



2018-2019

WANHUA CHEMICAL GROUP CO., LTD.
Sustainable Development Report



ADVANCING CHEMISTRY, TRANSFORMING LIVES

ADVANCING CHEMISTRY,
TRANSFORMING LIVES

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PREPARATION INSTRUCTIONS

This Report is the second Sustainable Development Report prepared by Wanhua Chemical Group Co., Ltd. for the purpose of presenting to stakeholders our sustainable development work in terms of the economy, environment and society, as well as our performance achievements in 2018.

Scope of the Report

This Report covers information related to the sustainable development of Wanhua Chemical Group Co., Ltd. from January 1, 2018 to December 31, 2018, and includes some data from 2019.

The sustainable development data revealed in this document covers the businesses related to the production and operation premises of all entities in China and stated in the financial report of Wanhua Chemical Group Co., Ltd., as well as the businesses related to the production of MDK petrochemicals, special chemicals, and new materials, which are presented according to region. The regions are divided into Wanhua Yantai, Wanhua Ningbo, and Wanhua Guangdong according to the distributional characteristics of the production premises in China of Wanhua Chemical Group Co., Ltd. Annotation. Notes are provided in the main body of the text when some data cannot cover the entire scope.

Reporting Period

This Report is the second Sustainable Development Report of Wanhua Chemical Group Co., Ltd. Starting from the last Report issued in September 2018, Wanhua Chemical Group Co., Ltd. will release its sustainable development report on an annual basis.

Reference Standards

This Report is prepared in accordance with the "core programs" of the Sustainability Reporting Standards (2016) of the Global Reporting Initiative (GRI Standards (2016) while referring to the disclosure requirements based on the *Guidelines of the Shanghai Stock Exchange for the Disclosure of Environmental Information by Listed Companies and the UN Sustainable Development Goals (SDGs)*.

Data Sources

The financial data herein comes from the 2018 Annual Report of Wanhua Chemical Group Co., Ltd. which was prepared upon the independent audit conducted by Deloitte Touche Tohmatsu Certified Public Accountants LLP. All amounts herein are expressed in RMB unless stated otherwise. Other non-financial information was provided by the functional departments of Wanhua Chemical Group Co., Ltd. and its branches.

Release of this Report

This Report is released as a printed version and electronic version in both Chinese and English. The electronic version can be accessed and downloaded from Wanhua's website <http://www.whchem.com>.

TERMINOLOGY DEFINITIONS

The abbreviations contained in this document have the following specific definitions:

| Abbreviations | Full Name |
|---|---|
| Wanhua, Wanhua Chemical, Group, Group Company, We, Our, Company | Wanhua Chemical Group Co., Ltd. |
| WIG, controlling shareholder | Wanhua Industrial Group Co., Ltd. |
| CSRC | China Securities Regulatory Commission |
| SSE | Shanghai Stock Exchange |
| GRI Standards | Sustainability Reporting Standards of the Global Reporting Initiative |
| TfS | Together for Sustainability |
| C3 | Carbon 3 |
| C4 | Carbon 4 |
| TDI | Toluene Diisocyanate |
| MDI | Methylenediphenyl Diisocyanate |
| ADI | Aliphatic Diisocyanate (including H12MDI, HDI, HDI derivatives, IPDI, etc.) |
| TPU | Thermoplastic Polyurethane |
| LPG | Liquefied Petroleum Gas |
| PC | Polycarbonate |
| MMA | Methyl Methacrylate |
| PMMA | Polymethyl Methacrylate |
| SAP | Super Absorbent Polymer |
| PUD | Polyurethane Dispersion |
| HDI | Hexamethylene Diisocyanate |
| IPDI | Isophorone Diisocyanate |
| COD | Chemical Oxygen Demand |
| TOC | Total Organic Carbon |
| CWAO | Catalytic Wet Air Oxidation |
| PSM | Process Safety Management |
| PHA | Process Hazard Analysis |
| HAZOP | Hazard and Operability Study |
| LOPA | Layer of Protection Analysis |
| SILver | Safety Instrument Integrity Verification |
| SIS | Safety Instrument System |
| LDAR | Leak Detection and Repair |

ACKNOWLEDGMENTS

We hereby express our sincere thanks to the following colleagues for their contribution to the compilation of this Report. (This list does not follow a particular order)

| | | | |
|----------------------------|---------------|---------------|--------------|
| Bai Zhenwei, Lan Xiaoping | Zhuang Chaowu | Ke Lin | Qiu Bin |
| Wang Jiangmin, Yuan Zhe | Wu Chongyan | Sun Shuchang | Qiu Xiaoxin |
| Wang Weiling, Liu Jiangwei | Jiang Lei | Wang Zhaojun | Zhu Xiaodong |
| Gao Yuan, Han Xiaotong | He Yong | Zheng Pingyou | Zhao Fuchun |
| Liu Xiaofei | Yan Bo | Jia Weiguo | Wang Shuya |

ADDRESS FROM THE CHAIRMAN



Chairman of Wanhua Chemical Group Co., Ltd.
Liao Zengtai

A handwritten signature in black ink, appearing to be 'Liao Zengtai'.

Safety & Environmental Protection and Steady Progress Creates Modern Chemical Enterprises that are Green and Environmental-friendly

Dear friends:

As of 2018, Wanhua Group has been established for 40 years. For years, Wanhua has been committed to the "chemical" industry and achieved countless feats of chemistry, developing from a synthetic leather factory at a modest location to a world-class international company that conducts business around the world. While constantly making breakthroughs in enterprise development, Wanhua has remained dedicated to the principles of green development, actively advanced the circular economy, and achieved a "win-win" outcome in terms of social responsibility and economic benefit.

Safety, Environmental Protection and the Pursuit of Excellence Embodies the Social Image of Responsible Chemical Enterprises

As early as 2004, Wanhua introduced the DuPont HSE Management System with respect to Ningbo Phase I Construction, thereby becoming the first enterprise in China to sign a consultancy agreement with DuPont. Later, by adhering to the spirit of pursuing excellence, aiming for "zero injuries, zero accidents and zero emissions", and integrating the safety management expertise of GE, BP, PPG and other multinational companies with our own realities, the Company established an HSE management system with 15 core elements, 58 sub-elements and 278 specific requirements.

In particular, the concept of "zero emissions" embodies Wanhua's determination to pursue green development and protect blue skies and clear water. On the basis of zero disorganized emissions, 100% achievement of standards for organized emissions, and zero environmental violations such as major leakages, Wanhua strives to continuously improve the efficiency with which we utilize resources by adhering to the concepts of "going green, protecting the environment, conserving energy, and reducing emissions". In 2018, the energy consumption per unit product decreased by 4.0% year-on-year, water consumption decreased by 8.3% year-on-year, COD emissions per unit product decreased by 2.5% year-on-year, and the solid waste rate per 10,000 tons decreased by 16.5% year-on-year, setting up a benchmark for green development in the industry.

Responsibility and Compliance of Wanhua Builds the Cornerstone of the Enterprise's Sustainable Operations

As a responsible chemical company, by regarding the safety, health, environmental protection and resource conservation of staff, relevant parties and the communities as a sacred duty, Wanhua has set up a Sustainable Development Committee to assume responsibility for making and implementing decisions related to the Company's sustainable development. As a practitioner and communicator of sustainable development, Wanhua joined the TFS initiative (Together for Sustainability) to work with customers, suppliers and other stakeholders on the promotion of sustainable development, and won the silver medal in Global Corporate Social Responsibility (CSR) assessment awarded by European Union EcoVadis.

In order to achieve compliance operations, Wanhua has set up three lines of defense: prevention and control in business departments, enterprise management departments, and audits, thus preventing and reducing risks. In 2018, Wanhua formulated a series of compliance rules & regulations and measures, such as the Anti-Malpractice Management System, Supplier Visit System and Process, Anti-Monopoly Compliance Management System, and Regulations on Staff Conflict of Interest to develop a compliance culture that upholds good professional ethics throughout the Group.

Prospectiveness and Forward-looking Innovation Constantly Drives Sustainable Development in the Chemical Industry

To actively respond to the 2030 Goal for Sustainable Development of the United Nations and fulfill Wanhua's commitment made at the second UNEA that "Sustainability is the only viable road to the development of the chemical industry", Wanhua has made multiple effective efforts in product stewardship by focusing on business links such as the supply chain, product development, production and operation, the storage and transportation of finished products, marketing, and after-sales services, thereby driving the sustainable development of the chemical industry.

Especially in product development, Wanhua has transformed renewable biomasses such as starch, cellulose, and straw into bio-based chemicals with high added value by relying on its independent innovation platform, and applied them in such fields as personal care, automobiles, spices, etc. in an innovative manner; in order to fundamentally eliminate plastic pollution, Wanhua is developing bio-based degradable plastic materials in a targeted way with the aim of contributing to the sustainable development of society.

In the new era and throughout the new journey, Wanhua will, based on its 40 years of experience, continue to deepen management in safety and environmental protection, further intensify technological innovation, effectively drive the sustainable development of the chemical industry, bravely undertake historical responsibilities, and continuously pursue excellence to create a better life for mankind.

ADDRESS FROM THE CEO



Wanhua Chemical Group Co., Ltd.

CEO

A handwritten signature in black ink, consisting of stylized Chinese characters.

Unswervingly Follow the Road of Green and Sustainable Development to Create a Better Life

In the 1980s, the World Commission on Environment and Development issued a global report entitled "Our Common Future" which put forward the concept of "sustainable development", sparking global thinking and action on sustainability. Over the past three decades, the world economy has developed rapidly, material life has been greatly enriched, and people have begun to pursue a better life with increasing intensity. The symbiosis of chemistry and human civilization is an important way for mankind to create a better life. Wanhua reasserted its mission in 2019: Advancing Chemistry, Transforming Lives! We believe that green chemistry is linked with human life and that it will enable the world to become a better place. However, our future is still full of challenges: global warming, reduction of resources, air pollution, and more. As an enterprise in the chemical industry, Wanhua is keenly aware of how to promote harmonious communication with nature and society while in the process of implementing sustainable development. Wanhua is willing to fully utilize its professional advantages, build a green and environmental-friendly modern chemical industry, and create a sustainable, green, and environment-friendly future world.

Wanhua practices the concepts of going green, environmental protection, conserving energy and reducing emissions; we seek to emit no pollutants, develop into a green and environmental-friendly chemical company that features "no leakages, no unusual odors and no mechanical noise", and establish a green and environmentally-friendly management system that is typical of Wanhua and conforms with the development of a circular economy. The MDI waste salt water treatment technology was indigenously developed by Wanhua to save 720,000 tons of water and reuse 140,000 tons of salt per year; the base metal HCL oxidation technology initiated by Wanhua can comprehensively use 300,000 tons of by-product hydrogen chloride; and, Wanhua enables the reuse of reclaimed water by using the "ultrafiltration + reverse osmosis" technology. In 2018, Wanhua reused 7.19 million tons of sewage water in Yantai.

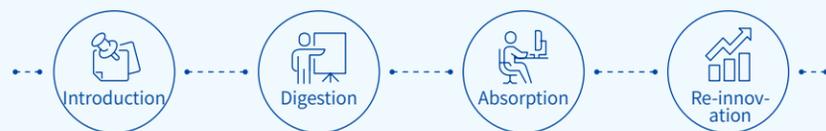
In 2015, at the United Nations Summit on Sustainable Development, the Sustainable Development Goals (SDGs) were officially released. This document aimed at proposing goals for world development over the next 15 years. Wanhua has actively promoted and implemented the SDGs by formulating a series of corresponding enterprise goals and action plans, and disclosed the implementation of sustainable development program every year according to GR criteria. Wanhua has also actively participated in various global sustainable development organizations. In February 2019, Wanhua joined the "Together for Sustainability" (TfS) organization which aims at driving sustainable procurement. In August 2019, on behalf of Wanhua, I promised to support the ten basic principles stated in the United Nations Global Compact and officially joined the UNGlobalCompact which calls on enterprises to abide by human rights principles, labor standards, environmental protection, and anti-corruption.

Wanhua has also been actively involved in various public benefit activities and has built a wide variety of quality projects with broad coverage and far-reaching influence in many fields. These projects have included participation in a "Nesting Activity" in collaboration with the China Foundation for Poverty Alleviation to improve the living environment of students in poverty-stricken areas, partnering with national universities to hold an innovation and application competition that stimulates the innovative thinking of undergraduates, and establishing the "Wanhua Scholarship" to enable students from underprivileged families to continue their studies.

Protecting our ecological homeland and pursuing sustainable development are the common aspirations of mankind. Facing the future, globalization and smart technology are surging forward and the green economy is ascendant. Wanhua will continue to make technological innovations, make steady progress in industry, and incorporate the concept of sustainable development into the Company's strategy, operations and daily management. Wanhua will unswervingly implement our sustainable development strategy, strive to achieve global sustainable development goals through new green and environmental-friendly chemical materials, create a better life by applying more new and high-end chemical products, and work with all sectors of society to jointly build a new world that is better and more sustainable.

XI JINPING VISITED THE WANHUA YANTAI INDUSTRIAL PARK

On the morning of June 13, 2018, Xi Jinping visited Wanhua Yantai Industrial Park while conducting an inspection tour in Shandong. Xi Jinping was very pleased to learn that Wanhua has taken a path of introduction, digestion, absorption, re-innovation, and independent creation, and that Wanhua has established its technological innovation capabilities from scratch, developing from weak to strong and becoming a leader in the industry.



Xi Jinping Visited the Exhibition Hall of Wanhua Yantai Industrial Park



Xi Jinping Delivered a Speech at Wanhua Yantai Industrial Park

After visiting the exhibition hall Xi Jinping delivered a speech, remarking that “looking back on your journey, you have done very well. Although it was a hard way to start a business, you were highly successful. I think one of the reasons for your success is that you have taken the road of independent innovation. Nothing is impossible, but a great deal of effort is required. Just as Qu Yuan said, ‘The road ahead will be long and our climb will be steep.’ Who said that state-owned enterprises cannot be operated well? Reform is necessary to enable state-owned enterprises to operate well. There is no use inclining to remnants and guard against deficiencies. A state-owned enterprise should be expected to become a modern enterprise if it successfully reformed. I hope that all of you will make persistent efforts, and forge ahead toward your goals with an spirit of persistence, coherence, and consistency.

WANHUA JOINED THE UN GLOBAL COMPACT TO CREATE A MODEL OF SUSTAINABLE DEVELOPMENT INDUSTRY



On August 30, 2019, Wanhua Chemical officially joined the UN Global Compact. On behalf of Wanhua, Wanhua Chemical President Kou Guangwu solemnly promised to support the ten basic principles stated in the UN Global Compact. This is an important initiative for Wanhua to demonstrate to the whole of society the concept of sustainable development and corporate social responsibility. Wanhua Chemical promised to integrate the requirements of the UN Global Compact and relevant principles into its strategy, culture, and daily operations, to implement the requirements of the ten basic principles within Wanhua, and to actively participate in the UN sustainable development cooperative program.

The "UN Global Compact" was proposed by Kofi Annan, Secretary General of the United Nations, at the World Economic Forum Annual Meeting held in Davos in January 1999 and officially launched at the UN Headquarters in July 2000. The "UN Global Compact" aims at calling upon enterprises to abide by the ten basic principles of human rights, labor standards, environment, and anti-corruption [1]. It is now managed by the UN Commission on Sustainable Development. The enterprises that have joined the UN Global Compact are all excellent enterprises that play a leading role in the field of sustainable

development. Wanhua Chemical is honored to be one of them. This is a strong affirmation of Wanhua Chemical's contributions in the field of sustainable development and a solemn commitment made by Wanhua Chemical to continue to strive for a better life for mankind.

As a global chemical enterprise, Wanhua will assume its responsibilities as a citizen of the world, actively contribute its own strength to the cause of global sustainable development, and implement the ten basic principles of the UN Global Compact into enterprise management through a step by step process; with a view of protecting human beings and the earth, committing to promoting human rights and labor rights in the world, protecting our natural environment, and maintaining a clean, transparent, and corruption-free business ecosystem with partners all over the world.

TEN BASIC PRINCIPLES OF UNGLOBALCOMPACT

Human Rights: Principle 1: Enterprises should respect and uphold various internationally recognized principles of human rights.

Principle 2: Enterprises shall never take part in any acts that ignore or trample on human rights.

Labor Standards: Principle 3: Enterprises should safeguard freedom of association and recognize the right of collective bargaining between employers and employees.

Principle 4: Enterprises should completely eliminate all forms of forced labor.

Principle 5: Enterprises should effectively abolish the child labor system.

Principle 6: Enterprises should put an end to any discrimination in employment and industry.

Environmental Protection: Principle 7: Enterprises should prepare for environmental challenges.

Principle 8: Enterprises should take the initiative to increasingly bear the responsibility for environmental protection.

Principle 9: Enterprises should encourage the development and promotion of environmentally sound technologies.

Anti-corruption: Principle 10: Enterprises should combat all forms of corruption, including extortion and bribery.

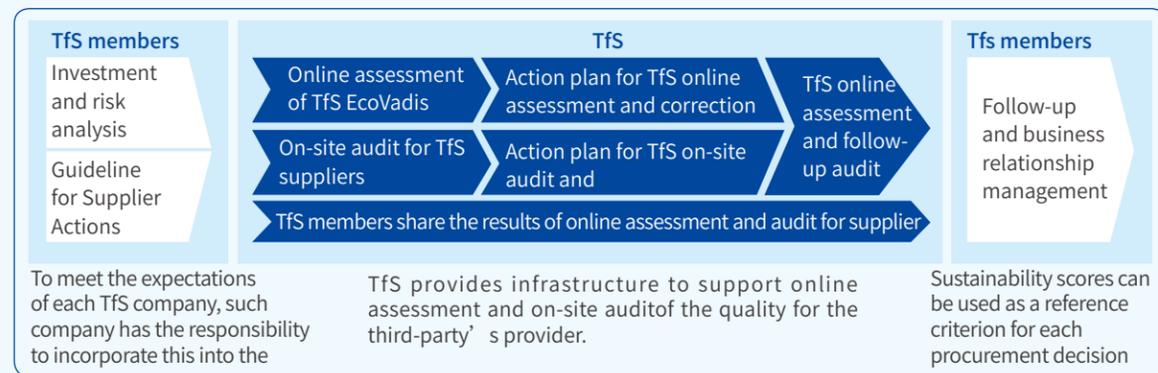


WANHUA JOINED THE “TOGETHER FOR SUSTAINABILITY (TFS)” INITIATIVE

On February 21, 2019, Wanhua held a membership signing ceremony with Tfs, which officially made Wanhua the 23rd enterprise in the Tfs initiative and the only enterprise in the Asia Pacific region to join the Tfs Initiative. As the first Chinese enterprise to join the Tfs Initiative and the representative of a new generation of Chinese companies, Wanhua will stick to the path of sustainable development, highlight the determination of strengthening and fulfilling social responsibilities and the ability of driving the global sustainable supply chain, drive more suppliers to promote sustainable development, inject new vitality into various activities of the sustainable development of the Chinese supply chain, and ultimately contribute to promoting the sustainable development practice of the Chinese chemical industry and improving the sustainable development of the supply chain in global chemical industry.



