

# Enzymes for Fiber Processing



# Different Raw Materials Have Similar Problems

PULP AND  
PAPER

If you are a manufacturer processing raw materials of plant origin, you may be able to benefit from work done to serve other similar industries. Plant materials such as wood, cotton, cereals, and fruits actually have an underlying chemistry of their “fiber” which is remarkably similar. At the core of many processing *problems* is the nature of the fiber itself, and therefore at the core of many processing *solutions* is the ability to modify the processing of the fiber.

## QUALITY IMPROVEMENT

Goods made from materials of plant origin rely on the chemical structure and form of the fiber for their basic quality. Modifying the processing method or the fiber itself can improve the properties of the final products. Even modifying secondary constituents of the fiber can change the product performance, or create new product opportunities.

## THROUGHPUT INCREASE

In the processing of fiber, there are often limitations in the rates of production because of either physical or chemical properties of the fiber. If the processing method or the fiber itself is changed, there can be the opportunity to increase the throughput of production facilities.

## COST REDUCTION

The cost of manufacturing goods from plant fiber is a function of many factors, including the fiber’s character and the processing methods used. The ability to change the fiber itself or its processing method without an impact on the product’s quality offers the potential to reduce the total cost of production.

## ENVIRONMENTAL IMPACT REDUCTION

The formation and release of environmentally sensitive byproducts from a fiber processing industry is related to the specific fiber used and the processing technology involved. The ability to change the fiber properties or the processing technology offers the potential to decrease the environmental impact of these industries.



TEXTILE  
PROCESSING



ANIMAL  
FEED

GRAIN  
PROCESSING



ETHANOL  
PRODUCTION

# Iogen Develops Enzymes for Fiber



IOPEN IS A LEADING TECHNOLOGY COMPANY WITH A FOCUS ON THE AREA OF FIBER PROCESSING. WE COMBINE OUR EXPERTISE IN GENETIC ENGINEERING AND ENZYME DEVELOPMENT WITH OUR EXPERIENCE IN FIBER PROCESSING TO DEVELOP PRODUCTS THAT MEET DIVERSE NEEDS.

## FOCUS ON THE APPLICATION

Iogen looks deeply at each application to develop a thorough understanding of the goals and drivers of success.



## PROBLEM SOLVING WITH TECHNOLOGY

## STATE-OF- THE-ART R&D

Iogen draws together teams of specialists in fundamental and applied R&D and uses the most advanced technology to deliver unique solutions.



## UNIQUE PRODUCTS & PERFORMANCE

The company makes a range of products and formats to suit the needs of each industry.

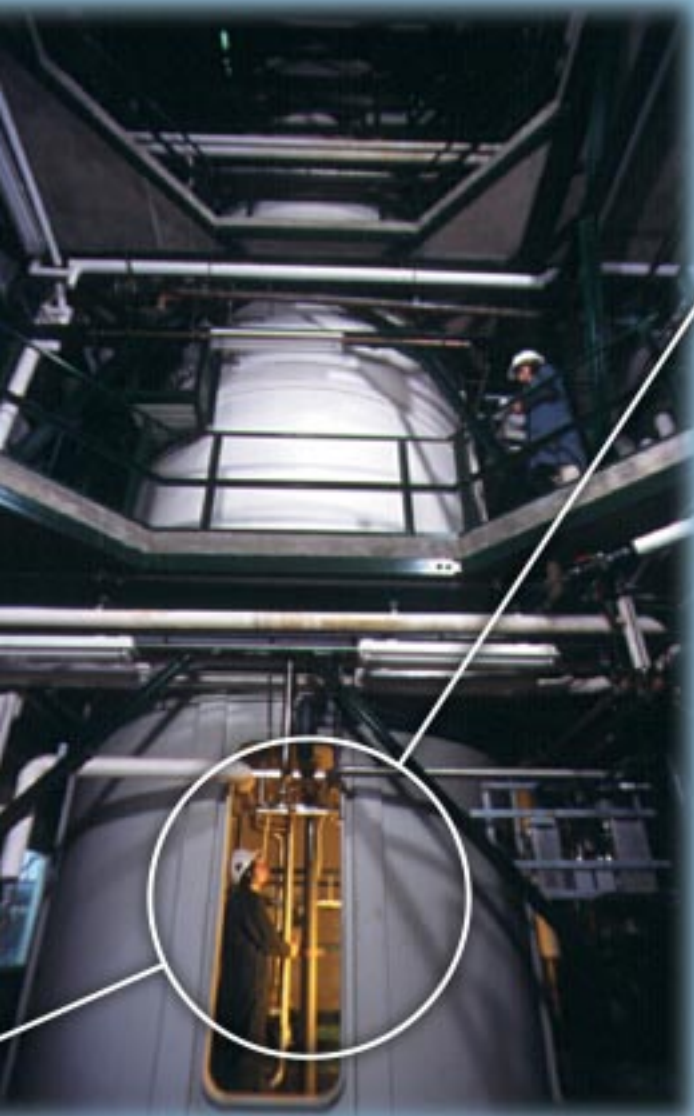
Because Iogen uses unique development methods, our products perform differently from other enzymes.



