

# QUALITY SURPASSES.

QUALITY WORKS.

**LANXESS**  
Energizing Chemistry

## Winner of the **National Green Plant Certificate 2018**

We have set yet another new benchmark in the pigments industry. LANXESS is the only global producer of synthetic iron oxide pigments to have received the prestigious National Green Plant certificate from the Ministry of Industry and Information Technology of the People's Republic of China (MIIT) for the new production facility in Ningbo. This quality seal is awarded to just one thousand best-in-class companies who demonstrate a clear commitment to sustainability in their respective industries by implementing cutting-edge technology and environmentally friendly practices in their production facilities.

### The greenest way to produce red iron oxides in the whole of Asia

Our plant is located in the Ningbo Petrochemical Economic & Technological Development Zone, one of China's major chemical industrial parks. Here, the newly developed **Ningbo Process**<sup>®</sup> ensures the most environmentally sound production of synthetic yellow-shade red iron oxides in China and in the whole of Asia, marketed under the **Bayferrox**<sup>®</sup> brand. Compared to traditional production methods, this process produces significantly less nitrogen oxide, including the extremely harmful laughing gas. Furthermore, the remaining greenhouse gas emissions are fully purified by highly efficient post-treatment equipment.

The National Green Plant certificate is a key element of China's Green Manufacturing System, which aims to accelerate industrial development while maintaining high environmental standards. In its 13<sup>th</sup> five-year plan China promotes renewable energies and improved utilization of resources to reduce environmental pollution. To achieve these goals, the MIIT launched the program in April 2017. National Green Plants serve as examples in their industries and set future benchmarks for sustainable production standards stipulated by the Chinese government.



