

## Effect of Injection Moulding Process Parameter on Tensile Strength of Using Taguchi Method

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**Abstract :** The plastic industry plays very important role in the economy of any country. It is generally among the leading share of the economy of the country. Since metals and their alloys are very rarely available on the earth. So to produce plastic products and components, which finds application in many industrial as well as household consumer products is beneficial. Since 50% plastic products are manufactured by injection moulding process. For production of better quality product, we have to control quality characteristics and performance of the product. The process parameters plays a significant role in production of plastic, hence the control of process parameter is essential. In this paper the effect of the parameters selection on injection moulding process has been described. It is to define suitable parameters in producing plastic product. Selecting the process parameter by trial and error is neither desirable nor acceptable, as it is often tends to increase the cost and time. Hence optimization of processing parameter of injection moulding process is essential. The experiments were designed with Taguchi's orthogonal array to achieve the result with least number of experiments. Here Plastic material polypropylene is studied. Tensile strength test of material is done on universal testing machine, which is produced by injection moulding machine. By using Taguchi technique with the help of MiniTab-14 software the best value of injection pressure, melt temperature, packing pressure and packing time is obtained. We found that process parameter packing pressure contribute more in production of good tensile plastic product.

**Keywords :** injection moulding, tensile strength, poly-propylene, Taguchi

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