

Sustainability in AkzoNobel



Our company in brief

- The world's largest paint and coatings company and a world leading chemicals producer
- Committed to delivering **Tomorrow's Answers Today**
- Global Fortune 500 company
- For five consecutive years listed as one of the leaders of the Dow Jones Sustainability Indexes (Chemical sector)

Values

- Focusing on our customers' future first
- Embracing entrepreneurial thinking
- Developing the talents of our people
- The courage and curiosity to question
- Integrity and responsibility in our actions

We want to be the world's leading Coatings and Specialty Chemicals company



Sustainability in AkzoNobel

Sustainability makes **sense** for us and for our children

AkzoNobel is aiming to be an **industry leader**

- in sustainability and the responsible use of resources
- through innovation and improvement of existing products and processes

We are **organizing** for sustainable change

- Setting targets and measuring progress
- Supporting innovation
- Optimising operations

We aim to grow a **profitable** portfolio of **eco-premium** solutions which will benefit society



Constituents (alphabetical)

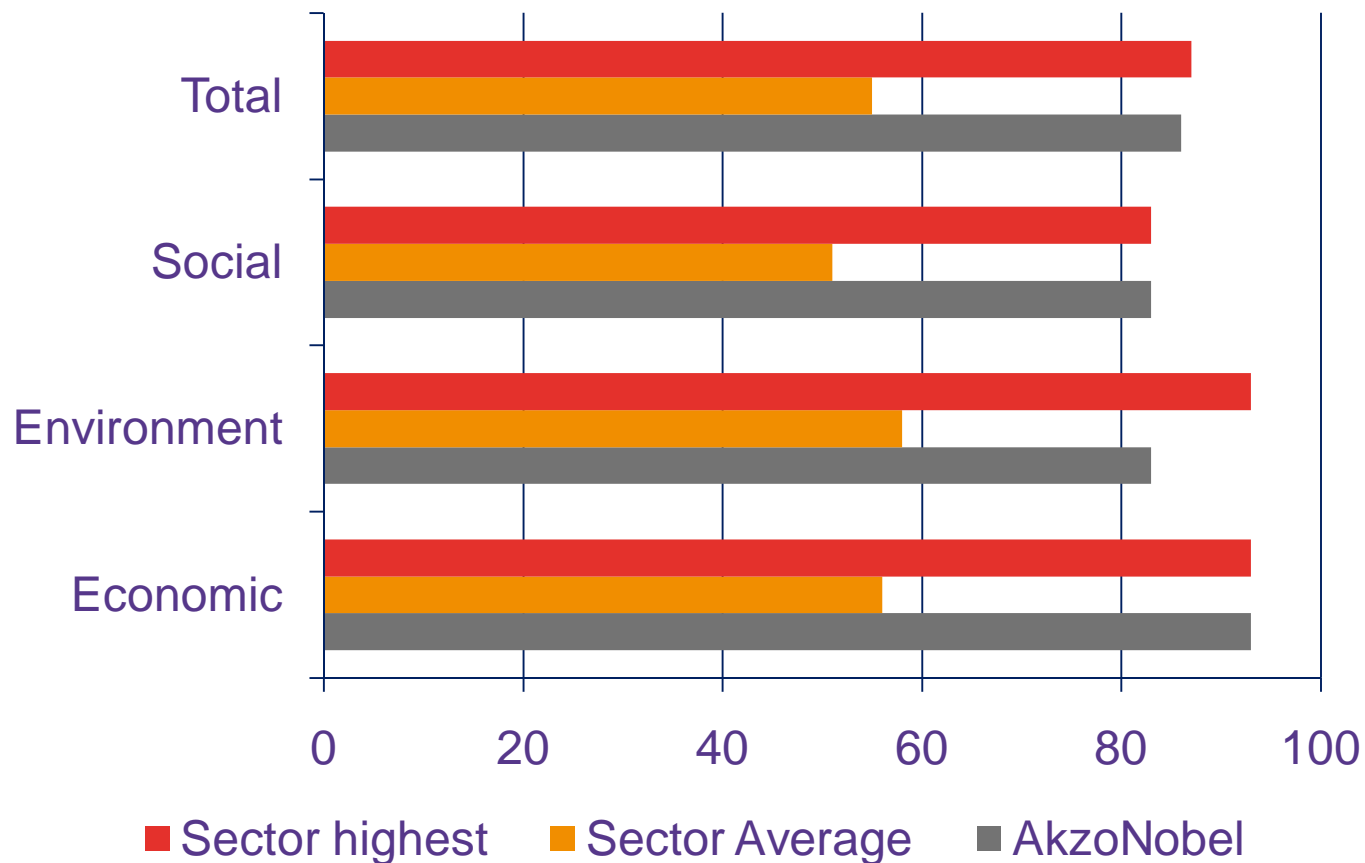
- Akzo Nobel N.V. Netherlands (#2)
- BASF SE Germany
- Bayer AG Germany
- Dow Chemical Co. United States
- DSM NV Netherlands
- Praxair Inc. United States
- Rhodia S.A. France
- Syngenta Switzerland
- Teijin Ltd. Japan



