TAMPERTECH

simple guide to SURFACE ENERGY

Tamper evident products; tapes and labels are only as effective as the surface they are applied to. The surface condition must be considered: roughness, smoothness, porosity, coated, uncoated, cleanliness, flexibility, temperature conditions, wet or dry, and finally, surface energy of the surface

Tamper Technolgies appreciate this and manufacture a range of security label and tape solutions using different adhesives, inks and films to ensure the best possible solution for customers.

All surfaces have energy associated with them, because work is needed to form them. These are the forces that are required to hold the molecules together to form the surface, whether it is a desk top or a coardboard box.

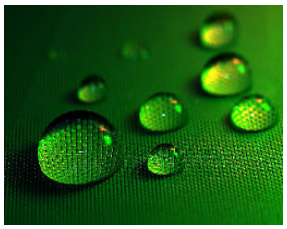
Surfaces are referred to as low energy or high energy.

Low energy surfaces for example acrylic, plastics, rubber and composites. These surfaces are harder for labels and tapes to stick too.

High energy surfaces for example glass and car paint are easier for for labels and tapes to adhere to.

To understand the surface energy of a product it is easy to perform a simple experimenent using a drop of water.

Surfaces can be **Hyrophobic (hate water)** or **Hydrophilic (love water).**



Hydrophobic surface has:

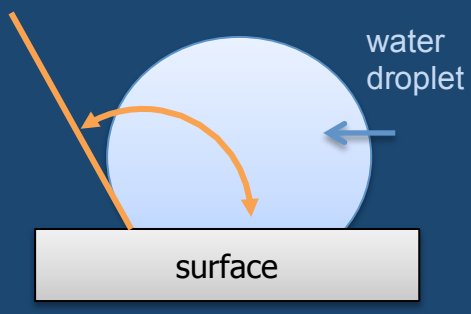
High contact angle
Low surface energy
Poor adhesiveness
Poor wettability

Hydrophilic surface has:

Low contact angle
High surface energy
Good adhesiveness
Good wettability

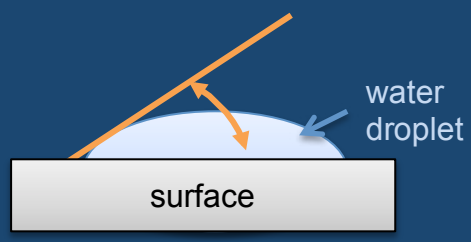
surface energy QUICK TEST

Low Surface Energy
=
Poor Adhesion



HYDROPHOBIC SURFACE

High Surface Energy
=
Good Adhesion



HYDROPHILIC SURFACE