

Introduction to Plastics:

It is very difficult to realize how important plastics have become to our everyday lives. We always seem to have known these materials, and we tend to take it for granted that they occur every day and all around us, for example in our clothing, the pen that we write with, the chair that we sit on or the wrapping of the food that we eat. Look around you; how much plastic do you see?

Figure:



So it is sometimes hard to believe that plastics have only been commonly available for about the last one hundred years. Yet in this time the impact that they have made upon the quality of our lives and on the products that we have access to has been enormous.

Plastics give us the possibility of manufacturing well-designed, beautiful products from the very many different types of plastics materials that are commonly available today. Within manufacturing technology there is a very high degree of technological understanding of plastics and a range of sophisticated technological processes that enable us to make them and shape them in numerous ways.

TCE ENVIS - Plastic Waste Management

Thiagarajar College of Engineering, Environmental Information System



Plastic is a word that originally meant “pliable and easily shaped.” It only recently became a name for a category of materials called polymers. The word polymer means “of many parts,” and polymers are made of long chains of molecules. Polymers abound in nature. Cellulose, the material that makes up the cell walls of plants, is a very common natural polymer.

Over the last century and a half humans have learned how to make synthetic polymers, sometimes using natural substances like cellulose, but more often using the plentiful carbon atoms provided by petroleum and other fossil fuels. Synthetic polymers are made up of long chains of atoms, arranged in repeating units, often much longer than those found in nature. It is the length of these chains, and the patterns in which they are arrayed, that make polymers strong, lightweight, and flexible. In other words, it’s what makes them so plastic.

These properties make synthetic polymers exceptionally useful, and since we learned how to create and manipulate them, polymers have become an essential part of our lives. Especially over the last 50 years plastics have saturated our world and changed the way that we live.