Swimming in the Right Direction

Bruce Small - ENVIRODESIC

For the last many decades, environmentalists have been sounding the alarm about the effects of man-made products on our delicate biosphere, and on human beings themselves. The solutions proposed have ranged from changing the way humans live (and “consume”) to changing the products that we use.

One area that receives attention periodically is that of household and commercial detergents. Some of us can still remember when government and industry finally noticed that ingredients such as phosphates were wreaking havoc in local waters by causing algae blooms and by adversely affecting aquatic life. The latest round of attention has been on other detergent components, such as “NPEs” (nonylphenol and its ethoxylates), which have just been proposed for inclusion in the “toxic” classification by Environment Canada.

Industry in general has been slow to respond, and many household cleaners containing NPE’s are still on the supermarket shelves and in the commercial cleaning carts. However, something new is beginning to happen in the detergent industry that may reset the standard for future products.

The story began many years ago when Mike Rochon, then a manufacturer of standard commercial cleaners, was faced with the fact that someone had been poisoned by ingesting one of his products. As the chemist who could formulate or re-formulate products, Mike knew that he had a responsibility and the capability to do something about this.

As a result of this early experience, Mike ultimately formulated a new line of hydrogen peroxide based products which were far less toxic than existing products, and which were designed to avoid indoor air pollution by eliminating volatile emissions that would adversely affect human beings.

But once the hydrogen peroxide line had been developed, Mike began to pursue a goal that was **miles beyond his original focus**. He wanted to develop products that were **completely natural and that had none of the drawbacks of existing technology. Products that you could keep on using for hundreds and thousands of years without causing problems for either human beings or for other forms of life around us.**

In the process, he learned that industry hadn’t even begun to address the problems of long-term toxicity and accumulation of residues from “surfactants”, a primary ingredient in detergents and the chemical that allows detergents to penetrate into the items you want to clean and help pick up the dirt you want to get rid of. Surfactants do this because they change the surface tension of water (“making water wetter”, as old commercials used to say).

But these same properties are what make commercial petroleum-based surfactants toxic to aquatic life if residues are allowed to reach our rivers, lakes and oceans. Despite current waste water treatment technology, which eliminates up to 98 percent of surfactants, there are still measurable concentrations of surfactants in the aquatic environment more than five miles downstream from treatment outfalls. And while some of this residue may slowly biodegrade in aerobic conditions, most of it lingers under anaerobic conditions.

We know that toxic residues in our waterways adversely affect many aquatic organisms in Canada. There are direct toxic effects, as well as potentiation of the effects of one chemical by the presence of others. The most publicized aquatic life is the Beluga whale, which is endangered in certain locations in Canada. Research has shown that there are toxic chemicals in Beluga whale tissues and that these animals have been adversely affected by the man-made contaminants in their native waters.

Working out of his new Caledon office, Mike took the Beluga's plight to heart, and has recently developed what appears to be a fully sustainable product. The new ECOgent cleaner is fully bio-based, produced from vegetable matter by fermentation processes. It has no volatile emissions, so it matches his previous work in terms of safety for indoor air quality. But its biodegradability is so rapid and its aquatic toxicity is so low that it represents a totally new standard.

The natural principles Rochon followed are very simple ones. First, he had to make something that would actually clean, but that wasn't so strong that it would take your hands off.

Second, he had to make something that would biodegrade so fast, that most of what went down the drain would be broken down long before it got through the treatment systems to open waters, and that even if it did get through, would continue to biodegrade very rapidly under all natural aquatic conditions.

Thirdly, even if some residue were still present near a sewage plant outfall, it would have to be so benign that it did not damage aquatic organisms in any way before its biodegradation was complete.

Mike (and ECOgent) have accomplished all three criteria, and has the hard data to prove it. To emphasize his goal of pushing the detergent industry towards true sustainability, Mike has adopted the Beluga whale as the symbol of his new ECOgent product, which is now becoming available through Wesclean.

It is not often that environmentalists can be rightfully enthusiastic about what the commercial world has produced. Industry has traditionally lagged behind ecological and medical science by many decades, and some dinosaurs – like the tobacco industry – may still go down in full denial. But we can't help but applaud

when someone like Mike Rochon helps to change the rules and challenges the rest of an industry to follow suit.

Writer Bruce Small is Executive Director of the Foundation for Independent Research on Technology and Health, a Canadian charitable organization helping society choose the best technologies and abandon the worst, and Director of the Envirodesic™ Certification Program, a commercial venture for encouraging industry to produce products that are more compatible with human health, and more sustainable for the biosphere. Technology and Health Foundation is pioneering the development of online databases, which will help people learn how to create healthier indoor environments.