

**POLYURETHANE:**  
**Outperforms wood, metal,  
 rubber or plastics in many  
 applications.**

Special formulations  
 are available to meet  
 your needs:

- Flame resistant grades
- High or low friction grades
- Noise reduction grades
- Abrasion resistance grades with the lubricity of UHMW additive

Polyurethane offers a variety of part design options for difficult applications where improved performance and lower costs are the focus. The versatility and lower costs associated with open cast polyurethane, combined with the ability to cast different urethane hardness scales directly onto other mating materials, including metals, allows designers to include performance enhancing additives to urethane components. Whether the working environment involves wet or dry conditions, high impact/heavy wear or low friction/self-lubricating concerns... polyurethane formulations are available to solve your application requirements.

**HARDER THAN BONE...OR SOFTER THAN A RUBBER BAND.** See the comparison chart on the back page, polyurethane offers a wide hardness range (far wider than conventional rubbers).

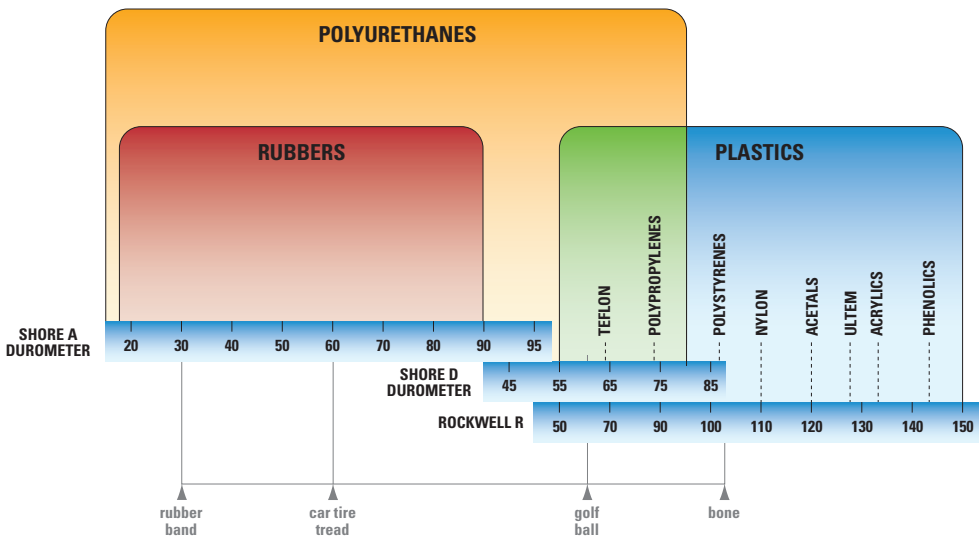
**WIDE RESILIENCE RANGE.** Unlike rubbers, polyurethanes can be made soft to make them resilient – hard polyurethanes can be as resilient as much softer materials. For shock absorbing applications, polyurethanes can be formulated with rebound values as low as 10% to 25%. For quicker recovery, or where high-frequency vibrations are a factor, they can be formulated with rebound values up to 40% to 70%.



*Shaping the World of Plastics*



**HARDNESS SCALE**  
DUROMETER COMPARISONS OF MATERIALS



**YES, POLYURETHANES DO HAVE LIMITATIONS.** Like other engineering materials, polyurethanes cannot do everything. The very characteristics that make them ideal for some applications, may make them unsuitable for others. In addition, polyurethanes are extremely difficult to machine, requiring special process and/or equipment. Tolerances may also be limited based on material and part design.



**POLYURETHANE BENEFITS:**

- Resistant to severe abrasion.
- Impact resistant standing up to repeated impingment.
- Remain flexible at low temperatures withstanding thermal shock and sudden drops in temperature.
- Continuous use up to 120° C (248° F).
- Does not swell or deteriorate in water (0.3% to 1% absorption by weight).
- Moist vapor transmission for poromeric applications.
- Excellent electrical insulator for potting or encapsulating applications.
- Wide resistance to oil, grease, and chemicals.
- Resistant to gamma radiation.
- Will resist mold, mildew, or fungus growth.
- Casts to wood, metals, and most plastics.
- Low tooling/mold costs for small or large quantity production runs.