The “Together for Sustainability (Tfs)” Initiative was established in 2011 by the global procurement directors from BASF, Bayer, Evonik, Henkel, Lanxess, and Solvay. It seeks to develop and implement a global plan to assess, audit, and improve the sustainability of all links in the chemical industry supply chain. It currently boasts 23 member companies worldwide and plans to continue to promote itself on a global scale. Tfs is committed to achieving mutual benefit for its member companies and their suppliers. This Initiative is conducive to constantly improving social and environmental conditions, bringing benefits to all stakeholders including staff, the neighborhood, local communities and the whole society. Tfs consists of online assessment and on-site audit process, which can be integrated by Tfs members into their sustainable procurement activities.



- Our Common Vision**
- Support UN Global Compact and Responsibility Care principle
 - Be responsible for our own operation and supply chain, and support and abide by existing regulations to meet social needs
 - Standardize the requirements and management for complex issues and risks, thus benefiting all stakeholders
 - Engage in an open and constructive dialog with our suppliers, improve working and environmental conditions, build a sustainable business, make more effective use of resources, and reduce supplier burden for re-assessment and re-auditing
 - Continuously monitor the operation transparency and compliance

WANHUA WAS LISTED AMONG GLOBAL TOP 50 CHEMICAL COMPANIES, RANKING THE 43RD

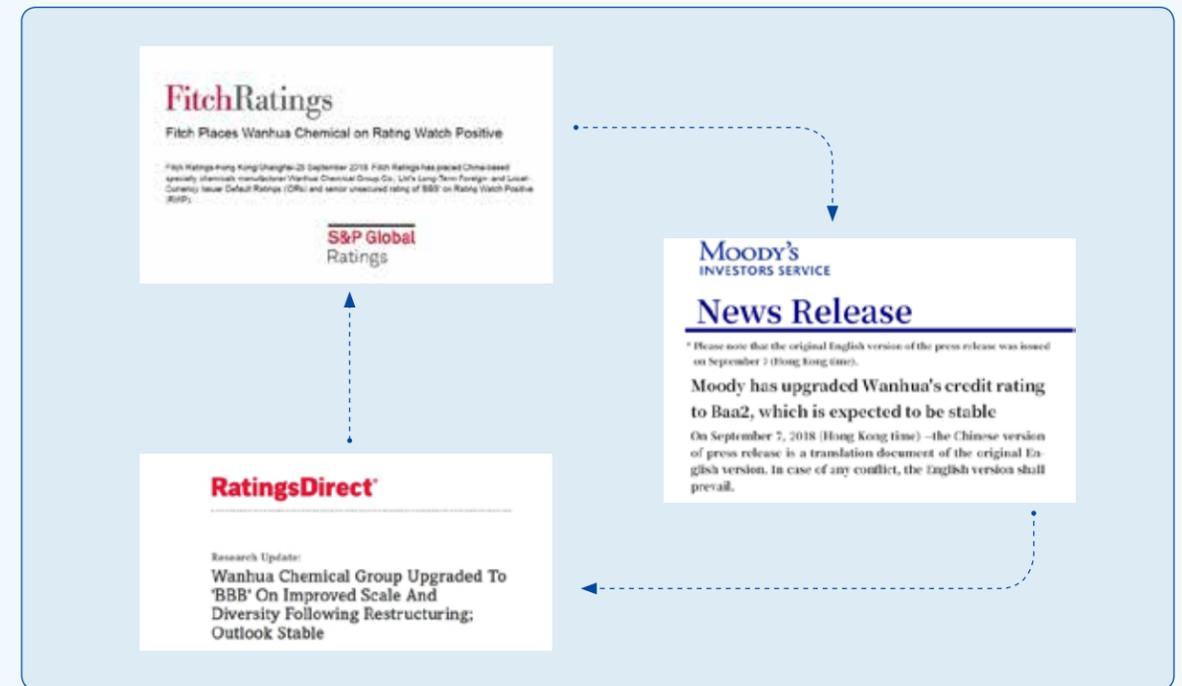
On July 30, C&EN (Chemistry and Engineering News) of the United States released its list of 2018 Global Top 50 Chemical Companies. According to the 2017 ranking of sales revenue and profit, Wanhua Chemical was listed for the first time with RMB 53.1 billion (about USD 7.9 billion), ranking 43rd.



Wanhua Chemical was listed for the first time with
RMB 531 (about USD 7.9 billion)
 billion
 ranking
43 rd.

BBB

In 2018, three major international rating agencies Standard & Poor's, Moody's, and RatingsDirect respectively upgraded Wanhua's international credit rating from BBB-(Baa3) to BBB (Baa2), which is conducive to further enhancing Wanhua's international reputation and reducing Wanhua's overseas financing costs.



WANHUA WON ASILVER MEDAL AWARDED BY ECOVADIS

On September 21, 2018, after being audited and certified by the EU EcoVadis, Wanhua Chemical gained 60 points in Global Corporate Social Responsibility (CSR) assessment and won asilver medal (silver medal: 45-64 points). It ranked in the top 7% among 22,000 enterprises worldwide audited by EcoVadis.



Wanhua ranked in the top among **22000** enterprises worldwide audited by EcoVadis



EcoVadis is a world-renowned authority on assessing Corporate Social Responsibility. It is engaged in helping enterprises assess the economic, environmental and social performance of their suppliers. Certification from EcoVadis means that the enterprise has obtained a global "Social Responsibility Management Permit". EcoVadis' s assessment criteria include 110 countries, 150 procurement scopes, and 21 CSR indexes. EcoVadis mainly examines five aspects to assess the fulfillment of corporate social responsibility: the overall situation, environment, labor and human rights, business ethics, and sustainable procurement of the company.



In the future, Wanhua Chemical will continue to follow the path of green and sustainable development, constantly improve its sustainable development performance, and strengthen its ability to fulfill social responsibilities.



WANHUA JOINED THE GLOBAL CHARTER FOR RESPONSIBLE CARE

"Responsible Care" is a global campaign launched voluntarily by chemical enterprises to jointly improve the safety management of chemicals throughout their life cycle and make greater contributions to improving quality of living and promoting sustainable development. As a signatory to the Global Charter for Responsible Care, Wanhua Chemical will devote itself to:

Building a good corporate culture: Provide support for the safety management of chemicals through the Global Charter for Responsible Care

Strengthening the chemical management system: Participate in formulating and implementing chemical safety laws and best practices oriented according to the life cycle of products and based on risks and scientific decisions

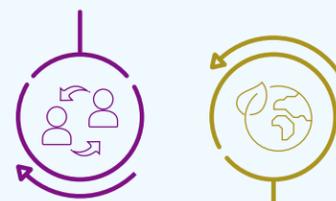
Attracting participation of stakeholders: Know about stakeholders, make a response to their concerns and expectations about operation and product safety, and engage in candid communication with stakeholders about our EHS performance and products



Protecting mankind and the environment: Constantly improve the company' s environmental, health, and safety performance and the safety of devices, processes, and technologies; drive the continuous improvement of chemical safety and supervision level throughout the supply chain



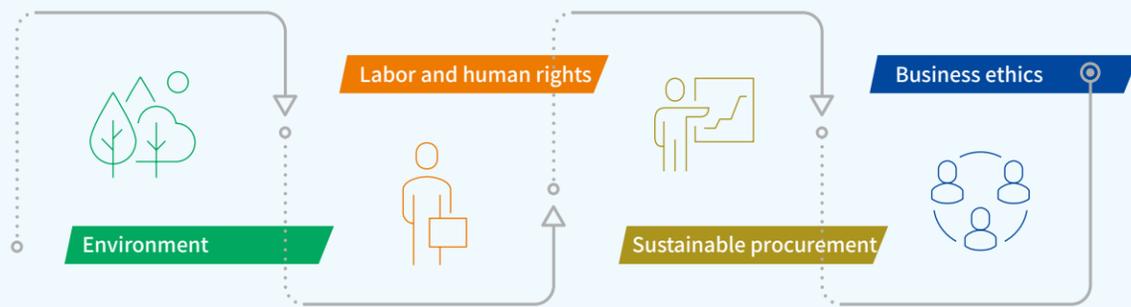
Driving business partners: Drive chemical safety management in their business



Make contributions to sustainable development: Create more economic opportunities by improving EHS performance, and develop innovative technologies and solutions to meet social challenges



WANHUA WON ASILVER MEDAL AWARDED BY ECOVADIS



Energy and greenhouse gas (GHG)

Energy consumption per unit product

-20%

Carbon footprint

-20%

Water

Water consumption per unit product

-20%

COD emission

-15%

Biodiversity

Raw materials, products and wastes

Solid waste rate per 10,000 tons

-30%

Staff health and safety

Number of major accidents

0

Recordable injury rate

0.1

Working conditions

Staff turnover rate

5%

Career development and training

Discrimination and harassment

Percentage of female staff

16%

Anti Anti Anti-corruption and corruption and

Anti-competition and anti-monopoly

Information security

Supplier social assessment

CSR assessment rate for new suppliers

70%

Proportion of TFS supplier procurement amount

30%

Social communication

Customer health and safety



| Policy | Execution | Results |
|---|--|---|
| Policy Guidelines, tasks, goals and management Commitment External initiatives and guidelines for sustainable development, such as Initiative for Responsible Care | Implementation Procedures, tools, and training for implementation Authentication External authentication, and third-party audit | Positive results Implementation and completion of policies and goals Negative results Non-implementation or non-completion of policies, injury records, records of punishment for violations, and disputes related to relevant parties |

Road Map for Action on Sustainable Development 2025

2020

- Establish the staff's consciousness of sustainable development
- Preliminarily establish a sustainable development management mechanism
- Implement sustainable procurement management
- Establish a tracking mechanism for carbon footprint and water resources
- Constantly improve the performance of environmental protection management
- Improve anti-monopoly, anti-corruption and anti-malpractice
- Control procedures and consolidate the foundation of business ethics
- Improve the labor and human rights policy
- Continuous improvement in ECOVADIS assessment performance

2023

- Sustainable development has become an important strategy of the Company
- Good sustainable development management mechanism
- Good sustainable procurement management
- Systematic energy management system
- Internationally advanced environmental protection management performance
- Open and transparent business ethics information
- Globally recognized policy of labor and human rights
- Continuous improvement in ECOVADIS assessment performance

2025

- Trend of the Company's development under the leading of sustainable development
- Globally advanced mechanism and concept of sustainable development management
- Excellent sustainable procurement management
- Advanced energy management system
- Internationally advanced environmental protection management performance
- Information-based business ethics management
- Globally-recognized policy and performance of labor and human rights
- Continuous improvement in ECOVADIS assessment



ABOUT WANHUA

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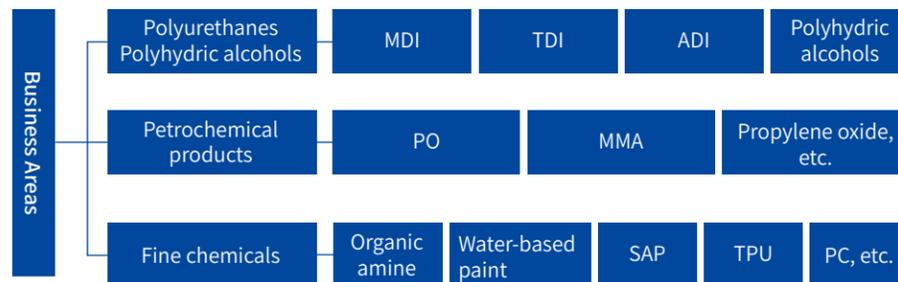
COMPANY PROFILE

Wanhua Chemical Group Co., Ltd. was established in 1998 with its registered address at No. 17 Tianshan Road, Yantai Economic and Technological Development Area. The company went public on the main board of the Shanghai Stock Exchange in 2001 (stock code: 600309).

In August 2018, the major asset restructuring project of Wanhua Chemical for absorbing and merging Wanhua (Yantai) Chemical Co., Ltd. was unconditionally approved by the Mergers and Acquisitions Committee of Listed Companies of the China Securities Regulatory Commission. In February 2019, Wanhua completed the major asset restructuring and overall listed asset delivery procedures.

As a global new chemical materials company, Wanhua aims to provide customers with chemical products and solutions. Wanhua's business covers MDI, TDI, polyether polyol and other polyurethane industrial clusters; acrylic acid and ester, propylene oxide and other petrochemical industry clusters; industrial clusters of functional chemicals and materials such as water-based PUD, PA emulsion, TPU, ADI series, and more. Wanhua mainly serves the following industries: electronic gifts home appliances, sports and leisure, automobile traffic, building industry, and electrical & electronics appliances.

The Company operates three domestic production bases in Yantai, Ningbo, and Zhuhai and one overseas production base (Hungary Borsodchem). It is an MDI manufacturing enterprise that operates using leading technology and which has a global competitive advantage. It boasts a complete C3/C4 petrochemical industry chain and ADI industry chain. It is a world-class manufacturer of polyether polyol, polyurethane system materials, and PUD, and also a world-leading TPU supplier.



The Company has set up its R&D headquarters in Cishan, Yantai, and established R&D centers in Beijing, Foshan, and Shanghai. In order to serve customers better, we set up branches or offices in more than ten countries and regions, including Europe, the United States and Japan.

CORE VALUES

- **Mission:** Advancing Chemistry, Transforming Lives!
- **Vision:** To become an innovative, world-class chemical company, admired by our staff and respected by the community.
- **Core Values:** Pragmatism & Innovation, Commitment to Excellence, Customer-oriented, Responsible Care, Gratefulness & Dedication, Teamwork.



REGIONAL IMPACT

Wanhua Chemical has had a positive impact on the local community and economy. It has employed 10,660 people in Yantai, Ningbo, Beijing, Guangdong and other regions, paying RMB 7.65 billion in taxes on its own initiative.



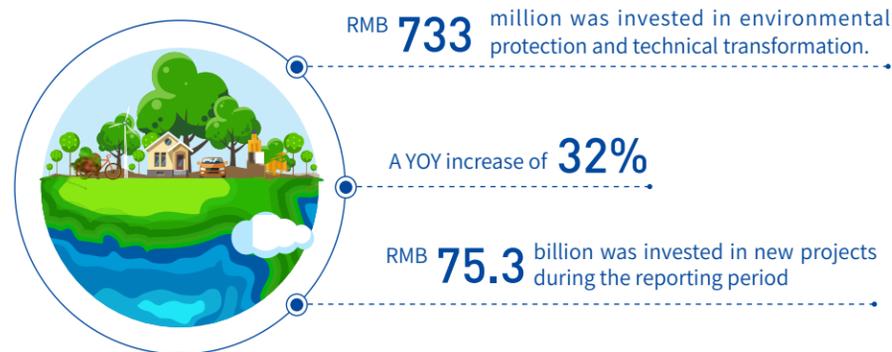
Operating Income (RMB 100 million)



Net Profit (RMB 100 million)



In 2018, the Company vigorously carried out investment in environmental protection and technical transformation in response to the national call for blue skies and clear water, with a total investment of RMB 733 million, a year-on-year increase of 32%. In addition, the Company invested RMB 7.53 billion in new projects during the reporting period, mainly including projects under construction.



| Economic Expenditures During the Past Three Years | 2016 | 2017 | 2018 |
|---|-----------------|-----------------|------------------|
| Environmental protection | RMB 130 million | RMB 310 million | RMB 4.0 million |
| Technical transformation | RMB 240 million | RMB 250 million | RMB 3.4 million |
| Project investment | RMB 3.4 billion | RMB 4.4 billion | RMB 7.53 billion |

WANHUA TIMELINE

- 2018.01 • PC Phase I Project was successfully put into operation
- Won the Special Contribution Award for IAESTE Intern Exchange
- 2018.04 • Continuous VOC removal plant successfully finished commissioning
- 2018.06 • President Xi Jinping visited Wanhua
- 2018.07 • Opening Ceremony held for launch of Formaldehyde-free Wood-based Panel Research Institute
- Listed into the ranking of Global Top 50 chemical companies
- 2018.08 • Partnered with Alibaba to create a new future for digital procurement
- Wanhua Chemical's Major Asset Restructuring Project was implemented successfully
- 2018.09 • Solventless aluminum-plastic cooking compound adhesive was successfully launched on the market
- Won the silver medal awarded by EcoVadis
- Rated as Baa by Fitch in 2019
- Moody announced the upgrading of Wanhua Chemical's international credit rating to Baa2
- Listed on C&EN's annual ranking of Global Top 50 chemical companies, and ChemicalWeek's Billion-Dollar Club, and was named an ICIS Annual Enterprise
- 2019.04 • Won the "Taozhu Gong Awards (2019)" issued by EuroFinance
- 2019.08 • Joined the UNGlobalCompact to create a model of the sustainable development industry



President Xi Jinping visited Wanhua



Wanhua Chemical's Major Asset Restructuring Project was implemented successfully



Listed on the ranking of Global Top 50 chemical companies



Won the silver medal awarded by EcoVadis



Wanhua joined the UNGlobalCompact To create a model of the sustainable development industry



Responsibility for Compliance

WANHUA' S RESPONSIBILITY FOR COMPLIANCE OPERATIONS

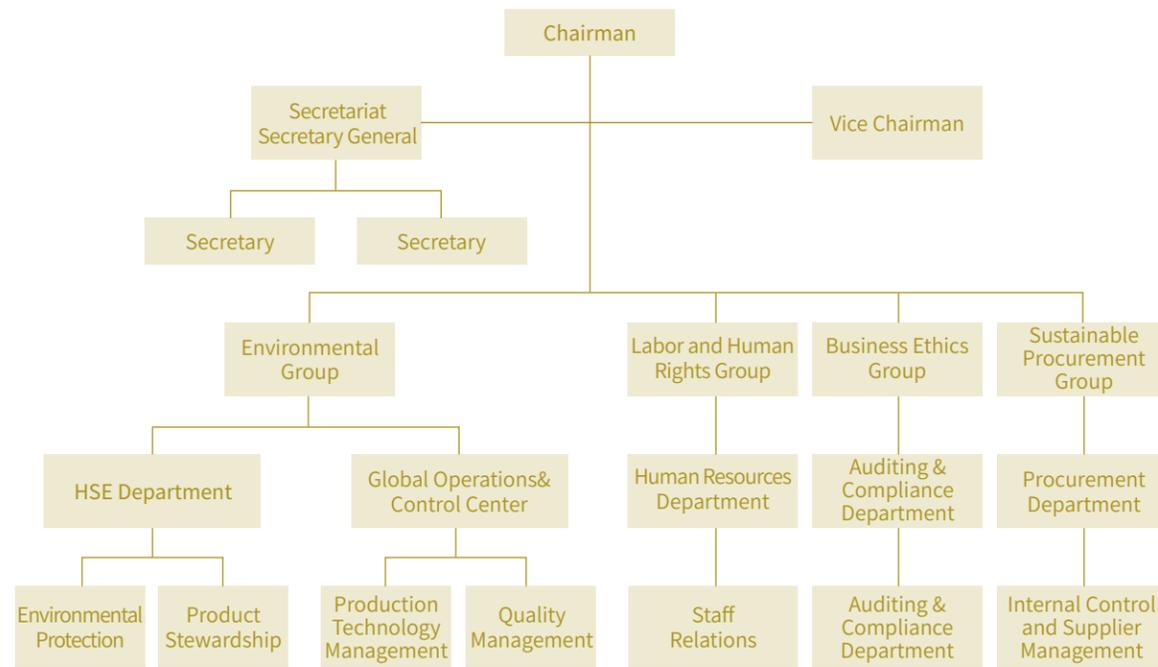
| | |
|--|----|
| Responsibility for Governance..... | 17 |
| Participation of Stakeholders | 17 |
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As the world's leading chemical producer, Wanhua's Board of Directors attaches importance to the balanced development of economy, environment, and society, as well as sustainable development. In 2018, Wanhua established the Sustainable Development Committee. With the authorization of the Board of Directors, the Sustainable Development Committee formulated Wanhua Chemical's sustainable development policy, established the Company's sustainable development goals and formulated the Company's sustainable development strategy.

