

The best of both worlds

S8049 improves adhesion to LSE substrates by combining rubber and acrylic adhesive technology



Manufacturers in many industries are turning to low surface energy (LSE) plastics for applications requiring high-performance, lightweight, low-cost materials with sleek aesthetic appeal. In the automotive industry, treated metal bumpers, body trim and interior panels are being replaced with lighter LSE plastic parts. LSE plastics also provide a durable, easy-to-clean finish that is ideal for medical equipment, household appliances and a range of industrial applications.

Unfortunately, sleek and easy to clean also mean hard to label, as traditional adhesives don't bond easily to LSE plastics or other difficult substrates. Picture the difference between waxed and unwaxed cars. When rain falls on an unwaxed hood, water flows into puddles because the surface energy of the car is higher by comparison. Waxing the hood, however, lowers its surface energy so water beads up instead of spreading. The lower the surface energy, the weaker the bond.

Adhesion challenges in LSE plastics

Because traditional adhesives don't bond well with LSE materials, labeling these substrates is inherently more challenging for today's manufacturers. Not only must label materials adhere to the more difficult LSE substrate, they often need to withstand the harsh chemicals and high temperatures that are common in automotive and industrial applications.

Rubber adhesives aren't a compatible answer. Although they're sticky enough for strong adhesion, they lack the chemical resistance required in industrial environments. Acrylic adhesives, while more resistant, are not tacky enough to take hold.



To improve adhesive performance, label makers developed soft, oozy, “tackified” acrylic adhesives that can more easily flow on difficult LSE surfaces. But because they flow so easily, tackified acrylics often ooze out during label converting, which can cause build-up on label rolls during production, forcing converters to stop presses mid-run to clean up a sticky mess. All of these factors make label adhesion increasingly difficult in demanding industrial and automotive environments and increase the risk for brand owners in the form of production delays, lost productivity and added costs.

Pairing strength and durability

Automotive and industrial applications require durable label solutions that keep pertinent information about products affixed and legible over a product’s lifetime. As LSE plastics become more popular in environments that already face harsh chemicals and high temperatures, brand owners need more efficient, effective ways to label these rough substrates.

In response to these challenges, Avery Dennison developed S8049 — an adhesive that combines the high adhesion properties of rubber with the strength of acrylic adhesives to deliver the best of both worlds in one label solution.

Made with Avery Dennison’s patented rubber hybridized acrylic (RHA) technology, S8049 consists of a durable acrylic backbone, with rubber chains added to make it tacky. This innovative combination gives S8049 the durability to resist high temperatures and harsh chemicals while maintaining long-term adhesion on the most difficult substrates, such as LSE plastics, in the most demanding applications.

With its high coat weight of 45g and strong acrylic stability, S8049 also converts more easily than soft durable adhesives. Converters no longer need to slow down or stop the converting process to clean build-up from label rolls caused by adhesive ooze and bleeding. Without the converting issues that typically accompany aggressive adhesives, converters can increase production speed and productivity up to 20 percent.

Another end-user advantage of S8049 is its extended open time, or the time available to reposition labels before full adhesion occurs. Whereas other aggressive adhesives activate

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full adhesion instantly, S8049 leaves a window of time — approximately 48 hours — when the label can be removed, repositioned or reapplied before the ultimate bond forms, making label application hassle-free for end-user brands.

A winning combination

Strong inside and sticky outside, S8049 gives industrial and automotive end-users a reliable label option for use on LSE plastics and other rough substrates when traditional label materials are not sufficient. Its performance has been confirmed through 1,500 hours of environmental testing against the most stringent automotive specifications, both in the lab and on site with converters.

With long-lasting durability to meet exacting end-user performance requirements, S8049 delivers:

- Reliable adhesive performance on rough, oily surfaces and low surface energy plastics
- Resistance to heat, oils, solvents and other harsh chemicals
- Efficient conversion and application

By utilizing S8049’s patented blend of both rubber and acrylic adhesive technology, end-user brands can feel confident about the performance of their durable labels while benefiting from faster production speeds, reduced downtime and improved efficiency. >

Contact Avery Dennison to learn more about our durable label portfolio and how we can meet your cost and performance requirements.

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Label and
Packaging Materials

North Asia
5th Floor, Hongye Park
1801 Hongmei Road,
Xuhui District
200233, Shanghai
China
+86 21 33951888

**South Asia Pacific &
Sub Saharan Africa**
151 Pasir Panjang Road
#03-13/16,
Pasir Panjang Distripark,
Singapore 118480
+65.6349.0333

Europe
Willem Einthovenstraat 11,
2342 BH Oegstgeest
The Netherlands
+31 71/579-4100

Latin America
Rodovia Vinhedo-
Viracopos, KM 77
CEP 13280-000
Vinhedo - SP, Brazil
+55 19 3876-7600

North America
8080 Norton Parkway
Mentor, OH 44060
440.534.6000