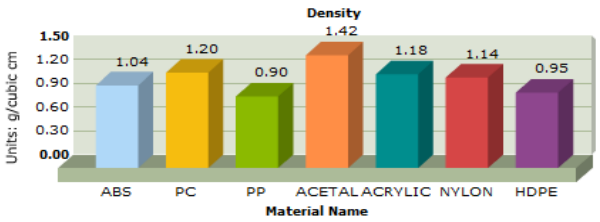
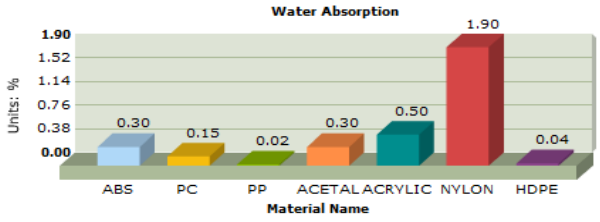
PROPERTY COMPARISON CHART FOR PLASTIC MATERIALS

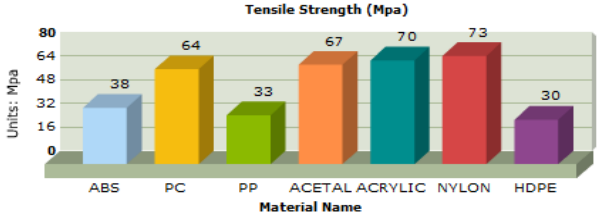
Density *(g/cm³)* For a homogeneous object, Density = Mass divided by Volume. The higher the density, the tighter the particles are packed inside the substance. The Specific Gravity is the ratio of Density of the material to the Density of water at a specified temperature. Density of water is highest at 4°C i.e. 1g/cm³. So Specific Gravity of less than "1" means that the material will float in water.



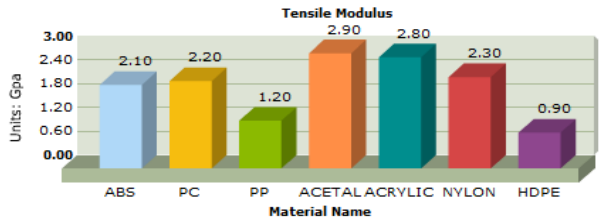
Water Absorption- *24 Hours* (%) Water absorption is used to determine the amount of water absorbed under specified conditions. Water absorption is expressed as increase in weight percent. Percent Water Absorption = [(Wet weight- Dry weight)/Dry weight] x 100



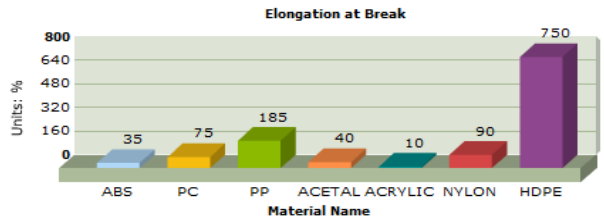
Tensile Strength *(Mpa)* Tensile strength is a property of a material that measures the force required to pull something to the point where it breaks. Tensile strength is important for a material that is going to be stretched or under tension. In many brittle materials such as rock, concrete, cast iron, tensile strength is almost negligible.



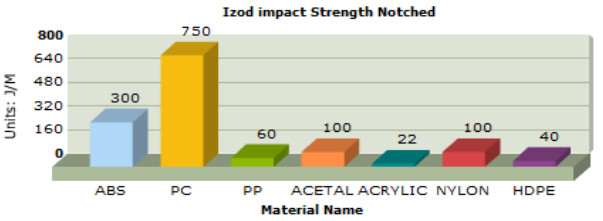
Tensile Modulus *(GPa)* Tensile Modulus, also known as Young's modulus, is defined as the ratio of stress to strain. Rigid materials, such as metals, have a high Young's modulus. In general, fibers have high Young's modulus values, elastomers have low values, and plastics lie somewhere in between.



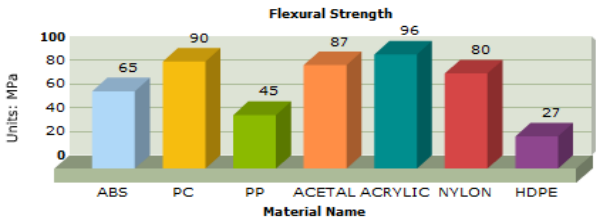
Elongation at Break(%) The elongation at break is the strain on a sample when it breaks. This usually is expressed as a percent. The elongation at break sometimes is called the ultimate elongation. Fibers have a low elongation-to-break and elastomers have a high elongation-to-break.



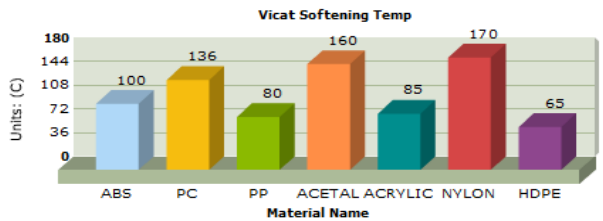
Izod impact Strength Notched *(J/m)* Notched Izod Impact is a test of how impact resistant a polymer will be. This is useful information when the application is for high impact performance. The Izod Impact test is a measurement from energy used to break a notch in the specimens.



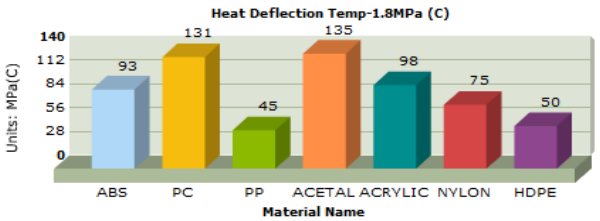
Flexural Strength *(MPa)* The flexural strength of a material is its ability to resist deformation under load, or how much you can bend the material before it starts to break. Skis, fishing rods, pole vault poles and diving boards are examples of parts needing high flexural strength.



Vicat Softening Temp. The temperature at which a thermoplastic material reaches a specific level of softness. It is taken as the temperature at which the specimen is penetrated to a depth of 1 mm by a flat-ended needle with a 1 square mm circular or square cross-section.



Heat Deflection Temp - *1.8MPa (C)* The Heat Deflection Temperature (HDT) is the temperature at which a plastic sample deforms under a specified load. A constant load is applied and the bath temperature is raised at a constant rate. The temperature at which the flexural deflection of the loading point has reached a predefined level is the heat deflection temperature of the material.



www.arptech.com.au