Wanhua Sustainable Development Committee decided to join in the Tfs Initiative and attend the social responsibility assessment of Ecovidas every year to join customers, suppliers, and other stakeholders in committing to sustainable development.

RESPONSIBILITY FOR GOVERNANCE

The Sustainable Development Commission has set up working groups focusing on the environment, labor and human rights, business ethics, and sustainable procurement. Based on the policies, goals, and strategies issued by the Sustainable Development Commission, all working groups formulated detailed road maps and implementation methods for sustainable development within their respective areas of responsibility.



Sustainable Development Commission Framework

PARTICIPATION OF STAKEHOLDERS

Wanhua Chemical's stakeholders include customers, supplies, shareholders and investors, staff, governments and regulators (including exchanges), the general public, surrounding communities, scientific research institutions, and industry associations. We communicate with those stakeholders regularly or irregularly through a variety of channels to capture their concerns and establish and implement our sustainable development solutions accurately and rationally. Interaction with industry associations also brings us valuable information.

Communication and Response to Key Stakeholders

| Stakeholders | Topics of Concern | Communication Channels and Frequency |
|--|--|---|
|  Customers (Including the assessment requirements for Tfs and EcoVadis) | Customer relations Compliance operation Product safety | Annual customer satisfaction survey Annual audit and assessment |
|  Suppliers | Procurement practices Economic impact Supply chain management | Annual supplier conference |
|  Shareholders and Investors | Economic performance Compliance operation | General Meeting of Shareholders Annual financial report |
|  Staff | Economic performance Occupational health Employment relationship Training and development | Staff representative meetings Coffee time Team-building activities Annual Family Day |
|  Governments and Regulators (including exchanges) | Local communities Compliance operation Materials | Sustainable Development Report Regular reports |
|  General Public | Waste discharge Product safety | Annual Sustainable Development Report |
|  Surrounding Communities | Local communities Waste discharge | Community co-development activities Walk into Wanhua |
|  Scientific Research Institutions | Product safety | Annual School-enterprise Co-construction Forum Global Conference on Process Safety |
|  Industry Associations | Compliance operation Economic performance | Participation in industry association meetings Participation in formulation of standards |

As of the end of 2018, the Company has joined more than 48 associations, some of which are listed in the table below:

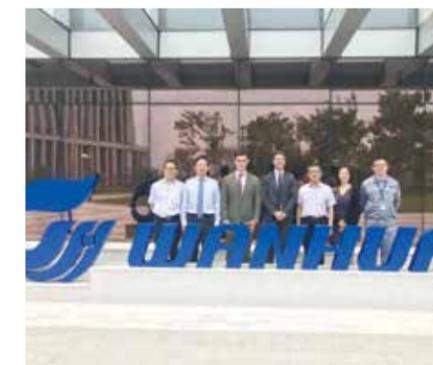
Major industry associations Wanhua has joined (This list does not follow a particular order)

| Associations Wanhua has Joined | Status |
|---|--|
| Anti-malpractice Alliance | Governing unit and convener of Wanhua Shandong |
| National Enterprise Compliance Committee of China Council for the Promotion of International Trade | Governing unit |
| China Polyurethane Industry Association | Sponsor |
| Association III (International Isocyanate Association) | Member of the Board of Directors |
| Coordinating Committee for Settlement of International Trade Disputes, China Petrochemical Federation | Member |
| China Hazardous Chemicals Logistics Branch | Director |
| Waterproof Coating Technology Branch of China National Building Waterproof Association | Member |
| Adhesive Industry Association | Member |
| ASPIA (Asian SAP Association) | Member |
| American Coatings Association (ACA) | Member |
| China Paint Industry Association | Member |
| Epoxy Resin Application Association | Member |
| China Automobile Painting Association | Member |
| China Automotive Surface Material Technology Innovation Alliance | Member |
| China Association of Fragrance Flavor and Cosmetic Industries | Member |
| International Federation of Essential Oils and Aroma Trade (IFEAT) | Member |
| Asian Clean Fuels Association | Member |
| China Cleaning Industry Association | Member |
| RadTech China | Member |

In order to accurately determine the material topics contained in this document and accurately formulate the sustainable development strategy for the next cycle, we have carried out special research on stakeholders. From December 2018 to May 2019, we designed questionnaires A and B, formulated a detailed investigation plan, conducted detailed investigations among internal and external stakeholders, and collected 114 valid questionnaires from different stakeholders, thus fully understanding the sustainable development topics which concern various stakeholders.



Zheng Shanjie, Deputy Secretary of Zhejiang Provincial Party Committee and Secretary of Ningbo Municipal Party Committee, Visited Wanhua Ningbo to Investigate and Inspect Work Safety



Mr. Mate Imre PESTI, Ambassador of Hungary to China, Peter Tabuns, Commercial Counsellor, and Their Delegation Visited Wanhua Yantai Industrial Park for Exchange



Rustam Minnikhanov, President of Tatarstan Republic, Russia, Visited Wanhua Yantai Industrial Park for Exchange



Wanhua Attended the 17th National Congress of Chinese Trade Union as a Delegate



Wanhua Chemical Attended Global Conference on Process Safety

CONFIRMATION OF MATERIAL TOPICS

Based on daily communications with stakeholders and the results of a specialized survey of stakeholders, we analyzed the economic, environmental, and social topics closely related to Wanhua Chemical's sustainable development from two dimensions, such as "importance to stakeholder decision-making" and "importance to economic, environmental, and social impact". Those material topics are the core of the development strategy formulated by Wanhua Chemical's Sustainable Development Committee and are also important content in this Report.

We held discussions and investigations on 21 sustainable development topics: product safety, waste discharge, economic impact, compliance operations, occupational health and safety, economic performance, employment relationships, local communities, energy resources, customer relations, anti-corruption, intellectual property protection and technological innovation, training and development, information security, supply chain management, materials, legal employment, climate change, procurement practices, diversity and equal opportunity, and environmental compliance.

| No. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 |
|--|----------------------|-----------------|---------------------------------|----------------------|-----------------|-----------|------------------|----------------|-----------------|--------------------------|-----------------------|-------------------------|-------------------------|--------------------------------|--------------------------|------------------|-------------------|----------------|----------------------|--------------------|---|
| Material topics on sustainable development | Economic performance | Economic impact | Diversity and equal opportunity | Compliance operation | Anti-corruption | Materials | Energy resources | Climate change | Waste discharge | Environmental compliance | Procurement practices | Supply chain management | Employment relationship | Occupational health and safety | Training and development | Legal employment | Local communities | Product safety | Information security | Customer relations | Intellectual property protection and technological innovation |

Analysis of Material Topics



Based on the above analysis, we have identified the recent material topics related to the sustainable development of Wanhua Chemical.

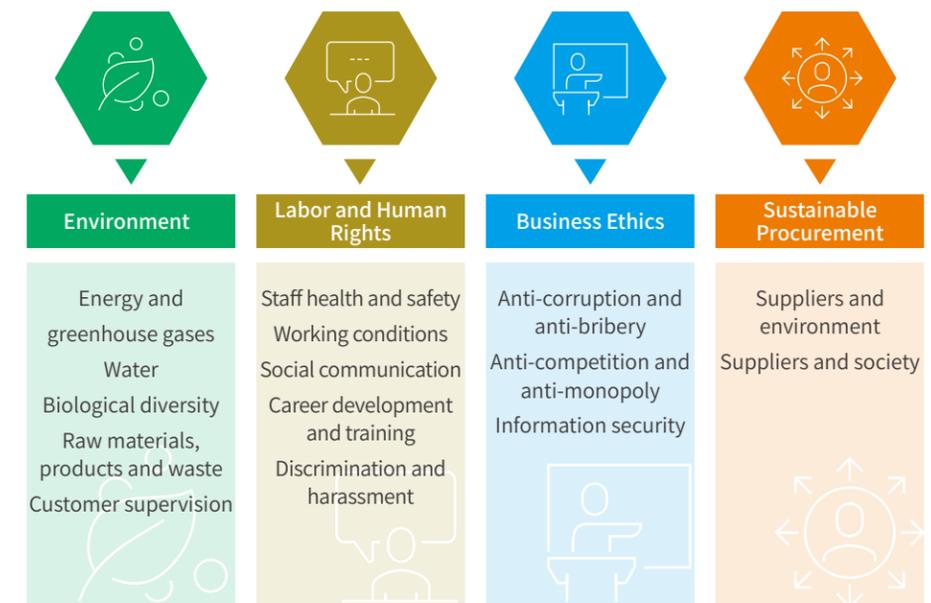
List of Material Topics

| No. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 |
|--|----------------------|-----------------|---------------------------------|----------------------|-----------------|-----------|------------------|----------------|-----------------|--------------------------|-----------------------|-------------------------|-------------------------|--------------------------------|--------------------------|------------------|-------------------|----------------|----------------------|--------------------|---|
| Material topics on sustainable development | Economic performance | Economic impact | Diversity and equal opportunity | Compliance operation | Anti-corruption | Materials | Energy resources | Climate change | Waste discharge | Environmental compliance | Procurement practices | Supply chain management | Employment relationship | Occupational health and safety | Training and development | Legal employment | Local communities | Product safety | Information security | Customer relations | Intellectual property protection and technological innovation |

SUSTAINABLE DEVELOPMENT MANAGEMENT SYSTEM

Based on the participation of stakeholders and the analysis results of material topics, the Sustainable Development Committee of Wanhua Chemical has identified the core content of the recent sustainable development management system.

Core Content of the Sustainable Development Management System



In active response to the planning and call of 2030 Agenda for Sustainable Development and Guidelines for Corporate Action for SDGs (UN Sustainable Development Goals) and in consideration of the Company's overall development strategy, we analyzed the value chain and mapped it with 17 sustainable development goals, thus determining the Company's medium-and long-term actions for sustainable development and the sustainable development goals for 2025.

Road Map for Action on Sustainable Development

| Goals | 2019-2020 | 2023 | 2025 |
|--|---|--|---|
| Overall Strategy for Sustainable Development | Carry out training for all staff to improve their overall consciousness level of sustainable development. Establish the road map for sustainable development for 2025 and determine the sustainable development goals of 2025 based on environment, labor and human rights, and business ethics. | Establish a systematic sustainable development management system based on ISO26000 with respect to three core topics such as the environment, labor and human rights, and business ethics. | Greatly improve the performance of the sustainable development management system and reach the advanced level of international counterparts. |
| Sustainable Procurement Management | Increase the requirements for supplier social responsibility based on TFS and EcoVadis. Establish a sustainable procurement system and determine the composition of sustainable procurement KPI. Build a framework for sustainable supply chain management system. | Improve the sustainable supply chain management system in China. Implement the supplier auditing system. | Achieve a unified global supply chain management system. |
| Energy Management and Climate Change | Establish an energy management system based on ISO50001. Establish a tracking mechanism for carbon footprint and water resources. | Achieve a mature system management level in energy, carbon emissions and water resources and release management reports on a regular basis. | Achieve the industry leading level in resource consumption intensity and carbon emissions intensity. |
| Performance in Environmental Protection Management | Import environmental risk management model. Import supply chain environmental performance management. | Constantly reduce pollutant emission concentration and intensity. Improve supply chain environmental protection performance. | Achieve international leading level in emission indexes. |
| Business Ethics | Improve the Company's business ethics system according to the regulator's requirements for internal control and risk control and the assessment standards of TFS and EcoVadis. Import ISO19600 and ISO37001, and build the framework of the Company's compliance management system. | Complete the process of establishing the compliance management system and obtain an authentication certificate. | Constantly improve performance of the compliance management system. Establish an information-based compliance management system. |
| Labor and Human Rights | Improve the existing labor and human rights system with reference to the assessment standards of TFS and EcoVadis. | Establish a globalized labor and human rights policy. | Achieve industry-leading level in globalized labor and human rights policy. Establish an international leading team consisting of technical and management talents. |

Mapping Analysis on Wanhua Chemical Value Chain and UN SDGs

| | Supply chain | Product development | Production and operation | Storage and transportation of finished products | Marketing | After-sales service |
|---|--------------|---------------------|--------------------------|---|-----------|---------------------|
| 1 NO POVERTY | ● | | ● | | ● | |
| 2 ZERO HUNGER | | | ● | | | |
| 3 GOOD HEALTH AND WELL-BEING | ● | ● | ● | ● | ● | |
| 4 QUALITY EDUCATION | | | ● | | | |
| 5 GENDER EQUALITY | | | ● | | ● | |
| 6 CLEAN WATER AND SANITATION | ● | ● | ● | ● | ● | |
| 7 AFFORDABLE AND CLEAN ENERGY | ● | ● | ● | ● | | |
| 8 DECENT WORK AND ECONOMIC GROWTH | | ● | ● | ● | | |
| 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE | | ● | ● | | | |
| 10 REDUCED INEQUALITIES | ● | | | | ● | ● |
| 11 SUSTAINABLE CITIES AND COMMUNITIES | | ● | ● | ● | | |
| 12 RESPONSIBLE CONSUMPTION AND PRODUCTION | ● | ● | ● | | ● | |
| 13 CLIMATE ACTION | ● | ● | ● | ● | | |
| 14 LIFE BELOW WATER | | ● | ● | ● | | |
| 15 LIFE ON LAND | | ● | ● | ● | | |
| 16 PEACE, JUSTICE AND STRONG INSTITUTIONS | ● | | ● | | | |
| 17 PARTNERSHIPS FOR THE GOALS | ● | | ● | ● | ● | |

COMPLIANCE OPERATIONS

Compliance is the cornerstone of an enterprise's sustainable operation. Wanhua has always adhered to the compliance policy of "prevention, supervision and control, zero tolerance of malpractice, and promotion of corporate compliance management and healthy development", and has systematically implemented compliance management. On the basis of in-depth interpretation of relevant national compliance regulations and requirements (such as Comprehensive Risk Management Guidance for the Central Enterprise and Basic Norms of Enterprise Internal Control) and with reference to advanced compliance management concepts, we have integrated the compliance management functions of Wanhua's Auditing Department and established the Auditing & Compliance Department to standardize compliance management procedures, protect the interests of the Company, and "safeguard" the Company's business development and risk management.

Risk Management

To ensure the implementation of the compliance policy, we have assigned various parts of the compliance policy to various departments and used KPI to assess the completion of compliance goals. We have also established a risk management system based on three lines of defense (prevention and control in business departments, enterprise management departments, and audits) to ensure that risks are controlled from the top level to the grassroots level. At the executive level, we have identified and assessed malpractice risks in internal and external environments and business activities mainly from the two dimensions of risk severity and possibility. To control the identified risks and reduce the probability of risks, we have set up four functional modules (management audit, legal audit, engineering audit, and inspection audit) and established a risk control mode of "prevention in advance, control while in progress, and treatment afterwards".

One moment of negligence can inflict enormous damage. Our top priority is risk prevention. Wanhua has conducted risk assessment on all subsidiaries. Based on Wanhua's risk matrix, the Auditing Department identified a total of 14 high risk points related to the business and established corresponding control measures. Wanhua has also set up various internal and external channels to identify and capture problems, and organized specialized persons to carry out incident acceptance, investigation, reporting and feedback, analyze the cause of problems, and correct loopholes in the management system where necessary, thus constantly improving the management system.

Compliance hotline: +86-535-3388855 (internal telephone connections: 68855)

Compliance e-mail: whlegal@whchem.com

Anti-malpractice hotline and report hotline: +86-535-8203820 (internal telephone connections: 63820)

Report e-mail: whjc@whchem.com

We are able to promptly investigate and address information regarding corruption that is collected during the reporting period, and ensure that such issues are fully dealt with.

During the reporting period, Wanhua has suffered from no judicial proceedings, no unfair competition or industrial monopolies, and no prosecution or administrative punishment.

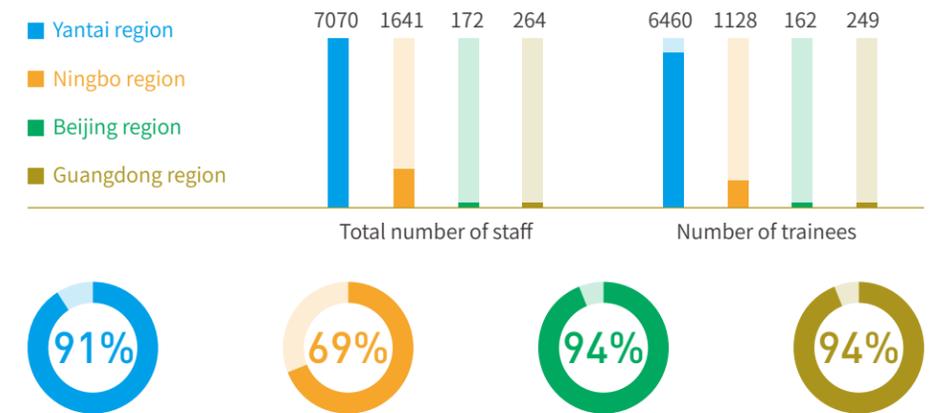
| Compliance Management Target in 2018 | Compliance Management Performance in 2018 |
|--|---|
| The anti-malpractice training was 100% completed, and irregular training was added according to demands. | Risk training has been completed for the Engineering Audit Department and external auditors. |
| Reporting was 100% implemented. | The reporting was followed up with as planned. |
| All identified problems were dealt with. | 100% of reporting was completed. |
| The signed letter of integrity commitment was hung in all offices. | The signed letter of integrity commitment has been hung at the office in the front area of the industrial park. |

Compliance Management and Education

The establishment and implementation of the system is a prerequisite to achieving risk control. At the group level, we have formulated a series of compliance rules & regulations and measures, such as the Wanhua Chemical Anti-Malpractice Management System, Supplier Visit System and Process, Wanhua Chemical Anti-Monopoly Compliance Management System, as well as supporting special rules and documents including the Wanhua Chemical Compliance Manual -Anti-Monopoly Compliance, Interbank Business Guideline and Archived Guideline for Communication with Competitors, etc., to manage the compliance risks of the Group and its ownership companies and build compliance culture throughout the Group with good professional ethics.

