

### The Rhein Chemie Additives business unit

The Rhein Chemie Additives (ADD) business unit of specialty chemicals company LANXESS develops, produces and markets additives and services for processors of polymers and specialty chemicals. Its portfolio comprises more than 4,000 customized active ingredient compounds, specialty chemicals and service products for the rubber, plastics, lubricants and paint industries, together with products for water treatment and the manufacture of crop protection agents. The business unit is organized into four business lines: Plastic Additives, Rubber Additives, Lubricant Additives and Colorant Additives.

#### Plastic Additives

The high-performance additives and finishing chemicals offered by the Plastic Additives business line improve the processability of polymer materials and the properties of the end products.

With products such as Adimoll, Mesamoll, Triacetin, Ultramoll, Unimoll and Uniplex, the business line offers specialty plasticizers for plastics processing. The phosphorus-based flame retardants of the Disflamoll and Levagard brands round out the performance spectrum.

The range's bonding agents improve the adhesion of PVC coatings.

Stabaxol additives are used to protect polymers in humid environments from hydrolysis and the premature aging associated with this process. The product portfolio also includes Addonyl catalysts and activators for the manufacture of cast nylon and modifiers that improve its impact resistance. Highly developed Addocat catalysts, Addolink crosslinkers and Addovate stabilizers from the business line are used in the manufacture of polyurethane rigid and flexible foams.

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## Background Information



The product under the brand name Mersolat serves as a polymerization emulsifier.

The Plastic Additives business line also offers water treatment solutions and products for the manufacture of crop protection agents. With its well-known Bayhibit and Baypure brands, the business line offers water treatment products and biodegradable dispersing and complexing agents. Phosphorus chlorides and phosphorus oxides are starting materials for chemical synthesis in the manufacture of flame retardants, crop protection active ingredients and active pharmaceutical ingredients.

### Rubber Additives

The Rubber Additives business line offers high-quality solutions for all the challenges faced in rubber processing.

From the development of the mixture to the production of the finished component, the business line supplies the rubber industry with a broad range of pre-dispersed chemicals, processing promoters, vulcanization and filler activators, anti-sun check waxes, release agents, tire marking inks and high-performance curing bladders for tire manufacture.

Brands such as Aflux, Aktiplast, Rhenodiv, Rhenogran, Rhenoshape and Vulkalent enable the customized processing of rubber in all areas of application – from tires, profiles, hoses and cables to seals and drive components.

### Lubricant Additives

Lubricants and lubricating greases are complex functional elements for use in very wide-ranging applications in industry and transportation.

Under the Additin brand name, the Lubricant Additives business line offers a comprehensive range of additives and additive packages for industrial lubricants and greases.

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## Background Information



The most important functions of lubricants are reducing friction and wear, transporting heat and energy and protecting materials against corrosion. These properties are ensured by a balanced formulation of additives and base oils. In addition to constantly rising demands on the performance and energy efficiency of additives, environmental compatibility and biodegradability play an ever more important role.

The Lubricant Additives business line is one of the leading producers worldwide of low-odor high-pressure additives for metalworking fluids and is one of the most experienced producers of anti-wear additives.

In addition to single additives, ready-formulated additive packages for end customers play an important role. With these high-tech products, the business line offers its customers the certainty of being able to cover all technical requirements of the most important international standards and specifications with one single additive package.

### Colorant Additives

The color is always the focus at Colorant Additives – whether in paints for indoor and outdoor use, in the housings of electrical and household appliances, in PET bottles, in cosmetic containers, or in inkjet inks for industrial printing. Due to their excellent technical properties the products are used in the most sensitive applications.

Outstanding product quality, long-standing technical expertise and the fulfillment of wide-ranging regulatory requirements are the critical qualification standards of the Colorant Additives business line's product range. Customers all over the world use the high-quality colorants under the brand names Bayfast, Bayplast, Bayscript, Ceres, Levanox, Levanyl, Levascreen, Macrolex and Solfort in a multitude of applications, from LCD displays to inks in writing instruments.

With the Macrolex and Bayplast product lines, the business line provides the basis for translating various design ideas into reality. The products excel through high thermal stability and lightfastness.

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## Background Information



Almost all Macrolex dyestuffs satisfy stringent purity requirements. Suitability for food packaging is especially important. One example: beverages and cosmetic items are increasingly less often packed in glass and more in unbreakable, light PET bottles. Macrolex meets the highest standards for these: almost all colorants under this brand accordingly fulfill the high requirements of the leading food agencies in Europe, the United States and Asia.

A completely different area of application is crop protection products, which are generally dyed to enable visual marking and – in many cases – producer-specific color recognition. Treated seed has to be color-coded in order to prevent inadvertent use in food products. The agricultural industry places high purity and quality requirements on the dyes used. All constituents must be recorded in country-specific registers and meet strict provisions regarding consistent composition. With the powdered pigment Solfort and the Levanyl brand, the business line Colorant Additives offers products for the agricultural industry that are tailored precisely to these requirements.

