

## BATHROOM TISSUE AND PAPER TOWELS

- 40% of trash in U.S. landfills consists of paper products.
- 30% of the timber consumed in the U.S. is used to make paper products.
- Paper use is expected to increase approximately 46% by the year 2040.



### The Short Life of Bathroom Tissue and Paper Towels

One of the largest segments of the paper products industry is bathroom tissue and paper towels. Bathroom tissue and paper towels are used once, never to be used again. They cannot be recycled, thereby eliminating the potential for replenishing what has been lost. However, the purchase of tissue and towels containing 100% recycled material and as much postconsumer waste as possible can reduce the impact of these short-lived items. Use of postconsumer fibers reduces the impact on landfills by saving 3.3 cubic yards of space for every ton of paper that is rechanneled.

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This *Choose Green Report* describes the enormous potential environmental impacts of bathroom tissue and paper towel use and how to reduce these impacts. Institutions can contribute greatly to preserving resources, protecting the environment, and reducing scarce landfill space by choosing bathroom tissue and paper towel products made of recovered materials and processed with fewer toxic chemicals.

### Green Seal Will Help You Make Sound Choices

To assist you in buying green products we have included two tables at the end of this report: Table 1 covers bathroom tissue, Table 2 paper towels. The tables recommend product brands and provide information with respect to percentage of recycled content, including postconsumer materials, and the bleaching process used (unbleached or process chlorine free); manufacturer contact information is provided at the end of the report.

## Startling Statistics About the Advantages of Recycling

Every ton of 100% recycled paper saves an estimated 4,100 kilowatt-hours of energy, 7,000 gallons of water and 60 pounds of air pollutants. If all paper towels were made with 100% recycled materials, approximately 1 million tons of used paper would be kept out of our waste stream. If recycled materials were not used to manufacture bathroom tissue, 3.5 tons of virgin wood would be needed in

*If recycled materials were not used, 3.5 tons of virgin wood would be needed in order to manufacture one ton of bathroom tissue.*



order to manufacture one ton of bathroom tissue. The statistics demonstrate that recycling has dramatically less impact on the environment.

be channeling the greatest amount of waste away from our landfills.

Recovered paper materials include paper waste generated after the completion of a paper making process, such as postconsumer materials; envelope cuttings; bindery trimming; obsolete inventories; and rejected, unused stock. Recovered materials do not, however, include fibrous waste generated during the manufacturing process such as fibers recovered from wastewater or trimmings from paper machine rolls (trimmings are also called “mill broke”). These are not included in the category of recovered materials regardless of whether such materials are used by the same company or by another company. Recovered materials also do not include fibrous by-products of harvesting, extractive or woodcutting processes, nor do they include forest residues such as bark.

## Postconsumer Versus Recovered Materials...What's the Difference?

There are two categories of recycled materials. Why distinguish between the two? The difference is significant. Postconsumer materials include any items that have already been used by consumers or businesses and would otherwise be sent to landfills or incinerators. Typical postconsumer materials include used food containers, newspapers, old cardboard boxes and any paper materials set out for pickup at curbside or brought to recycling centers. By purchasing products with the highest percentage of postconsumer materials you will

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## Chlorine Bleaching Is Harmful at All Levels of the Food Chain

Chlorine and its derivatives such as hypochlorite and chlorine dioxide should not be used to make recycled paper. Paper towels are sometimes bleached with elemental chlorine (chlorine gas), which causes the release of chlorinated compounds, such as dioxins and furans, which are powerful carcinogens and mutagens. These compounds adversely affect immune systems and reproductive systems and are harmful to aquatic life and wildlife. In addition, these chemicals are bioaccumulative, meaning they build up increasingly higher concentrations of potentially toxic chemicals in organisms. Organisms at the top of the food chain (such as human beings) may therefore accumulate concentrations a million times higher than those that are present in the environment.