# s Unique r Processing

## ADVANCED QUALITY SYSTEMS

Iogen has a comprehensive quality control methodology which spans its operations. The company has developed automated assay machines and unique delivery systems to ensure reliable product performance.



## WORLD SCALE MANUFACTURING

Iogen's manufacturing facility in Ottawa, Canada, has large scale fermentation and recovery operations employing advanced automation and controls. This leads to lower cost and improved quality.

## SERVICE & SUPPORT

Iogen's team works with customers to ensure we meet their needs. We have comprehensive support capabilities including applications testing, quality testing, equipment systems support, inside sales and logistical support, and field service and testing.



# Benefit From Our Focus On Fiber

For over 20 years, Iogen Corporation has focused exclusively on fiber processing technologies. By combining the power of biotechnology with our knowledge of fiber properties and processes, we create new enzymes that modify fiber. Iogen develops new and different products to solve customer problems.

## MORE THAN JUST ENZYMES

Iogen is a specialist in the processing of fiber, not just the manufacture of enzymes. We bring our customers an unparalleled background and technology in the field, draw insight from our focus on similar industries, and deliver unique solutions based on a different technology base.

## LEADING PROCESS DEVELOPMENT

Iogen is a recognized leader in the technology of using enzymes to break down fiber into sugar, and has invested more than \$65 million in the field. Through a range of basic and applied research, Iogen has developed and patented a number of key innovations in the field.

## ADVANCED BIOTECHNOLOGY

Iogen has developed and patented unique genetic engineering methods to create new and useful fiber modifying enzymes. Most of our enzyme products are made with genetically engineered organisms. This gives our customers the best economy and functionality possible.

## UNIQUE MANUFACTURING TECHNOLOGY

With its significant investment in manufacturing technology, Iogen has developed and engineered the unique enzyme manufacturing methods used in its state-of-the-art facility in Ottawa, Canada. Iogen's customers benefit from low cost, large scale manufacturing.

