

Too Much Chlorine Dioxide?

There can be unintended
consequences.





The Challenge: **ClO₂ Overuse**

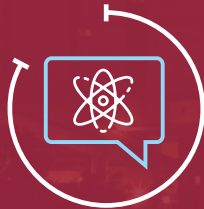
When it's time to make decisions about your pulp mill's output, it's common practice to favor brightness over any other objective. It's a reasonable stance to take. After all, no one wants to spend time, money and effort reworking or disposing of pulp that doesn't meet customer expectations. But the common remedy of overfeeding comes at a cost—one that far exceeds the price of the chemical itself.

Every additional pound of chlorine dioxide used means that much more energy is spent cooling and heating water. It produces more AOX in the discharge of your effluent.

It means more hazardous rail cars to unload. It also increases the chances that chlorine residuals become too high in the bleach plant, increasing your safety exposure.

Additionally, ClO₂ is not perfectly selective. While it's oxidizing the chromophores, it's also oxidizing—and thus damaging—the wood fibers themselves. This lowers viscosity and depletes the fiber's strength. So when ClO₂ is the only tool you have for achieving brightness, you'll be forced into compromises that hurt your business.

Approximately **83% of respondents** said they felt it was **"important or extremely important"** that companies design their products to be more environmentally friendly.¹



The Solution: Achieve Better ClO₂ Efficiency

You want every pound of chlorine dioxide to move the brightness needle as much as possible. By using Buckman's Vybrant® technology, you'll be well equipped to make this happen.

Using Vybrant before the addition of ClO₂ allows you to remove bulk chromophoric groups off the surface of the fiber. This in turn reduces the work that must be done by the ClO₂, allowing you to use less of the chemical. Plus, you'll remove many of the materials on the outside of the fiber that aren't chromophores but would

interact with—and needlessly consume—ClO₂. This opens up reactive sites at the fiber surface, allowing more of the chemical to penetrate and do its job.

Finally, after the bleaching process is completed, you can utilize Vybrant again to remove any remaining chromophores. You'll achieve a higher level of brightness as a result—without purchasing any additional equipment or infrastructure.

 **Vybrant technology** offers **greater selectivity** than chlorine dioxide. 



Reduce Your Dependence on ClO₂

Same brightness, less ClO₂. When you use Buckman's Vybrant® technology, it's possible.

With Buckman, you'll **reduce** your **ClO₂ spending** by **up to 20 percent**—without making any additional capital investments.

What's more, you'll also be able to:



Use less water to cool and heat, reducing energy costs and your carbon footprint



Cut back your AOX discharge, so you can get ahead of emerging regulations



Increase safety by limiting the amount of hazardous chemicals handled by your people

1. Most Consumers Want Sustainable Products and Packaging, Andrew Martins, Business News Daily, June 4, 2019

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