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## Senate Committee on Natural Resources and Energy

February 5, 2015  
10:00 am – 201 SE State Capitol

### Testimony on SB 15 by Senator Robert Cowles

I want to speak briefly on Senate Bill 15 relating to the manufacture and acceptance for sale of products containing microbeads. Wisconsin is blessed to be bordered by two of the world's five Great Lakes. The Great Lakes form the largest group of freshwater lakes on earth and are important natural resources and economic assets of the state; critical to sustaining the shipping, sport fishery and tourism economies of Wisconsin's coastal communities. In recent years, research has found tiny bits of plastic called "microbeads" in all of the Great Lakes prompting me to look into this issue further.

In December of 2010, Dr. Rios Mendoza from the University of Wisconsin Superior published a scientific paper in the Journal of Environmental Monitoring which examined how persistent organic pollutants absorbed on plastic debris in the Pacific Ocean. This research paper was the first to demonstrate that plastic debris found in the ocean absorb pollutants in a manner similar to sediment, but they do not sink like sediment. Instead they remain on or near the surface where they are or may be ingested by fish or birds. The research continues by outlining the fact that a half to three-quarters of the samples contained measurable amounts of harmful pollutants in levels that were much higher in the plastic debris than concentrations in the water. This finding indicates that the plastic particles were indeed absorbing pollutants.

The research conducted in the world's oceans prompted researchers from the University of New York at Fredonia and the University of Wisconsin Superior to question whether the Great Lakes could also be littered with plastic debris. During the summer of 2012 and 2013 all of the Great Lakes were sailed skimming the surface with finely meshed netting to search for plastic particles.

Microscopic studies of the Great Lakes samples has uncovered a likely source for the plastic: due to the perfectly round nature, scientists know that these particles are microbeads used in many personal care products.

These plastic substances pose a risk to fish communities and they absorb dangerous pollutants already in the lakes' water column. Once these absorptive particles are ingested by fish, they have the potential to bio-accumulate and pose human health risks. Of particular concern is the

absorption of polychlorinated biphenyls (PCBs), chlorinated pesticides, and polycyclic aromatic hydrocarbons (PAHs), which are known carcinogens, and are considered to be endocrine disrupting chemicals.

At an April 2013 American Chemical Society meeting, Dr. Rios Mendoza reported that they had collected up to 1.7 million microscopic particles from Lake Erie. Rios said that lab examination has detected two potentially harmful chemicals in the Lake Erie plastic debris including PCB's and PAH's both of which are capable of causing cancer and birth defects. Since that time, Lake Michigan has been studied and an average of 17,000 plastic pieces per square kilometer have been reported.

Due to the potential human health impacts, environmental impacts to fish populations, impact to Great Lakes sport and commercial fishing, and the readily available selection of natural alternatives; many of the leading manufacturers in the cosmetics and personal care products industry have already begun researching how to phase out the use of microbeads in their product lines. Industry leaders like Johnson and Johnson and Proctor & Gamble have made commitments to begin to phase out the use of microbeads.

This bill strikes the balance of providing additional environmental protections for the Great Lakes while recognizing the good-faith efforts of these companies and setting a definitive timeline.

During drafting the authors worked with WMC and Clean Wisconsin to develop a piece of legislation that balances protecting our Great Lakes waterways and provides certainty to the responsible manufactures and retailers phasing out these products. The bill as drafted is supported by the following industry groups: Personal Care Products Council (PCPC) and the Consumer Healthcare Products Association (CHPA) and is modeled after industry supported legislation that passed in Illinois last fall.

One-fifth of the fresh water in the world borders our state, it is my hope that we can put in place some common sense regulations that protect these resources and the people who work, recreate and live on or near our amazing Great Lakes.

Thank you for consideration and I will take any questions you may have at this time.



