

AkzoNobel in the detergents industry

Laundry detergents



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.

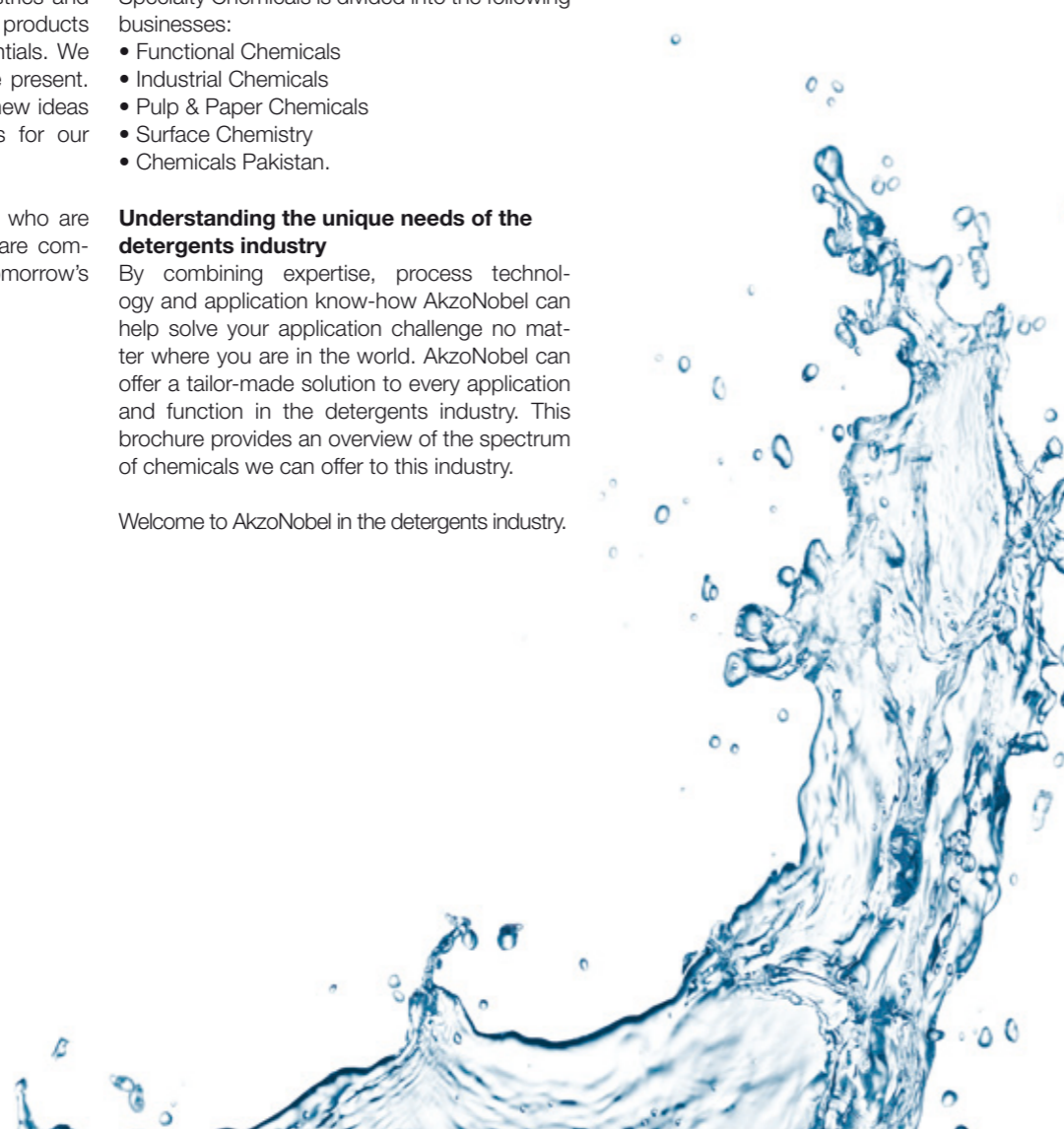
AkzoNobel's chemicals are essential ingredients in everything from ice cream to asphalt, soup to soap, and plastics to paper. We're a global leader in several markets and sectors. Specialty Chemicals is divided into the following businesses:

- 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.



For a sustainable future

Protection for human and animal health as well as our environment is embedded in our way of working. Finding new products acceptable in the marketplace and getting them into the market quickly and cost-effectively is vital to our business.

Our sustainability framework focuses on three pillars, to Invent, to Manage and to Improve. As we move forward, we are identifying and managing those issues which provide long-term opportunities for our businesses. By including sustainability in all aspects of the supply chain, we strengthen areas from market research to sales and marketing. Our risk processes integrate environmental, social and governance issues. Backed up by our commitment to Responsible Care®, Product Stewardship, REACH and GHS, we believe that supplying the right chemistry goes beyond just selling products.