Green Seal recommends choosing unbleached products whenever possible because unbleached products can be just as effective and functional as



bleached products. Generally, the primary difference between bleached and unbleached is the color. However, if unbleached products are not available or if you must choose white, then select products that are process chlorine free (PCF) first (see Brief Glossary). If PCF towels are not available, choose a product that is elemental chlorine

free (ECF). More environmentally responsible bleaching alternatives to chlorine and its derivatives are oxygen, hydrogen peroxide, sodium hydrosulfite, enzyme bleaching and ozone. Use of these compounds prevents the release of highly dangerous chemicals such as dioxins.

## Deinking Recycled Paper

The process of deinking requires the removal of coatings, fillers, pigments, inks and dyes from

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### BRIEF GLOSSARY

**Dioxins:** Highly toxic chlorinated organic chemicals linked to cancer and interference with the immune system and reproductive system.

**Effluent:** Outflow from an industrial facility, typically containing pollutants.

**Elemental Chlorine Free (ECF):** Bleached with a chlorine derivative such as chlorine dioxide rather than with chlorine gas.

**Food Chain:** A sequence of organisms each of which uses the next lower member of the sequence as a food source.

**Postconsumer:** Refers to materials that have served their end-purpose and have been diverted from landfills.

**Process Chlorine Free (PCF):** Not bleached with chlorine or its derivatives.

**Sanitary Landfills:** Disposal sites for non-hazardous solid wastes spread in layers, compacted to the smallest practical volume and covered by material applied at the end of each operating day.

**Totally Chlorine Free (TCF):** Pulp that has never been bleached with chlorine or its derivatives; hence, in practical terms made from 100% virgin components. Not recommended for bathroom tissue or paper towel production.

**Virgin Paper:** Paper made from pulp that has never been used before in a product.

**Waste Stream:** Total flow of solid waste from homes, businesses, institutions and manufacturing plants. Waste is recycled, burned or deposited in landfills.

recycled paper before the paper is used to make bathroom tissue and paper towels. Deinking allows the use of the most substantial portion of the paper (the cellulose fiber) to be extracted for recycling.

In deinking it is especially important that disposal of sludge be properly handled. Sludge is a semi-solid residue that remains at the end of the deinking process. Sludge can contain toxic heavy

*A deinking mill produces 21-31% less effluent per unit of production than that of a virgin paper mill.*



metals such as cadmium, chromium, mercury and arsenic which are in inks and dyes used in printing. Sludge may also contain

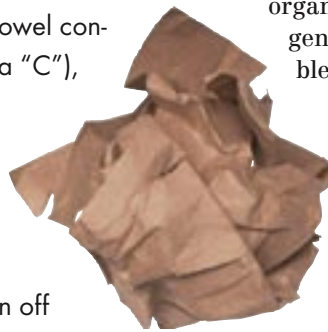
contaminants such as chlorinated organic compounds from the original paper bleaching process. The deinked pulp is often bleached again with chlorinated compounds.

Sludge disposal is properly handled in one of several ways: placed in a special landfill designed with groundwater monitoring systems and leachate collection; sent to an incinerator; “landfarmed” (distributed over farmland soils); or reused in making concrete blocks, among other products. Though none of these options is completely impact-free to the environment, they do not have the harmful effects of using virgin pulp to make bathroom tissue and paper towels. Deinking mills prevent large amounts of refuse from entering our municipal waste stream. A deinking mill produces 21-31% less effluent per unit of production than that of a virgin paper mill. Deinked sludge also contains significantly fewer chlorinated organic compounds than those generated by the original bleaching of wastepaper stock.

**HOW UNCONTROLLED USE OF FOLDED TOWELS COSTS MONEY AND CREATES WASTE**

Individual paper towels come in different folds: singlefold, multifold and C-fold. Singlefold has one fold, multifold two folds. A C-fold towel is approximately 13" x 10" when fully opened and flat, which rarely ever happens when it is used. The flat towel consists of three different folds (hence, opening up into a "C"), and the final, folded piece is a rectangle measuring about 10" in length and 3½" in width.