## CROSS-INDUSTRY EXPERIENCE

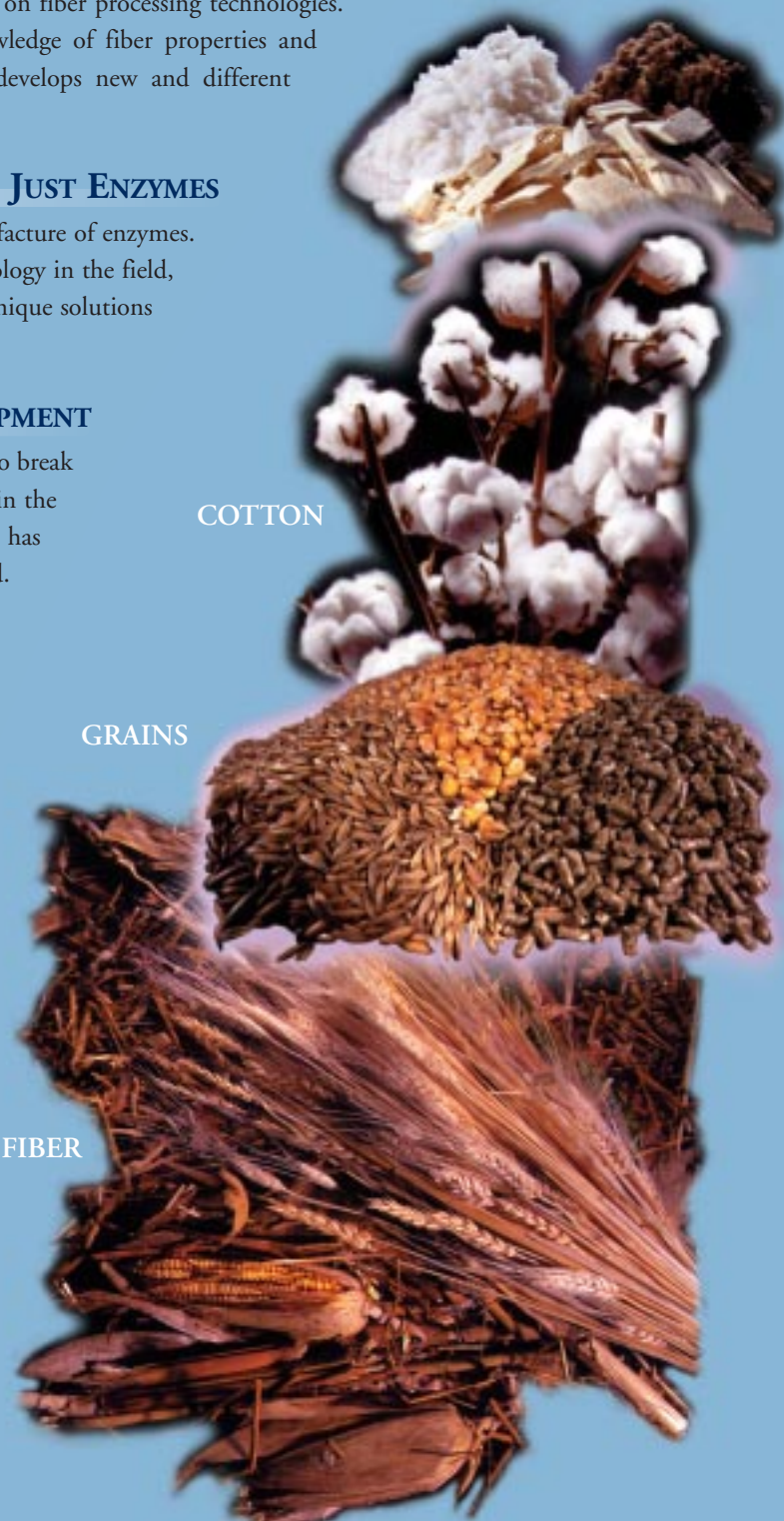
Iogen learns from each industry it serves, and can effectively integrate solutions from one industry to the benefit of another. The similarity of the chemistry of fiber across industries enhances Iogen's ability to provide useful solutions to customers' problems.

WOOD PULP

COTTON

GRAINS

CROP FIBER





Iogen Corporation develops, manufactures, and markets industrial enzymes used to modify and improve the processing of natural fibers. It owns and operates a world scale biotechnology facility, and has developed its EcoEthanol™ process, making Iogen the leader in cellulose based renewable fuel. Based in Ottawa, Canada, Iogen is a privately owned Canadian company whose enzyme products are sold around the world and used in a diverse range of applications including pulp and paper, textiles, animal feed, and grain processing industries.

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This paper contains  
pulp treated with  
Iogen bleaching enzymes.

