

# Recycling and upcycling

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## Abstract

Recycled product is a wonderful way to save natural resources like metals, trees and petroleum. The manufacturing processes used to create these products also require less energy to produce. Recycling is a part of waste disposal hierarchy-Reduce, Reuse, Recycle. Effective recycling starts with household or the place where the waste was created. Recycling process is done to reduce the use of raw materials that would have been used. Recycling also uses less energy and great way of controlling air, water and land pollution.

The present study is focused on recycling of the damaged cartridge fibres of water filters and upcycling into home furnishing products. Upcycling term is also known as creative reuse, is the process of transforming by products. Most of the filters of electronic products are recycled and performance is as good as new filters. In the present study the damaged water filters cartridge are used to make decorative products. The fibre strands found in filter cartridge are effectively used in making table mats using crochet techniques.

**Key words:** Reduce, Reuse, and Recycle, Upcycling, filter cartridge,

## Introduction

Textiles and clothing recycling is a potentially beneficial activity from environmental, social, and economic points of view, as opposed to land filling or being used for energy. Textiles, nonwovens as well as fibre reinforced composite materials are commonly used in daily life and in technical applications. The annual world fibre market amounts to about 60 million t including natural and man-made fibres. Due to increased ecological awareness and more severe legislations disposal of waste is increasingly avoided through the use of recycling technologies. This development also takes place in the field of fibre materials. However, proper processes for fibre recycling are not yet fully developed. Commonly end-of-life fibres are supplied for energetic utilization. Fibres are used for a large variety of applications.

## Review of Literature

### ➤ Sources of Textiles for Recycling

Textiles for recycling are generated from two primary sources. These sources include:

1. Post-consumer, including garments, vehicle upholstery, household items and others.
2. Pre-consumer, including scrap created as a by-product from yarn and fabric manufacture, as well as the post-industrial scrap textiles from other industries.

➤ **Sharma R and Goel A**, Department of Home Science, Dayalbagh Educational Institute Agra, Uttar Pradesh, <sup>2</sup>Department of Clothing and Textiles, G. B. Pant University of Agriculture and Technology, Pantnagar, Uttarakhand, India. Recycling is a way to process, the used materials (waste) into new products to prevent waste of potentially useful materials. It reduces the consumption of fresh raw materials, energy usage, air pollution created mainly from incineration, water pollution and land pollution mainly from land filling. Recycling is a key component of modern waste reduction and is the third component of the "Reduce, Reuse, Recycle and Recover" (4R's) waste hierarchy.

➤ Recycling, **Bengs**, an entrepreneur says, is the answer. "We cannot keep growing more cotton, and producing more new clothes. To feed a growing population's appetite for consumption, we have to start recycling, or as we like to call it, pure cycling."

➤ **Pesola**, an entrepreneur says that 95 percent of textile fibers can be recycled. "Not only can it be recycled," he explains "but it's actually cheaper, if we work in volume, because we don't have to go through the dyeing process."

➤ **Performance from a Bottle:** The Poole Company provides the textile industry with performance from a bottle. Taking recycled PET bottles that would have otherwise clogged a landfill and producing Eco Sure spinning fibers that can be made into apparel is performance from a bottle.

## Methodology/Present study

Presently the undamaged filters are recycled and the performance is as good as a new filter and oftentimes provides better filtration performance than when the filter was new. But the damaged filters can be reused to make products such as braided mats, crochet mats etc. the present study is focusing on recycling of these cartridge fibers into home furnishing material.

The study helps in reducing the wastage produced by discarded filters and provides ample of ideas to the entrepreneurs to bring up new products to the market.



**Aquaguard-Cords filter cartridge**



**Unwound cartridge fibers made into a table mat**

**Limitations:**

The present study is limited in recycling of filter cartridge fibers into home decors like, table mats, using crochet techniques. Dyeing process will be applied on these cartridge fibers to understand dye resistance.

## **Conclusion:**

Recycling is the process of collecting and processing materials that would otherwise be thrown away as trash and turning them into new products. Increases economic security by tapping a domestic source of materials. Recycling is the process of converting waste materials into new materials and objects. It is an alternative to "conventional" waste disposal that can save material and help lower greenhouse gas emissions. Prevents pollution by reducing the need to collect new raw materials and saves energy.

## **References:**

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