AkzoNobel is ranked in the top three of the prestigious Dow Jones Sustainability World Indexes (DJSI) for the fifth year, recognizing the company's ongoing commitment to improving its social responsibility performance.



AkzoNobel Chelates



With production locations in Herkenbosch (The Netherlands), in Lima, Ohio (The United States of America), in Kvarnorp (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...**

Clean and Green

The laundry detergent industry is having to contend with a changing market. The challenge formulators and manufacturers are facing is to develop sustainable solutions which will help demonstrate that detergent ingredients present no risk to people or the environment.

Dissolvine® GL is the latest, strong and green chelate in our product range. It is a safe and readily biodegradable chelating agent, that can be used in cleaning applications as an alternative to Phosphates, Phosponates, Zeolites, NTA and EDTA. It has an exceptional high solubility at high and low pH. The major part of the Dissolvine® GL molecule originates from a natural and sustainable source.

Unique properties:

- Readily biodegradable strong builder
- Excellent ecological & toxicological profile
- Based on a natural and sustainable source
- High solubility over wide pH range
- Enhances cleaning and stain removal
- Improves product stability and shelf-life

Compared to NTA & EDTA:

- Better eco & tox properties
- Better boost of biocidal activity
- Better hard surface cleaning

Compared to Phosphates and Phosphonates:

- No contribution to eutrophication
- Better eco & tox properties
- Stronger chelating power
- Better stain removal

Compared to Zeolites:

- High solubility over wide pH range
- Boosts cleaning action and soil removal by protecting surfactants and oxidizing agents
- Improves product stability and shelf-life

Understanding the unique needs of the detergents industry...

GLDA: a greener builder alternative

This builder / chelating agent is a greener alternative, as it is predominately made from sugar waste material. GLDA has the smallest eco footprint and environmental impact (measured according to ISO 14040) when compared to other strong complexing agents/builders.

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 eco and human toxicity.

GLDA: tough against dirt

In cleaning formulations and under harsh washing conditions, GLDA complexes hard water ions very well and also retains its high chelating value at elevated temperatures better than other chelating agents. GLDA shows good stain removing properties with tea, dried starch, protein and burnt milk stains. Also GLDA is highly soluble at room temperature under various pH conditions and continues to remain stable at higher temperatures (50°C).

GLDA: powerful and gentle

GLDA is free from genetically modified raw materials and is not irritating to skin or eyes.



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.

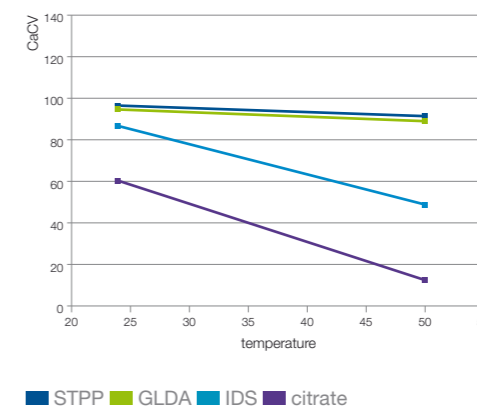


Figure 1. Calcium chelation values (CaCV) of STPP, GLDA, IDS and citrate from 25 to 50 °C using CaCO₃ precipitation.

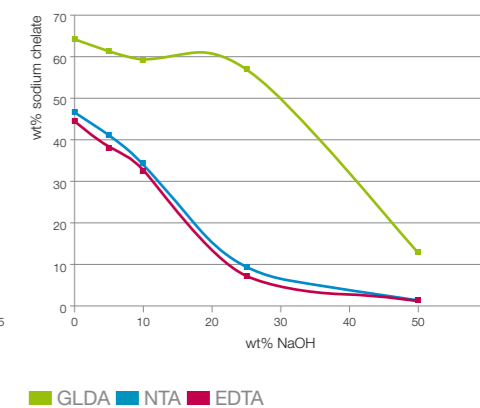


Figure 2. Solubility of GLDA, NTA and EDTA at room temperature and high pH

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

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AkzoNobel Surface Chemistry Fabric & Cleaning

Is there a contradiction between clean and green? We are determined that it shouldn't be. As leading supplier of specialty surfactants and synthetic and bio-polymers additives, we can help you enhance the performance of your products. By using chemically efficient solutions we minimize the consumption of energy and raw materials and thereby the impact on the environment.



We are dedicated to make surfaces and fabrics cleaner and brighter with a longer lasting effect.