Did you ever observe how people pull out folded paper towels by the fistful just to wipe their hands? Or if a cup of coffee is spilled one or two people run off to grab enormous amounts of folded towels as if a gallon of liquid had been spilled. The easy accessibility of folded towels makes them readily available to grab by the handful. In contrast, hardwound roll towels combined with controlled-use dispensers control the amount provided and save huge amounts of paper – 25 to 35%. Roll towels also require up to 80% less packaging. In most applications, roll towel dispensers need to be refilled far less often than folded towel dispensers, saving on maintenance time. Moreover, roll towels are more compact, requiring less storage space.



**Buy Towels in High-Capacity Rolls**

Look for paper towels that are wrapped around a central core of 100% recycled fiber and allow the dispensing of only the amount needed (controlled-use dispensing). Seek out the item that contains more square feet than that of other standard rolls. Some manufacturers “puff up” their products with air to make the diameter the same as that of bigger rolls, but the inflated roll

*continued on page 6*

## WAYS YOU CAN HAVE LESS IMPACT ON THE ENVIRONMENT

Published environmental standards for bathroom tissue and paper towels were reviewed, including standards of the U.S. Environmental Protection Agency (USEPA), U.S. Department of the Interior, and Green Seal. Including the largest amount of recycled and postconsumer wastepaper is the best way to save used materials from the waste stream. Accordingly, bathroom tissue should contain 100% recycled content, including a minimum of 20% postconsumer waste. Paper towels should contain 100% recycled content, including a minimum of 40% postconsumer waste. Also, bathroom tissue and paper towels should contain no added pigments, inks, dyes or fragrances, and should be unbleached or bleached preferably without any chlorine derivatives to minimize release of toxic chemicals in production. In addition, choosing products with environmentally preferable packaging further diverts materials from the waste stream and avoids contamination of the environment with toxins and other harmful chemicals.

### *T*hese Are the Selection/Recommendation Criteria for Environmentally Preferable Bathroom Tissue and Paper Towels:

- Where available, purchase bathroom tissue and paper towels certified as environmentally preferable under Green Seal's environmental standards, GS-1 and GS-9, respectively.
- Purchase bathroom tissue and paper towels made of 100% recovered materials.
- Bathroom tissue should contain a minimum of 20% postconsumer waste; paper towels should contain a minimum of 40% postconsumer waste.
- Choose unbleached paper towels first; process chlorine free (PCF), second; elemental chlorine free (ECF), third.
- Select packaging having minimum environmental impact: made of recycled and recyclable materials; imprinted with safe inks; and containing no toxic metals, dyes, inks or fragrances. Avoid products which are packaged in outer cartons that are inappropriately sized or which contain excessive inner packaging materials.
- Seek items having the largest amount of product. For example, each roll of bathroom tissue should contain at least 40 square feet of product.
- Select high-capacity hardwound roll towels (800 feet or more).



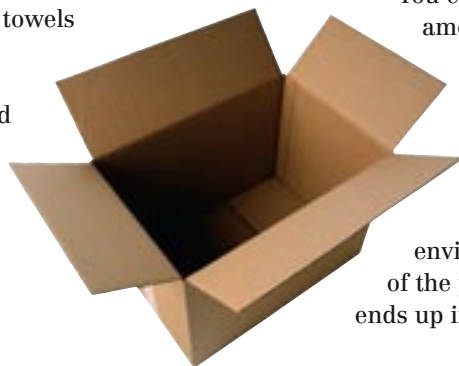
has fewer sheets. By choosing the product having more square feet, you can be sure of getting the maximum amount of towel for the cost.

Choose paper towels that are hardwound roll towels (800 feet or more). When possible, use hardwound roll towels with a controlled-use

*When possible, use hardwound roll towels with a controlled-use dispenser.*

dispenser that reduces the amount of paper used by dispensing only a predetermined towel length, which may be reduced appropriately. Uncontrolled folded towels, such as C-fold towels, generate considerable waste in the use phase and can be more costly to purchasers (see sidebar on page 4).

There are additional benefits of hardwound roll towels compared to individual, folded towels. Hardwound roll towels often require less packaging per weight than do individual, pre-folded towels.



You can diminish the amount of waste generated by choosing packaging that has little impact on the environment. Much of the packaging ends up in the solid



Less packaging consumes less fiber, resulting in fewer air, water and solid pollutants, as well as conservation of fossil fuels.