# MARY CZAJA

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## **Senate Bill 15 – Manufacture & Acceptance for Sale of Products Containing Microbeads Senate Committee on Natural Resources and Energy February 5th, 2015**

Thank you for holding a public hearing on Senate Bill 15 today. This legislation sets a definitive timeline for the phasing out of personal care products containing microbeads. We have worked diligently to strike the balance of providing needed environmental protections while recognizing the good-faith efforts of leading manufacturers who have already begun voluntarily phasing out this ingredient.

The industry trend of using microbeads reached its peak during the 1990's and early 2000's. Microbeads are so small that most municipal water treatment systems are unable to filter out the beads, leading to a large accumulation especially in our Great Lakes. Recognizing this problem and responding to shifting consumer demands, today many manufacturers have already begun to voluntarily phase out microbeads, instead opting for natural substitutes such as apricot and other fruit particles.

SB 15 will bring certainty to both manufacturers and consumers. Our bill establishes a definitive timeline of December 31, 2017 to end the manufacture of personal care products with microbeads. The sale of these products would then be prohibited one year later on December 31, 2018. Over-the-counter drugs containing microbeads follow a slightly delayed timeline; the manufacture is prohibited effective December 31, 2018 and the sale prohibited on December 31, 2019. The timeline is based on similar legislation enacted last year in Illinois, which has served as a model bill for the nation and was agreed to by both business and environmental groups. Establishing this timeline sets clear guidelines for industry compliance.

Our bill will also provide assurance to Wisconsin consumers. Citizens can be confident that the products they chose to buy are not having unintended consequences on our natural resources, instead of scanning dozens of ingredients on a label searching for the words "polyethylene".

During drafting my co-authors and I worked with WMC and Clean Wisconsin to develop a piece of legislation that balances protecting our Great Lakes waterways and provides certainty to the responsible manufactures and retailers phasing out these products. The bill as drafted is also supported by the Personal Care Products Council, the Consumer Healthcare Products Association, the Wisconsin Wildlife Association, the Wisconsin Pharmacy Society, and other groups.

Thank you and I am happy to answer any questions.



**Testimony of Tyson Cook, Director of Science and Research  
Amber Meyer Smith, Director of Programs and Government Relations  
Assembly Bill 15/Senate Bill 15  
Senate Natural Resources and Energy Committee  
February 5, 2015**

Clean Wisconsin is a non-profit environmental advocacy group focused on clean water, clean air and clean energy issues. We were founded forty four years ago as Wisconsin's Environmental Decade and have 20,000 members and supporters around the state.

We appreciate the opportunity to speak in favor of Assembly Bill 15 and its companion Senate Bill 15, and to thank the authors for their attention on this emerging pollution issue.

We have known about the dangers of plastic pollution in our waters for quite some time, and there has been considerable scientific research done around the issue. This includes not only large plastics like bottles and bags, but also so-called "microplastics" – tiny particles of plastic that range in size from 5 millimeters on the large end (about the size of a pencil eraser) to micrometers (less than the width of a human hair). Until relatively recently, most of the research around these pollutants has been focused on oceanic impacts. However, scientists have lately begun to look at inland waters as well. And when they looked, they found microplastics to be widespread here as well, for example throughout the Great Lakes.

Microplastics enter the environment in a variety of ways, like through the gradual breakdown of plastic-containing litter like bottles or bags into smaller and smaller sizes. This is in fact the largest source of microplastic pollution in the oceans. However, there are also some products that are specifically designed as microplastics, like plastic "microbeads" intentionally manufactured and used in cosmetics and cleaning products despite the availability of effective and economic alternatives. When plastic microbeads are put into personal care products, they can easily make their way to inland waters because they are washed right down the drain, and are difficult to remove from the water by sanitation systems due to their size, buoyancy, and resistance to coagulation. And unlike in the oceans, over half of all microplastic particles found by researchers in the Great Lakes were in the shape of those deliberately made microbeads.



Since microplastics aren't biodegradable, once they get into the environment they stick around for a long time. This means that there are many opportunities for them to be taken in by aquatic organisms, which can, for example, mistake them for food. As a result, researchers have found them in everything from tiny invertebrates to large fish. More research is still needed on how these microplastics end up impacting the organisms that ingest them, but it is clear that they have the potential to disrupt digestive systems, and decreasing feeding by taking up space in those digestive systems.

