

# QUALITY SUCCEEDS.



## Leaders in quality and sustainability

These properties characterize the iron oxide and chromium oxide pigment ranges of LANXESS Inorganic Pigments. They are used all over the world in a wide variety of applications.

**X BAYFERROX®**  
Color for Life.

**X COLORTHERM®**  
Color for Life.

**X Bayoxide®**

**QUALITY WORKS.**

**LANXESS**  
Energizing Chemistry

# INORGANIC PIGMENTS BUSINESS UNIT

**Bayferrox®**, **Colortherm®** and **Bayoxide®** pigments from LANXESS boast excellent product quality based on extensive technological competence and eco-friendly manufacturing processes.

LANXESS Inorganic Pigments is one of the world's largest manufacturers of inorganic iron oxide and chromium oxide pigments. All **Bayferrox®**, **Colortherm®** and **Bayoxide®** pigments feature high-quality chemical and physical properties. Now known and valued the world over, they first appeared in Germany, where they have been manufactured since 1926.

High-quality inorganic color pigments from the **Bayferrox®** and **Colortherm®** product ranges are now used by customers worldwide in a range of applications, whether on roofs, walls and roads, in artificial turf at sports facilities, in laminate floors or in plastic and cosmetic products. They are especially well known for their intensity and consistency of color.

Moreover, LANXESS pigments are increasingly being used in applications that harness their technical properties rather than their coloring properties. There is a diverse range of potential uses for the **Bayoxide®** product line marketed for technical applications, from the treatment of drinking water and the manufacture of catalysts to the desulfurization of biogas and use in batteries for electric vehicles.

With production sites on five continents and more than 1,500 employees, LANXESS Inorganic Pigments has a local presence for customers, no matter where in the world they are based. Over 350,000 metric tons of iron oxide and chromium oxide pigments are manufactured at sites in Germany, Brazil and China. This global network is supplemented by ad-

## FACTS AND FIGURES

- **Production capacity:** Approx. 350,000 metric tons per year with sites on five continents
- **Products:** Approx. 1,100
- **Color range:** Red, yellow, black, brown, green (> 100 shades)
- **Main brands:** Bayferrox®, Colortherm®, Bayoxide®
- **Workforce:** Approx. 1,500
- **Customers:** Approx. 4,500

Last updated: November 2012

ditional mixing and milling plants in Australia, China, Spain, the United Kingdom and the United States. In addition to the production network, LANXESS staff or sales partners are also available in all markets to provide advice and support.

Sustainability is extremely important for all products and processes. It is and will remain an indispensable element of our business philosophy. Production processes are designed to conserve resources and preserve the environment – and to be safe and sustainable. They are also subject to constant improvement. All of our production facilities are well established, technically complex, very regularly monitored and are certified to DIN ISO 9001 and ISO 14001. But sustainability is about much more than protecting the environment and safeguarding resources. The business unit is continuously expanding its capacities, developing innovations and optimizing processes. LANXESS Inorganic Pigments is investing in growth so that it can be a reliable partner to its customers in the long term. For us, economic and ecological sustainability go hand in hand.

- Iron oxide and chromium oxide pigments offer excellent light, weather and chemical resistance
- Pigments deliver optimum processing properties for the customer
- ISO certification and eco-friendly manufacturing processes at all locations
- Broad product portfolio for innovative color and special applications
- Global service network to ensure worldwide availability of expertise and experience





# APPLICATIONS FOR MORE COLOR

Bayferrox® and Colortherm® pigments have been setting standards worldwide for many decades. They are available in red, yellow, green, brown and black, with more than 100 different shades. In addition to standard applications such as the coloring of pavers and facades, the pigments are also used in exposed concrete, infrared reflective coatings, artificial turf

and wood-plastic composites. They deliver first-class quality and very high chemical and physical resistance. The pigments are available in powder, granular, compact or liquid form. There are also special micronized pigments for high dispersion requirements and ultra pure Bayferrox® and Colortherm® Z-grades for the cosmetics industry.

## Paint for buildings



### ■ Emulsion paint for facades

Emulsion paints are widely used for external walls or house facades. They not only make walls look good, they also help protect the building.

### ■ Decorative paints

Decorative paints are no longer only solventborne, nowadays they are available in waterborne forms with comparable quality. These paints deliver excellent quality in terms of leveling and processability.

