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## IMPACT OF TOXIC PAINTS ON ENVIRONMENT AND HUMAN HEALTH

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### Abstract

Paints make the house and furniture look attractive, new and even keep safe from different insects. Regular paints in the house keep away the boredom and give freshness to the surrounding. But with giving good vibes it can even become a serious problem for the people living in the house. The effects of paints on the environment and health may last forever if we did not make choices wisely. The wise choice can be made by gaining knowledge of the product they are buying. Eco-friendly organic paints are made of natural minerals and are water-based. They have the ability to control pollution, killing bacteria and fungi. The toxic paints that contain chemicals, oils, lead are harmful to children and critical to the environment. The pigments in the paints can be natural or man-made. The natural pigments can also be dangerous than man-made. This paper has provided ways to make the environment clean and pollution free. The purpose of the study is to make consumers aware of the toxic and harmful paints which have an effect on human health. And ways that need to be adopted to prevent wastage to excess paints.

### Keywords

Chemicals, Consumers, eco-friendly paints, environment

### Introduction

Non-toxic paints are made up of natural raw materials like water, milk, natural colours, essential oils and they are odour free. Some of the eco-friendly paints contain very low amounts of volatile organic compounds (VOCs). That has a minimal impact on the environment and on human health. Toxic paints contain poisonous chemicals which can affect human health and can even cause cancer. The World Health Organisation estimates that professional decorators are 40% more likely to contract cancer. The paints for the house should contain 0% or low amount of VOCs. So, the choice should be for natural paints. Even the eco-friendly paints provide a wide range of choices with attractive colours and long life. All major brands provide substitute of toxic paints.

The choices we make during the purchase impact the environment and our life in some or the other way. Many times, people are not aware of the harm they cause to the environment.

The air that surrounds us is 80% toxic and harmful to the planet we live on.

Eco-friendly paints don't contain airborne chemicals or gases that are havoc on health.

These VOCs react with the gases present in the air and cause headaches, cough, dizziness, visual impairment and may even cause heart, lung or kidney damage.

According to the studies indoor pollution is 2-3 times more effective than outdoor pollution.

To compensate for the loss caused to the environment and the health there are even better options available in the form of natural paints which have a minimal effect on the environment. They are fresh colours with herbal ingredients, odourless. One of them is introduced by The Union Minister of Micro, Small and Medium Enterprises Nitin Gadkari on Thursday (December 17, 2020) named as Vedic paint. This paint is 100% environmental friendly and made from cow dung through khadi and Village industries. The non-toxic paint called as **khadi prakriti paint** is anti-fungal and anti-bacterial and washable and has been certified by the "Bureau of Indian standards". This paint is available in two forms: distemper paint and plastic emulsion paint. The paint is claimed to be free from heavy metals like mercury, chromium and many more. This will help to increase the rural economy and help to boost the local employment for villagers. It is estimated to generate additional income of Rs.30,000-50,000 per annum per animal for the villagers and gaushalas. The utilisation of cow dung will clean up the environment and would be helpful to prevent diseases caused by the animals waste. This technology will use cow dung as raw materials for manufacturing of paints.

Some of the examples of natural paints are:

- **Clare paint** - this paint is 100% natural with zero VOCs and green guard gold certified. The company produces minimum waste and recycled packaging and also provides a water conservation system.
- **The red milk paint company** - This paint is made of milk protein (called "casein") and is not water-based or oil based. This has many colours according to the customisation of customers.
- **Bio shield** - It is 100% environmental friendly and the paints are made of natural renewable resources with a wide range of colours and have a long-lasting life.

Other natural paints are - Benjamin Moore Natura , Sherwin-Williams Harmony, Ecos paint is a USA-based paint company, earth pigments.

## Literature review

Paint recycling campaigns-

Paint recycling campaigns are adopted in different countries like Canada- programmes named as " The orange drop programme" , United Kingdom, United States-Programme named as "Paint stewardship".

According to **Christopher, curtland** paints are made out of recycled, natural pigments but paints labels do not show ingredients, procedure to the customer as it impacts the corporate social responsibility. In 2002 a study by the **National Cancer Institute** found that people working in the paint factories have high risk of cancer. India doesn't have guidelines to classify paints so the standards formulated by Green Seal Standard for Paints & Coatings is followed. (**Arush Prakash, eco deaz**).