There are also potential chemical impacts from microplastics on wildlife. For example, the plastics themselves can leach chemicals like BPA, which have been shown to cause significant impacts for individual organisms or even their offspring.

Of even greater concern for people, microplastics may act as a pathway for toxic chemicals to be gathered from the water and enter into the ecosystem, where they can reach even higher concentrations. This is because microplastics can act like sponges for persistent organic pollutants (like pesticides and PCBs) or other chemical pollutants in the water. When the microplastics are then eaten or otherwise taken in by aquatic organisms, those gathered pollutants may then be released into the organisms. Many of those types of pollutants have the ability to then accumulate in the organisms, and then “biomagnify” up to much higher concentrations as larger animals higher up the food chain eat lots of the smaller contaminated organisms.

The widespread presence of microbeads in our Great Lakes has been only recently confirmed through research by a team of scientists in 2013. Studies have shown that the Great Lakes are teeming with plastic, with higher concentrations nearer to coastal cities. An average of 17,000 tiny pieces of plastic per square kilometer has been found in Lake Michigan.

Applying previous research and estimates to our state, we calculate that Wisconsinites alone may be responsible for adding 11,000 pounds of microbeads into the waste stream each year. That is nearly 400 billion individual plastic microbeads that have the potential to get into our waters.

There are many effective economic alternatives for manufacturers to use as an exfoliant in their personal care products like rice, apricot seeds, walnut shells, powdered pecan shells, bamboo, pumice, fruit pits, and oatmeal. It is by using these safe alternatives that we can reduce unnecessary plastic contamination of our waters. Many leading manufacturers have already stopped or are removing plastic microbeads from their products. This includes the five largest cosmetic and personal care product companies: Procter & Gamble, Unilever, Colgate Palmolive, L’Oréal USA Inc., and Revlon, Inc. But even with this commitment, those companies represent only about one-third of the total marketshare, and it is necessary for lawmakers to ensure all companies are acting responsibly and getting microbeads out of their products.

Several other states are considering phasing out microbead use in personal care products. In spring of 2014, Illinois became the first state to phase out use, and SB 15 and AB 15 are substantially similar to their law. In Illinois the timelines were a carefully crafted compromise between legislators, industry and environmentalists.

Clean Wisconsin is also supportive of legislation being introduced by Senator Wirch and Representative Ohnstad which phases out the use of microbeads on a more aggressive schedule. The sooner these microbeads stop entering our waterways the better. But we also respect the compromise reached in Illinois, and feel comfortable with the phase out set forth in SB 15 and AB 15.

These bills are a common sense approach where safer and affordable alternatives exist, but legislation is needed to make sure all companies are complying. We appreciate the opportunity to speak on this bill today, and urge your support.



# PLASTIC MICROBEADS POLLUTING OUR WATERS

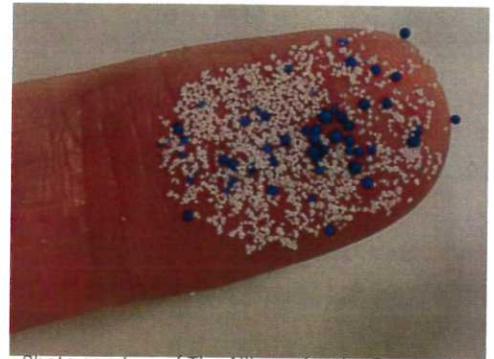


Photo courtesy of The Alliance for the Great Lakes

**Plastic microbeads** are tiny particles of plastic that are sometimes put in products like face and body scrubs, hand soaps, or toothpastes.

They can range in size from less than 10 micrometers (about the diameter of a red blood cell) up to a few millimeters (a millimeter is about the width of a credit card).

## The problem with plastic microbeads

Plastic microbeads aren't easily captured by water treatment systems, so after being rinsed down drains, they can get in our waters where they can damage the aquatic ecosystem.