To ensure that all internal and external personnel from the top level to the grassroots who affect compliance operation have the necessary awareness and ability, Wanhua has integrated compliance management requirements into our training system. Various audit functional departments of Wanhua have, based on the key points of business links and post risks, led the implementation of corresponding training in various forms including awareness publicity such as visits to prison, and training on post operation requirements such as management of bidding and tendering, etc., thus fulfilling different training needs. All members of the governing bodies have already undergone anti-corruption training, and all bidders and suppliers have signed a letter of integrity commitment, gradually enacting anti-bribery training for all staff.

Staff Training on Anti-Bribery in 2018



To learn and acquire experience in business ethics development from excellent domestic enterprises, Wanhua joined the Anti-malpractice Alliance of Chinese Enterprises in 2018. During communication and exchange with other members, Wanhua also disclosed its own compliance auditing model while absorbing experience and methods such as prevention and investigation of business ethics malpractice incidents. As the convener of the Anti-malpractice Alliance of Chinese Enterprises in Shandong, Wanhua has actively encouraged its business partners to join the Alliance, including LOVOL, so that they can also benefit from the practical experience.





Technological Innovation

**WANHUA' S TECHNOLOGY IS
EXCELLENT AND INNOVATIVE**



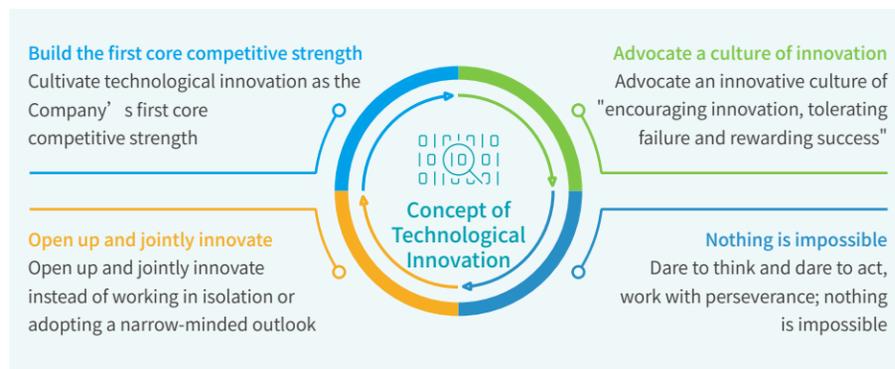
Technological Innovation36

Intellectual Property Protection .41

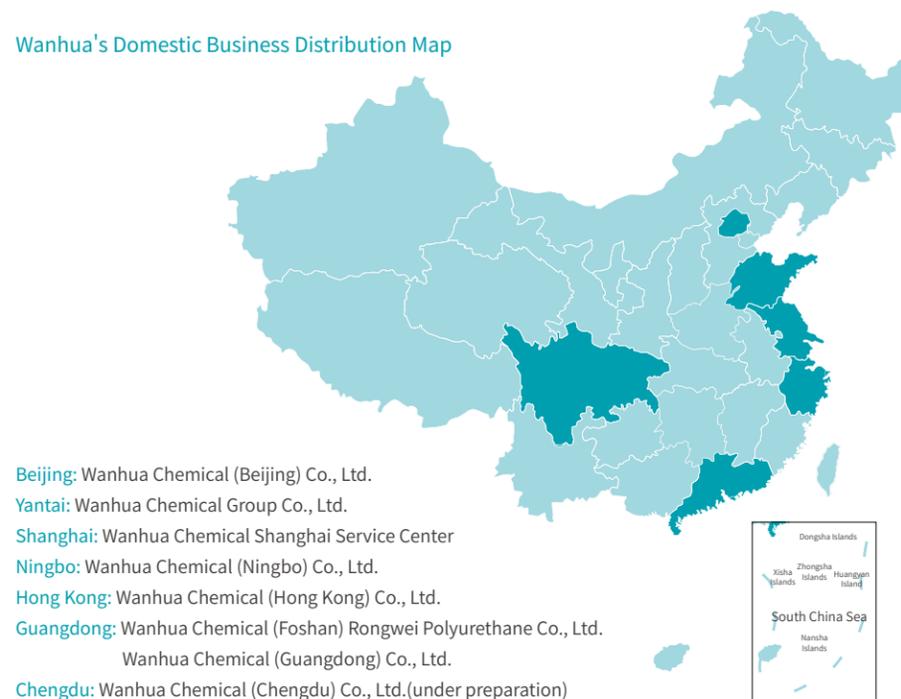
Technological innovation is cultivated as the first core competitive strength of Wanhua. By adhering to the concept of systematic innovation, Wanhua has created an innovation system to stimulate technological, management and cultural innovation. By relying on technological innovation, Wanhua has developed from a factory with an annual production of 10,000 tons of MDI into one of the world's largest suppliers of chemical raw materials and new materials. With a goal of achieving high-quality development by deepening reform and innovation, Wanhua will continue to draw on the advanced experience of international counterparts and aim for higher ground.

TECHNOLOGICAL INNOVATION

In terms of R&D, Wanhua has developed more new products of social value and pushed industry development towards high quality by adhering to the concept of "Advancing Chemistry, Transforming Lives" and insisting on independent innovation. At present, Wanhua Chemical has built R&D centers in Yantai, Beijing, Ningbo and Zhuhai, as well as the United States, and Hungary, achieving a global layout of "innovating Wanhua". It operates a technological innovation organization that integrates basic research, process development, engineering development, and product application in R&D.



Wanhua's Domestic Business Distribution Map



Wanhua's Global Business Distribution Map



In recent years, Wanhua has invested more than RMB 1.2 billion in R&D every year. In 2018, Wanhua invested RMB 1.61 billion in R&D. Sustained high-intensity investment in R&D has become one of the driving forces for Wanhua's rapid and steady growth in business performance.

At present, Wanhua Chemical employs about 1,800 scientific researchers, including more than 110 scientific researchers who hold Doctorate degrees, and more than 640 scientific researchers who hold Master's degrees. It also employs more than 150 senior technical personnel.



| Specialized R&D Institutions | R&D Platform |
|---|---|
| <ul style="list-style-type: none"> Global R&D Center of Wanhua Chemical Group Institute of High Performance Materials Institute of Polyurethane Application Chemical Design Institute North American Technology Center European Goodale Technology Center | <ul style="list-style-type: none"> National Polyurethane Engineering Technology Research Center National Engineering Laboratory of Polymer Surface Material Preparation Technology State Accredited Enterprise Technical Center Postdoctoral Scientific Research Work Station Academician Workstations (2) State Accredited Analysis Laboratories (4) Provincial and Industrial Engineering (Technology) Centers Key Laboratories (5) |



Product Innovation Case

New Chain Extender Product for Running Tracks:

In pursuit of independent innovation and to lead the running track industry to develop in a safer and more environmentally friendly direction, Wanhua Special Amine Industry Chain utilized hindered amine technology to independently developed WANALINK®1104, a safe, environmental-friendly and non-carcinogenic chain extender product for running tracks. This product has passed the specimen test of many downstream customers in Northern China, Eastern China and Southern China, and received unanimous praise for its excellent application performance and chemical characteristics.



Technological Innovation Case

In 2018, Wanhua made several remarkable achievements in independent intellectual property rights, including the successful commissioning of an independently-developed phosgene-based PC plant. The Company achieved new breakthroughs in MDI's seventh-generation reaction technology, and successfully commissioned independently-developed C4 MMA, PMMA, TBA dehydration, CWAQ, and three catalyst production lines and other industrial plants. Wanhua successfully developed the complete technology used to prepare propylene oxide in a highly-efficient and environmental-friendly manner based on ethylbenzene co-oxidation, which has reached an internationally leading level following approval by the identification committee. Wanhua's "technology for preparing neopentyl glycol based on condensation hydrogenation" won the First Prize of 2018 Science and Technology Progress in Shandong Province; the "key resin for water-based surface material and its application solution" won the First Prize of 2018 Science and Technology Progress awarded by the China Petroleum and Chemical Industry Federation, and the architectural coating series "water-based acrylic copolymer emulsion - Archsol®8087" won the "2018 Coating Industry - Ringier Technology Innovation Award".

CASE Commissioning of multiple independent innovation plants



Six production lines of TPU Phase II Project simultaneously commissioned



Seven production lines of the new material polyester polyol plant project Phase II were successfully put into operation, and the denitrification system successfully commissioned



Ningbo continuous VOC removal plant successfully commissioned



POSM pilot plant successfully commissioned



TBA dehydration plant successfully commissioned and formally put into operation



CWAO industrialized plant successfully commissioned

CASE Commissioning of multiple independent innovation plants



XDI pilot plant successfully commissioned and produced qualified products



MMA plant successfully commissioned and produced qualified products



Yantai water-based plant successfully commissioned



TDI plant successfully commissioned and produced qualified products



PMMA plant successfully commissioned and produced qualified products

INTELLECTUAL PROPERTY PROTECTION

To protect the Company's intellectual property rights, Wanhua has established a Security and Information Security Committee and formulated the Security Management System of Wanhua Chemical Group Co., Ltd. to carry out management of confidential information, personnel who deal with confidential information, activities and areas related to confidential information, information-based security, security auditing, and reporting and investigation of risks and incidents in breach of confidence.

In addition, Wanhua has also actively promoted social respect for intellectual property rights through the protection of intellectual property rights in the value chain.



Safety Precaution

WANHUA' S SAFETY STANDARDS CREATE A HARMONIOUS HOME

| | |
|---|----|
| Occupational health and safety .. | 46 |
| Process safety..... | 49 |
| Product regulation | 50 |
| Logistics safety | 51 |
| Emergency Management and Fire Safety Construction..... | 58 |

By constantly absorbing and innovating safety management concepts and methods for the HSE management system, introducing and drawing lessons from HSE management experience of major international companies such as DuPont, BP, General Motors, etc., and in consideration of the Company's realities, Wanhua Chemical has developed Wanhua's ten safety principals, Wanhua's ten infrangible rules, a regional safety accountability system, full participation and other HSE management practices, and established the HSE management system which includes 15 core elements and pursues "zero injuries, zero accidents, and zero emissions" in order to guide and standardize the daily behaviors of staff, thus continuously improving staff awareness.



Responsibility care is one of the most basic value criteria and codes of conduct for Wanhua. Our HSE management system covers a complete responsibility care system that includes 15 core elements, 63 sub-elements, and 278 specific requirements.



HSE Management System Framework



Core Elements of HSE Management System



- | | | |
|--|------------------------------|--|
| 1. Leader commitment and total involvement | 6. Work permit | 11. Traffic safety |
| 2. Risk management | 7. Change management | 12. Public safety |
| 3. Procedures, systems and standards | 8. Product supervision | 13. Community awareness and emergency response |
| 4. Factory facilities | 9. Occupational health | 14. Accident management |
| 5. Training | 10. Environmental management | 15. Assessment and improvement |

In 2018 Wanhua focused on deepening its safety management by pursuing the two objectives of "deepening the design and management of intrinsic safety, and deepening the management of process and labor discipline". We have carried out safety management in accordance with the principles of "emphasizing the key components of intrinsic safety, emphasizing the planning of top-level design, and emphasizing the implementation of the process system".

Management During the Year of Deepening Safety Management





Results achieved

- Trained 56 personnel in process safety and process control, with a total of 1624 trained;
- Perfected the safety management procedures and relevant guidelines for the functions of the safety instrument system;
- Organized the preparation of documents such as *Guidelines for Intrinsic Safety Design*, *Guidelines for Minimizing the Stock of Hazardous Chemicals*, and *Guidelines for Assessment of Reaction Hazards*;
- The annual accident rate of process safety **dropped to 0.003**.

The safety management target for 2018 was a major accident rate of 0. By December 31, 2018, the actual annual safety accident rate was 0.2, the actual major accident rate was 0, the safe driving distance of an automobile was 123 million km, and the safe driving distance of a ship was 3.28 million nautical miles, and the Company was once again awarded the "Social Responsibility Contribution Award" by the China Federation of Logistics Certification Center.

OCCUPATIONAL HEALTH AND SAFETY

Wanhua's HSE management system has passed the ISO45001 certification review for occupational health and safety. Based on the occupational health and safety management manual and corresponding management strategies, we strive to achieve zero injuries, zero accidents, and zero emissions. Wanhua has established an Occupational Health and Safety Committee with representatives from all departments participating.

All new staff need to receive three-level safety education and training, and receive regular training every year. The minimum training time for each staff is 20 hours per year. During 2018, Wanhua made an effort to deepen our safety management by implementing the "dual system construction" of risk classification control and hidden hazard investigation and management. We also conducted safety awareness and safety ability training in multiple dimensions around the occupational health and safety management system, including safety skill series training, risk classification identification, hidden hazard investigation and management training, etc.

Wanhua regularly carries out occupational health and safety management inspections focusing on risk control, system construction, capability improvement, HSE comprehensive information and platform construction, and indicators of occupational health and safety department of the sustainable development system, including management system auditing, daily inspection and regular safety performance indicator (KPI) assessment.

Chen Yifeng, Vice President of Wanhua Chemical Group Co., Ltd.,
Lecture on How to Establish Excellent Safety Leadership



Due to the toxic and harmful factors in the raw materials needed for production and the production environment, Wanhua has taken a variety of measures from the beginning of design, such as closed operation to keep hazards at a minimum, and installing appropriate and effective

ventilation and dust removal systems in production workplaces. Wanhua regularly carries out occupational hazard factor detection in the workplace and communicates results to staff.

Wanhua also provides all staff exposed to occupational hazards with appropriate personal protective equipment, free of charge, and promptly replaces equipment. Wanhua ensures that all staff work in clean, hygienic, and safe workplaces.

2025 PLAN

| Planning Safety Management Objectives in 2025 | Safety Management Performance in 2018 |
|---|---------------------------------------|
| Number of major accidents: 0 | 0 |
| Leaving rate of work injury: less than 0.04 | 0.032 |
| Recordable injury rate: less than 0.1 | 0.038 |

Note 1: leaving rate of work injury = number of work injury leaving cases/total labor hours *200,000

Note 2: recordable injury rate = number of recordable injury cases/production man-hour *200,000

The HSE department organizes safety emergency drills every year to ensure that all staff have the necessary emergency handling capacity. There are no emergencies during the reporting period. As for important health and safety topics, Wanhua will adopt the democratic resolutions of the workers' congress to protect our employees' right to know and participate in decision-making. During the reporting period, all staff signed collective bargaining agreements, which covered topics such as special protection for female staff and occupational health and safety protection for workers.



Yantai Production Base Joins Traffic Police Force of Yantai Development Zone to Hold "Volunteers for Traffic Safety Day" Activity



Yantai Production Base Joins Traffic Police Force of Yantai Development Zone to Hold "Volunteers for Traffic Safety Day" Activity



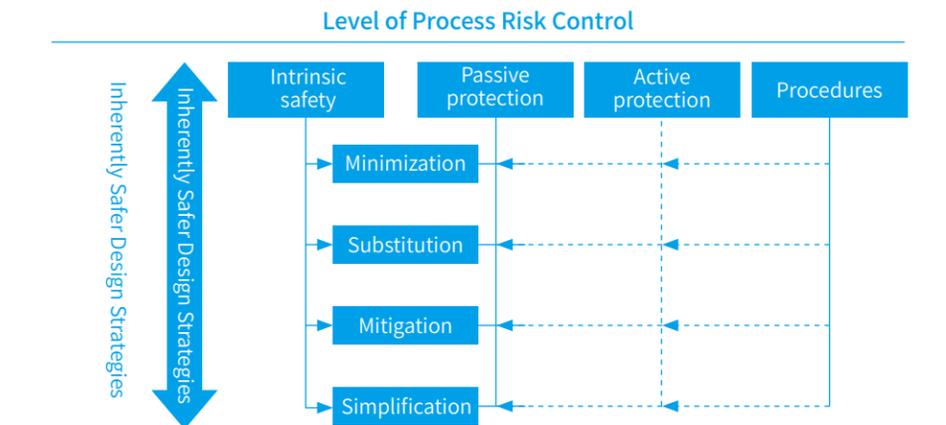
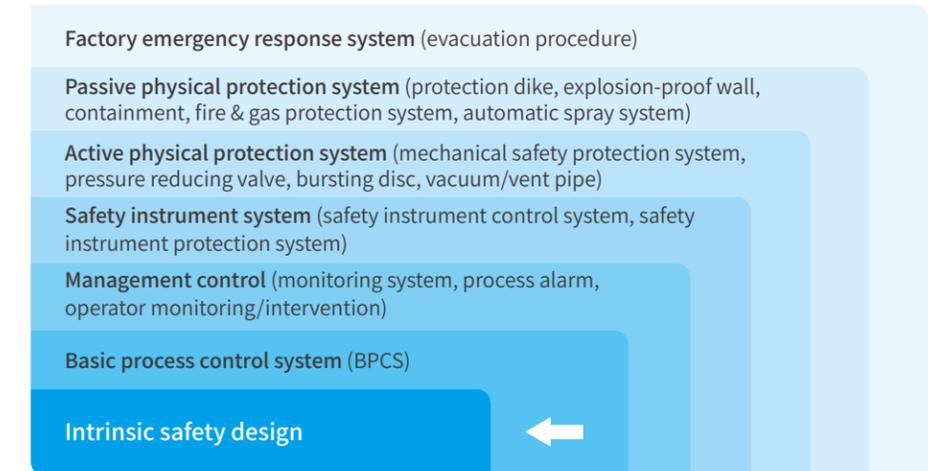
Advancing chemistry, transforming lives 43 Wanhua Chemical Launches "Life First, Safe Development" Keynote Speech Contest During Chemical Safety Month



PROCESS SAFETY

Investment in new materials, new processes, new devices, and new projects will increase safety risks. Intrinsic safety is for a crucial part of Wanhua's effective safety management and minimization of safety risks.

| | | |
|-----------|--|---------------------------------------|
| 2025 PLAN | Safety management objectives | Safety management performance in 2018 |
| | Accident rate of process safety of 0.1 | 0.032 |



The focus of intrinsic safety work in 2018 included carrying out intrinsic safety research and risk assessment, optimizing production automation control system, and achieving intrinsic safety of design and process. The Company has conducted process safety research with the help of internal professional teams and external consulting agencies, and established process hazard analysis (PHA) management, functional safety instrument management, and safety life cycle management by drawing lessons from the best practices, and the technical norms and standards of international first-class chemical companies, to identify and control risks in different levels. We have completed the upgrading of the information level and the improvement of the full life cycle management process of functional safety instruments. The new management system adopts advanced equipment monitoring systems to implement preventive management of key electromechanical instrument equipment and facilities that enhance intrinsic safety and address issues before they develop. The Company has established a scientific automatic full life cycle management system, which can ensure the complete functionality of the automation system and instrument safety facilities from conceptual design, process package design, detailed

engineering design, and project construction to production, operation, and maintenance. Our automation level has also achieved the world-class chemical industry level. After optimization, the production device has achieved active monitoring, automatic control, and automatic closed sampling. The automatic control rate has increased from 90% to 98.3%, and the alarm rate has decreased from 25 times/person/h to 5 times/person/h, which has also greatly improved labor production efficiency. During the reporting period, five advanced process control (APC) projects were completed, saving about RMB 6 million throughout the whole year compared with pre-optimization.

