



# Choosing Polymer Materials – FAQs

## 1. What considerations should be taken into account when selecting polymer materials?

The initial consideration should always be the environment, service conditions and temperature requirements. The next consideration should be physical properties, hardness, tensile strength, tear strength, elongation etc. These will be related to the application. So, for instance, if you were using a roller you would need abrasion resistance; for belts, tensile strength; for diaphragms flex life would be critical.

## 2. Should I consider costs?

Cost is always a factor that must be taken into account, where two comparable materials offer suitable characteristics, where possible the cheaper option should be selected. However, this is not always the most cost-effective solution, a more expensive material may offer improved service life, so over the life time of your equipment the overall cost will be less. Unplanned maintenance as a result of seal failure can be expensive and result in costly downtime.

## 3. Are material certifications important?

For certain applications, it is essential to have certified materials, e.g. FDA for food application, USP class VI for medical uses, WRAS materials for use with water, flame retardant aerospace seals, Norsok M710 approved materials demonstrating RGD resistance for use in oil and gas applications. The correct material certification provides customers with assurance regarding correct material choices.

## 4. How do you select the right polymer for a customer?

The choice of the right polymer for a particular application is often a matter of selecting the best combination of properties, starting with the most critical requirement. This will consider chemical resistance, temperature resistance (both hot and cold extremes), the physical properties required (e.g. hardness, compression set, tensile strength etc.), costs, colour and specific properties required for the application (e.g. flex life, abrasion resistance) often trading off one property against another to select the best overall compromise.

## 5. What is the starting point in selecting a material?

The starting point in selecting a material is understanding our customers' requirements for a particular product, once we have discussed this we will formulate a material to meet their needs. Often a material will require testing in our laboratories to establish chemical compatibility, or ensure that key physical properties are met. Once this has been completed we can then move to producing prototype parts for evaluation by our customers including life and function testing.

## 6. How quickly will I receive my products?

We can deliver both prototypes and production parts quickly. We also provide flexibility in terms of the numbers that we produce, ranging from single seals, to high volume specialist FFKM & FKM 'O' rings.

## 7. As well as bespoke products, does TRP offer high volume products?

We focus on delivering custom rubber moulded solutions, from one-off parts, through to hundreds of thousands of bespoke parts. These are supplied to a large variety of industries including Nuclear, Medical & Pharmaceutical, Oil and Gas, Chemical processing and transportation, and motor sport including Formula one race engines.

## 8. Why should people choose TRP Polymer Solutions?

We offer proven experience and expertise in material development, particularly for use in aggressive chemical environments, extreme hot or cold temperatures, and our experience and success in designing materials for those applications. Also, flexibility in terms of being able to respond quickly to a customer's requirements. Speak to one of our technical advisors today by calling **01432 268899**, or email us directly at [sales@trp.co.uk](mailto:sales@trp.co.uk).