**Dow Jones
Sustainability Indexes**

Member 2010/11

AkzoNobel dimension scores



Aiming for eco-premium solutions

AkzoNobel target: 30% of sales by 2015

We measure whether a product is eco-premium when assessed against the competing mainstream products using quantitative or qualitative analyses in 6 categories:

1. It provides the same or better functionality for the customer application.
 2. When assessed along the **full value chain** against the following criteria:
 - Energy efficiency (consumption)
 - Use of natural resources/raw materials
 - Emissions and waste
 - Toxicity
 - Risks (for accidents during production, transportation etc.)
 - Land use, if applicable
- a) it is **significantly better** in at least one criteria
 - b) there are **no significant measurable or perceived adverse effects** in any other of the criteria



AkzoNobel in Sweden

Decorative Paints



Functional Chemicals



Eka Chemicals (Pulp & Paper Chemicals)



International Paint (Marine & Protective Coatings)

Surface Chemistry

Wood Finishes & Adhesives



AkzoNobel in Stenungsund



Surface Chemistry eco-premium solutions

The Surfactants market worldwide is 70% petroleum-based. Where we operate in global markets with renewable raw materials, the products based on these materials are considered eco-premium



Recipes for Green

- Low ecotoxicity
- Readily biodegradable
- Based on natural raw materials
- Efficiency in chemistry – use less



AkzoNobel is very much focused on all areas!



Natural based or not: What is the obtained effect?

- Making the same product from natural and petroleum based components, respectively, does not influence the effect on the nature (Toxicity and Biodegradation)
- There is no direct "reward" for natural sources (EcoLabel) to this date, only indirect
- However, natural based components will affect the "Eco foot print" (CO₂ equivalents etc.)



Driving forces for development

- Customer inquiries for Eco labelling
- "In-house" targets for constant improvement of Eco profile = new should be better
- Demands on "use of less" – Driven by limitations in raw material sources
- Regulations

But:



Cost-Performance usually has to stay the same



An example of regulation effect

On March 31 2004 the Regulation 648/2004 came into effect.

**REGULATION (EC) No 648/2004 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL
of 31 March 2004
on detergents**

This regulation heavily impacted our "flagship" for cleaning, Berol 226

ULTIMATE BIODEGRADABILITY (MINERALISATION) TEST METHODS FOR SURFACTANTS IN DETERGENTS

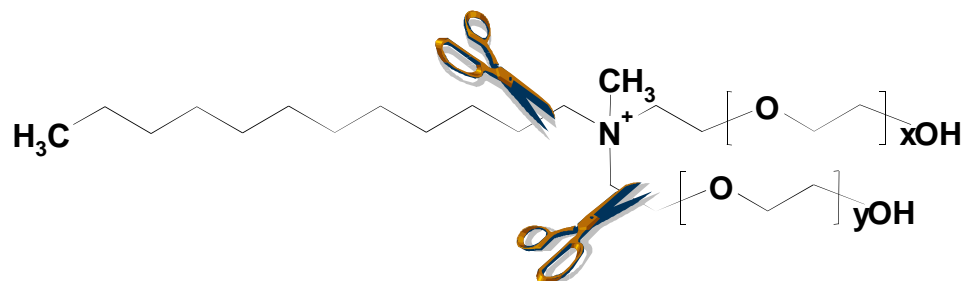
Surfactants in detergents shall be considered as biodegradable if the level of biodegradability (mineralisation) measured according to one of the five following tests (1) is at least 60 % within twenty-eight days:

