

# REACH – EXTENDING TO A BETTER ENVIRONMENT

It has been called the most important EU legislation in 20 years, yet the word instills concerns in many industry players across all of Europe. For most people “reach” means to extend out as far as possible, but in the world of chemicals the word has got a new meaning the last couple of years.

The EU’s REACH stands for Registration, Evaluation, Authorisation and Restriction of Chemicals. The acronym is self-explanatory but another 10,000 pages of guidelines thoroughly explain what the new piece of legislation really means. In a nutshell it is a new chemical legislation with the main objective to ensure that the chemical business uses chemicals in a way that is safe to humans and the environment. The legislation concerns all industries, approximately 29,000 companies, producing or importing chemicals in the EU. About 30,000 of the estimated 100,000 chemicals in Europe are covered by REACH.

Enzymes are regarded as chemicals by authorities although most people might not consider them as such. “All substances in the

EU have to be registered under REACH unless there are specific exceptions. Technical enzymes, ranging from the detergent, textile, leather, forest product, and cosmetic industries to the fuel ethanol industry, fall under the new law,” says Rie Tsuchiya, Regulatory Affairs Manager at Novozymes.

The main feature of REACH, compared to the former bundle of some 40 regulations, is that it shifts the responsibility for providing safety documentation on to the producer. “The EU’s principle ‘no data – no market’ puts a great responsibility on the producer. At Novozymes we already carry out extensive data collection on how enzymes affect humans and the environment. We’re now complementing these data to fit the new requirements,” says Rie Tsuchiya.



## FACTS ON REACH

REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
Scope	<ul style="list-style-type: none"> <li>• 10,000 pages of text</li> <li>• 30,000 chemicals to be registered over 11 years</li> </ul>
Cost	<ul style="list-style-type: none"> <li>• The European Commission estimates REACH will cost the industry EUR 2.8–5.2 billion</li> <li>• The Commission estimates to save EUR 54 billion in healthcare costs as the exposure to dangerous chemicals is reduced</li> </ul>
Process	<ul style="list-style-type: none"> <li>• REACH entered into force on June 1, 2007. It requires basic safety data on every chemical in the EU and will restrict any substance deemed to endanger health or the environment. All businesses importing or manufacturing more than 1 ton of chemical substance per year had to preregister between June 1 and December 1, 2008. Companies that have filed a preregistration document for a chemical can continue producing or importing that substance without completing formal registration until November 2010, May 2013, or May 2018. The deadline depends on how much of the substance they manufacture or import, with the earliest deadline for higher production compounds and for chemicals with demonstrated toxicity</li> </ul>





# SAVE TIME AND MONEY

## ► Tough times for harsh chemicals, good times for enzymes

REACH encourages the industry to seek alternatives to harsh chemicals. To use “substances of very high concern” under REACH, companies have to apply for a special permit and pay an authorization fee of EUR 50,000. “Enzymes substitute harsh chemicals in many processes, and the legislation focuses on finding more environmentally friendly alternatives. We believe enzymes will receive an even more prominent role as chemical substitutes,” says Rie Tsuchiya.

### REACHing the goal

At Novozymes a cross-organizational project group has worked since May 2007 to establish good networks and relationships with collaborating organizations, developing industry standards for safety documentation, and internally ensuring that all involved stakeholders are well informed. “We’ve worked closely with our suppliers and customers to inform them about the implications of REACH. We’re also the driving force, working in consortium with our competitors, to produce various industry guidelines and policy documents,” says Rie Tsuchiya.

The project group assesses and manages all relevant aspects of REACH, including the technical guidance documents associated with REACH. It draws on expertise from people from many of Novozymes’ business areas, including Regulatory Affairs, Legal, Sales, Product Safety, and Toxicology.

“We believe REACH has great potential in the long run as focus shifts to safe and sustainable chemicals. The foundations of REACH are certainly in line with Novozymes’ biotechnology base and business strategy. REACH will therefore indirectly support Novozymes’ efforts to maintain and grow our existing business, and develop new enzymes and other biobased products,” says Karin Weinell, Senior Manager for the REACH project at Novozymes. ■

The machines are running full-speed at PT. Kemilau Warna Ceria’s factory in Java, Indonesia. Producing textiles means using large amounts of water, electricity, and chemicals. Novozymes’ Cellusoft Combi combines three processes into one, saving costs and production time without affecting the quality of the fabric.

About 85% of the water in textile production is used predominantly for dyeing and finishing. These processes use about 75% of all the energy and 65% of the chemicals to convert fiber into textile. Any cut in production time, chemical, energy, and water usage means substantial cost savings for textile mills constantly working with tight cost margins. It also washes away much of the industry’s bad reputation as a great industrial polluter.

So far enzymes have been helpful in this respect both during bleach clean-up and biopolishing. Mills traditionally bleach to obtain smashing colors in the dyeing process. The bleach is normally rinsed with reducing agents and large amounts of hot water. By adding a small amount of catalase in the bleach clean-up process hydrogen peroxide is catalyzed into oxygen and water, resulting in lower water usage and less wastewater pollution.

To get smooth cotton textiles with vibrant colors, textile mills polish the fabrics, targeting the small protruding fiber ends that make the fabric look fuzzy and create pills. Polishing can be done by singeing with a gas flame. The less harsh alternative, biopolishing, uses cellulases to polish the yarn surface and prevent pilling.

### Get two for one

To optimize the processes and offer an environmentally friendly alternative, Novozymes has developed a product that combines bleach clean-up and biopolishing into one. “Cellusoft Combi greatly reduces time, energy, and water consumption by combining biopolishing and bleach clean-up processes in the dyeing step. The product allows end user mills to free up production and improve throughput,” says Umar Riaz, Global Marketing Manager for textiles at Novozymes.

At PT. Kemilau Warna Ceria, they have tried to biopolish with Cellusoft Combi. The 1,600 employees produce 13,000 meters woven fabric and 20,000 kg knitted fabric a day for dyeing and printing. The company has recently made large investments to develop a high-quality knitted fabric and has already invested in several new machines to improve capacity. To boost production further the director of PT. Kemilau Warna Ceria, Hendro Prasetyo, decided to try out the ready-to-use Cellusoft Combi. The first test results were promising. “We find the product very good, both technically and concept-wise. Cellusoft Combi reduces processing time and saves costs

#### FOR MORE INFORMATION

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