### **Packaging** *Potentially Hidden Costs to You and the Environment*

waste stream, so how the package is made is almost as important as how the product is made. Packaging should not contain excess materials to “bulk up” the product. A box properly sized to the product reduces waste and saves the purchaser money. Boxes made of corrugated cardboard or paperboard should contain recycled and recyclable materials. The box should be made and printed without toxic metals and other harmful chemicals. Some vendors of bathroom tissue and paper towels may be well informed about the manufacture of recycled paper products, but might unknowingly purchase their packaging materials from companies who have no knowledge of or interest in what least impacts the environment.


## *THE ADVANTAGES OF GREEN SEAL CERTIFICATION*

Green Seal, Inc., is an independent, non-profit organization whose mission is to create a more environmentally sustainable economy by identifying and promoting environmentally preferable products and services. Green Seal has developed environmental leadership standards for dozens of product and service categories, including bathroom tissue and paper towels, and its certification program verifies that products meet these stringent standards. Therefore, when purchasers see that a product is Green Seal-certified, they know that it is environmentally preferable because it has been validated by a reputable third party with no financial interest in the product or company that manufactures it. In this report Green Seal has independently verified product information only for those products indicated as Green Seal certified; other product information has not been verified by Green Seal.



**Table 1. Recommended Bathroom Tissue Products**

None of the products listed contains fragrance.

Manufacturer	Product Name (Bathroom Tissue)	Recycled Content	Bleaching Process	Notes
Bay West Paper	EcoSoft™ Green Seal® Bathroom Tissue 	100% recycled up to 49% postconsumer	Process chlorine free	Green Seal certification also requires packaging to be free of toxins (above trace levels), including lead, mercury, cadmium, and other harmful chemicals, and to reduce waste
Marcal Paper Mills	Bathroom Tissue	100% recycled > 60% postconsumer	Process chlorine free	Manufactures 100% total recycled content in all of its paper products
Javits-Wagner-O'Day Program c/o National Industries for the Blind	"Kick Butt" bathroom tissue paper, and other bathroom tissues	100% recycled >30% postconsumer	Process chlorine free	
Cascades Tissue Group	North River Bathroom Tissue	100% recycled 60% postconsumer	Process chlorine free	500, 1000 sheets, jumbo roll tissue
Earth Friendly Products	Earth Friendly	100% recycled 35% postconsumer	Process chlorine free	
Kimberly-Clark Worldwide, Inc	Bathroom tissue products <ul style="list-style-type: none"> <li>■ Scott Coreless JRT Jr 1-ply</li> <li>■ Scott Coreless JRT Jr 2-ply</li> <li>■ Scott Coreless Standard 2-ply</li> </ul>	45% minimum post-consumer Less than 100% recycled content	Elemental chlorine free	Scott Product Codes <ul style="list-style-type: none"> <li>■ 07005 Scott Coreless JRT Jr 1-ply</li> <li>■ 07006 Scott Coreless JRT Jr 2-ply</li> <li>■ 04007 Scott Coreless Standard 2-ply</li> </ul> These products minimize packaging waste by eliminating cores and including more tissue in the roll.

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= Product is certified to Green Seal's environmental standards (GS-1 for bathroom tissue, GS-9 for paper towels)

## Table 2. Recommended Paper Towel Products

None of the products in this table contains fragrance.