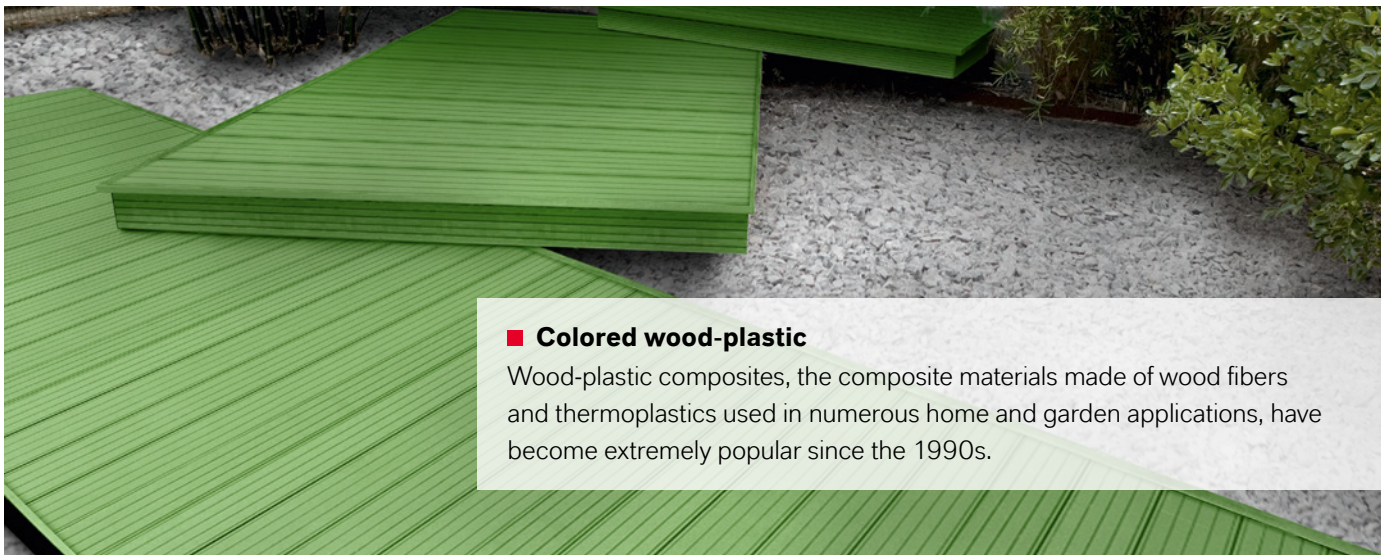
### ■ Colored facade elements

The external walls of buildings have always been coated to protect against the elements. Colored facade elements provide a charming architectural touch.



### ■ Colored concrete roofing tiles

The possibilities for roof design are endless with colored concrete roofing tiles.



### ■ Colored wood-plastic

Wood-plastic composites, the composite materials made of wood fibers and thermoplastics used in numerous home and garden applications, have become extremely popular since the 1990s.

### ■ Pavers

Colored concrete pavers provide a solid foundation under your feet. They maintain their color, even on surfaces intended for tires such as bike paths, parking lots or driveways.

### ■ Mulch

Colored mulch is made of pure wood chips. Thanks to the light color of the soft woods used, the wood chips can be transformed into brilliantly colored products.

### ■ Cast-in-situ concrete

Structures such as the Arsta Bridge in Stockholm, Sweden, colored in the traditional Falun red prove that cast-in-situ concrete and color are an ideal combination.



### ■ Sound barrier walls

Sound barrier walls made of colored concrete are often used along highways. They protect against noise and can be optimally blended into the surrounding environment.

### ■ Asphalt

Colored asphalt guides traffic, shows the way, designates zones and decorates plazas. Tones, whether soft or bold, can be adapted to the surrounding colors.



### ■ Industrial and anti-corrosion coatings

As well as protecting against external influences such as light, weather and chemicals and helping to maintain value, decorative aspects also play an important role in anti-corrosion coatings.