And because the plastic particles are not biodegradable, they remain in the environment for long periods of time.

## Plastic microbeads in the Great Lakes

Recent research has shown that the Great Lakes are teeming with plastic, with higher concentrations nearer to coastal cities.

*An average of 17,000 tiny pieces of plastic per square kilometer has been found in Lake Michigan.*

## What are manufacturers doing?

Fortunately, many leading manufacturers have already stopped or are removing plastic microbeads from their products. This includes the five largest cosmetic and personal care product companies: Procter & Gamble, Unilever, Colgate Palmolive, L'Oréal USA Inc., and Revlon, Inc.

These leaders have less than one-third of that total marketshare however, leaving many potential microbead-containing products on shelves.

**A single bottle of  
microbead face  
scrub can contain  
over 300,000  
plastic particles**

**AVOID PRODUCTS  
CONTAINING:  
POLYETHYLENE,  
POLYPROPYLENE, OR  
ACRYLATE (CO)POLYMER**

### Contacts:

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Photo courtesy of 5 Gyres

**Wisconsinites may be adding nearly 400 billion microbeads to the waste stream a year**

## What are the impacts of plastic microbeads?

Plastic microbeads in the water can be easily confused for food by aquatic organisms. As a result, researchers have found them in everything from tiny invertebrates to large fish. And since they cannot be digested, they can cause problems like decreased feeding and disrupted digestive systems.

Plastic microbeads can also contain various chemicals. Some of those chemicals are purposeful additives like BPA put in the microbeads themselves. Other times, the microbeads act like sponges, soaking up chemicals they come into contact with. Plastic debris in the oceans, for example, has been found to accumulate pollutants such as PCBs up to 100,000 to 1 million times the levels in the water.

When chemicals are absorbed by the organisms that eat plastic microbeads, they have the potential to kickstart the process of biomagnification, where chemical concentrations increase to much higher levels up the food chain, like in larger fish.

## Does my product contain plastic microbeads, and are there alternatives?

You can check your personal care or beauty products for plastic microbeads by checking the ingredients list for *polyethylene*, *polypropylene*, or *acrylate (co)polymer*.

While a large number of products, especially those marketed as “scrubs” do contain these plastic microbeads, there are also many that don’t. They use natural ingredients like fruit pits, oatmeal, or pumice instead.

## Why are we just hearing about plastic microbeads?

Until recently, research on plastic pollution in our waters has been focused in the oceans. But new research has shown that microplastics like plastic microbeads are also found throughout inland waters.

In the oceans, the vast majority of microplastic pollution is made up fragments broken down from larger pieces of plastic like plastic bags or bottles. In the Great Lakes, however, over half of all microplastic particles found by researchers were in the shape of microbeads.

**IN THE GREAT LAKES,  
OVER HALF OF ALL  
MICROPLASTIC PARTICLES  
WERE FOUND BY RESEARCHERS  
TO BE IN THE SHAPE OF  
MICROBEADS**

## What can be done to fix the problem?

Unfortunately, there are no known methods to effectively remove plastic microbeads from the environment. As a result, we need to keep them from getting out into our waters in the first place.

***Recently proposed bills in Wisconsin follow the lead of other states to do just that, by banning the manufacturing of microbead-containing products, and phasing them off store shelves.***



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February 4, 2015

The Honorable Robert Cowles  
Wisconsin State Senate  
Madison, Wisconsin

Dear Senator Cowles,

I am writing to enthusiastically support the legislation you have introduced to ban microplastics in products in Wisconsin. As you know there are many contaminants that enter our freshwater systems from the products we use in our everyday lives. Studies have shown that we do not have the adequate treatment available to completely prevent the release from our decaying infrastructure, wastewater treatment systems and septic systems. We have limited data on what these contaminants may do when they interact with wildlife and the environment, however microplastics have been shown to bind pollutants and may increase the uptake of these pollutants into fish and other organisms. In addition, although more study is needed, microplastics could potentially interfere with digestion and immune system function in these organisms.

