

A STUDY ON OCEAN POLLUTION FROM TEXTILE INDUSTRIES

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Abstract - The textile industries are the most polluting in the world. So that the ecosystem also gets damage from those industries. The industries are affecting biomes which reduce the breathing capacity of plants and animals. Moreover, the water coming out from the textile industries polluting the water pollution. The working employees are also affected by dust, which creates respiratory problems. The employees must follow the standard operating procedures. The management should ensure safety standards to minimise the effect of the hazards. This will eliminate the environment polluting agents. So that the ecosystem will survive without affecting the environment conditions, the wastewater should be treated with cleaner technology which gives sustainable growth to our environment. This will save the water for the future environment. The textile industries should monitor wastes and worker's health.

Key Words: Environment, sustainable growth, pollution, control measures, ecosystem

1. INTRODUCTION

The textile industries are one of the growing sectors in the world. The textile industries are manufacturing the material with different chemical composition. They are using different antibacterial chemicals for manufacturing goods. The resulted in several health hazards and environmental damages. Each country has different techniques to solve the environmental problem. The textile industries should follow the standards to resolve the degradation. If the environment damaging is more, we cannot live on the planet because all living organisms depend upon one another.

The yarns and fabrics are producing in the textile industries for manufacturing the product. The yarns are not only used in the textile industries but also used in the automobile industries like car seats and bus seats. They manufacture safety gloves with different materials with the help of yarns. We can achieve sustainable growth by developing the textile industries because in the world needs the number of goods. It will develop the automobile industries as well.

2. OCCUPATIONAL HEALTH HAZARDS

Individual wellbeing is related to the occupation. Occupational health and safety is a whole part of the

conventional notion of health that is a part of socio-economic development. Occupation health affects everyone directly or indirectly. Depending on their occupation, industrial workers may be affected.

Each industry has its machines that may create hazards — recognising risks related to the activities and select most pessimistic scenario situations for the estimation of outcomes. It will use presumed programming models for outcome estimation. Because of the tested recurrence of the event, it will recommend hazard decrease estimates to the administration for robust execution.

The presence of heavy metals sulfur, naphthol and nitrates mercury soap chemicals all are making the effluent more toxic.

It will change the ph level in the water. If we send it out to an environment, it may alter the ph level in the groundwater. These chemicals may go to the ocean through floods and other natural disasters. It may increase the temperature in an ocean environment so that the many organisms may not survive within this region. These organisms may go to another ecosystem; it may affect the natural breeds in those fields. It may create amensalism to other organisms. In that many organisms have died during this stage.

The government should restrict the wastewater coming out from the textile industries with appropriate standards.

Table -1: Industrial Growth

Year	\$ billion %	Growth
2017	746.1	4.5%from 2016
2018	778.2	4.3% from 2017
2019	810.4	4.1% from 2018
2020	842.6	4.0 from 2019

The textile industries polluting the water create health hazards and degrading the ocean when the water reached the ocean.

3. DEGRADATION OF OCEAN

The textile industries are the most polluting in the world. The chlorine and hydrocarbon solvents more used in textile operations. These solvents are coming out from the industries without appropriate precautions that will

damage the groundwater. So that it will reduce the percentage of pure water.

The aerated solvents are the most dangerous for flora and fauna. If the solvents mixed with plants in the environment, the animals have died because of the bio-magnification.

Our clothes are not only manufactured from cotton and also the nylon acrylic, polyester, and other synthetic fibers. So that the plastic creates the water lock in the environment, these fibers create ocean pollution in the environment. While washing the cloth with the microplastic leach out from the cloth, it is mixed with the water. When the water reaches the ocean, that affects the microorganisms.

3.1. Polluting agents:

The polluting agents are different according to the textile industries. The textile industries are using more chemicals in each stage of manufacturing the materials. The developed countries have an excellent technique to resolve the problem, but the developing countries are trying to eliminate the hazards. They do not have the excellent technique to resolve the problems. The different chemicals are chlorine, hydrocarbon, acrylic, used oils, and polyester.

Chlorine bleach is understood to be very hepatotoxic to the atmosphere, and people nevertheless chlorine-based chemicals area unit still usually will not to bleach cloth. An alternative bleaching methodology that is oxygen-based (hydrogen peroxide) is used. Some mills have stated exploitation gas, an new technology for bleaching. This technology depends on cold water instead of having to take care of the material during a quandary tub for several hours. The gas breaks down into the water in wastewater.

The cotton is the second most harmful agricultural crop in the world 25 per cent of all pesticides used globally put on cotton crops. The solution has remained found in natural cotton, but this too requires much water for growing.

One commonly recognised type of microplastic found in biological samples are fibers, which are thought to originate from textiles. Both natural textile fibers (wool, linen and cotton) and artificial textile fibers (polyester, polyamide) found in the marine environment.

Once the marine ecosystem damaged by textile fibers means which also affects the human because the microorganism develops the ecosystem of the ocean, if the ocean algae dies, The carbon sink also released to the atmosphere which further creates air pollution. The Ocean gives the food as much as possible in the way of meat. Some of the nations have upon the ocean-related food for their economic development. Moreover, the ocean gives medicine for curing the

disease. So, The ocean has many advantages to protect biodiversity.

Table 1 refers to the textile solvents which are released by washing. It creates pollution when contact with water bodies. So the ecosystem also gets damaged from the solvents.

