Transparent Plastics
Company overview

- PAN-European distribution company since 2002
- More than 230 employees
- 37 offices
- >45 warehouses

Main suppliers

- LyondellBasell
- SABIC Innovative Plastics™
- Domo Engineering Plastics
- Ascend Performance Materials
- LANXESS
- BASF
- Ravago

Headquarters

Ultrapolymers Group NV
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A spirit of Partnership

Ultrapolymers Group was founded in October 2002 in Belgium to distribute materials for major polymer producers in several countries across Europe. Since then the company has grown to become one of the most significant European polymer distributors.

With offices and warehouses in most European countries, and with additional presence in Turkey and South Africa, Ultrapolymers has established a broad commercial network with a local aspect, operating in close partnership with customers and suppliers.

Ultrapolymers offers a comprehensive product portfolio of raw materials covering commodities, engineering plastics, thermoplastic elastomers and synthetic rubbers. We can deliver any quantity from a single bag to a full truck load.
• To be a “First In Class” distribution organisation for plastic and rubber raw materials, driven by quality of service to our customers.

• To provide our products and services in a reliable and technically proficient way.

• To conduct this business ethically, in a spirit of partnership with our suppliers and stewardship with our staff.
Visible solutions for every application...
We bring clear solutions to the market

In a world full of different types of plastics it is perhaps the transparent ones that provide the greatest benefit to our everyday lives. From baby bottles to mobile phones to lenses we are surrounded by clear, tinted or translucent plastic materials that make our lives easier and our products more attractive.

The transparent materials offered to the market by Ultrapolymers are the result of decades of continuous research and development in product technology as polymer manufacturers strive to create new and exciting applications for transparent plastics.

As a leading European polymer distributor, Ultrapolymers is committed to building lasting relationships with our suppliers and customers, offering the best transparent materials and product solutions to the market and adding value throughout the supply chain.
How many transparent polymers are there?

More than 120 polymers can be transparent.

Ultrapolymers can help to select the most optimum material for your clear application.
Why would you be interested?

If you are a designer or technical buyer of optical polymers you will want to choose the very best materials available in order to demonstrate the full value of your product. We have summarized below a number of key benefits that our transparent polymers can bring to your company and its products.

- Combination of optical and mechanical properties
- Crystal clear transparency
- Wide range of aesthetic and special effects available
- Glass substitution: offering a lighter, tougher and safer alternative
- Noise absorption and acoustic performance
In what market segments can we find clear polymers?

- Building & Construction
- Sport
- Consumer
- Healthcare
- Packaging
- Automotive
- E&E
- Lighting
- Agriculture
Which transparent material?

Choosing the best transparent polymer for your product will depend greatly on its functional performance requirement in the field. In order to assist in selecting the appropriate material for your application we have compiled a checklist of the properties that you may need to consider when designing with a transparent polymer. Material selection can be based on the polymer that meets the greater number of key performance criteria for the specific application. Many varied material properties can come into consideration, as illustrated in the table below;

### Hard Polymers

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### Soft Polymers

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The significance of density

In finalizing your selection of transparent polymer it is essential to pay due regard to the relative densities of each of the materials under consideration. Since density (otherwise known as ‘specific gravity’) varies with each class of polymer, so in turn will the part weight vary according to the density of the polymer from which the part is manufactured. This may have a bearing on cost, since a material with a higher density will require a greater weight of polymer in order to manufacture the part. When designing with and comparing polymers it is advisable to calculate the cost in terms of price per litre as an alternative to price per kilo, as this will compensate for the variable densities of each material across the range.

Selecting a full package of properties

By moulding, extruding or blowing transparent applications, not only the clearness of the material is a crucial element, but also many other properties will make or brake your final part. Mechanical performance, heat resistance, food contact certifications,...we as Ultrapolymers are your partner in discussing the whole story of your production and to understand what you really need. Our local sales people and engineers will always help you finding the best trade-off solution in terms of price and performance.
Transmittance (ASTM D1003)

The transmittance value of a polymer is a key indicator of transparency. The more light that is able to pass through a material, the greater the transmittance value, hence the higher level of transparency.

Haze (ASTM D1003-95)

Haze is a term used to define the cloudiness of a material caused by scattering of light. This effect can be influenced by the presence of elements within the polymer such as pigment particles and additives. Furthermore, the haze value may be affected by the presence of foreign bodies on the surface of the part, for example dust, sand or grease. Haze is a key characteristic when determining the suitability of a transparent polymer in applications such as lenses, lighting, drinks bottles and food containers.

\[
\text{% Haze} = \frac{T_{\text{diffuse}}}{T_{\text{total}}} \times 100
\]

Haze is measured as the relative percentage of light that is scattered more than 2.5° from the direction of the incident light beam. Materials with haze values greater than 30% are considered to be light-diffusing polymers. These are frequently used in LED lens applications.

Refractive Index (ISO 489/ASTM D524)

The refractive index is the ratio of the velocity of light in a vacuum to the velocity of light in a transparent material. This index figure can be used to calculate the bending radius of a beam of light as it passes from one transparent object to another. The refractive index is a key performance indicator in the design of optical lenses. It is similarly used as a quality control measure in the manufacturing specification for transparent polymers.
Gloss (ASTM D523-89)

Gloss is an optical property describing the ability of a surface to reflect light into the specular direction. The factors that affect gloss are the refractive index of the material, the angle of incident light and the surface topography.

Gloss is one of the factors that describe the visual appearance of an object. Materials with smooth surfaces appear glossy. Very rough surfaces reflect no specular light and appear dull. Gloss may be expressed similarly as 'lustre' or 'sheen' in certain fields of application.
Disclaimer: The data indicated above are the results of our investigations and correspond to the state-of-the-art. Ultrapolymers Group and affiliated companies can’t guarantee the relevance or accuracy of this information and accept no responsibility in this regard. No liability, warranty or guarantee of product performance is created by this document. It is the buyer’s responsibility to determine whether Ultrapolymers products are appropriate for Buyer’s use and to ensure that Buyer’s workplace and disposal practices are in compliance with applicable laws and regulations.

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