Microplastics are just the most recent example of these types of pollutants. However unlike other micropollutants, such as pharmaceuticals, these particles are not necessary in products and are simply used as part of marketing. They can be replaced in products where they are used as abrasives. They can be easily removed from other products without a significant consequence. I commend the work you have done with the various stakeholders who include these plastics in their products to collectively come to a solution to this problem.

Thank you for all of your work to protect our Great Lakes.

Sincerely,

A handwritten signature in cursive script that reads "Rebecca Klaper".

Rebecca Klaper, Ph.D.  
Professor, School of Freshwater Sciences, University of Wisconsin-Milwaukee

Superior, WI February 3, 2015

To whom it may concern,

My name is Dr. Lorena M. Rios. I am currently an assistant professor at the University of Wisconsin Superior. I was contacted by Toni R. Herkert from the Office of State Senator Rob Cowles in regards to the 2015 Senate Bill 15 related to the manufacture and acceptance for sale of products containing microbeads. This bill proposes to prohibit personal care products containing non-biodegradable plastic particles for sale beginning December 31, 2018.

I have been studying the plastic debris pollution from 2003 on the beaches and in the Ocean, mainly Pacific and Atlantic Oceans. In 2011 I started to survey the plastic debris contamination on the beaches and shorelines of Lake Superior. During 2013 and 2014, I collected samples from surface waters of the Lakes Superior, Huron, Michigan and Erie. The main finding in these waters was the micro plastic pellets in sizes lower than 5 mm. These pellets were mainly PE (polyethylene) and PP (polypropylene) with high concentrations of PAHs (polycyclic aromatic hydrocarbons) and PCBs (polychlorinated biphenyls) contaminant compounds.

I have 12-years of experience studying and conducting field research on plastic debris pollution. It is my opinion, based on my experience as a researcher, that this bill will be of great benefit to alleviating the impact that plastic debris pollution has revealed to have not only in our marine ecosystem but also in our Great Lakes and the overall impact on this earth. I will be happy to provide farther information if required.

Respectfully submitted,

Dr. Lorena M Rios  
University of Wisconsin Superior  
Assistant Professor of Chemistry  
Department of Natural Sciences  
Phone: (715) 394 8205  
Fax phone: (715) 394 8418



*founded 1881*

February 2, 2015

The Honorable Robert Cowles  
Committee on Natural Resources and Energy, Chair  
Wisconsin Senate  
State Capitol, Room 118 South  
Madison, WI 53707

**RE: Support for S.B. 15 (Cowles et al.) – Prohibiting Synthetic Plastic Microbeads**

Dear Chairman Cowles,

I am writing on behalf of the Consumer Healthcare Products Association (CHPA) to express support for Senate Bill 15, which seeks to phase-out the use of synthetic plastic microbeads in personal care products and over-the-counter medicines.

CHPA is the 133-year-old trade association representing the leading manufacturers and marketers of non-prescription, over-the-counter (OTC) medicines and dietary supplements. Every dollar spent by consumers on OTC medicines saves the U.S. healthcare system \$6-\$7, contributing a total of \$102 billion in savings each year. CHPA is committed to promoting the increasingly vital role of over-the-counter medicines and dietary supplements in America's healthcare system through science, education, and advocacy.

CHPA member companies understand that plastic pollution in the environment is of concern to regulators, policy makers, advocacy groups and the public. CHPA's member companies do not oppose the phase-out of plastic microbeads from personal care products and over-the-counter medicines. In fact, many manufacturers have already begun proactively phasing-out the use of synthetic plastic microbeads.

To date, Illinois is the only state to have passed a law prohibiting the sale of products containing synthetic plastic microbeads<sup>1</sup>, though as many as 25 states will consider legislation on the issue in 2015. Although we believe there should be one unified national approach to avoid a patchwork of laws aimed at addressing synthetic plastic microbeads, CHPA supports the concept proposed in S.B. 15 because it mirrors the existing Illinois law, ensuring reasonable effective dates and uniform definitions for key terms.

