs and suppliers need PSA tapes that emit low levels of volatile organic compounds (VOC) without compromising adhesive performance. Effective low VOC solutions incorporate solvent-based, UV-cured, emulsion-based acrylic, or hot-melt rubber technologies for PSA tapes used inside the car.
- Meeting OEM specifications. PSA tape options must comply with OEM specifications for a variety of laminates and substrates.

SIMPLIFYING THE BUYING PROCESS

Given the complexities and wide range of options, OEMs and suppliers may prefer a collaborator focused on streamlining the specification process. For instance, the Avery Dennison Core Series™ Portfolio makes the tape and adhesive selection process quick and easy. This portfolio offers solutions across many industries and can make PSA tapes available with a low minimum order quantity.

Specific to automotive, Avery Dennison recently introduced the Automotive Foam and Fiber bonding portfolio, which includes many Core Series™ products. This one-stop shop features a comprehensive view of PSA tapes widely used across the industry. The PSA tapes meet OEM specifications for a wide range of applications. The portfolio includes specific bonding applications across six key areas:

Buzz, Squeak & Rattle Solutions. Single-sided and transfer tapes are good for supporting the use of felts, flocks and ultra-high molecular weight (UHMW) films paired to single-sided tapes. These tapes must bond well to polypropylene and other low surface energy (LSE) plastics. Low odor/low VOC options may be optimal for many applications.

Heat Shield Bonding. Heat shields protect components, such as gas tanks, that are sensitive to extreme heat generated by automotive powertrains. Some transfer tapes are specifically engineered to secure heat shields. These tapes can support lightweighting by replacing mechanical fasteners while reducing tooling costs and distributing stresses evenly. Transfer tapes can bond around LSE contours without lifting and last the life of the vehicle, even under high temperatures and fluid exposure. Because these tapes are underneath the car, VOC emissions are not a concern.



How Does TechTeam™ Work?

Interior Gasket Bonding. Interior gaskets, typically made of polyurethane foams, are used between plastic components to ensure a tight fit, accommodate movement, absorb noise and reduce BSR. Double-coated and transfer tapes are especially effective for bonding interior gaskets to various vehicle components. PSA tapes must bond well to interior gasket foams, such as polyether and polyester urethanes, as well as LSE plastics such as polypropylene.

Exterior Gasket & Seal Bonding. Typically made of sponge rubber foams, exterior gaskets protect automotive interiors by serving as a gasket and seal. Double-coated and transfer tapes are suited for bonding exterior gaskets across a wide range of vehicle components as they are optimized for exterior environments. These tapes bond effectively to exterior gasket foams such as EPDM, nitrile vinyl, PVC and dense urethanes, as well as LSE materials such as polypropylene and automotive paint coatings. High-performance acrylic adhesives are capable of withstanding high temperatures and difficult automotive environments. Double-coated options with carriers prevent stretching during die cut part application

Acoustical Absorption Bonding. Transfer and double-coated tapes are good choices for bonding PET or PP fiber blankets, shoddy and urethane foams that help ensure a quiet ride. Choose tapes with high coat weight that bond well to textured surfaces. Tapes must also bond effectively to LSE plastics, such as polypropylene.

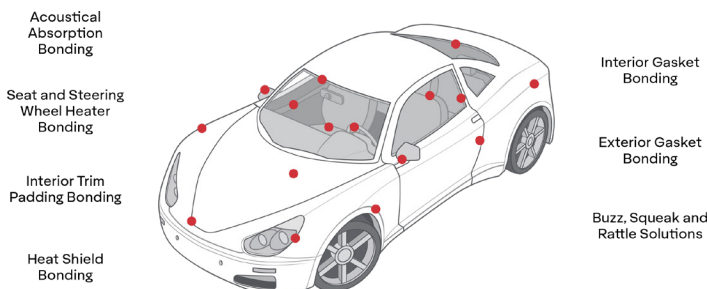
Interior Trim Padding Bonding. Double-coated and transfer tapes are used for bonding trim padding in various areas of the vehicle to create a more comfortable ride. This foam padding, typically polyurethane foam, is commonly used inside trim in areas such as the steering wheel and arm rests.


DEVELOPING CUSTOM SOLUTIONS

Beyond the tried-and-true options, in some cases OEMs and suppliers need custom PSA tapes. To develop one-of-a-kind solutions, it is important to have a company willing to collaborate and offer access to experts and testing facilities, such as Avery Dennison's laboratory certified to ISO 17025.

SUPPORTING SUCCESS


In the fast-paced automotive industry, engineers and designers need collaborators who can offer solutions to a wide range of challenges while ensuring a convenient experience in specifying PSA tapes. These materials have played an important role in the automotive industry and are becoming more important than ever as the industry innovates to offer a wide range of EVs.




Have a question come up while working on a project? **1** 

 **2** Submit your inquiry through our portal.

Our experts will review and discuss your submission. **3** 

 **4** The experts will reach out with solutions or further ideas.

Apply the solutions with the knowledge at your hands. **5** 

GFA Members can access TechTeam from the Resources page after logging into the GFA's website (www.gasketfab.com). TechTeam will quickly and confidentially provide unbiased, expert support to save you time, money, and materials.