A research conducted at Lovely Professional University to make 100% natural paints primers with the use of litchi. The extracts of litchi like peels and seeds were used to make the core component of paint. Dwarika Prasad, professor at LPU, Who hails from Uttarakhand realised that the waste of litchi should be used somewhere. As litchi releases 100% natural colour, after the experiment till now only brown colour is available. They are working to produce more different colours. This process is cost effective and pollution free. The impact on the environment can vary according to the type of paint used. The release of VOCs during the drying process has the maximum impact on the environment. Traditional Paints often contain hazardous material in it as compared to present paints. Lead is also a heavy metal that is added in paints. It is the metal that is very toxic and harms the environment which needs to be removed. As these metals come in contact

with humans and domestic animals that can be very dangerous. Low VOCs paints improve air quality and help in reducing urban smog and contain less odour, smoothing finish, clean air and safety to the environment.

### Scope of the study

Different types of indoor paints are-

1. LATEX- It is water-based paints with other solvents also included and is easily soluble.
2. ALKYD- It mainly oil-based and does not carry water or very less amount of water is involved.

### Steps to prevent pollution from paints-

- Checking the quality of the paints and reading the instructions given.
- Going in detail about the ingredients used and having knowledge about the ingredients.
- Purchasing the quantity of paints as much as required and applying as soon as the paint containers are opened.
- Keeping the containers in the well ventilated place or in the open area to save people from coming in contact with the paints.
- Raising awareness about the types and quality of paints among our loved ones and neighbours.
- Keeping eye on paint manufacturers.

To measure the VOCs quantity in paint here is the way-

1. Low VOCs paints contain <50 g/l of VOC.
2. Zero VOCs paints contain <5 g/l of VOC.

The following are some of the Indian companies that sell eco-friendly and non-toxic paints -

Asian Paints.

Berger Paints.

Dulux India.

Kansai Nerolac.

### Research objectives

- To investigate the level of awareness among Indian consumers for natural paints.
- To find out the effect of toxic paints on the health of the consumers.
- To find out the level of pollution toxic paints add to the environment.
- Providing remedies to reduce, reuse and recycle excess paints.

### Hypothesis

- There is no effect on the health of the consumer after using the toxic paints in the house.
- Every consumer is aware of the eco-friendly paints.
- There is no indoor and outdoor pollution after using regular paints.

### Limitation

- The data is collected from a small number of people which may not represent the whole population.
- For this research only some companies are considered.
- It is considered that people are aware of natural paints.

### Research methodology

#### PRIMARY SOURCES

To collect the authentic and reliable information for the study the data is collected from the primary sources through questionnaire, telephonic interviews. A well structured questionnaire was conducted which was given to different retailers and households in the motive of collecting information regarding how much aware are they and to what extent they are ready to boycott harmful paints. Retailers responded favouring environment and mainly their concern was customers choices. Different people presented different views and the views were also differentiated according to the age gaps.

## SECONDARY SOURCES

Relevant books were considered for collecting information and journals on the topic is considered here. The information collected by different publishers is also mentioned in this study. The data is also collected from newspapers, magazines and different websites.

## **Conclusion**

Government with private companies should organise 3 Rs( reduce, reuse and recycle ) schemes like other countries. To control the disposition of paints in garbage, roads, open areas etc. which can easily come in contact with the environment. The excess of paint should be used in government departments, houses of people who cannot afford or the paint can be returned to the retailers for recycling and disposing at the place which does not harm the environment. This can result in best practice for management. The paint donors should be motivated by making them members of NGOs, organisations and giving discounts on their next purchase. This will also help the government to keep a check on the quality of paint used in the house. For the manufacturers of the paints the government should provide subsidies, training on manufacturing eco-friendly paints, advanced technologies to make natural paints to sustain the ecosystem. Like the vedic paint many more initiatives should be taken to utilise the waste and make some useful products. This will not only improve the environment but also helps in boosting economy and it will help to generate employment and improve sustainability. As the cost effective techniques of manufacturing natural paints will replace the toxic paints from the environment. The reasonable price of the paints will make high demand of natural paints among the customers. There are manufacturing units which add lead and other chemicals in the paints that should be stopped. They are not concerned about the effects of pigments like titanium dioxide( $\text{TiO}_2$ ) Chrome Green Oxide, yellow and red Iron Oxides, etc. The concerned departments must take strict actions against these practices and ensure betterment of the society. The buyers must also be aware of the choices they made and learn the importance of buying natural paints. It should be the duty of the consumers to buy the paints after going through the ingredients added to the paints and pigments. If there is no ingredients labelled on the product or there is so much emphasis on the word organic then it is fair to assume that the paint is harmful.

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