



# TRP Polymer Solution's custom rubber products range

As an industry leading specialist in the manufacture of custom rubber products, TRP Polymer Solutions has a wide range of custom rubber mouldings and other high-performance rubber product designs available. In this article, we give you an overview of rubber polymers, types of rubber polymers and preview some of our most popular rubber products.

## What are rubber polymers?

Rubber is an example of an elastomeric polymer, where the material has the ability to return to its original shape after being stretched or deformed. This is due to the formation of cross links between long polymer chains during vulcanisation, or curing of the rubber. A polymer chain consists of several thousand chemical repeating units, or monomers. These chains are capable of recovering their original shape after being stretched.

The elastic properties of a rubber product arise from its ability to stretch the chains apart. Then, when the tension is released, the chains snap back to the original position. The chemical & heat resistance and physical properties of the rubber will be determined by the polymer selected and the formulation of a particular compound.

## Types of rubber polymers

There are two main **types of rubber polymers**: natural rubber and synthetic rubber. Natural rubber is an addition polymer that starts life as latex; a milky white fluid derived from a rubber tree. Natural rubber is from the monomer isoprene (2-methyl-1,3-butadiene), which is a conjugated diene hydrocarbon. Charles Goodyear discovered that by mixing rubber and sulphur (a process now known as vulcanisation), the rubber would become tougher, more elastic and resistant to temperature extremes. Synthetic rubber, on the other hand, is a **custom rubber product** that was developed during World War II when supplies of natural rubber were limited. Synthetic rubber is more resistant to abrasion and oxidation than its natural counterpart. The most prevalent synthetic rubbers are styrene-butadiene rubbers (SBR), which accounts for around 40% of synthetic rubber production. Other common synthetic rubbers include EPDM, silicone rubber and nitrile.



## TRP custom rubber mouldings

TRP Polymer Solutions is an industry leader in manufacturing custom rubber products. Among our high performance rubber product designs, we design, develop and produce precision custom rubber mouldings, diaphragms and seals. With more than 25 years' experience of successful component design and development, our custom rubber mouldings are used in industry specific – and often extreme environments – worldwide.

Among our broad range of custom rubber mouldings, TRP Polymer Solutions can provide custom rubber seals, encompassing everything from soft seated PTFE rubber bonded butterfly valve seals, through to high performance seals for chemical processing.

We also offer custom rubber diaphragms, such as thin walled diaphragms for precision flex characteristics, and custom rubber gaskets, including FDA gaskets for food processing applications. Finally, our line of custom rubber mouldings includes a variety of rubber to metal bonded products, through to precision ground rubber rollers and AV mountings.

## Buy custom rubber products from TRP

At TRP Polymer Solutions, we develop **custom rubber products** that balance quality, performance and cost. Our manufacturing facilities can handle everything from a one-off prototype to high-volume runs, with new tooling and first off samples delivered within 7 days in many cases.

For more information about our entire **custom rubber products** range, please contact us today by calling our expert team of advisers on **01432 268899**.