

# AkzoNobel in the detergents industry

Personal Care & Cosmetics



**AkzoNobel**

Tomorrow's Answers Today



# AkzoNobel in the detergents industry

## AkzoNobel is proud to be one of the world's leading industrial companies.

In fact, we are the largest global paints and coatings company and a major producer of specialty chemicals. We supply industries and consumers worldwide with innovative products and quality ingredients for life's essentials. We think about the future, but act in the present. We're passionate about introducing new ideas and developing sustainable answers for our customers.

That's why our 55,000 employees – who are based in more than 80 countries – are committed to excellence and delivering Tomorrow's Answers Today™.

About AkzoNobel:  
Looking closer,  
Seeing further.

AkzoNobel's chemicals are essential ingredients in everything from ice cream to asphalt, soup to soap, and plastics to paper. We're a global leader in several markets and sectors. Specialty Chemicals is divided into the following businesses:

- Functional Chemicals
- Industrial Chemicals
- Pulp & Paper Chemicals
- Surface Chemistry
- Chemicals Pakistan.

## Understanding the unique needs of the detergents industry

By combining expertise, process technology and application know-how AkzoNobel can help solve your application challenge no matter where you are in the world. AkzoNobel can offer a tailor-made solution to every application and function in the detergents industry. This brochure provides an overview of the spectrum of chemicals we can offer to this industry.

Welcome to AkzoNobel in the detergents industry.

# AkzoNobel Chelates

AkzoNobel is one of the world's leading suppliers of chelates, fulfilling the diverse needs of our customers with a comprehensive range of Dissolvine® chelates, customizing packaging and delivery, offering outstanding advice on applications, dedicating extensive R&D to product innovation, and providing peerless service in everything we do.



## An Eye on the Future

With production locations in Herkenbosch (the Netherlands), in Lima, Ohio (the United States), in Kvarntorp (Sweden) and in Ningbo (China), we are committed to supplying our customers around the globe.

Dissolvine® is the AkzoNobel brand name for products known as chelates, chemicals that control the reactivity of metal ions. Dissolvine® chelates form strong, water-soluble complexes that prevent undesirable precipitation, dissolve scale deposits and optimize oxidation processes.

## Dissolvine® Chelates: The Right Chemistry...

### Products:

Dissolvine® chelates have been designed and fine-tuned to meet the needs of our customers. Our product range is extensive, including chelating agents and metal chelates, in various salt forms, in different purities and in both liquid and solid forms.

- Ethylene Diamine Tetra Acetic acid (EDTA)
- Diethylene Triamine Penta Acetic acid (DTPA)
- Hydroxy Ethyl Ethylene Diamine Tri Acetic acid (HEDTA)
- Nitriolo Tri Acetic acid (NTA)
- Glutamic acid Di Acetic acid (GLDA)
- Glucoheptonic acid (CSA)
- Ethanol diglycinic acid (EDG or HEIDA).

The use of chemicals in cosmetics and personal care is regulated by National Authorities. For your convenience, these regulations, together with the INCI names relevant to a range of Dissolvine® chelating agents and metal chelates, have been summarized in the application leaflet 231 – Dissolvine® in Cosmetics. In addition, please feel free to ask for our application leaflets:

- 11 - Dissolvine® in Detergents and Soaps
- 232 - Application of Dissolvine® in Cosmetics and Personal Care products.

What is more, we continuously develop new products to better meet requirements in the Detergents Industry. Thanks to our concerted research and development efforts, product quality and consistency are ensured.

## Powerful and Gentle

The next generation of products in personal care and cosmetics needs to be both powerful and gentle. Dissolvine® GL can do the job:

- boosts the performance of preservatives more than other chelating agents
- chelates calcium and transition metal ions which helps to enhance the shelflife of creams
- helps to stabilize and avoid discoloration in liquid and soap products.

But it is also:

- free from genetically modified raw materials
- not irritating to skin or eyes
- readily biodegradable
- prevents metal salt precipitation in hard water (often referred to as soap scum)
- reduces the effect of  $M^{2+}$  ions, resulting in better surfactant performance.

Dissolvine® GL is listed under INCI as Tetrasodium Glutamate Diacetate and Tetrasodium Dicarboxymethyl Glutamate.

### GLDA: safe to use

GLDA was found to be readily biodegradable in the OECD 301 test, which was confirmed by a third party and to have excellent properties with regard to ecological and human toxicity. This makes Dissolvine® GL an excellent solution for use in Personal Care.

We are proud to present green labels to confirm the safe handling and use of our products.



- ECOCERT: authorized synthetic ingredient



- COSMOS\*: authorized for use in bio-cosmetic soaps

\*COSMOS = COSMetic Organic Standard as of 2010 of BDIH (Germany), Bioforum (Belgium), Cosmebio (France), Ecocert (France), ICEA (Italy), Soil Association (UK)



## Functional Application areas:

### Dissolvine® GL can be applied in a wide range of personal care products:

- Shampoos – reduces effect of water hardness and improves foaming properties
- Bar & Liquid Soaps – reduces effect of metal catalysed oxidation causing discoloration and rancidity
- Deodorants – stops bacteria metabolising other metals found on the skin
- Creams, lotions and oils – increases formulation stability, appearance and shelf life.

### Contact us:

If you would like further details, please get in touch with us at one of our regional offices.