During the reporting period, **five** advanced process control (APC) projects were completed

Saving about RMB **6** million throughout the year

To achieve our goal of intrinsic safety, it is critical that we promote the safety technical ability of our employees. In 2018, the Wanhua began to establish a process safety talent pool, train and recruit professional and technical personnel, improve safety knowledge of existing staff, and improve the risk control ability through the process safety training.

PRODUCT REGULATION

Wanhua's products conform to the relevant regulations for chemical products in the countries or regions that supply the products worldwide. We have achieved product safety compliance in the countries or regions where our products are used, extending throughout the whole process management of the product life cycle.

- ▶ **Design and Development Stage:** confirm product compliance through market access declaration, toxicology test reporting, and other methods. We have also integrated environmental benefits and positive health and safety characteristics into product design, and carried out risk management on products to develop products with lower risks and less environmental and health hazards than products sold in the current market. When the laws and regulations of the destination are changed, Wanhua responds promptly. For example, after the revision of South Korea's K-REACH (The Act on Registration and Evaluation of Chemicals, hereinafter referred to as K-REACH), Wanhua responded positively and completed the pre-registration and registration obligations, and completed the market access process by setting up an Only Representative (OR) locally.
- ▶ **Raw Material Procurement Stage:** We have set up a digital procurement system to clarify the material requirements and ensure the conformity of all batches of materials. The Procurement Department has also established a supplier evaluation mechanism to ensure that the quality, packaging, and transportation of Wanhua's purchased products meet the standards through periodic supplier evaluation and audit. Special compliance assessment shall be carried out for raw materials with purchasing volume exceeding 1 ton/year.
- ▶ **Production Stage:** We have formulated a series of safety and environmental protection measures to reduce the environmental impact and the safety and health impact on production personnel and community residents around the factory caused during the production stage.
- ▶ **Storage, Transportation, Packaging and Distribution Stage:** We have formulated strict safety management procedures for the storage and transportation of products, and implemented classified management for product packaging to ensure the safe delivery of products.
- ▶ **Sales and Use Stage:** All products delivered and used by Wanhua have material safety data sheets and local management codes. We visit customers regularly to provide HSE technical support and solutions.
- ▶ **Reuse and Disposal Stage:** We have adopted advanced disposal, analysis technology and environmental monitoring management system to effectively manage the use of products.



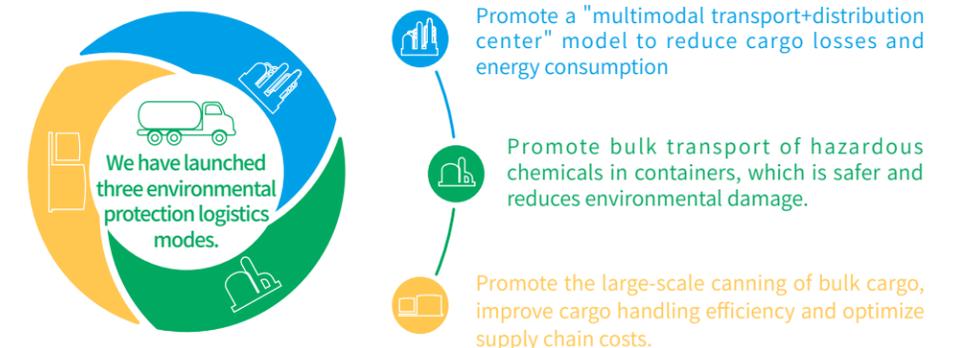
Product Safety Supervision Throughout the Full Life Cycle

2025 PLAN

| Product Regulation Objectives | Product Regulation Performance in 2018 |
|---|--|
| The compliance evaluation rate of products with sales volume exceeding 1 ton/year is 100% | 90% |
| The compliance evaluation rate of products with procurement volume exceeding 1 ton/year is 100% | 90% |

LOGISTICS SAFETY

Wanhua seeks to "ensure logistics safety, meet logistics demands, reduce logistics costs and improve customer satisfaction". We adhere to the principles of "prioritizing safety, environmental protection, and efficiency, and placing customer satisfaction, continuous optimization, and development first". This allows us to implement safety control throughout the entire logistics process.



In 2018, in order to improve our logistics safety management capability and achieve safe transportation, Wanhua continuously pushed the concept of intrinsic safety and carried out research on reaction hazards. Our company strengthened risk control and accident management in transportation links through the use of smart G7 robots and LMS (Logistics Management System), strengthened the safety assessment and safety audit of carriers, and improved the safety capability of carriers.

2025 PLAN

| Planning Logistics Safety Management Objectives in 2025 | Logistics Safety Management Performance in 2018 |
|---|---|
| Accident rate per million kilometers of less than 0.2 | 0.017 |
| Ship accident rate of 0.005 | 0 |

Note 1: accident rate per million kilometers = (passenger car/freight car/construction car) number of traffic accidents/(passenger car/freight car/construction car) mileage *1,000,000.

Note 2: ship accident rate = number of collisions between ship and dock and berthing & unberthing times *1000.

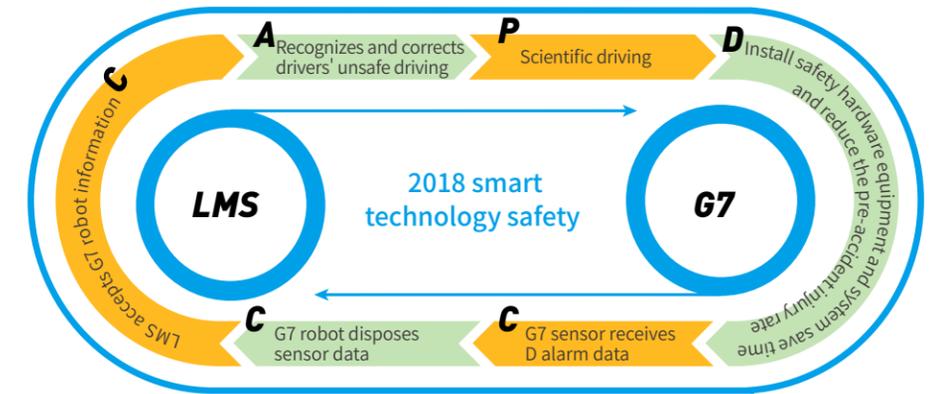
Land Transportation Safety

Wanhua carried out a variety of safety work for auto carriers which addressed the entire logistical life cycle from four aspects: access control, transportation preparation, supervision and implementation, and completion evaluation.

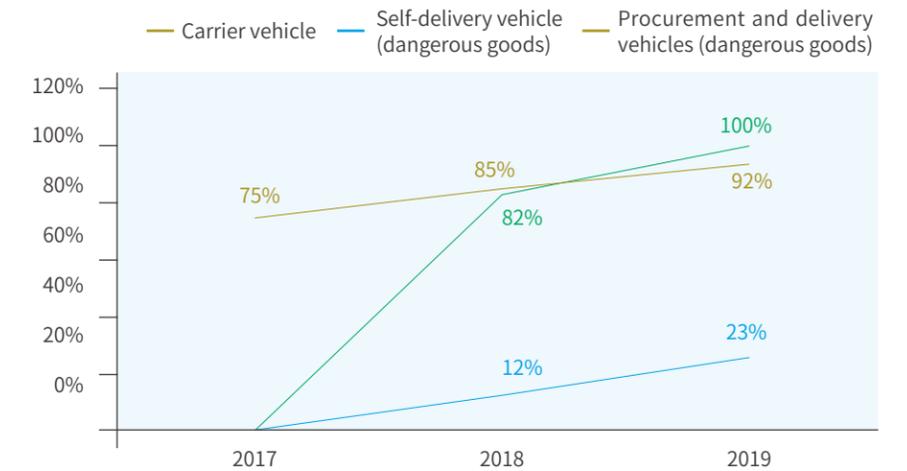
Before transporting our products, Wanhua required carriers to attend safety training after entering the factory and pass an examination. Wanhua conducted individual inspections for each vehicle, provided individual cards for each person, engaged in strict, detailed, and rapid control, and blacklist control for vehicles entering the factory. This ensured that carriers could transport only after they are confirmed to have qualifying certificates, and are not using fraudulent identification or engaging in dangerous driving or other acts. During the process of transportation, we utilize the smart G7+mobieye system to ensure that drivers are not overly fatigued. The system includes an alarm system, reminder rest system, mileage control, humanistic care and other methods. In addition, the ADAS high-risk control and compulsory circuit breaker mechanism reduces in-transit risks. Wanhua's smart management system has enabled us to achieve smart safety assessment and raise the ADAS risk index assessment benchmark year by year. In-transit control has been continuously strengthened to reduce in-transit risks.



Land Transportation Safety Management System

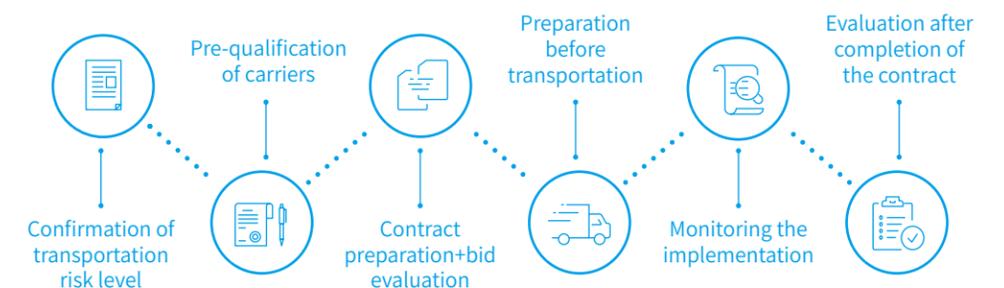


LMS Registration and Management for Land Transportation Vehicles



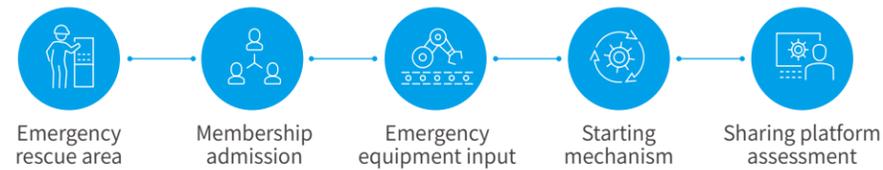
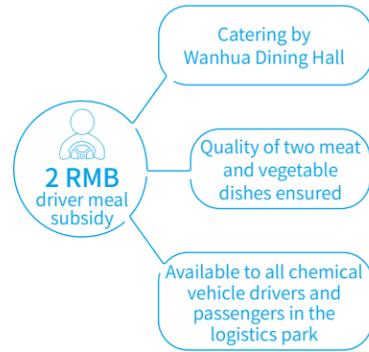
Note: The data for 2019 will end in the first half of 2019.

Wanhua has always attached importance to carrier management and care, and has implemented HSE management throughout the full life cycle for carriers by adhering to the concept of "remaining attentive of carrier performance, helping carriers to improve their performance, and increasing safety investment":



In order to completely eliminate unsafe behaviors of carriers and promote traffic safety, Wanhua subsidizes nearly RMB 20 million in freight charges to carriers every year. Since 2017, Wanhua has increased its investment in logistics safety and responsibility care, equipped over 800 chemical vehicles with advanced driving assistance systems (ADAS), established a compulsory circuit breaker mechanism for smart safety big data and stopped vehicles and personnel, and provided "2 RMB of driver meal subsidy", as well as a lounge, pantry, carrier control room, and other supporting service facilities. We have strengthened our responsibility for the chemical logistics industry, shared practical cases with the China Federation of Logistics and Purchasing, many large chemical industrial parks and chemical manufacturing and logistics enterprises in China, and helped improve the safety of the chemical logistics industry. We have won the "Social Responsibility Contribution Award", the highest enterprise award in the chemical logistics industry for two consecutive years.

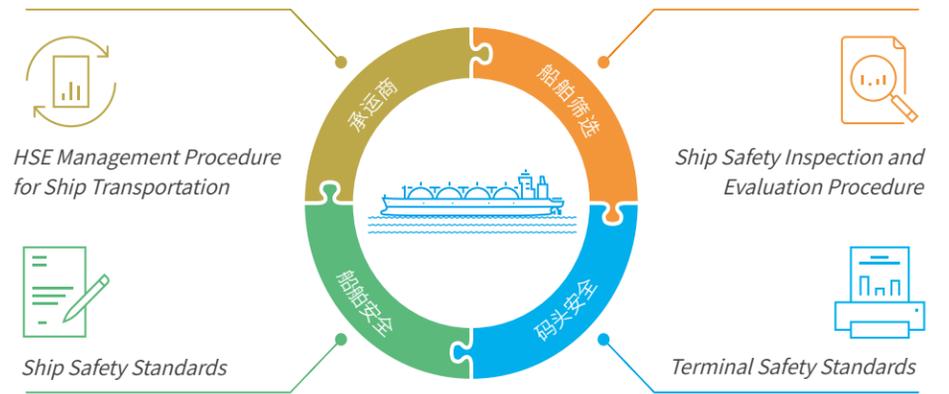
In order to improve emergency response to accidents occurring during the road transport of Wanhua goods, implement enterpriseresponsibility for work safety, minimize accident hazards, reduce the negative impacts of accidents on enterprises and society, and maintain the social image of relevant parties, Wanhua has established a sharing platform for the emergency rescue during the road transportation of goods and a long-term working mechanism for providing emergency rescue assistance. By the end of the reporting period, Wanhua has employed 17 road emergency experts, covering 9 rescue points and 80% of the trunk lines.



Shipping Safety

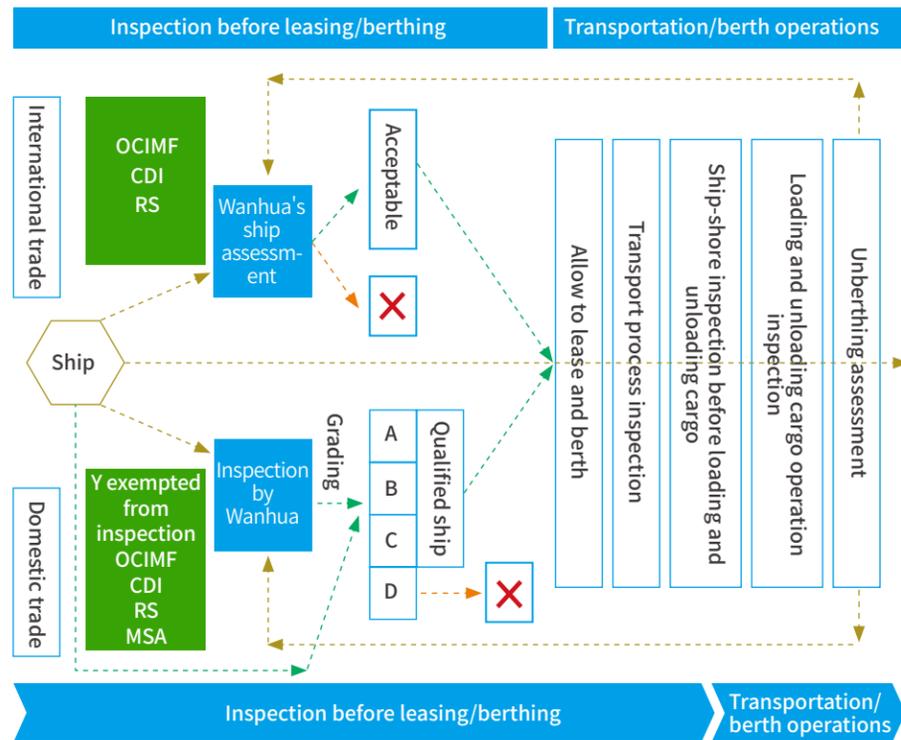
Wanhua has transportation terminals in Yantai and Ningbo. Our HSE management system also covers shipping safety management and manages safety for ship transportation and terminal operation.

The management mode of water transportation safety was established based on industry standards for responsibility care, advanced CDI, and OCIMF. It has combined well with China's national conditions and established differentiated management procedures and methods in practice.