One of the components in Berol 226 did not pass



Chemistry at its best

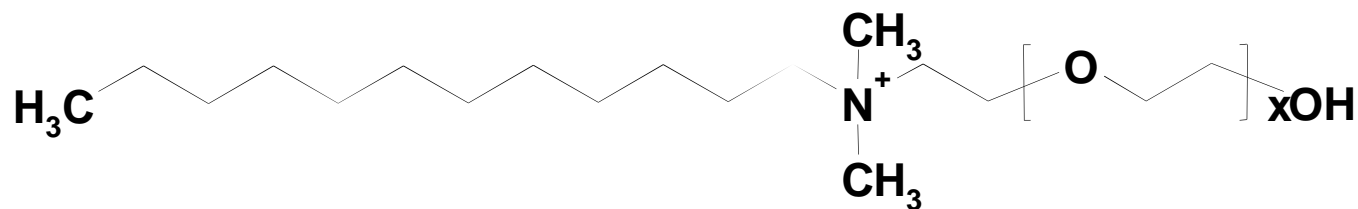
The chemical component that did not pass:



Bacterias are the ones cutting chemistry to pieces

By detective work on what pieces are created during cutting

→ We ended up with the solution



We ended up with a chemistry adjusted to the nature



Berol 226 became Berol ENV226

Berol ENV226

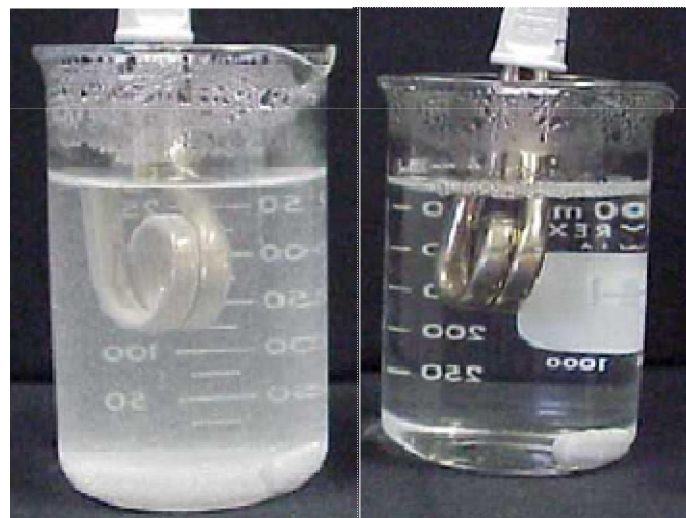
- Based on Top performing Hydrotrope/Cosurfactant
→ Perfectly optimized cleaning!
- Comply with Detergent Regulation EU 648/2004
- Extremely good degreasing performance at very low concentration
- Easy to formulate under acidic as well as alkaline conditions
- An efficient base for any cleaning task



The use of polymers in cleaning products

Polymers are used in a range of products, both for institutional and private use.

- Anti-redeposition and soil release
- Cobuilders
- Surface modification
- Dispersion



You can imagine the "left situation" ending up with your dishes. How would your dish look like.



Hybrid polymers – A story about improving the Eco profile

The AkzoNobel hybrid polymer program aims at exchanging, to a large extent, petroleum based polymers with natural polymers, while maintaining performance.

- **Polysaccharide** plays a major role
 - 25% - 95% typical
 - Variety of monomers can be used
- By including biodegradable parts the biodegradation profile can be dramatically improved



Example from Surface Chemistry: **Rediset™ asphalt additive**



Above: traditional paving process
Right: paving with Rediset



Significantly reduces the mixing and paving temperatures, creating fuel savings and reducing operational costs.

Results in lower asphalt fumes, providing better working conditions for the paving crew and lower emissions for the environment.

How



Other examples from SC

Personal Care: Biopolymer based styling products deliver volume, color protection and excellent aesthetic properties with renewable ingredients



Hard Surface Cleaning: Our Bero!® line of products offers industrial strength degreasing without the need for solvents and VOCs.



Developing innovative, eco-premium solutions

Freashaire - Colors that take your breath away. Paint that won't™.

- The Freshaire Choice™ Paint contains no volatile organic compounds — commonly known as VOCs — harmful chemicals that contribute to poor air quality

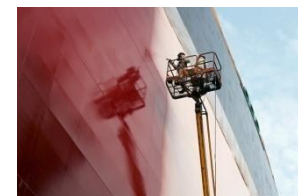


UV LED spray gun for Autoclear® UV

- Automotive spray gun introduced in May which paints and cures at the same time. No warm up time, up to 25 percent less energy used during total repair.

Intersleek 900

- Our very latest innovation in foul release coatings. Its exceptionally smooth, slippery, low friction surface prevents organisms attaching, saving you time and money at sea.



Rediset™ asphalt additive

- Significantly reduces the mixing and paving temperatures, creating fuel savings and reducing operational costs. Results in lower asphalt fumes, providing better working conditions for the paving crew.

Dissolvine® GL

- Leading the next generation of products in cosmetics and personal care. It's free from genetically modified raw materials, not irritating to skin or eyes and readily biodegradable.

