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Get more performance from virgin and  
recycled fiber with next generation  
**Maximize<sup>®</sup>.**

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For years, high performing packaging mills have looked to Maximize enzymatic technology to improve drainage, strength and machine speeds on lines using mostly recycled fiber.

With market demands pushing strength requirements to new heights, mills using virgin fiber from integrated sites are also looking for ways to improve quality and productivity while maintaining or improving yield.

The ability to modify virgin fiber at integrated sites is now possible with Buckman's next generation Maximize. Our next generation Maximize products are still the best performing

products in the market for recycled fiber, which continues decline in quality. It is now also the best way to get the most from your virgin fiber. Adding Maximize to your fiber will now create new opportunities for all packaging paper producers regardless of your fiber mix.

It redefines what "maximum" really means, formulating several specialized enzymes with stabilizers and potentiators to boost enzymatic activity and effectiveness to the next level. So you get better quality fiber, improved drainage, and a stronger sheet while saving energy and money and gaining a new edge in the marketplace.

Take your fiber performance to the max. Treat your fibers to next generation **Maximize.**

A  
New  
"MAX"

in Recycled  
Packaging

Boost the  
performance of  
fibers, machines,  
and final products.

**The market demands more from packaging.** First of all it must be strong to protect the contents. It has to be light and right-sized to minimize waste and reduce the cost of shipping. It needs to be sustainable and recyclable while minimizing its carbon footprint. These demands funnel down to the quality of the fiber and the need to get the most from it regardless if it is virgin fiber or recycled fiber. Fiber-based packaging was one of the first to be recycled, and as such the ability to capture even the lowest quality fiber is now routine. As a result, recycled fiber quality deteriorates, so turning that recycled fiber into first-quality packaging grades becomes more challenging. Likewise, if a papermill is using virgin fiber, a premium quality product with minimal waste is expected. That's why Buckman continually works to minimize the need for mechanical refining while maximizing the potential of every fiber. With next generation Maximize, we've made the industry leader even better. You'll see the improvements in your productivity and your product strength, regardless of your fiber mix, from 100% virgin to 100% recycle and everything in between. And you'll see it on the bottom line.

### **How it works.**

Next generation Maximize® is made up of several formulations that work in different ways to achieve the desired results. The basic goal is to modify the fiber so that you minimize the damage and maximize yield and strength. What if you could cook the fiber less, refine the fiber less and use lower quality fiber while maintaining your strength and production goals?

Some Maximize technologies contain specialized enzymes that work on the surface of the fiber to condition it and with the natural organics in your system to form natural polymers that provide additional strength. Others contain specialized enzymes that work to specifically enhance drainage whether or not you have refining in your process. As a result, the next generation Maximize programs give you much more flexibility in how you use your system and chemical additives to meet the market demands and improve your bottom line.



## How it makes all the difference.

### Boosts performance

Improved drainage, machine speed and plybond strength can mean greater profitability for your mill and more flexibility in your production.

### Reduces costs

Next generation Maximize can help you reduce costs every step of the way, including the costs of:

- Fiber—Get desired results with higher yield or lower cost/quality recycled fiber
- Energy—Reduce refining energy and dryer steam costs
- Speed—Increase drainage of very low quality fiber
- Chemistry—Replace more costly strength additives
- Transportation—Reduce chemistry volume dramatically, reducing the number of deliveries and storage requirements



### Improves sustainability

In addition to return on investment, Maximize offers a measurable return on environment:

- Lower steam consumption
- Reduced fresh water needed to dilute traditional strength resins and starch
- Reduced refiner energy
- Less CO<sub>2</sub> emissions generated by mill activities and product delivery

## CASE STUDY 1

### Stronger, lighter, faster.

**The Challenge:** A mill making linerboard with 100% OCC was unable to meet strength targets without adding extra weight and increasing refining. The extra fiber was costly and the heavier sheet coupled with extra refining slowed production.

**The Solution:** Buckman completed a system audit and designed a next generation Maximize program that enabled the mill to reduce refining and run at target weight. Also, better drainage allowed them to increase speed while reducing headbox consistency, resulting in superior sheet formation.

**Return on Investment:** Reduced fiber use, less mechanical refining and increased speeds resulted in savings of US\$3.21 per ton.

**Return on Environment:** Shipping more paper area on a roll reduced the number of delivery trucks needed, saving fuel and reducing emissions.

## CASE STUDY 2

### Reduce fiber and refiner limitations

**The Challenge:** A mill making linerboard and medium grades from virgin unbleached fiber supplied from an integrated pulp mill was fiber and refiner limited. They wanted to increase production and meet new strength requirements at a lighter weight.

**The Solution:** Buckman coordinated a series of evaluations with the goal of shifting their current operating window. After selecting the correct Maximize product, dosage and feed location(s) the mill changed its operation in a controlled and stepwise manner. As a result, they cooked the fiber to a higher Kappa, refined the fiber less and produced a lighter weight grade at a higher strength target.

**Return:** Production of paper increased (measured by area), no longer out running the pulp mill capabilities. The cost of refiner energy and maintenance was reduced, as well as the mill's reliance on traditional wetend chemistries, improving their system stability and reducing chemical spend. The estimated savings is US\$4.4 million per year.

## Learn more.

If you are not constantly improving your mill's performance, you're getting left behind. Grab the leading edge with third generation Maximize enzymatic technology, and unpack the full potential of your packaging mill. For more information, contact your Buckman representative or visit [buckman.com](http://buckman.com).

This is not an offer for sale. The product shown in this literature may not be available for sale and/or available in all geographies where Buckman is represented. The claims made may not have been approved for use in all countries. Buckman assumes no obligation or liability for the information. Please contact your Buckman sales representative for more information.

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Argentina +54 11 4701-6415; Australia +61 (2) 6923 5888; Belgium +32 9 257 92 11; Brasil +55 (19) 3864-5000; Chile +56-21 2946-1000; China +86-21 6921-0188; India +91 44-2648 0220  
Indonesia +62 21-2988 8288; Japan +81 3 6202 1515; Korea +82 31-416 8991; Mexico +52 (777) 329 3740; Singapore +65 6891 9200; South Africa +27 (31) 736 8800; United States +1 (901) 278-0330

Global Headquarters at 1256 N. McLean Blvd., Memphis, TN 38108, USA