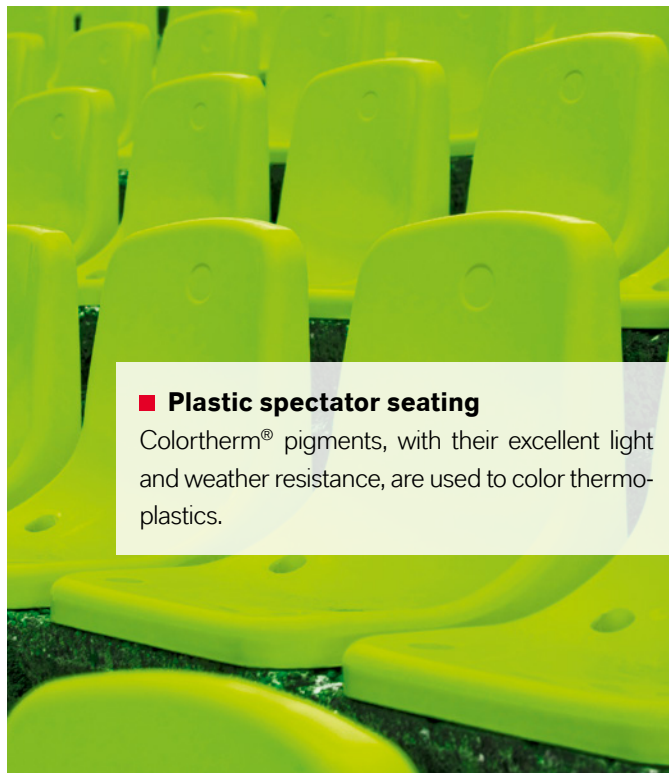






### ■ Artificial turf

Sports facilities with artificial turf are becoming increasingly common. One reason for this is that, in 2005, the International Soccer Federation (FIFA) gave its approval for international matches to be played on this surface.

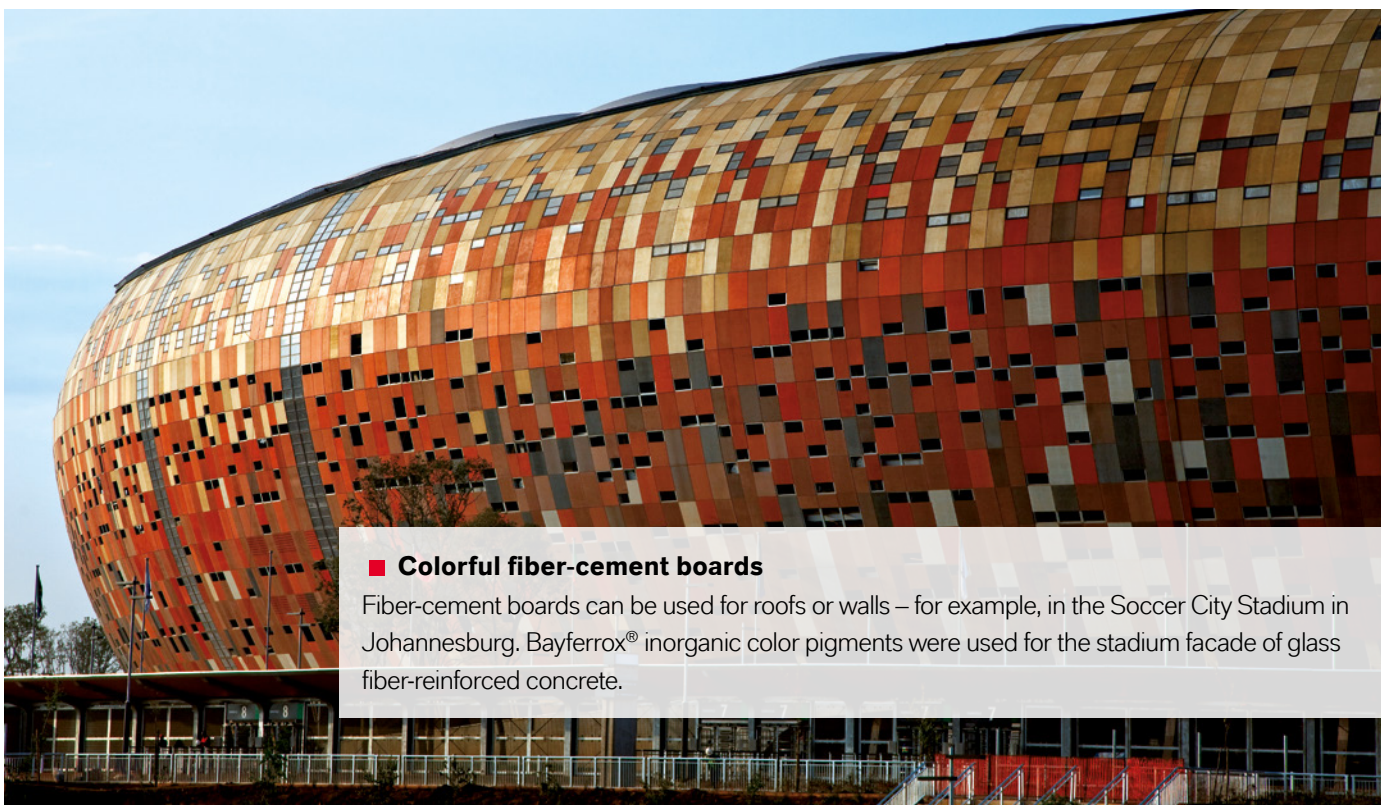


### ■ Plastic spectator seating

Colortherm® pigments, with their excellent light and weather resistance, are used to color thermoplastics.