CHPA commends you for supporting this balanced approach to addressing this issue, and we respectfully urge the committee's support for S.B. 15. CHPA sincerely appreciates your

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<sup>1</sup> Illinois Public Act 098-0638 – Signed into law June 9, 2014

Consumer Healthcare Products Association  
Support for S.B. 15  
February 2, 2015 - Page 2 of 2

consideration of our position on this issue. If you have any questions, please contact me directly via the information below.

Respectfully submitted,

A handwritten signature in black ink that reads "Sean R. Moore". The signature is written in a cursive, slightly slanted style.

Sean R. Moore  
Associate Director, State Government Affairs  
Consumer Healthcare Products Association  
[smoore@chpa.org](mailto:smoore@chpa.org) 202-429-3537

cc: Senate Committee on Natural Resources and Energy  
Mr. Ryan Smith, Clerk, Senate Committee on Natural Resources and Energy



*Leaders in Resource Renewal*

*A non-profit association that provides statewide proactive leadership on waste reduction and recycling through education, advocacy, collaboration, programs and services.*

## **AROW Board of Directors- Legislative Position Paper**

February 2, 2015

Wisconsin SB15/AB15-Relating to: the manufacture and acceptance for sale of products containing microbeads

*Associated Recyclers of Wisconsin (AROW) is a non-profit, 501(c)(3) organization that provides statewide proactive leadership on waste reduction and recycling through education, advocacy, collaboration, programs and services. AROW was established in 1994 by recycling professionals working from the public and private sector to implement Wisconsin's recycling law and to develop best management practices for the industry.*

The AROW board of directors supports SB15/AB15, Relating to: the manufacture and acceptance for sale of products containing microbeads.

Microbeads are microscopic polyethylene (PE) spheres used in personal care items such as exfoliating skin care products, lotions, cosmetics and toothpastes. After use they are rinsed away and flushed through the wastewater system. Unfortunately, the PE beads pass through this system and enter surface waters where they may cause environmental harm. Because they are of a similar size as fish eggs, aquatic species, such as frogs, fish and birds ingest the microbeads and any chemicals absorbed into the microbeads.

The AROW board of directors supports this bill as ultimately the removal of microbeads from personal care products and prescription medications will reduce waste microbeads from entering surface waters and protect the environment. We further support an accelerated implementation timeline, as most major manufacturers have already begun to phase out the use of microbeads.

Please feel free to contact AROW with questions about the above information.

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Karin Sieg  
Executive Director  
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**MEMO**

**TO: Members of the Senate Committee on Natural Resources and Energy**

**FROM: Eric Bott, Director of Environmental and Energy Policy, Wisconsin Manufacturers and Commerce**

**DATE: February 5, 2015**

**RE: Senate Bill 15 – Prohibition on the Manufacturing and Acceptance for Sale of Synthetic Plastic Microbeads**

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Wisconsin Manufacturers and Commerce (WMC) greatly appreciate the efforts taken by the authors of Senate Bill 15 (SB 15), Sen. Rob Cowles and Rep. Mary Czaja, to consult with businesses while drafting this legislation. By working with Wisconsin employers, they have developed a bill that will accomplish its stated goals without unduly harming Wisconsin's business community.

Senate Bill 15 codifies into law actions manufactures and retailers are already taking as responsible stewards of Wisconsin's waterways. Keys to the success of this bill are the definitions and timelines it incorporates to allow for the development and replacement of synthetic plastic microbeads with environmentally friendly alternatives. WMC has consulted with numerous impacted Wisconsin companies regarding SB 15 and found they view the legislation favorably or neutrally, provided that the definitions and timelines contained within the bill remain intact.

WMC is Wisconsin's largest general business trade association, representing nearly 4,000 employers statewide. WMC member companies employ roughly one quarter of Wisconsin's private sector workforce.

For more information, please contact Eric Bott at [ebott@wmc.org](mailto:ebott@wmc.org) or (608) 258-3400.