The pigment dispersions in the Levanyl and Levanox product lines for use in paints for indoor and outdoor use offer high color intensity, pigment loading and consistent quality. In addition, the business line offers optimal support in regulatory matters.

The ADD business unit is part of LANXESS's Performance Chemicals segment, which recorded sales of EUR 2.1 billion in fiscal 2015. It is headed by Anno Borkowsky and currently employs around 1,600 people worldwide.

### Industries and applications

- Automotive, transportation, mechanical engineering, electrical/electronics, shoe, paper, construction, adhesives, metalworking and cosmetics industries
- Products for coloring, for example, plastics and seeds as well as pigment dispersions for interior and exterior use

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- Products for water treatment
- Precursors for crop protection and the chemical and pharmaceutical industries

### Key brands and products

- **Additives for the rubber industry:**  
Adimoll<sup>®</sup>, Aflux<sup>®</sup>, Aktiplast<sup>®</sup>, Antilux<sup>®</sup>, Cohedur<sup>®</sup>, Disflamoll<sup>®</sup>,  
Levaform<sup>®</sup>, Mesamoll<sup>®</sup>, Rhenoblend<sup>®</sup>, Rhenocure<sup>®</sup>,  
Rhenodiv<sup>®</sup>, Rhenofit<sup>®</sup>, Rhenogran<sup>®</sup>, Rhenomark<sup>®</sup>,  
Rhenopren<sup>®</sup>, Rhenoshape<sup>®</sup>, Rhenosin<sup>®</sup>, Rhenoslab<sup>®</sup>,  
Santoweb<sup>®</sup> Ultramol<sup>®</sup>, Urepan<sup>™</sup>, Vocol<sup>®</sup>, Vulkacit<sup>®</sup>,  
Vulkalent<sup>®</sup>, Vulkanol<sup>®</sup>, Vulkasil<sup>®</sup>
- **Additives for the lubricants industry:** Additin<sup>®</sup>
- **Additives for the plastics industry:**  
Addocat<sup>®</sup>, Addolink<sup>®</sup>, Addonyl<sup>®</sup>, Addovate<sup>®</sup>, Adimoll<sup>®</sup>,  
Baymod<sup>®</sup>, Disflamoll<sup>®</sup>, Levagard<sup>®</sup>, Mesamoll<sup>®</sup>, Stabaxol<sup>®</sup>,  
Triacetin, Ultramol<sup>®</sup>, Unimoll<sup>®</sup>, Uniplex
- **Phosphorous chemicals:** Phosphorus chlorides and phosphorus oxides
- **Chemicals for water treatment and detergents:**  
Bayhibit<sup>®</sup>, Baypure<sup>®</sup>, Mersolat<sup>®</sup>
- **Colorants:**  
Bayfast<sup>®</sup>, Bayplast<sup>®</sup>, Bayscript<sup>®</sup>, Ceres<sup>®</sup>, Levanox<sup>®</sup>, Levanyl<sup>®</sup>,  
Levascreen<sup>®</sup>, Macrolex<sup>®</sup>, Solfort<sup>®</sup>

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## Background Information



### Sites

**Headquarters:** Cologne (Germany)

**Production sites, technical competence centers and labs:**

Mannheim, Krefeld-Uerdingen, Leverkusen (Germany); Antwerp (Belgium); Epierre (France); Chardon, Ohio, Little Rock, Arkansas, Greensboro, North Carolina, Pittsburgh, Pennsylvania (United States); Porto Feliz (Brazil); Burzaco/Buenos Aires, Merlo (Argentina); Jhagadia (India); Qingdao, Shanghai (China); Toyohashi (Japan); Lipetsk (Russia)

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For detailed information go to [www.rheinchemie-additives.com](http://www.rheinchemie-additives.com).

LANXESS is a leading specialty chemicals company with sales of EUR 7.9 billion in 2015 and about 16,700 employees in 29 countries. The company is currently represented at 55 production sites worldwide. The core business of LANXESS is the development, manufacturing and marketing of chemical intermediates, specialty chemicals and plastics. Through ARLANXEO, the joint venture with Saudi Aramco, LANXESS is also a leading supplier of synthetic rubber. LANXESS is listed in the leading sustainability indices Dow Jones Sustainability Index (DJSI World) and FTSE4Good.

Cologne, October 2016

### Forward-Looking Statements

This news release may contain forward-looking statements based on current assumptions and forecasts made by LANXESS AG management. Various known and unknown risks, uncertainties and other factors could lead to material differences between the actual future results, financial situation, development or performance of the company and the estimates given here. The company assumes no liability whatsoever to update these forward-looking statements or to conform them to future events or developments.