

# STUDY OF EFFECT OF PLASTIC MATERIAL ON HEALTH AND HYGIENE

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## **Introduction :-**

Plastic material have drawn considerable interest of environmentalist and are currently being investigated by the technologist and scientists in various laboratories all over the world. Plastic is the broad category but here the general term used for polyethylene which is used as carry bags is vary dangerous as for as pollution is concerned. This carry beg polythene plastic is very much used in all over the world which is nonbiodegradable. The polythenes normally below  $20 \times 10^{-6} \text{m}$  are polluting the city in many ways. Because of its very long life on or below the earth surface it reduces the fertility, polluting the atmosphere and deteriorating health and hygiene condition in country like India. Poor people are very badly affected by this problem. Health is now recognized a fundamental right of every human being. It has to be earned by individual efforts. It can not be given by one person to another. The study of plastic-health and hygiene have been become the interest of both theoretical and experimental due to wide importance. Among the polythene less then 20 micron is one of the most important material because of mostly in this range are non biodegradable impose a great challenge to the scientist. Various methods of disposal such as chemical, burning, recycling are used. Hear we have studied the effects of health and hygiene, due

to plastic material. In country like India the carry bag are not only used to carry the good but also used to carry hot material like tea, coffee, hot cooked food. Due to transparent in nature and low quality of plastic, some percentage of plastic material of carry bags is melt due to hot material which is put inside the bag and goes it inside the human body.

## **Experimental:-**

The manufacturing of plastic in the combine effect of Carbon, Hydrogen, Oxygen, Chlorine, Florien, Sulpher, Nitrogen etc. For its manufacturing natural gas and crude oil are used as raw material. This process is known as cracking. This process generate Hydrocarbon, monomer like  $\text{C}_2\text{H}_4$ ,  $\text{C}_3\text{H}_6$  etc. and finally produce polymer which is in general terms known as plastic.

## **Results:-**

Worker making polythene (polyethylene) bags were found to be exposed of the fumes from degradation of polythene at the average concentration of  $0.6 \text{ mg/m}^3$  for 40 hours per week. They can be differentiated from unexposed worker. However exposed worker reported a number of symptoms such as nasal irritation, sore eyes, sneezing headaches, dry through, nausea, coughing, breathlessness, chest tightness, skin irritation etc. which they are related solely to the presence of fumes in their working place.

The survey says that these complain were derived from an excessive hot and noise work environment.

The  $20 \times 10^{-6}$  m. polythenes are non-biodegradable. Survey show that in city like Jabalpur having to 15 lakhs population used 100 metric ton per month. Survey also shows that 75-80% are recycled and 25-20% are produced directly health and hygiene problem. Approximately 1-2% are directly burn and exit polluted gases and less than 0.5% are eaten by animal like cow etc.

### **Discussion:-**

It is known that plastic material produces a great problem for environment, health and hygiene in developing countries. Since item made of plastic are light weight, economic and can be used in many ways so that use can not be stop in individual level only. But it can be stop by national and international regulation and proper use by people. The side effect of plastic are still not known to the illiterate people of the country and it is not digestible, So it creates lot of health problems and number of diseases to human being.

If we see the consumption of polythene it does not follow linear, non-liner or exponential relation. Its use increases very rapidly. Now days no saturation graph occurs. It shows its utility on all level of life. Now scientists are trying for biodegradable plastic.

The different plastic are used for different purposes such as PBC-is used for sport item, LDPE – plastic bags, milk packet, HDPE-cold drinks bottles, capsule, PET- soft drink bottle, PUF- throw away plate, form, thermacole etc.

It is reported that 1kg PETE emits 1.5 gm sodium ion, 0.18 gm acid, 0.12 gm metal, 0.71 gm chloride ion, 0.40 gm hydrocarbon, 0.60 gm suspended solid, 0.01 gm,  $P_2 O_5$ , 0.04 gm. sulphate, 0.001 gm nitrogen and other molecules of toxic gases. These are very harmful for health and hygiene even gases coming out from the burning of plastic are disturbing the ozone layers which are responsible of various human diseases.

The use of plastic in India is 3kg per person per year where as in developed country it is 30-40kg per person per year. The plastic used in India in the following years are as under

2001-2002	-	4.3 million ton
2002-2003	-	4.9 million ton
2003-2004	-	4.9 million ton
2004-2005	-	5.5 million ton
2005-2006	-	6.6 million ton
2006-2007	-	8.0 million ton

This increases of use of plastic shows that utilization of plastic increases at very high rate not only in India but other countries in day by day. To stop the use of polythene is very difficult because of its attachment with daily life. Its systematic use can be reduce the health and hygiene problem up to some extent. Plastic should be recycled, reused and reduced use will decrease the problems up to some extent. In some countries plastic is used for generation energy, filling of pit but it is still contaminate the soil water and atmosphere.

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