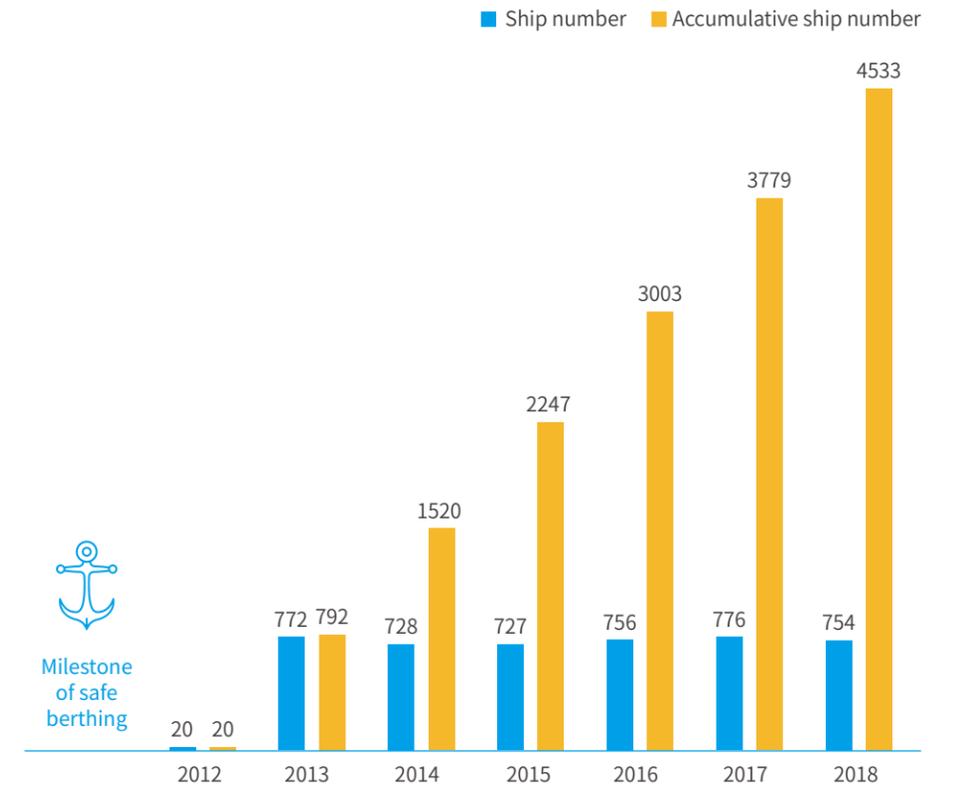
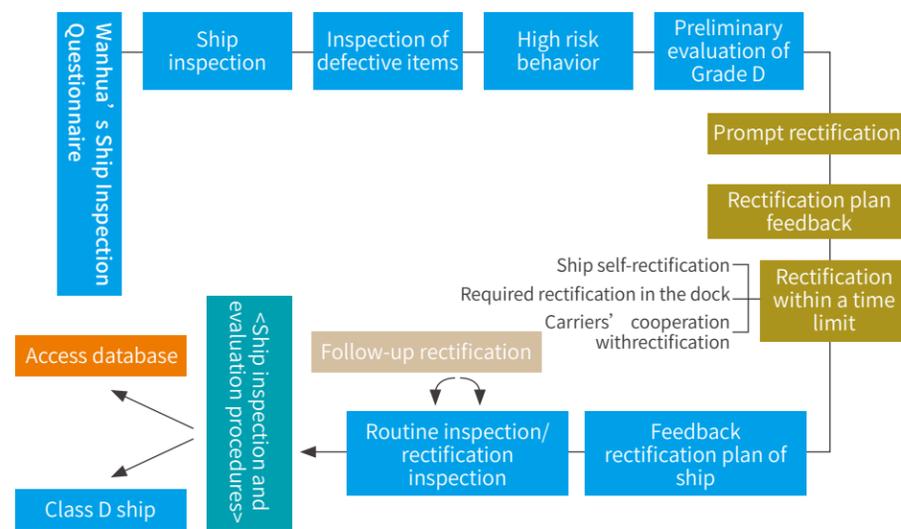


Wanhua has established a ship screening mechanism to screen and classify rented and berthed ships (A, B, C, D). Ships assessed as Class D are not considered for renting and/or berthing; qualified ships will be subject to procedures such as dynamic monitoring of navigation, supervision of terminal operations, and evaluation and improvement. This achieves closed-loop management of shipping safety, ensures Wanhua's shipping safety, and helps carriers improve their safety performance.

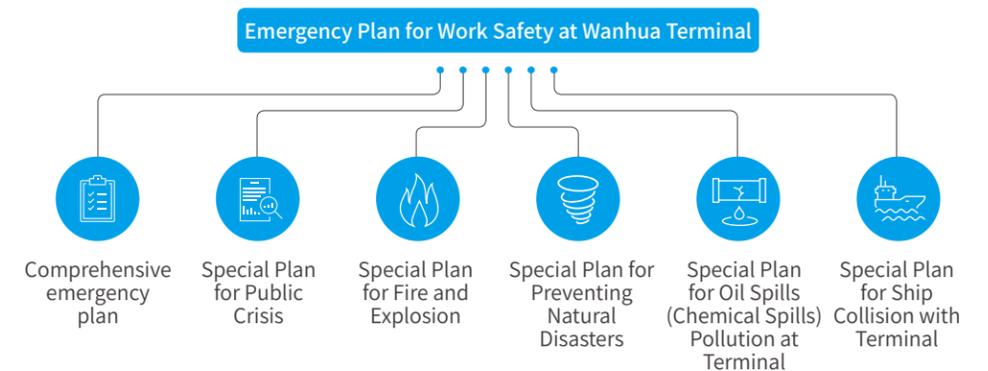




Wanhua's HSE management system has systematically identified risks existing in terminal and ship operations, prepared emergency plans, and adopted a PDCA model for risk control. The day-to-day operation and management of the Wanhua Terminal has been automatically controlled, and safe berthing has been achieved through the use of a small detective patrol system, a WeChat platform, and the sending of berthing SMS messages. Ningbo Chemical Industry Terminal has adopted an SCADA monitoring system to achieve automatic, fast, safe and reliable control. One-switch control enables emergency response. In 2019, Ningbo Terminal will witness a milestone by safely berthing and unberthing of 4,000 ships.



In view of potential risks, the HSE management system has formulated a systematic emergency plan for work safety at the terminal.



Safe Loading, Unloading, and Storage

Wanhua has formulated strict safety specifications for loading, unloading, and storage. It not only strictly manages its own warehouses, but also manages its peripheral warehouses in a penetrating way. It regularly audits, rectifies, and improves the operation procedures of peripheral warehouses according to the HSE Assessment of the Storage Tank Area, and promptly maintains storage tanks to ensure the safe storage of goods. In the process of loading and unloading goods, the daily inspection and electrostatic management of the loading and unloading area shall be strictly implemented to ensure loading and unloading procedures are conducted safely. As for petrochemical products, Wanhua and Sinopec worked together to sort out the safety hazards of unloading for petrochemical customers and promote the establishment and landing of safety access standards for the unloading process.

2017

Promoting Infiltration Safety Management

- Interim audit
- Field audit
- Safe penetration

2018

Promoting Factory Delivery Management

- Registration of personnel/ vehicles
- Vehicle inspection management
- Personnel training
- Field operation management

2019

Deepening Factory Delivery Management

- Deepening the "factory delivery management system"
- Promoting "closed loading"
- Special inspection of pipelines at chemical terminal

EMERGENCY MANAGEMENT AND FIRE SAFETY CONSTRUCTION

Wanhua is equipped with fire extinguishers, fire hydrant systems, foam fire extinguishing systems and fire alarm systems in accordance with the policy of "prevention first, and combined prevention and elimination" and the fire safety requirements of the industrial park. Wanhua also focuses on the building structure characteristics of the production base, the nature of production equipment, storage types and reserves in the storage tank area, the nature and distribution of key hazard sources, and other factors.

Wanhua has compiled fire-fighting management documents such as Fire-Fighting Management Regulations, Gas Control Management Regulations, Fire-Fighting Facilities and Equipment Management Regulations, and Fire-Fighting Safety Responsibility System, and has established fire-fighting management standards according to fire-fighting regulations and standards. Responsibility for fire-fighting safety shall be delegated to individuals.

As a key fire-fighting unit, Wanhua organizes all staff of various posts and teams of production bases to participate in pre-job and on-the-job fire-fighting training and emergency drills every year.



Yantai's Production Base took part in the city's various forms of fire-fighting team competitions and won the city's first prize



Yantai Production Base participated in the emergency rescue skills competition of the State Administration of Work Safety and achieved excellent results.



Yantai Production Base has held fire 119 publicity week for 5 years

Emergency Response

In order to avoid secondary environmental events caused by safety accidents, Wanhua strengthens environmental emergency management, prepares a Contingency Plan for Environmental Emergencies in accordance with legal and regulatory requirements, formulates relevant emergency drill plans and carries out desktop and actual drills for the emergency plan on a regular basis. The drill involves work safety, firefighting, chemicals, food poisoning, and epidemics.

The company's emergency rescue organization is set up with reference to American ICS (Incident Command System), and includes an emergency command department, on-site operation team and rear support team, for cooperating in dealing with emergencies. Wanhua's HSE department shall organize emergency drills on an annual basis.

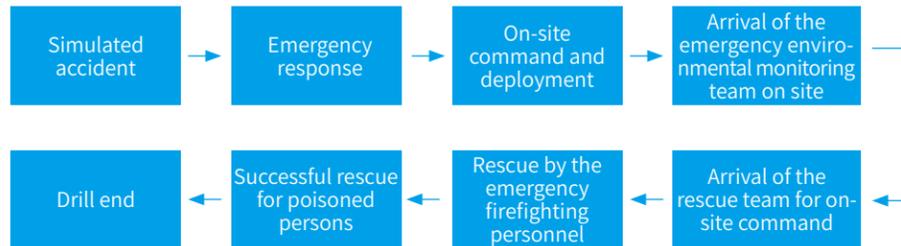
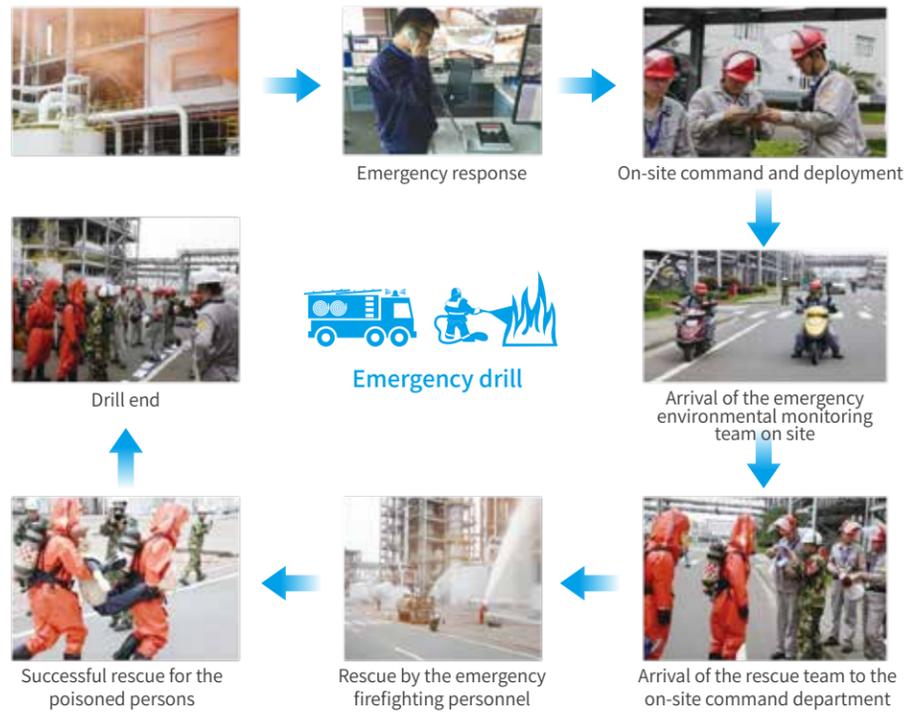
Biannual comprehensive emergency drill at the production-base level

Quarterly special emergency device-level drill

Monthly on-site group-level emergency response drill



Emergency Drill Flow Chart:



In order to establish a professional fire rescue team, Wanhua Yantai and Ningbo production bases have invested RMB 140 million in fire safety. The plant is equipped with an automatic fire alarm system and fire extinguishing system. Yantai's production base has 13 extinguishing trucks, 5 fire-fighting robots and many other forms of equipment to provide fire extinguishing, gas prevention and rescue, disposal of hazardous chemicals, emergency rescue, leakage stoppage, detection, and emergency rescue. It is staffed with 80 full-time firefighters, including 38 firefighters in regular combat readiness and 574 part-time firefighters. The Ningbo production base is staffed with 23 full-time firefighters, 147 part-time firefighters and 28 gas defenders. In addition, UAV is used for detection, effectively solving problems of personal safety for firefighters when they conduct detection operations at disaster locations that contain the risk of inflammables, explosives, poison, oxygen deficit, and smoke.



Blind drill for the first butane leakage in LPG station for storage, transportation, and handling



Joint actual drill for emergency treatment of Ningbo production base and Ningbo Beilun Hospital



Participation of Ningbo production base in emergency management exchange meeting of dangerous chemical enterprises in Ningbo



Environmental Protection

WANHUA PROTECTS BLUE SKIES AND CLEAR WATER

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| Environmental practices | 68 |

ENERGY RESOURCE MANAGEMENT

Wanhua has set up an HSE department to take charge of the overall operation of the environmental management system. The environmental management system is an important part of HSE management which includes product life cycle management, prevention and control of waste water, waste gas, noise, solid waste, radioactive pollution, chemical management, energy conservation and clean production management, detection statistics, and improvement. As a window for information exchange with stakeholders, the HSE department has established information exchange procedures to ensure the smooth communication of information. In order to ensure the comprehensive identification and evaluation of environmental risks, Wanhua has developed the management tools of environmental factor (EA) identification and environmental impact (EI) assessment, identified the company's strategic environmental factors (SEA), and established the SEA control barriers.

Throughout 2018 Wanhua always enforced to the national and local environmental protection laws and regulations as the bottom line, followed management standards outlined in the ISO14001 environmental management system, steadily promoted the construction of "beautiful Wanhua" and "three-noes" (no leakage, no unusual odors and no mechanical noise) parks, increased the research and development of environmentally friendly products, actively explored new concepts and new measures of pollution prevention, environmental protection management, energy conservation and emission reduction, and further improved the basic management level of Wanhua's environmental protection. In addition, it solidified advanced environmental management practices, which laid a solid foundation for achieving the company's goal of "zero emissions" and the construction of a green ecological modern chemical enterprise, so as to actively promote green and sustainable development.

Energy Consumption

Wanhua always adheres to the spirit of green technology and benefitting people's livelihood, actively responds to the government's call for energy conservation and emission reduction, and develops a low-carbon economy. We have established a complete public engineering system and used new technology and equipment to reduce resource and energy consumption, improve energy-saving efficiency, and enhance the reliability of each piece of equipment.

Wanhua's Energy Conservation Committee serves as the highest level of energy conservation management organization to examine and approve the medium and long-term energy conservation and low-carbon planning and the next year's energy conservation and low-carbon work plan. The Production Management Center and the Equipment Process Optimization Center manage specific energy conservation and energy conservation technology respectively. Meanwhile, the business unit of each subsidiary implements localized energy conservation management, and each department at all levels works together to strive to achieve Wanhua's energy conservation goals.

Wanhua's energy consumption mainly comes from the coal, gasoline, diesel, natural gas, propane LPG, electricity and steam used during production. In order to further improve energy use efficiency and reduce energy consumption, Wanhua has formulated Measures for Energy Conservation of Wanhua Chemical, and established an energy management system with key risk points identified by applicable laws and regulations, energy cost assessment, new project energy conservation assessment, energy conservation activities (consumption reduction projects, publicity and training, etc.), and energy efficiency benchmarking as the main control mode. An effective energy management system enables us to promptly monitor changes in energy consumption and optimize energy operation in real time; through benchmarking, we can find out the operation gap of the equipment, formulate measures to eliminate the gap, and improve energy efficiency.

Total Energy Consumption from 2016 to 2018

| Type | Unit | 2016 | 2017 | 2018 |
|--------------------------|-----------------|----------------------|----------------------|----------------------|
| Total Energy Consumption | Kilojoules (KJ) | 5.4×10^{13} | 5.9×10^{13} | 5.0×10^{13} |

Note 1: The scaling factor is taken from the GB 31830-2015 norm of energy consumption per unit product of diphenyl methane diisocyanate.

Note 2: The energy consumption in 2018 mainly comes from the contribution of TDI, aniline Phase II and other equipment at the Yantai production base.

2025 PLAN

2025 Planning Energy Consumption and Emission Reduction Targets

Reduction of energy consumption per unit product by 20%

2018 Energy Consumption and Emission Reduction Performance

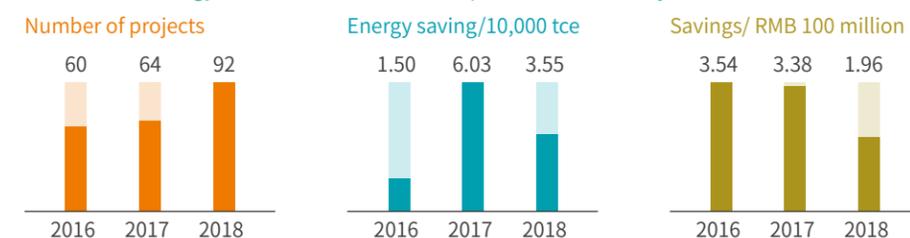
Reduction of 4.0% in 2018 compared with the reference value in 2017

Energy-saving Effects

In 2018, Wanhua continued to set energy consumption and energy cost assessment indicators for MDI, petrochemical, and ADI series products. It strengthened the application of new energy-saving technologies, equipment, and materials, carried out energy management auditing on the production equipment of each subsidiary business unit, and continued to organize the collection, evaluation, and reward activities of energy-saving and consumption-reduction projects.

In 2018, Wanhua collected 92 energy conservation and consumption reduction projects in total, with an annual revenue of RMB 196 million and an energy saving amount of 35,500 tons of standard coal.

Income from Energy Conservation and Consumption Reduction Projects from 2016 to 2018



Protection of Water Resources

Wanhua water consumption is subject to municipal water supply, without other types of water resources or being affected.

The MDI waste brine treatment technology independently developed by Wanhua can save 720,000 tons of water and 140,000 tons of reused salt every year; the independently-developed technology for recycling high salt, high COD and biorefractory butyl acrylate sulfonated waste water is firstly industrialized in the industry that tackles the difficulties in butyl acrylate sulfonated waste water treatment; with the application of "ultrafiltration + reverse osmosis" technology for reclaimed water reuse, reuse of sewage in the Yantai area in 2018 reached 7.19 million tons, creating a green development benchmark in the industry; Wanhua has invested RMB 50 million in the circulating water demisting system newly built to save water by reducing the evaporation of circulating water.

Water Consumption from 2016 to 2018 (10,000 tons)

| Regions | 2016 | 2017 | 2018 |
|-----------|------|------|------|
| Yantai | 1735 | 2610 | 2178 |
| Ningbo | 3257 | 3428 | 3214 |
| Guangdong | 14 | 17 | 17 |
| Total | 5006 | 6055 | 5409 |

2025 PLAN

2025 Planned Water Management Objectives

Reduction of water consumption per unit product by 20%

2018 Water Management Performance

Reduction of 83% in 2018 compared with the reference value in 2017

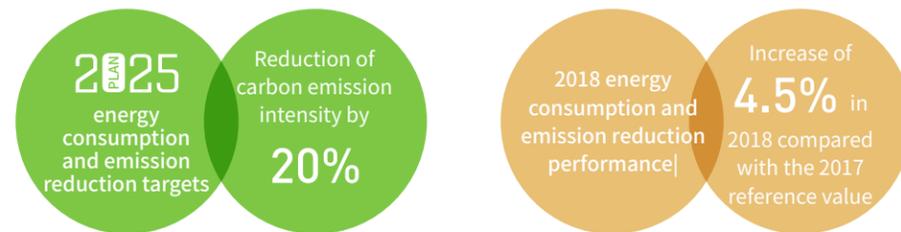
CLIMATE CHANGE

Wanhua actively complies with regulations of national and local climate change authorities, pays close attention to the impact of production on climate change, and takes positive measures to reduce greenhouse gas emissions and minimize the impact on the environment and surrounding community residents. Through the Company's energy management system, Wanhua has established a carbon emission management system, developed a series of carbon emission management methods and data calculation guidelines to guide the monitoring and accounting of carbon emission data, increase awareness of low-carbon emission reduction of the staff, and achieve the purpose of reducing actual emission intensity.