### ■ All-weather running track

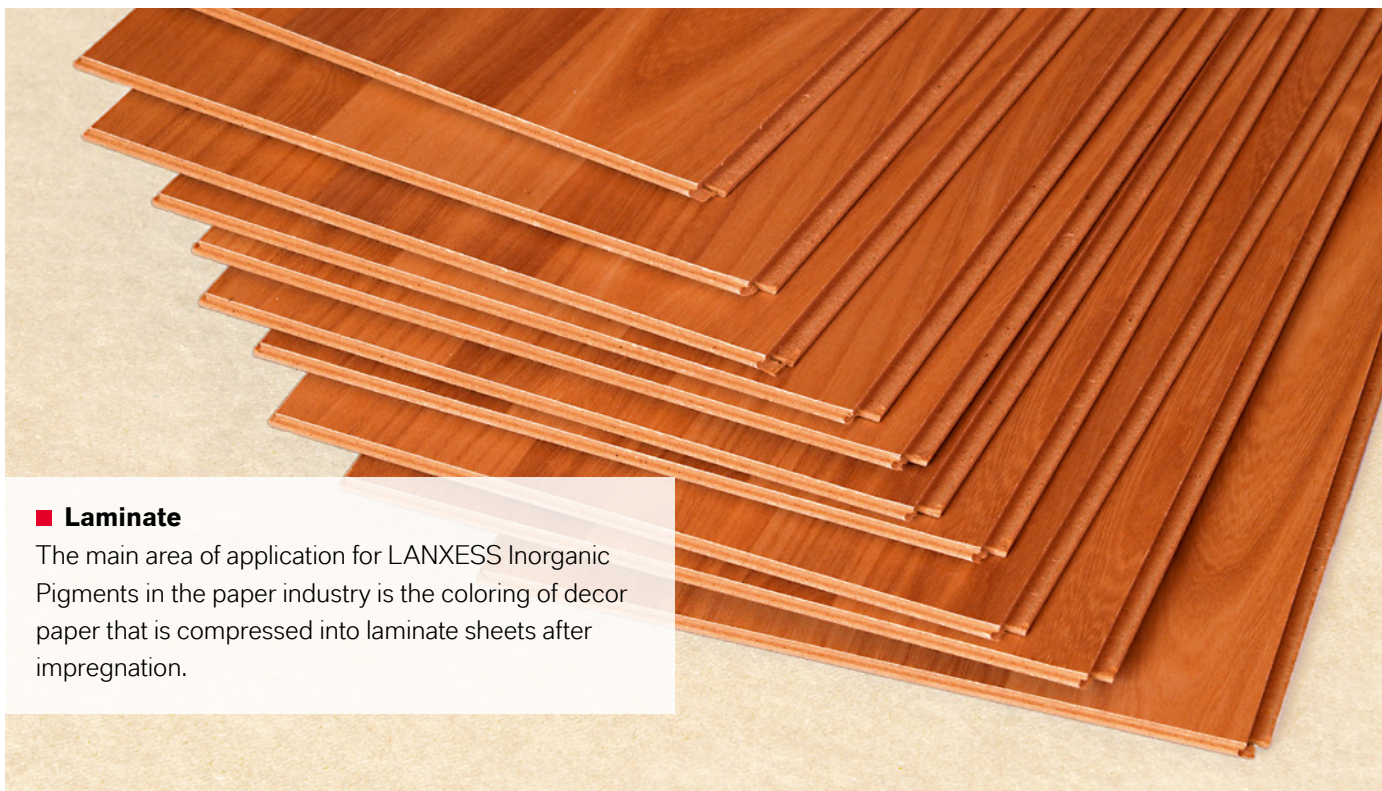
Iron oxide pigments have also made their way into the world of sports. Colortherm® pigments are used to color all-weather running tracks.