**X BAYFERROX**<sup>®</sup>  
Color for Life.

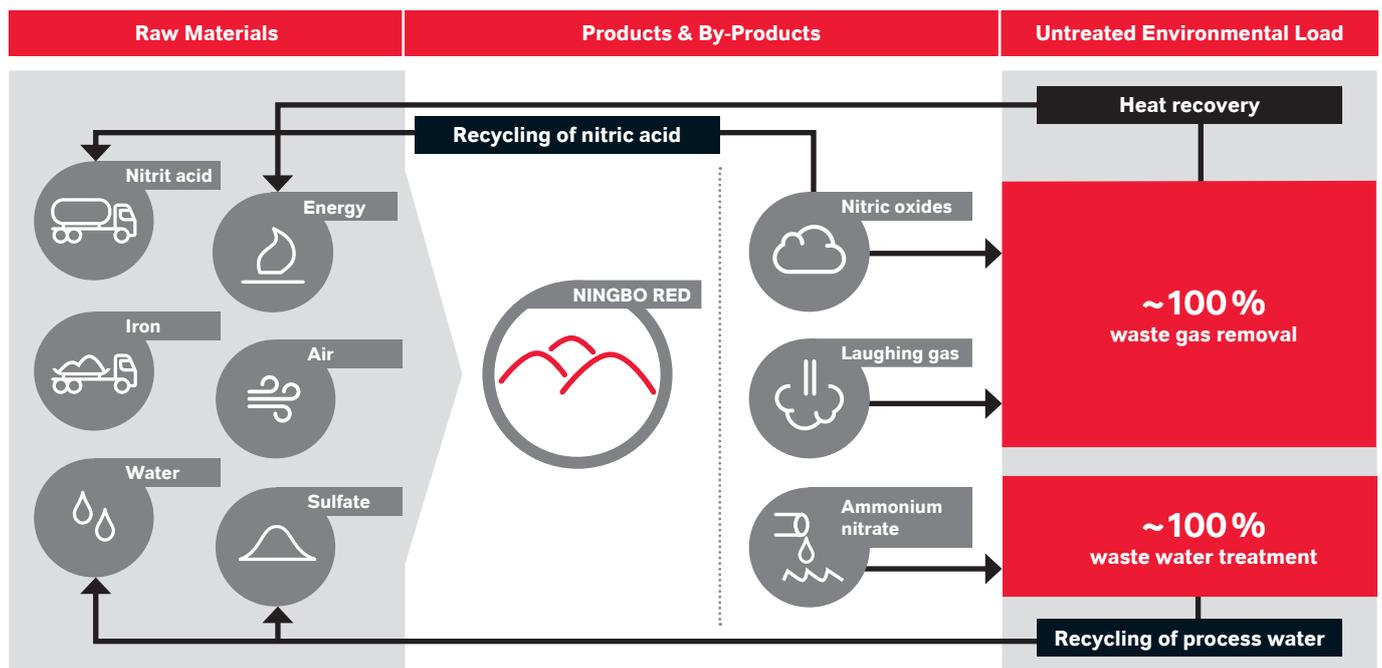
**Ningbo**<sup>®</sup>  
Process

# A New Benchmark for Iron Oxide Production

We walk the talk. The National Green Plant certificate is a testament to LANXESS' effectiveness in minimizing the carbon footprint of its products. Thus, we proactively embrace change. By ensuring the most environmentally sound production of red pigments in China, the innovative **Ningbo Process®** technology makes a measurable contribution to the environment:

**Unfiltered laughing gas is generated by the Penniman production process for red iron oxide pigments in China accounting for as much as 7,6 million tons of CO<sub>2</sub>-equivalents per year. If every production facility were to use our Ningbo Process® the reduction of this greenhouse gas would amount to the total annual CO<sub>2</sub> emissions of 300,000 Chinese households.**

## The Ningbo Process® – efficient recycling and treatment of all by-products



- The control system of the process significantly reduces the generation of harmful waste gases during the pigment formation reaction.
- Remaining waste gases are converted back into nitric acid and then reintroduced to the process as a raw material.
- Innovative plant technology and heat recovery reduces energy demand by up to 80%.
- Wastewater treatment incorporating biological denitrification, ultrafiltration and reverse osmosis allows the water to be cleaned and recycled back into the process.

**LANXESS**  
Energizing Chemistry

LANXESS Deutschland GmbH  
Business Unit Inorganic Pigments  
47812 Krefeld  
Germany

Tel.: +49 221 8885 5684

www.lanxess.com  
www.bayferrox.com

The manner in which you use and the purpose to which you put and utilize our products, technical assistance and information (whether verbal, written or by way of production evaluations), including any suggested formulations and recommendations are beyond our control. Therefore, it is imperative that you test our products, technical assistance and information to determine to your own satisfaction whether they are suitable for your intended uses and applications. This application-specific analysis must at least include testing to determine suitability from a technical as well as health, safety, and environmental standpoint. Such testing has not necessarily been done by us. Unless we otherwise agree in writing, all products are sold strictly pursuant to the terms of our standard conditions of sale. All information and technical assistance is given without warranty or guarantee and is subject to change without notice. It is expressly understood and agreed that you assume and hereby expressly release us from all liability, in tort, contract or otherwise, incurred in connection with the use of our products, technical assistance, and information. Any statement or recommendation not contained herein is unauthorized and shall not bind us. Nothing herein shall be construed as a recommendation to use any product in conflict with patents covering any material or its use. No license is implied or in fact granted under the claims of any patent.

### Forward-Looking Statements

This company release contains certain forward-looking statements, including assumptions, opinions, expectations and views of the company or cited from third party sources. Various known and unknown risks, uncertainties and other factors could cause the actual results, financial position, development or performance of LANXESS AG to differ materially from the estimations expressed or implied herein. LANXESS AG does not guarantee that the assumptions underlying such forward-looking statements are free from errors nor does it accept any responsibility for the future accuracy of the opinions expressed in this presentation or the actual occurrence of the forecast developments. No representation or warranty (expressed or implied) is made as to, and no reliance should be placed on, any information, estimates, targets and opinions, contained herein, and no liability whatsoever is accepted as to any errors, omissions or misstatements contained herein, and accordingly, no representative of LANXESS AG or any of its affiliated companies or any of such person's officers, directors or employees accept any liability whatsoever arising directly or indirectly from the use of this document.

**Note:** The information contained in this publication is current as of April, 2018. Please contact LANXESS Solutions US Inc. to determine if this publication has been revised.

® = trademark of LANXESS Deutschland GmbH or its affiliates, registered in many countries in the world.