

## Surface Energy - Solutions to bonding to low surface energy substrates

*3M™ High Strength Acrylic Adhesive 300LSE - The right choice for difficulty to bond to surfaces.*

Low surface energy, or LSE, plastics include materials such as vinyl, polyethylene and polystyrene and have unique surface characteristics making them harder for pressure sensitive adhesives to stick. These plastics are generally soft and have low density which helps in light weighting applications. Historically, LSE plastics were commonly used for single use applications but as these are materials are often recycled, they are becoming more prevalent than ever. For an adhesive to stick, it needs to be able to “wet out;” this term describes the many, tiny interactive bonds to the surface of a substrate. Because of the low energy at the surface of these solids, many adhesives are not able to achieve adequate interactive bonds and fail to form a robust and measurable bond strength. The result is low or poor adhesion.

Modified acrylic adhesive systems, such as 3M™ High Strength Acrylic Adhesive 300LSE, were designed to help overcome the obstacles of bonding to low surface energy surfaces without the need to modify the surface with techniques such as flame, corona or the use of solvent based adhesive promoters/primers. These methods often add cost, complexity and can inadvertently add environmental and/or safety issues. 3M™ High Strength Acrylic Adhesive 300LSE is available in both adhesive transfer and double coated constructions. The adhesive family was traditionally developed and used primarily for smooth, flat surfaces in applications such as a die cuts for smartphones, flat-screen TV’s, gasketing, trim attachment and packaging applications. This was often due to the complexity of working with the initial tackiness of the adhesive. However, 3M has recently introduced ultra thin, double coated versions such as 3M™ Double Coated Tape 93005LE that easily bond to surfaces where very thin total caliper and improved conformability are required.

3M™ High Strength Acrylic Adhesive 300LSE should be considered when bonding the following types of materials:

ABS Plastic	Coated Paper	EPDM Rubber	Graphite
Metal Mesh	Rubber	Polypropylene	Powder-Coated surfaces
Wood	Polyurethane	Foam	Polystyrene

## Surface Energy - Solutions to bonding to low surface energy substrates - continued

---

Consider using the following key 3M™ Tapes for these hard to bond to surfaces:

Thickness (mil)	Product	Adhesive Type	Carrier	Liner
2	<a href="#">3M™ Double Coated Tape 93005LE</a>	300LSE	PET	PCK#58, PCK#83
2	<a href="#">3M™ Adhesive Transfer Tape 9471LE</a>	300LSE	None	PCK#58
5	<a href="#">3M™ Adhesive Transfer Tape 9472LE</a>	300LSE	None	PCK#58
5.9	<a href="#">3M™ Double Coated Tape 93015LE</a>	300LSE	PET	PCK#58

Contact Tekra today to learn more about the benefits of using [3M™ High Strength Acrylic Adhesive 300LSE](#).