With production locations in e.g. Mons (Belgium), Herkenbosch (the Netherlands), Stenungsund and Stockvik (Sweden), Chattanooga, Houston and Morris (USA) and Singapore, we are committed to supplying our customers around the globe.

Fabric Care Products and Functions

We deliver highly efficient, copolymers and surfactants that ensure a consistent and satisfactory result when cleaning fabrics and clothes.

Laundry

Our polymers help to suspend dirt and keep it from re-depositing on the clothes during washing. They also aid hard water sequestration, surfactant phase stabilization and give corrosion inhibition. Moreover, our polymers ensure an optimum result when ironing. To enhance cleaning, as well as to impart softening and static control in fabric conditioners polymers and fatty nitrogen derivatives are used in liquid and powdered laundry detergents.

A wide variety of nitrogen containing surfactants can be used to improve the performance of laundry detergents. Stain removal is one of the key benefits and other benefits include corrosion inhibition and antiredeposition. Armeen APA derivatives make excellent detergency boosters and are effective on greasy soils.

Our recently launched Alcoguard® H5240 is a unique plant-based alternative to petroleum-chemical polymers, made from over 60 percent renewable resources such as corn, potato and tapioca. In addition to being biodegradable, our hybrid outperforms other green polymers currently on the market. It is designed to prevent scale formation in laundry detergents and automatic dishwashing, as well as other applications where synthetic water-soluble polymers are typically used.

Narrow range ethoxylates, proven successful in hard surface cleaning formulations are being developed for use in laundry formulations. These new materials are showing benefits in terms of ease of handling, improved dispersency, and improved cleaning.

Fabric softening

In softening applications, quaternary ammonium salts provide the benefit of fluffing the fabrics giving them a feel that is more pleasing to the skin. We have also developed unique polymer delivery systems that, for example, give clothes a longer lasting freshness.

Other

ALCOCAP natural encapsulation polymers and ALCOSPHERE fragrance capsule technology are used for fragrance delivery from powdered laundry detergents. These materials make detergents smell better and increase the consumer connection with the detergents through optimized fragrance delivery.

Products

Our range of specialty polymers and surfactants, emulsifiers, rheology modifiers, encapsulants, delivery systems and textile conditioners are recognized under the following trade names:

- Alcocap® (Polymers)
- Alcoguard® (Polymers)
- Alcosperse® (Polymers)
- Alcosphere® (Delivery Systems)
- Arquad® (Quaternaries)
- Armeen (Amines)
- Armosoft® (Quaternaries)
- Berol (Specialty Ethoxylates)
- Ethoquad® (Quaternary Ammonium Salts)
- Ethomid® (Ethoxylated Amides)
- Aromox® (Amine Oxides)
- Ethomeen® (Ethoxylated Aliphatic Amines)

Application Areas

Our surfactants and polymers are widely used in various detergent and cleaning applications such as:

- Hard surface cleaning
- Laundry detergents
- Fabric softeners
- Phosphate free automated dish washing (ADW)
- Vehicle cleaning
- CIP / Bottle washing
- Metal cleaning
- Disinfectants / Sanitizers

Contact us

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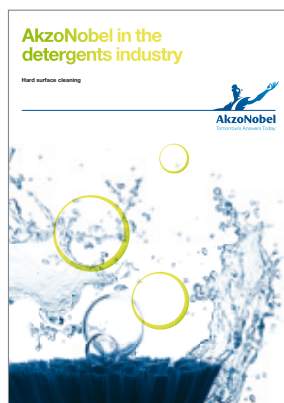
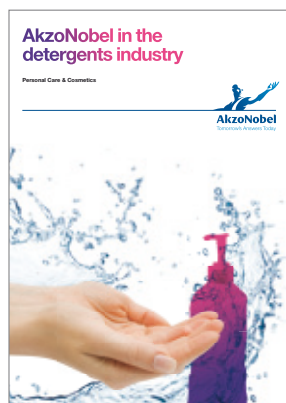
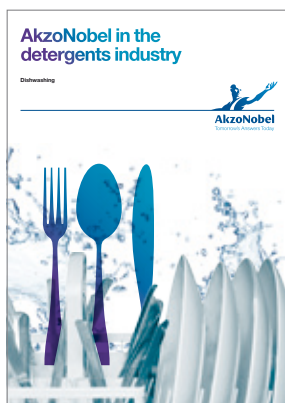
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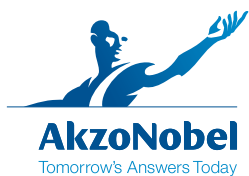
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Our series of brochures, AkzoNobel in the Detergents Industry, covers a complete range of applications. Also available are:



Please contact your local sales representative for more information.



www.akzonobel.com

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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