Table 2 Industrial solvents

SL NO	Chemical names	HAZARDS
1	Chlorine	Long term side effects which include nervous system damage, cancer and skin disease.
2	Hydrocarbon	Hydrocarbon solvents may cause pneumonitis if aspirated into the lung and also create CNS effects. The respiratory problems are very high when we reached beyond the exposure limits.
3	Used oils	The untreated water will cause carcinogenic effects

4. Water Pollution

Mills discharge legion gallons of this effluent as a risky waste product, filled with colour and organic chemicals from colouring and finishing salts. The presence of sulphur, naphthol, vat dyes, nitrates ethanoic acid, sops metal compounds and significant metals copper arsenic, lead, cadmium, mercury, nickel and atomic number 27 and bound auxiliary chemicals all put together to build the effluent extremely cyanogenic. Alternative harmful chemicals gift within the water could also be methanal based mostly dye fixing agents, hydrocarbon-based mostly softners and non-biodegradable colouring chemicals.

The mill effluent is additionally typically of a heat and pH scale, each of that area unit extraordinary damaging. The mixture matter gift near colours and oily scum will increase the cloudiness and offers the water an explicit look and fol smell. It prevents the diffusion of daylight necessary for the method of a chemical process.

This interest with the element transfer mechanism at the air-water interface depletion of a dissolved element in water is that the most series impact of textile waste as the dissolved element is essential for marine life. This medium additionally hinders with self-purification method of water. Additionally, one this effluent is allowed to flow within the fields. It clogs the pores of the soil leading to loss of soil productivity. So that the soil

gets hardened and penetration of roots prevented. The wastewater flows within the drains corrodes and damage the sewerage pipes

If allowable to flow in drains and rivers, it affects the standard of potable in hand pumps creating it unfit for human consumption. It additionally ends up in discharge in drains increasing their maintenance price.

Such impure water is often a parcel for microorganism and viruses. Impurities in waste affect the textile process in some ways. In scouring and bleaching, and they convey a yellow tinge to a white cloth. In colouring stage silver ions gift in water generally, mix with the dyes inflicting dullness in shades.

Textile effluent may be a reason behind the significant quantity of environmental degradation and human sickness. Concerning of p.c of worldwide used colourants contain organically particular cl a glorious matter. All the organic material gift within the waste from a textile business area unit of gentle concern in water treatment as a result of they react with several disinfectants, particularly chlorine.

Chemicals evaporate into the air we have a tendency to breathe or area unit absorbed through our skin and show up as aversions and will cause hurt to youngsters even before birth.

4.1. Estimated fibres from the wash

The tiny fibres below 5 millimetres in length and diameter less than micrometres (one-thousandth of a millimetre) will create the ocean plastic pollution. This microplastic pollution in the ocean affects the ocean environment, which damages the food chain in an environment. The tiny fibres are coming out from the cloth while walking on the ground. It mingles the chemicals with the food chain in an ecosystem.

Estimated fibers released from wash

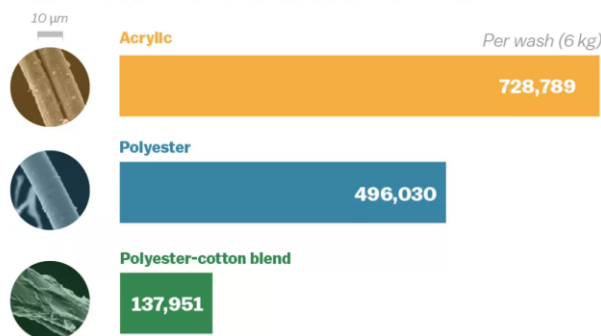
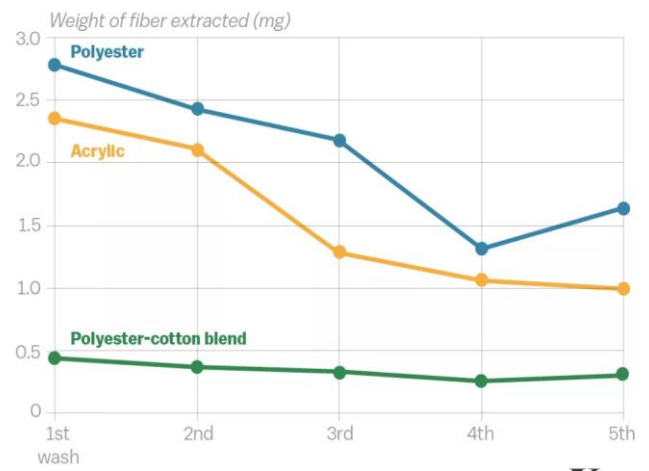


Fig 1: Fiber estimation from the cloth

4.2. Fibre loss from washing cloth:

According to the marine pollution bulletin, the polyester chemicals are quickly removed by the first wash itself. The second pollution chemical is acrylic which creates the secondary pollution of the hazards. The polyester-cotton blend creates minimum water pollution in an environment from the washing cloth. Both polyester and acrylic are wasted to the environment with a simple wash

Hazards due to contact with living organisms or their by product (e.g. molds, bacteria, HIV, grain dust). Anthrax, which causes tetanus, bacteria and various types of blood-borne disease.



5. RESULTS AND DISCUSSION

The textile industries are the most polluting in the world. The textile industries are using chlorine solvents oxygen solvents and hydrocarbon solvents which exceeds the threshold limit value and total weighted average, it may create other environmental hazards. The carcinogenic materials exist in the hydrocarbons. Moreover, the carbon is created environmental pollution. So that the emission of the carbon creates ozone depletion which further creates climate change

6. CONCLUSION

In today's world, the textile industries are growing industries which gives the environment growth — and also polluting the environment. Each county should follow the international standards to eliminate the pollution from the textile industries. Moreover, each country should exchange the technique to eliminate pollution chemicals.

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