### ■ Colorful fiber-cement boards

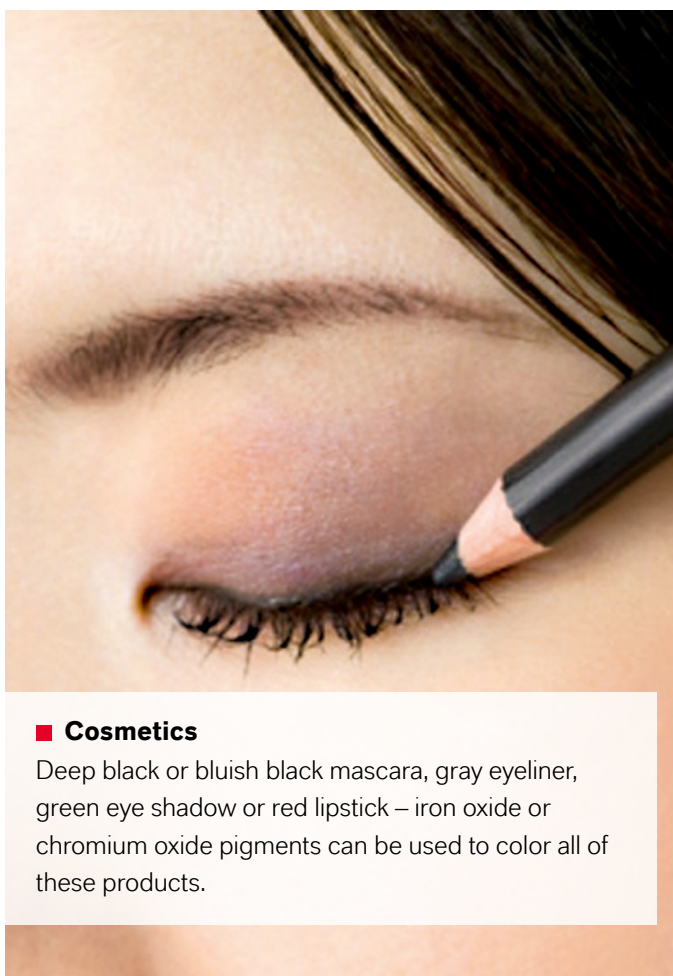
Fiber-cement boards can be used for roofs or walls – for example, in the Soccer City Stadium in Johannesburg. Bayferrox® inorganic color pigments were used for the stadium facade of glass fiber-reinforced concrete.





### ■ Laminate

The main area of application for LANXESS Inorganic Pigments in the paper industry is the coloring of decor paper that is compressed into laminate sheets after impregnation.



### ■ Cosmetics

Deep black or bluish black mascara, gray eyeliner, green eye shadow or red lipstick – iron oxide or chromium oxide pigments can be used to color all of these products.



### ■ Shoe polish

Sustainably produced color pigments are also playing an increasingly important role in the manufacture of shoe polish. Pigments from LANXESS are produced to the highest global environmental standards.

### ■ Glass and ceramics

Colored glass or ceramic objects such as dishes, vases or floor tiles can be found in virtually every home. LANXESS offers a wide range of colors for such applications.



# TECHNICAL APPLICATIONS

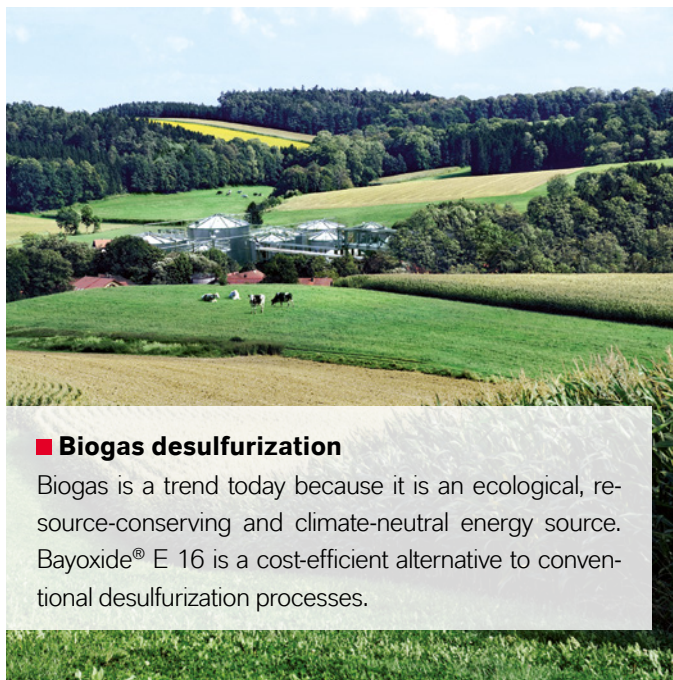
Bayoxide® pigments are custom-developed for a wide variety of special applications, ranging from products for airbags and catalysts to water treatment and the desulfurization of biogas. Recent developments include 'medtech' applications and raw materials for the manufacture of batteries for electric cars.