Greenhouse Gas Emission Concentration from 2016 to 2018

| Content | Category | 2016 (base year) | 2017 | 2018 |
|--|-------------|------------------------|-----------------------|-----------------------|
| Total greenhouse gas emissions (tCO ₂ e) | Category I | 8.4 × 10 ⁶ | 9.3 × 10 ⁶ | 1 × 10 ⁷ |
| | Category II | 4.8 × 10 ⁶ | 5.3 × 10 ⁶ | 5.5 × 10 ⁶ |
| | Total | 1.32 × 10 ⁷ | 1.5 × 10 ⁷ | 1.6 × 10 ⁷ |
| Emission intensity per unit product (tCO ₂ e/t) | | 2.43 | 2.20 | 2.30 |

Note: Greenhouse gas emissions are from Yantai and Ningbo, excluding other regions.



Note: The increase of carbon emission intensity in 2018 is mainly caused by consumption of fuel and energy for the start of TDI, aniline Phase II, and other equipment at the Yantai production base.

WASTE MANAGEMENT

In terms of waste management, Wanhua has established the whole life cycle management process of pollutants in combination with the "3R" environmental protection concept, to detect and repair pollution leakage points where it is possible to produce pollutants based on the essential environmental protection concept from the stage of project design. This enables Wanhua to achieve its goal of "zero unorganized emissions". For organized emission, Wanhua has defined management requirements for emissions declaration, port standardization, emission and treatment and emission monitoring of pollutants, to achieve the comprehensive monitoring of organized emission point sources. In terms of solid waste management, we take the lead in applying barcode, GPS, electronic lock, monitoring platform and other forms of information technology to the process of solid waste generation and transfer, achieving full-process supervision of solid waste from generation to final disposal.

No major leakage accidents occurred in Wanhua in 2018.

Waste Water

The waste water produced in Wanhua's operation process is divided into domestic waste water and industrial waste water. A small percentage of saline water is discharged into the sea, and other waste water will be channeled to the municipal pipeline network after processing in line with standards.

Waste Water Emission from 2016 to 2018

| Regions | Checkpoint, Category | Emission Standard | Test Item (Name of the Pollutants) | Average Emission Concentration (mg/l) | | | | Total Emission (t) | | | |
|------------------|-------------------------------|--|------------------------------------|---------------------------------------|-----------|--------|--------|--------------------|-----------|--------|-------|
| | | | | Standard | 2016 | 2017 | 2018 | Standard | 2016 | 2017 | 2018 |
| Yantai Region | Municipal wastewater emission | Standard for pipeline in processing urban sewage treatment works | COD | 500 | 179.26 | 130.88 | 132.54 | 1038.35 | 703.4 | 687.16 | 792 |
| | | | Ammonia nitrogen | 35 | 2.04 | 4.89 | 2.13 | 69.22 | 7.99 | 25.68 | 13.1 |
| Ningbo Wanhua | Municipal wastewater emission | Comprehensive Wastewater Emission Standard and Limitation of Nitrogen and Phosphorus of Indirect Wastewater Emission by Industrial Companies of Zhejiang | COD | 500 | 75.9 | 126 | 26.8 | 136.00 | 119.87 | 115.66 | 42.04 |
| | | | Ammonia nitrogen | 35 | 0.96 | 0.41 | 8.51 | 25.50 | 19.04 | 2.91 | 13.3 |
| Beijing Region | Sanitary sewage | DB11/307-2013-Comprehensive Emission Standard of Water Pollutants | COD | 500 | 64.5 | 46 | 168.5 | / | 0.22 | 0.41 | 0.85 |
| | | | Ammonia nitrogen | 45 | 11.9 | 11.3 | 31.58 | / | 0.06 | 0.08 | 0.16 |
| Guangdong Region | Municipal wastewater emission | Three-level Standard of the Second Period of Guangdong Local Standard Limitation of Water Pollutant Emission (DB44/26-2001) | COD | 500 | Non-start | 21.7 | 48.96 | / | Non-start | 2.37 | 3 |
| | | | Ammonia nitrogen | 45 | Non-start | 0.16 | 0.42 | / | Non-start | 0.02 | 0.03 |

2025 PLAN

| 2025 Planned Wastewater Emission Target | 2018 Wastewater Emission Performance |
|---|---|
| Reduction of COD emission per unit product by 15% | Reduction of 2.5% in 2018 compared with the reference value in 2017 |

Waste Gas

The waste gas which Wanhua produces during operation is subject to organized emission and unorganized emission. On the one hand, we are committed to transforming the unorganized emission of waste gas into the organized emission of waste gas and supporting the construction of waste gas treatment facilities for treatment; for organized emissions, we have built perfect waste gas treatment facilities. The design of such facilities adheres to the concept of being strictly lower than national emission standards for pollutants. Through management of the operation efficiency of environmental protection facilities and monitoring the emission of waste gas, Wanhua achieves emission that match the standard; for dynamic and static sealing points, we have implemented LDAR management, and promptly identified and repaired leaking sealing points. On the other hand, through technical transformation or process optimization, etc., we have improved the efficiency of the pollutant treatment of environmental protection facilities and further reduced the emission of pollutants.

During the reporting period, the goal of achieving 100% organized emission of waste gas has been met.

Actual Exhaust Gas Emission Concentration of Wanhua

| No. | Environmental Protection Facilities | Pollution Factor | Unit | National Standard | Wanhua's Actual Emissions |
|-----|---------------------------------------|--------------------|--------------------|-------------------|---------------------------|
| 1 | Photochemical exhaust funnel | Chlorine | mg/Nm ³ | 65 | 0.4 |
| 2 | Nitric acid tail-gas absorption tower | NO _x | mg/Nm ³ | 200 | 3 |
| 3 | Aniline adsorption tower | Aniline | mg/Nm ³ | 20 | 0.8 |
| 4 | Sulfur recovery equipment | SO ₂ | mg/Nm ³ | 200 | 4.4 |
| 5 | Formaldehyde ECS waste gas | formaldehyde | mg/Nm ³ | 25 | 0.09 |
| 6 | Boiler for waste energy | NO _x | mg/Nm ³ | 250 | 10 |
| 7 | | SO ₂ | mg/Nm ³ | 100 | 4.6 |
| 8 | | Particulate matter | mg/Nm ³ | 10 | 1.25 |

Note: Wanhua's actual emissions originate from the third-party monitoring data.

Waste Gas Emissions from 2016 to 2018

| Regions | Name of Pollutants | Regulation Requirements | Average Emission Concentration mg/m ³ | | | Total Emission (t) | | |
|-----------------------------|--------------------|----------------------------|--|-------|-------|--------------------|--------|--------|
| | | Total Control Standard (t) | 2016 | 2017 | 2018 | 2016 | 2017 | 2018 |
| Yantai Region | SO ₂ | 1777.9 | / | / | / | 2.85 | 19.83 | 11.26 |
| | NO _x | 3000 | / | / | / | 182.4 | 241.37 | 222.44 |
| | Particulate matter | / | / | / | / | 4.74 | 5.12 | 22.43 |
| Yantai Thermal Power Plant | SO ₂ | 1300 | 92.7 | 31.8 | 16.7 | 756 | 248 | 146.2 |
| | NO _x | 806 | 53.4 | 49.4 | 34.2 | 374 | 366 | 297 |
| | Particulate matter | 220 | 19 | 9.26 | 1.05 | 132.5 | 66.2 | 9.1 |
| Ningbo Region | SO ₂ | 42 | / | / | / | 38.47 | 17 | 21.66 |
| | NO _x | 161 | / | / | / | 141.08 | 61 | 59.45 |
| Ningbo Thermoelectric Plant | SO ₂ | 420 | / | 11.04 | 11.48 | 125 | 100 | 106 |
| | NO _x | 600 | / | 32.24 | 29.54 | 444 | 303 | 271.5 |
| | Particulate matter | 60 | / | 6.03 | 1.87 | 117.54 | 58.226 | 17.23 |

Note: The above data originates from the third-party detection institution and online monitoring data.

Solid Waste

Wanhua is well aware of the environmental harm that hazardous waste causes, and has always attached great importance to the management of hazardous waste. Since the establishment of hazardous waste information management system in 2007, Wanhua has continuously optimized and upgraded the system. In 2018, Wanhua applied information technology such as barcodes, GPS, electronic locks, and monitoring platforms to the process of generation and transfer of solid waste, achieving the traceable management of the whole life cycle of hazardous waste. As the government gradually increases supervision and punishment of hazardous waste management, Wanhua strengthens the management of hazardous waste disposal enterprises.

Through on-site auditing before signing contracts, irregular visits, and active communication and exchange during the performance period, Wanhua not only urges legal and compliant operation of hazardous waste disposal enterprises but also improves our management level.

Wanhua adheres to the principle of "volume reducing, recycling, utilization and safe disposal" for solid waste management, and actively implements emission reduction at source and comprehensive utilization. For example, all furnace residue produced by the thermal power plant is used to make building materials, useful components are extracted from aniline tar for recycling, industrial waste gas and waste liquid are treated with harmless incineration, and heat is recovered to generate steam for use by production equipment.

Wanhua annually formulates a dedicated solid waste rate per 10,000 tons, and carries out follow-up assessment. In 2018, the solid waste rate per 10,000 tons reaches the desired target.



Note: the solid waste rate per 10,000 tons = quantity of hazardous solid waste paid for outsourcing/product output (in 10,000 tons)

Waste Volumes from 2016 to 2018

| Category | Hazardous Waste (ton) | | | General Waste (ton) | | |
|---------------------------------------|-----------------------|--------|--------|---------------------|---------|--------|
| | 2016 | 2017 | 2018 | 2016 | 2017 | 2018 |
| Recycled waste | | | | | | |
| Waste Package Bulk (Ningbo Rongwei) | 225.64 | 104.9 | 84.4 | / | / | / |
| Waste Chlorobenzene (Ningbo) | 739 | 983 | 806 | / | / | / |
| Waste Package Bulk (Ningbo) | 297 | 351 | 357 | / | / | / |
| Ferrimolybdate Catalyst (Ningbo) | 0 | 43 | 59 | / | / | / |
| Heat Preservation Cotton (Ningbo) | / | / | 70.2 | / | / | / |
| Waste Oil (Ningbo) | 95 | 26 | 113 | / | / | / |
| Salt Slurry (Ningbo Chlor-Alkali) | / | / | / | 2883.78 | 2766.98 | 1818.1 |
| Lubricating oil (Ningbo Chlor-Alkali) | 2.44 | 1.98 | 7.38 | / | / | / |
| Waste Lubricating Oil (Yantai) | 42.8 | 105.36 | 165.32 | / | / | / |
| Waste Empty Bulk (Yantai) | 97.9366 | 104.26 | 55.66 | / | / | / |
| Waste Catalyst (Yantai) | 366.26 | 846.07 | 707.3 | / | / | / |
| Waste Chlorobenzene (Yantai) | / | 225.42 | 249.04 | / | / | / |

| Category | Hazardous Waste (ton) | | | General Waste (ton) | | |
|--|-----------------------|---------|-------|---------------------|-----------|----------|
| | 2016 | 2017 | 2018 | 2016 | 2017 | 2018 |
| Weight of Recycled Waste, Including Recycled Energy | | | | | | |
| Crude and Fine Residues (Ningbo) | / | / | | 60600 | 78900 | 92400 |
| Residue of Gasifier in Yantai | / | / | | 108864 | 123390.9 | 90379.73 |
| Thermo-electric Furnace in Ningbo | / | / | | 163246 | 144997 | 162207 |
| Waste Weight of Incineration (Large-scale Burning) | | | | | | |
| Ningbo Rongwei | 221.55 | 268.17 | 54.85 | 0 | 465.97 | 0 |
| Other Incineration (Yantai) | 1041.981 | 1183.26 | / | / | / | / |
| Yantai Chlor Alkali Thermal Power | / | 10.261 | 146.5 | / | 190297.02 | 206721.4 |
| Aniline tar (Ningbo) | 1419 | 693 | 427 | / | / | / |
| Other Incineration Waste (Ningbo) | 1311 | 850 | 1042 | / | / | / |
| Other Incineration (Ningbo Chlor-Alkali) | 13.16 | 28.46 | 10 | / | / | / |
| Waste Weight of Landfill | | | | | | |
| Heat Preservation Cotton, Glass Fibre Reinforced Plastics (Ningbo) | / | / | | 195.9 | 163.9 | 142.6 |
| Residue of Furnace (Yantai) | 0 | 0 | | / | / | |

Note: "/" means the corresponding area did not produce such waste.

CASE

All the furnace residue produced by the thermal power plant is used to make building materials; useful components are extracted from aniline tar for recycling; industrial waste gas and waste liquid are treated by harmless incineration, and heat is recovered to generate steam for use by production equipment.

Noise

In order to reduce the influence of noise generated during production on the surrounding environment and build a chemical industry park with "no equipment noise", Wanhua has carried out prevention and control of noise pollution from the three dimensions of noise source, transmission path, and noise receptor, and reduced noise generation during equipment operation and material transportation through a variety of measures, including shock pads, soundproof rooms, noise enclosures, and silencers.



Noise Emission from 2016 to 2018

| Regions | Measuring Point | 2016 | | 2017 | | 2018 | |
|-----------|---|-----------------------|-----------|-----------------------|-------|-----------------------|-------|
| | | Measured Value dB (A) | | Measured Value dB (A) | | Measured Value dB (A) | |
| | | Daylight | Night | Daylight | Night | Daylight | Night |
| Yantai | Outside the north gate of Hexi factory | 54.00 | 51.23 | 52.75 | 47.63 | 52.78 | 49.75 |
| | Southern part of the factory of Hexi Solid Waste Station | 60.33 | 53.70 | 55.03 | 49.73 | 54.83 | 51.80 |
| | Eastern border of the factory on Wanhua Road and Industrial Park North Road | 46.60 | 47.57 | 49.53 | 47.38 | 54.00 | 50.95 |
| | Southwestern border of the factory with chlor-alkali equipment | 57.50 | 50.83 | 60.73 | 52.70 | 57.83 | 53.43 |
| | Southern part of Anbao Building outside the factory | 49.87 | 47.20 | 49.03 | 48.35 | 55.18 | 52.08 |
| | Southern part outside the front factory gate #1 | 45.77 | 46.33 | 49.08 | 46.20 | 48.60 | 47.05 |
| Guangdong | One-meter measuring point 1# outside eastern factory | Non-start | Non-start | 57 | 48 | 50.7 | 43 |
| | One-meter measuring point 2# outside southern factory | Non-start | Non-start | 60 | 52 | 47.6 | 43.9 |
| | One-meter measuring point 3# outside western factory | Non-start | Non-start | 61 | 48 | 46.7 | 41.9 |
| | One-meter measuring point 4# outside northern factory | Non-start | Non-start | 58 | 50 | 47.7 | 44 |
| Ningbo | Eastern factory | 60.2 | 52.3 | 50 | 48 | 61 | 53 |
| | Western factory | 62.8 | 49.8 | 49 | 50 | 62 | 57 |
| | Northern factory | 53.9 | 52.9 | 48 | 46 | 61 | 50 |
| | Southern factory | 56.3 | 49.8 | 52 | 50 | 57 | 53 |

Note 1: Wanhua complies with Class III of the Emission Standard for Industrial Enterprises Noise at Boundary (GB12348-2008).

Note 2: The monitoring result does not deduct the background noise.

ENVIRONMENTAL PRACTICES

Based on the "volume reducing, recycling, utilization, and safe disposal" environmental protection policy, Wanhua implemented a series of environmental protection practices from the perspective of reducing pollutant emissions and saving energy and resources based on the characteristics of its production mode in 2018, making remarkable achievements:

| | |
|---|---|
| Successful Reconstruction and Implementation of Coal Yard of Ningbo terminal of Wanhua | It is the first circular dome bunker built by the port industry in China. After reconstruction, the fully-enclosed transportation of coal has been achieved, which effectively eliminates the environmental and safety problems such as dust pollution and spontaneous combustion caused by the air storage of steam coal in the yard of the terminal, beautifies the environment, and improves air quality. At the same time, economic losses caused by typhoons and rainstorms can be reduced by about RMB 18 million per year. |
| Completion of Measurement of 490 traps in Yantai Base | In view of 202 faulty traps, a 40.8% overall failure rate and 45,450 tons of total steam quantity loss per year, Wanhua has measured 490 traps in Yantai Base to improve the efficiency and reduce the loss of steam quantity. |
| Optimization of Consumption of Circulating Water Heat Exchanger | By sorting out the list of circulating water heat exchangers and optimizing control individually, the demand for circulating water can be given more accurately on the premise of meeting process stability. |
| Energy-saving and Optimization of Compressor | In view of the diseconomies of operation of the compressor with long-term anti-surge valve opening, the operation mode of the compressor is optimized by optimizing the surge curve and clearance adjustment, thereby cutting operation costs. |



Mutually Beneficial Partnerships

**WANHUA' S HONESTY ACHIEVES FOR
WIN-WIN PARTNERSHIPS**

Program for improvement of
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Wanhua undertakes the mission of "Advancing chemistry, transforming lives". For this reason, Wanhua always sticks to the road towards green development, continues to innovate and strives for excellence, allowing us to meet the requirements of stakeholders and create a better life for humanity. To improve customer satisfaction and bring greater value, Wanhua has remains customer-oriented, providing high-quality products and services to customers, exceeding customer expectations and working to become the best choice for customers.

PROGRAM FOR IMPROVEMENT OF CUSTOMER EXPECTATIONS

It is thanks to the support of our customers that Wanhua has successfully weathered 40 years of trials and hardship. In 2018f faced with the capacity release of competitors and oversupply in the market, the customer service team of Wanhua bridged communication with customers by summarizing our experience and improved our company's performance through a variety of measures such as standardizing work, introducing high efficiency of process, and informatizing data. This enabled Wanhua to strive for success while ensuring stability, and to continually provide customers with high-quality products and services, allowing us adequately prepare for new challenges and opportunities.

In 2018, the customer service team of Wanhua changed the service mentality of "fire drills" to active service. Wanhua is constantly identifying problems and preventing their occurrence by planning before production, guaranteeing during the production process, guaranteeing the continuity of delivery, and providing service after delivery, so as to ensure that the provided products and services exceed customer expectations.

