

# Permanent Surface Activation of Plastics with ModyBond™

Plastics and composites are prized for structural integrity, low weight, and the superior design flexibility they bring to demanding applications. As more product assemblies rely on plastics, from medical devices to automobile components, effective bonding to plastics has become integral to many industries. 'Bond-ability' is the ability to adequately wet the surface, spread uniformly and adhere to the surface of the plastics and these needs to be maximized to ensure performance.

One of the major drawbacks of plastics is that they are difficult to adhere to, due to their low surface energy and need to be surface treated to enable paints, coatings, adhesives and other materials to bond to them. Technologies such as flame, plasma and corona treatments only work temporarily and are ineffective on many materials and shapes. Other solutions such as harsh solvent-based systems have significant environmental impacts and tend to be expensive to purchase and manage.

**ModyBond™ permanently activates plastics without impacting strength, flexibility or other critical performance properties.**

Inhance Technologies' ModyBond™ permanently activates plastics without impacting strength, flexibility or other critical performance properties. ModyBond™ improves the bond-ability of plastic materials by permanently increasing surface energy. ModyBond™ imparts the highest surface energy and polarity to a plastic surface compared to other treatments, improving wettability, film formation and maximizing adhesion.

Plastics treated with ModyBond™ maintain high surface energies for years after treatment and are stable for long-term storage. It enables all types of plastics to be used, resulting in significant cost savings.

## Advantages of ModyBond™

- Permanently increases surface energy
- Enables increased adhesion properties for paints, coatings and adhesives
- Complete design freedom of parts
- Allows for the use of water-based paints, coatings and adhesives, instead of solvent-based formulations
- Replaces expensive alternatives
- Eliminating primer layers and mechanical fasteners, enabling light-weighting



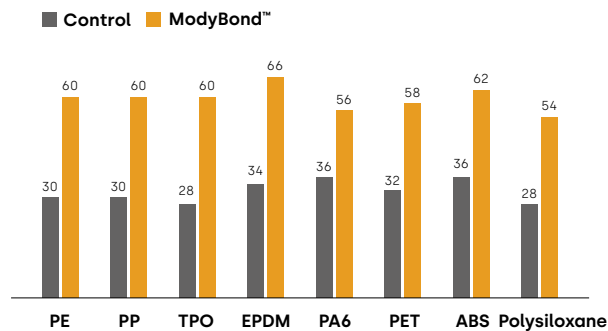
# ModyBond™

## Applications

ModyBond™ is effective on discrete parts, continuous films, sheets and fibers. The process ensures 360° coverage of parts, evenly treating every exposed surface, irrespective of part design and geometry, enabling complete design freedom. Flame, plasma and corona treatments have to be applied using robots which requires close contact with the surface, ModyBond™ can be applied to complex geometries as the treatment is line of sight independent. Surfaces with intricate designs, including deep grooves, cannot be surface activated by alternative technologies, because the treatment cannot get close enough to the surface that need to be activated. It does not subject the parts to any heat or other stress, which can disrupt delicate assemblies or impact haptics.

Inhance Technologies' ModyBond™ is used to treat plastics across many industries for various applications including:

- Transportation – Vehicle exterior and interior components
- Consumer goods – Health & beauty, sporting goods, appliances
- Industrial – Building & construction, packaging
- Healthcare – Medical device and equipment



**Sample surface energy enhancements (dyne/cm) with Inhance Technologies ModyBond™. Testing conducted per ASTM D2578-84.**



**The bonding of parts treated with ModyBond™ often exceeds the strength of the materials bonded. ModyBond™ offers complete peace by choosing a better technology, but also committing to making the world a better place in the process.**

At Inhance Technologies, our focus is—and will always be—on using technology as a means to achieve a more sustainable future. As a global technology transformation partner specializing in plastics and chemicals, we believe in the science of better: innovating safer, environmentally friendly and more sustainable materials. Our sustainable manufacturing processes produce zero solids waste, zero water waste and zero emissions.

Inhance Technologies is an ISO9001:2015 and RC14001:2015 certified company.

## Contact Information

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ModyBond™ is a product in the Modyfy™ line of surface technologies.