

Polyurethane

Polyurethane is an incredibly resilient, flexible, and durable manufactured material that has thousands of applications across all fields. Polyurethane might be hard, bouncy like rubber wheels, or sticky like glue. Since its invention in the 40s, polyurethane has been used in everything from baby toys to airplane wings, and new uses for polyurethane are found every day.



Polyurethane is a substance categorized as a [polymer](#) based on its chemical structure. This makes a basic material whose variations can be stretched, smashed, or scratched, and remain fairly indestructible. Polyurethane might take a liquid, foam, or solid form, each with advantages and limitations.

Some polyurethane is categorized as an [elastomer](#). It has elastic properties while maintaining some rigidity, such as in the wheels of a dolly that absorb shock but don't compress too much. It can be extremely flexible when used as a foam insulator in construction or a foam cushion in upholstery. It can be deformed over and over and still maintain its original shape; in other words, it has a structural memory. Elastomers have made our home and work environments warm and comfortable.

Other polyurethane is a thermoplastic (A polymer material that turns to liquid when heated and becomes solid when cooled. There are more than 40 types of thermoplastics, including acrylic, polypropylene, polycarbonate and polyethylene). that resembles other kinds of plastic, metal, or fiberglass. Thermoplastics are rigid and smooth with a sealed surface impermeable to water. These are used when strength and durability are important, such as in seats at an airport terminal or packaging crates on a truck. Some polymer thermoplastics are difficult to recycle, but they can be reused.

We can find polyurethane in every room of our house and practically everywhere we go. It seals surfaces like wood, metal, and paint to protect them from rot, corrosion or fading. As an adhesive, polyurethane resists moisture and heat, so it's ideal for use in the sun or ocean.

The use of polyurethane is virtually limitless.

In situations where temperatures range from -65F to + 200F a polyurethane seal is often the most economical and best design choice.

Besides being inexpensive, urethanes are tough, abrasion/wear resistant, and able to take shock loads better than most elastomers.

For more technical information on polyurethane visit <http://en.wikipedia.org/wiki/Polyurethane>