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www.dissolvinegl.com / www.dissolvine.com

### Enhancing the effect of preservatives

Chelates are often added to personal care products to improve the shelf life, e.g. to prevent rancidity of fatty products by complexing trace amounts of metals that can catalyze the oxidation of fatty acids, to complex hardwater ions or to boost the effect of other ingredients like preservatives. Our Dissolvine® GL products are compliant to the (old) European Cosmetics Directive 76/768/CEE as well as the (new) European Regulation on Cosmetic products EC 1223/2009.

The results of the so-called challenge test are illustrated in figure 1 with Bronopol as

preservative. Dissolvine® GL has no biocidal properties in itself, but it can boost the effectiveness of the preservative and in doing so reduce the amount of preservative necessary to reach the desired effect. This boosting effect is proved for gram negative bacteria, gram positive bacteria and mold, and for a variety of preservatives.

The positive effect of GLDA in boosting preservatives has been described in the SOFW Journal (reference 10-2008 by W. Siegert, Schülke & Mayr).

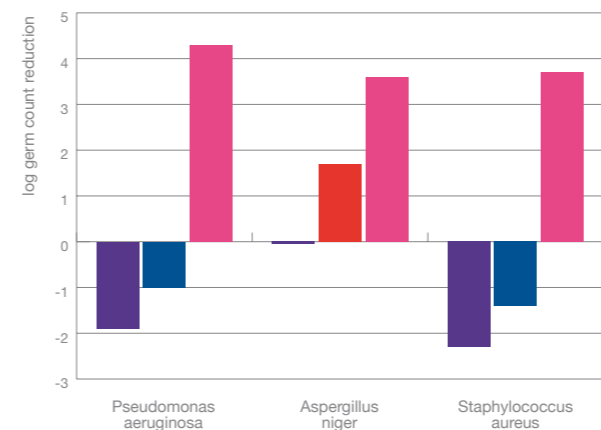


Figure 1: The influence of GLDA on Bronopol. The purple bars indicate conditions with germ growth whereas the red/pink bars represent conditions with germ reduction.

■ 0.1% GLDA  
■ 5 ppm Bronopol  
■ 100 ppm Bronopol  
■ Bronopol + GLDA

# AkzoNobel

## Global Personal Care

Where science is a thing of beauty™

The real secret to beauty is great chemistry. Our formulating expertise teamed with a solid commitment to sustainable practice is keeping the world beautiful. With strong science supporting your brand, anything is possible.

Our world class development resources create solutions for personal care technology needs today and envision what our customers will need for tomorrow. Because of the broad applicability of polymer and surfactant technology, we serve virtually the entire range of market segments within the personal care industry: hair care, hair styling, skin care and sun care.

### We're everywhere in Personal Care

We offer a wide range of products that offer dependable science. As the world's leading supplier of hair styling polymers, our extensive portfolio also includes natural and naturally derived ingredients, along with conditioning and

cleansing technologies. We at AkzoNobel Global Personal Care continue to invest in a broad range of services that support these ingredients with top technical service and sophisticated formulating capability. Our ability to leverage these services and technologies, provides new and innovative solutions for the beauty industry.

A substantial investment in R&D facilities, personnel and processes allow us to support customers with technical programs that address both the short and long term needs of the market. The success of this strategy is seen in our continuing introduction of ground-breaking technology, and in the development of tailored ingredients and systems for individual customers.

### Markets and applications

#### Major market sectors include:

- Hair care
- Hair styling
- Skin care
- Sun care.

#### A global team of R&D and application specialists focus on key areas of the personal care industry:

- Film formation for longer lasting performance and higher efficacy of formulated products;
- Delivery systems technology that targets effects, enhances efficacy/performance and supports novel product forms;
- Sensory enhancement expertise that offers the personal care industry new ways to delight the consumer in higher performing products;
- Surfactants for novel cleansing, conditioning, and rheology.

### Our Products

#### Our products are recognized under the following trade names:

- AMAZE® Polymers
- AMPHOMER® Styling Polymers
- Armocare® Ingredients for Personal Care
- Arquad® PC Conditioning Agents
- Elfacos® Personal Care Emulsifiers
- CELQUAT® Conditioning Polymers
- DRY-FLO® Aesthetic Enhancing Polymers
- DERMACRYL® Film Forming Polymers
- RESYN® Styling Polymers
- STRUCTURE® Rheology Modifying Polymers



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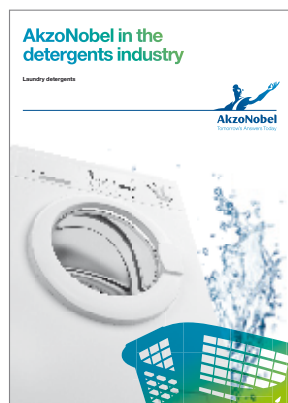
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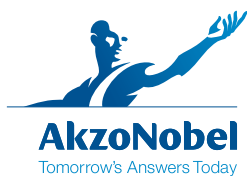
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Our series of brochures, AkzoNobel in the Detergents Industry, covers a complete range of applications. Also available are:



Please contact your local sales representative for more information.



[www.akzonobel.com](http://www.akzonobel.com)

AkzoNobel is the largest global paints and coatings company and a major producer of specialty chemicals. We supply industries and consumers worldwide with innovative products and are passionate about developing sustainable answers for our customers. Headquartered in Amsterdam, the Netherlands, we are a Global Fortune 500 company and are consistently ranked as one of the leaders on the Dow Jones Sustainability Indexes. With operations in more than 80 countries, our 55,000 people around the world are committed to excellence and delivering Tomorrow's Answers Today™.

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