



# Bemis Toilet Seats: Made in USA, Greener in Every Color

*Better environmental practices from painting to molding  
to selection of materials*

## By Bob Davis

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## Healthier Paints

At Bemis Manufacturing Company we have been working hard to ensure that our products and processes adhere to the very highest environmental standards. We go beyond what's required by laws and regulations and strive for the right thing to do.

A look at three key areas in our manufacturing—paint, materials and molding—shows the high value we place on the health and safety of our employees, our customers and our planet. It also underscores the added value of products that meet American environmental standards.

Understanding the environmental impact of toilet seat manufacturing requires knowing a bit about how they are made and how they are finished. Toilet seats are made from plastic and molded wood that are then painted or finished. The process can involve the use of volatile organic compounds (VOCs), formaldehydes and isocyanates.

The term VOCs often refers to certain types of solvents and liquids including paint additives, spray can propellants, gasoline or kerosene, petroleum distillates, dry cleaning products and many other industrial and consumer products. VOCs also can arise naturally from both plant and animal sources. Because they can be hazardous, it is general practice in U.S. industries to limit exposure to VOCs and prevent their release into the environment.

Formaldehydes and isocyanates are also organic chemicals widely used in industry. Their properties make them essential in producing hundreds of useful everyday products. Formaldehyde and its closely related chemical cousins are especially useful in making the resins and adhesives used in pressed wood products such as plywood, fiberboard and similar composites. Isocyanates are a class of compounds needed to make polyurethane foams, thermoplastic elastomers, spandex fibers and polyurethane paints.



*Corporate Headquarters & East Campus, Sheboygan Falls, WI*

Beginning in 1995, Bemis began a costly conversion of the manufacturing processes at our Sheboygan Falls facility away from using VOC-solvent bases in our paint processes. Since 1998, Bemis has used only water-based acrylic paint for its molded wood toilet seats. The result is a cleaner, safer work

## Safer Molding Processes

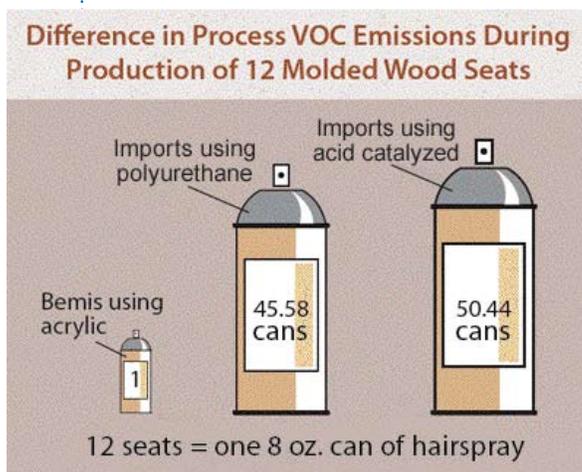
environment, reduced emissions of VOCs into the atmosphere and less residual long-term emissions from finished products.

Manufacturers of Chinese imports, by comparison, generally use two paint types on their molded wood and/or medium-density fiber (MDF) seats—acid catalyzed or polyurethane. Best industry estimates are that 75 percent of the molded wood and/or MDF seats from China use a polyurethane finish. About 60 percent of their solid wood seats and/or veneer seats use polyurethane, 30 percent use acid catalyzed, and 10 percent use an extremely low-quality lacquer.

All paints contain some degree of VOCs. Some polyurethane paints contain isocyanates. Water-based acrylic and acid-catalyzed paints contain formaldehyde. During the painting process, VOCs, isocyanates and formaldehydes can be released into the atmosphere. It is assumed that once the paint finish has cured, there are no further significant emissions of these chemicals. However, if packaged prior to complete curing, the product can continue to give off formaldehyde for up to three months, which is long enough for the end customer to have in the home or office. There also are problems when containers from overseas filled with product made using formaldehyde are opened for unloading. Our painting process in Sheboygan Falls, Wisconsin, is dramatically different from those in China, producing a cleaner, safer workplace for our employees, reduced emissions into the atmosphere and less chance for residual long-term emission of VOCs from finished products.

The molding process used by Bemis uses wood flour mixed with a phenolic resin that contains phenol, formaldehyde, zinc compounds and “nuisance” particles. The resin we use has been selected specifically for its reduced environmental impact.

The molding process used by toilet seat manufacturers in China typically combines wood flour with liquid urea formaldehyde. MDF is usually made with wood chips, urea formaldehyde and wax in a process where woodchips are broken down into their natural cellulose fibers and combined with resin and wax. The dried fibers are formed into mats and compressed into panels under high pressure. In these operations, urea formaldehyde is released into the atmosphere.



The environmental difference is significant. Methods used in China produce considerably more VOC emissions than the Bemis process.

Let’s look at an example most people understand by measuring the quantity of VOCs emitted as the ounces contained in one can of hair spray. The process used by Bemis produces the VOC equivalent of one can of hairspray emissions for every 12 seats manufactured. In the processes used by the Chinese, that one can becomes 45 to 50 cans. Put another way, seats made in China typically require the use of 45 to 50 times the amount of VOCs as seats made in our Sheboygan Falls plant.

## Rediscovered Wood

One way that we measure our environmental contributions and progress at Bemis is through audits by independent environmental groups such as the Rainforest Alliance. Affiliated with the Forest Stewardship Council, the Rainforest Alliance works globally to conserve biodiversity and ensure sustainable livelihoods by transforming land-use policy, business practices and consumer behavior.

One of the alliance's initiatives is called the SmartWood™ Rediscovered Wood certification program. To qualify, a company must use recycled, reclaimed and salvaged wood for its products. Bemis does.

All of our molded wood toilet seats contain rediscovered wood from 100 percent recycled sources. Simply put, no trees are cut down to make our wood seats.



Bemis is one of only a small number of North American manufacturers to achieve the strict standards required for Rediscovered Wood certification.

Using recycled and reclaimed wood, reducing VOC emissions and utilizing specially selected resin in the molding

process are all examples of our commitment to the environment. At Bemis, our approach to manufacturing is based on doing the right thing for the right reasons.



For more information on Bemis, visit [www.BemisMfg.com](http://www.BemisMfg.com).

For more information on the company's commitment to the environment, visit [www.BemisMfg.com/sustainability](http://www.BemisMfg.com/sustainability).