Manufacturer	Product Name (Paper Towels)	Recycled Content	Bleaching Process	Notes
Bay West Paper	EcoSoft™ Green Seal® Natural Roll Towels 	100% recycled up to 82% postconsumer	Unbleached and process chlorine free	Green Seal certification also requires products and packaging to be free of toxins (above trace levels), including lead, mercury, cadmium, and other harmful chemicals, and for packaging to reduce waste
	EcoSoft™ Green Seal® Natural White Roll Towels 	100% recycled up to 73% postconsumer	Unbleached and process chlorine free	
	EcoSoft™ Green Seal® CenterPull Towels 	100% recycled up to 49% postconsumer	Process chlorine free	
	EcoSoft™ Green Seal® Natural White Singlefold Towels 	100% recycled up to 73% postconsumer	Unbleached and process chlorine free	
	EcoSoft™ Green Seal® Natural Multifold Towels 	100% recycled up to 82% postconsumer	Unbleached and process chlorine free	
	EcoSoft™ Green Seal® Natural White Multifold Towels 	100% recycled up to 73% postconsumer	Unbleached and process chlorine free	
	EcoSoft™ Green Seal® Natural White C-Fold Towels 	100% recycled up to 73% postconsumer	Unbleached and process chlorine free	
Javits-Wagner- O'Day Program c/o National Industries for the Blind 	Paper Towel, C-fold	100% recycled 90% postconsumer	Process chlorine free	Green Seal certification also requires products and packaging to be free of toxins (above trace levels), including lead, mercury, cadmium, and other harmful chemicals, and for packaging to reduce waste



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**Table 2. Recommended Paper Towel Products, continued**

Manufacturer	Product Name (Paper Towels)	Recycled Content	Bleaching Process	Notes
Javits-Wagner-O'Day Program c/o National Industries for the Blind	Paper Towel, Single-fold	80% recycled 40% postconsumer	Unbleached and/or Process chlorine free	Less than 100% recycled content
Seventh Generation	White Paper Towel	100% recycled 80% postconsumer	Process chlorine free	
	Natural Paper Towel	100% recycled 100% postconsumer	Unbleached	
Kimberly-Clark Worldwide, Inc	Paper towels Scott Products ■ Scott Hard-roll Tradition Products ■ Single-fold brown ■ Multi-fold brown ■ Hard-roll brown	100% recycled 70% postconsumer	70% bleach free; 30% elemental chlorine free	Scott Product Codes ■ 02021 Scott Hard-roll ■ 04142 Scott Hard-roll Tradition Product Codes ■ 01702 Single-fold ■ 01801 Multi-fold ■ 04128 Hard-roll
Cascades Tissue Group	North River Paper Towels Single-fold Multi-fold C-fold Roll Towels	100% recycled 80-100% postconsumer	North River Kraft Paper Towels available as unbleached and process chlorine free	
Marcal Paper Mills	Multi-fold Towels	100% recycled 60% postconsumer	Process chlorine free	Manufactures 100% total recycled content in all of its paper products
Georgia Pacific	Envision Acclaim economy level	100% recycled 40% or more postconsumer	Available as unbleached	Envision Acclaim economy level paper towels meet or exceed EPA postconsumer fiber content guidelines.
SCA Tissue	Encore	100% recycled 40% postconsumer	Process chlorine free	
	Second Nature	100% recycled 40% postconsumer	Unbleached	

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- *Bleaching without chlorine*
- *Deinking recycled paper*
- *Packaging*

## MANUFACTURER CONTACT INFORMATION

Bay West Paper	1-877-907-2737 toll-free	<a href="http://www.baywestpaper.com">http://www.baywestpaper.com</a>
Javits-Wagner-O'Day Program c/o National Industries for the Blind	1-800-433-2304	<a href="http://www.jwod.com/">http://www.jwod.com/</a>
Seventh Generation	1-802-658-3773	<a href="http://www.seventhgeneration.com">http://www.seventhgeneration.com</a>
Cascades Tissue Group	1-800-246-0711	<a href="http://www.cascades.com">http://www.cascades.com</a>
SCA Tissue	1-866-722-6659 toll-free	<a href="http://www.scatissue.com">http://www.scatissue.com</a>
Marcal Paper Mills	1-201-796-4000	<a href="http://www.marcalpaper.com">http://www.marcalpaper.com</a>
Kimberly-Clark Worldwide, Inc.	1-800-346-4652	<a href="http://www.kcprofessional.com">http://www.kcprofessional.com</a>
Georgia Pacific	1-404-652-4000	<a href="http://www.gp.com">http://www.gp.com</a>
Earth Friendly Products	1-800-335-3267	<a href="http://www.ecos.com">http://www.ecos.com</a>