Close customer contact and the joint development of solutions are extremely important. With countless research and development staff and global technical competence centers, LANXESS Inorganic Pigments is a valued partner worldwide.



## ■ Drinking water treatment

With the products in the Bayoxide® E 33 range, LANXESS has developed innovative technical oxides that are used for drinking water treatment around the globe, primarily for the removal of arsenic.



## ■ Biogas desulfurization

Biogas is a trend today because it is an ecological, resource-conserving and climate-neutral energy source. Bayoxide® E 16 is a cost-efficient alternative to conventional desulfurization processes.



## ■ Toner for photocopiers and laser printers

Since they were launched in 1981, Bayoxide® E products have become firmly established in magnetic toners.

## ■ Airbags and brake linings

Technical oxides also play a crucial role in the automotive industry, whether in the achievement of special friction coefficients in brake linings or ensuring the controlled inflation of airbags.



## ■ Electric mobility

Iron oxides from LANXESS are key to sustainable mobility. They are used as an innovative solution in lithium-iron-phosphate batteries and are increasingly being used in electric vehicles.



LANXESS Deutschland GmbH  
Business Unit Inorganic Pigments  
47812 Krefeld  
Germany  
Tel.: +49 221 8885 5641

[www.lanxess.com](http://www.lanxess.com)  
[www.bayferrox.com](http://www.bayferrox.com)  
[www.bayoxide.com](http://www.bayoxide.com)

#### Health and safety information

Appropriate documentation was compiled with information on the health and safety measures that have to be observed in handling the LANXESS products mentioned in this brochure. For materials mentioned here that are not LANXESS products, the operational hygiene and other safety measures recommended by the respective manufacturers must be observed. Before working with these products, you must read and familiarise yourself with the available information on their dangers, proper use and handling. This point is of decisive importance.

Information is available in various forms: such as safety data sheets, product information and product labels. Please contact your LANXESS representative in Germany or the Department of Regulatory Affairs and Product Safety of LANXESS Deutschland. For business in the USA, please contact the LANXESS Product Safety and Regulatory Affairs Department in Pittsburgh, Pennsylvania.

#### Information on Regulatory Compliance

For some end use purposes of the products found in this brochure, the applicable regulations must be observed, including those of the FDA, BfR, NSF, USDA and CPSC. If you have any questions regarding the approval status of these products, please contact your representative at LANXESS Deutschland GmbH or the Department of Regulatory Affairs and Product Safety of LANXESS Deutschland GmbH or, for business in the USA, your representative at LANXESS Corporation, the LANXESS Regulatory Affairs Manager in Pittsburgh, Pennsylvania.

How and for which purposes you utilise our products, our technical support and our information (oral, written or through product assessments) is beyond our control. The same applies for suggested formulations and recommendations. Therefore it is indispensable that you check our products, our technical support and our information for their suitability for the intended processes and purposes. The application-specific analysis must encompass at least suitability tests in regard to technical as well as health, safety and environmental aspects. Such testing has not necessarily been done by us. Unless agreed to otherwise in writing, all products are sold exclusively in accordance with our general terms and conditions for sale and delivery. Information and technical support are provided without warranty (we reserve the right to make changes at any time). It is expressly agreed that you release us from any possible liability resulting from the use of our products, technical support and information due to fault, contract or other reasons and that you assume this liability yourself.

Any statements and recommendations not contained in this brochure are not authorised and are not binding for us. None of the information in this brochure is to be interpreted as a recommendation to use the products in any way that violates commercial proprietary rights such as patents in regard to any materials or their use. Furthermore, neither explicitly nor implicitly is any licence granted under commercial proprietary rights such as patents.

Edition 01/2017

Bayferrox® is a registered trademark of Bayer AG, Leverkusen, Germany.  
Colortherm® is a registered trademark of LANXESS Group.  
Bayoxide® is a registered trademark of Bayer AG, Leverkusen, Germany.