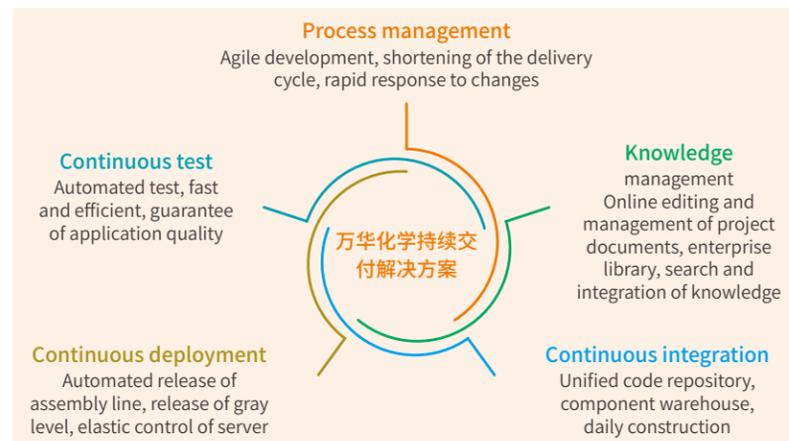
Guarantee Before Delivery

To continuously and steadily provide products that meet customer requirements and to exceed customer expectations, Wanhua has adopted a production and operation mode of localized production management of the Ningbo production base, Yantai production base and Zhuhai base, and headquarter-based planning and coordination.

Before products are formally put into production and put on the market, the customer service team of Wanhua takes the initiative to visit the customer on location to accurately understand the customer's requirements, formulate a unified standard for links that past experience has demonstrated are prone to problems, and actively participates in customers' product testing work after the launch, so as to promptly obtain information that will help in the improvement process.

To improve the efficiency and accuracy of order processing and promote customer experience, Wanhua introduced a smart platform for the follow-up and management of orders in 2018. Scientific and technological means, a confidentiality agreement and other methods are adopted to ensure that customer information is not disclosed.

During the reporting period, no customer information is disclosed.



IaaS platform, microservices and continuous delivery platform and Saber mobile development platform of Wanhua are launched at the same time



Sales and order systems are launched in Domestic Business Department and each business department

Monitoring of Customer Satisfaction

To promote customer satisfaction, Wanhua improved the *Customer Complaints Handling Process of Wanhua Chemical*, compiled *Products Quality Accidents Management Specifications of Wanhua Chemical*, and carried out standardized, process and on-line operations for customer complaints handling in 2018 for existing problems with the investigation of current situation of customer complaints handling of the previous year, so as to prevent the isolated information and achieve the sharing of customer complaint information. Meanwhile, the Company established a responsibility system for the product unit, assigned special quality management personnel to each business unit, and carried out politicization, explanation, and answered the questions of standardization requirements for each product unit, so as to ensure that the final products and services provided to customers meet the requirements. In addition, Wanhua also pays attention to the management and inheritance of knowledge. The customer service team compiles a series of best practice guidelines based on customer requirements and management systems and sustainable development requirements to avoid similar accidents.

- The revised version of Customer Complaints Handling Process of Wanhua Chemical is adopted
- The document *Specifications for Customer Demand Management of MDI and TDI Products* is formulated and released
- Monthly return visit mechanism for key customers with a service concept of "four 24-hours" is established to respond to customer needs quickly and effectively:



By implementing a series of measures, the satisfaction evaluation of 2018 customers for products and services provided by Wanhua in seven aspects (personnel quality, product quality, technical service, timely response, logistics service, commercial terms and stable supply) increased compared with that of 2017, and the two most recognized aspects are personnel quality and product quality.



Customer Recognition in 2018



Annual Excellent Supplier of Axalta for the second time



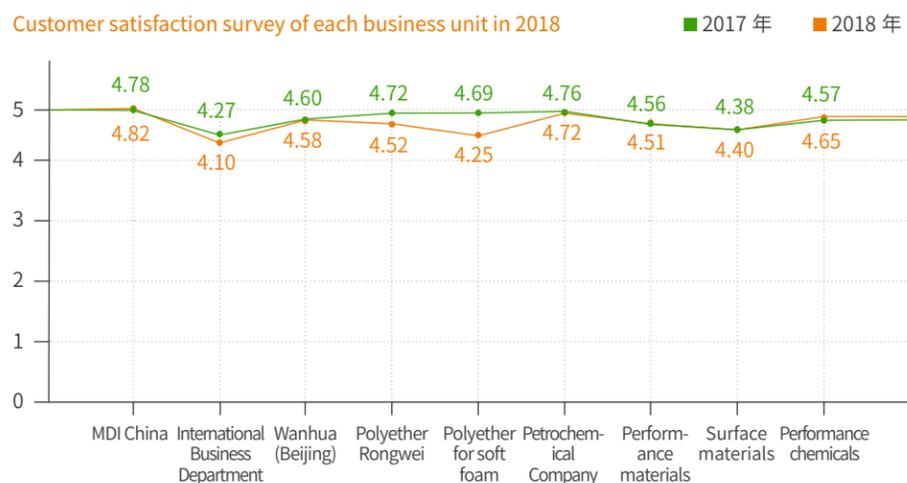
Best Supplier of Haier in India for the second time



Superior Partner of Jiangsu Branch of Sinopec Chemical Commercial Holding Co., Ltd.



Top Ten Excellent Suppliers of LG Electronics



Although scores of all aspects have been improved, Wanhua's mission to improve customer satisfaction will never stop. By analyzing the satisfaction survey results of each business unit, Wanhua has found that the satisfaction of business divisions of MDI China series, performance chemicals and performance materials decreased compared with 2017. In view of this, Wanhua formulated a series of improvement measures, such as:

- In terms of stable supply, Wanhua plans to improve the capacity of MDI production devices in Yantai and Ningbo in 2019;
- In terms of product quality, Wanhua plans to develop and produce MDI-50F products with low activity in 2019 to meet customer requirements;
- Wanhua plans to improve product stability in the production process by adding a near-infrared on-line instrument on a separating device.

In addition, Wanhua's customer service team participates in the review process of various management systems to ensure the continued satisfaction of customers from the perspective of the management system. This process includes planning and implementing internal joint review, regularly carrying out audits for corrective measures of the responsibility department, conducting on-site auditing for suppliers and foundries, and participating in customer auditing, so as to ensure that quality and safety/ environmental indicators of products meet the legal requirements, industry development requirements, and customer requirements, and that the Company's system operations are ethical. During this process, Wanhua also identifies and solves problems through auditing, and continuously improves the effectiveness and efficiency of the management system, so as to achieve healthy development of the supply chain.

- In 2018, the customer service team participated in the planning and implementation of the joint internal audit, identified the risks of quality management of companies and business units, and found 130 opportunities for improvement by examining the typical problems that were exposed in previous customer complaints;
- Regularly carry out auditing for the rectification measures formulated by responsible units. In 2018, the customer service team conducted 91 inspections for rectification measures and identified 29 opportunities for improvement in 2018.
- In 2018, the customer service team carried out on-site quality auditing for 5 suppliers;

Follow-up After Delivery

To ensure that the information about delivered products can be provided in a timely manner to the relevant parties in cases of batch quality defects or potential hidden hazards to safety, health, and environmental protection, the relevant products can be rapidly brought under full control to avoid or reduce losses to customers and Wanhua and possible impacts to public safety, health, and the environment, Wanhua established the Product Recall Procedures of Wanhua Chemical in 2018. These procedures standardize the product recall process and ensure effective control of defective products after delivery, so as to ensure compliance with the requirements of the sustainable development system and achieve responsible care for customers.

Exceeding Customer Expectations

As a supplier of performance chemical materials with advanced technologies and global comprehensive competitive advantages, the objectives of serving Wanhua's customers are not only to meet the requirements, but also to exceed customer expectations. In 2018, Wanhua's marketing department engaged in extensive contact and communication with various industry associations, carried out effective research on the current and potential product markets, technology R&D, production, marketing, and sales. The enabled Wanhua to better understand market changes and future development trends of the industry, make sure that the Company's products and services are always leading the industry in their ability to better serve customers, and to create and improve value for customers. Practical level:

- In 2018, in the field of fine chemicals, Wanhua utilized polyurethane and monomer on petrochemical industry chains to customize materials and provide solutions for customers based on their special requirements;
- As a business department of performance material with a leading research and development platform for functional polymer material and the ability to provide innovative and customized comprehensive solutions for customers, it has competitive advantages over its peers;
- To provide customers with various performance materials at a competitive price, offering solutions for polyurethane application systems, and creating premium products and services, Wanhua has built the South China Logistics and Technical Assistance Center in its Zhuhai industrial park, and set up a customer technical service center in Shanghai as an image window to the world in order to better serve customers.

To practice the core values of "Responsible Care", Wanhua formulates responsible care plans for customers every year. The plan aims to help customers to solve problems related to production and operations and achieve common growth for customers and Wanhua. In 2018, Wanhua completed responsible care for a total of 15 customers.



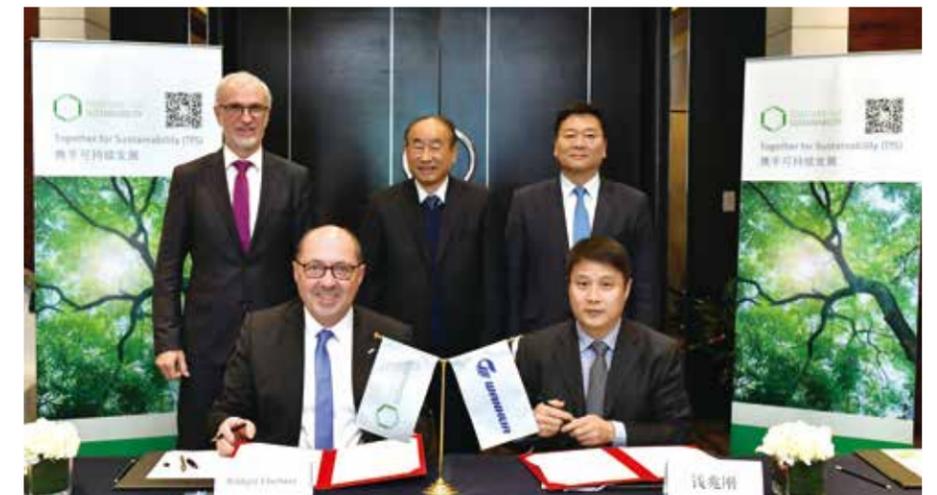
Wanhua's customer service objectives: commit to providing high-quality products and services for customers, and strive to become an important olefin supplier in China by 2025, a globally first-class olefin supplier by 2030, and the most reliable partner in the industry.



SUSTAINABLE PROCUREMENT MANAGEMENT

The due diligence management of Wanhua's procurement supply chain mainly covers three areas. Firstly, we promote and implement the corporate social responsibility of ourselves while committing to the sustainable development of procurement supply chain and striving to improve our sustainable procurement capability. We focus not only on the product quality, price, and service of suppliers, but also on the sustainable procurement capability of suppliers. Secondly, when operating locally, ("local" refers to the customs area of mainland China), we always pay attention to development of the local economy and our partners. Our materials are sourced all over the world. To promote the development and growth of local enterprises, we prioritize local procurement under the same conditions. Thirdly, we strive to create mutually-beneficial partnerships. Through cooperation and exchanges with excellent suppliers, we optimize the quality of the supply chain to achieve mutual growth.

On February 21, 2019, we joined the Tfs initiative (Together for Sustainability), which indicates that Wanhua will continuously promote the sustainable development of supply chains in the future.



Management of the Supplier's Environmental and Social Responsibility

Wanhua's management of suppliers in terms of sustainability does not stop with our commitment; we prioritize supporting the abilities of our partners. We have currently signed a supplier code of conduct with 2400 suppliers in the SRM system, which is based on the management of supplier social responsibility. In 2017, we formulated a series of action plans to promote the sustainable development of the supply chain, to effectively achieve sustainable development in medium and long-term procurement supply chain:

- 1 Training on social responsibility management for suppliers**
 - 2 Planning of management objectives of sustainable procurement in 2025**
 More than **100** suppliers are trained on Tfs
 - Performance up to the second quarter of 2019**
 - 20 suppliers participated in special training on Tfs at regional conferences
 - 92 suppliers participated in the petrochemical industry procurement conference for suppliers
 - 100 suppliers confirmed to participate in the online evaluation have been invited to participate in EcoVadis online training

2 On-site auditing plan

Planning of management objectives of sustainable procurement in 2025

More than 13 suppliers participate in onsite audit every year

Performance up to the second quarter of 2019

It is planned to carry out on-site TfS auditing of 10 suppliers in 2019. At present, 51 suppliers were audited on site. (Including data of previous years)

3 Social responsibility assessment and integrity commitment requirements of suppliers

Planning of management objectives for sustainable procurement in 2025

The signing rate of integrity agreement with transacted suppliers is not less than 95%

The evaluation rate of social responsibility of new suppliers is 95%

50 suppliers participate in online EcoVadis social responsibility evaluation every year.

Plan of 2019 and current performance

The signing rate of the integrity agreement with transacted suppliers is 70% (Actual completion up to the first quarter of 2019)

The evaluation rate of social responsibility for new suppliers is 73% (Actual completion up to the first quarter of 2019)

70 suppliers are expected to conduct EcoVadis online social responsibility evaluation in 2019.

4 Requirements for recycling of packing materials (related to TfS)

Planning of material recycling in 2025

The quantity of recycled packing materials is more than 7300 tons per year.

Proportion of amount of recycled packing materials is 15%.

Performance in 2019

The amount of recycled packing materials is more than 6300 tons per year.

Proportion of amount of recycled packing materials is 10% in 2019, including various materials such as metal, plastic, wood, and paper packing

Local Procurement

Priority is given to suppliers who participated in Wanhua's relevant social responsibility training and signed an integrity agreement or were audited on site by Wanhua.

In 2018, the expenses for raw materials purchased locally and used for four major production bases of the Company accounted for 79% of the total procurement expenses.

Business Development

We committed to establishing long-term stable strategic cooperation relations with excellent suppliers to mutual benefit. The following accomplishments were made during the reporting period in 2018:



The Wanhua and Shenhua Trading Group signed the Strategic Co-operation Frame Agreement on Coal-fired Power between Shenhua Trading Group and Wanhua Chemical Group in 2018-2022



Wanhua and Abu Dhabi National Oil Company (ADNOC) signed 10-year LPG supply agreements and memorandum of understanding on naphtha cooperation respectively



Wanhua and China Telecom signed global strategic cooperation agreements



Wanhua and Sinopec Chemical Commercial Holding Co., Ltd. signed strategic cooperation agreements

Through strategic partnerships with the above supplier representatives, Wanhua can obtain an optimal solution of excellent suppliers and improve our ability to obtain high-quality resources from suppliers.

Improvement of Procurement Efficiency and Transaction Experience of Suppliers

Cloud Procurement Platform

In 2018, we improved procurement efficiency through introducing a cloud procurement platform, so as to improve the transaction experience of suppliers. The online transaction amount reached 2.06 billion yuan and there were 1,066 online suppliers as of the first quarter of 2019. The use of cloud procurement platform helps us to promote integration and optimization of the supply chain, create a new E-commerce model of the chemical industry and formulate a procurement ecosystem.



Electronic Signature

In 2018, Wanhua launched an electronic signature system for procurement contracts. As of the first quarter of 2019, 1,017 suppliers were actively using the system, the proportion of orders with electronic signatures reached 82%, greatly improving procurement efficiency, reducing the consumption of express resources, and improving the transaction experience of suppliers.



Humanistic Care

WANHUA' S HUMANISTIC CARE OFFERS COLLABORATIVE DEVELOPMENT

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|--------------------------------|----|
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EMPLOYMENT RELATIONSHIP



We commit to protecting the health and safety of employees and surrounding communities, and to pursue the mutual growth of employees and the enterprise. We plan our human resource strategy based on the form of our organization and the talent structure, introducing and training talents, formulating career development and growth plans for each employee in a targeted manner, building reasonable and superior compensation and a welfare system and incentive performance assessment system.

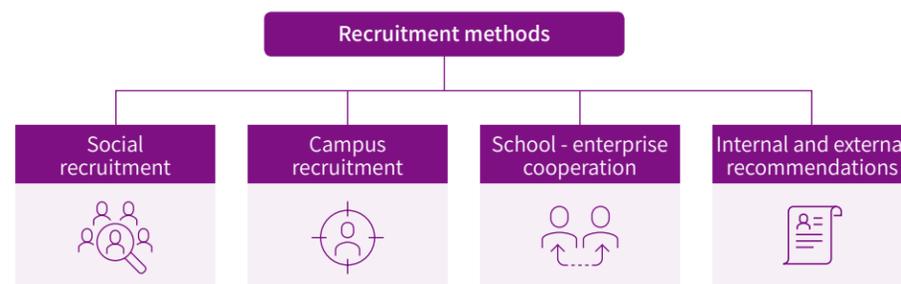
We provide opportunities for each employee to achieve development and value. We have established a complete human resource management system, prepared a Management Manual of the Human Resource Department of Wanhua Chemical, and regularly carried out management review to continuously improve insufficiencies. We follow the rules of human nature, build a vast development platform to help employees to realize their self-worth, and enable employees and the company grow together.

Employment

Wanhua has been broadening the channels for selecting and employing talent, building various channels for talent exchange, revitalizing the cause with talents, and continuously incorporating chemical industry talents into Wanhua's talent pool to contribute to Wanhua's sustainable chemical industry.

We treat all applicants equally without discrimination. With a strategy of placing talent first, we recruit first-class talent and reward work that achieves results, carry out recruitment according to Measures on Recruitment Management of Wanhua Chemical.

Applicants must be at least 16 years old and have a real and valid ID card. We monitor the whole life cycle of all employees from employment, entry, promotion, and dismissal.



Wanhua will also publicize and exert influence on the value chain with respect to employment policies such as legal employment. New suppliers are required to sign Wanhua's code of conduct to protect the basic rights of employees in the supply chain.

During the reporting period, there was no employment of child labor, forced labor, discrimination, harassment, violations of employee freedom of association and collective bargaining in the supply chain of Wanhua and our company.

Prohibition of Child Labour

Wanhua strictly complies with national laws, regulations and local policies on employment, and prohibits the recruitment of children under the age of 16. We have worked out a remedy for the misemployment of child labor. So far, Wanhua has not employed child labor and there is no child labor in the company's supply chain.

Prohibition of Forced Labour

Wanhua prohibits any servitude or forced labor from the recruitment of employees to the termination of labor contracts with employees, ensuring that employees participate in work or labor on a voluntary basis. We have formulated the "Attendance Management Regulations of Wanhua Chemical" to ensure employees' freedom of labor and right to rest. During the reporting period, there was no forced labor in the Wanhua supply chain.

Anti-harassment and Anti-abuse

In order to maintain a work environment of equality and mutual respect, Wanhua will not tolerate any harassment and abuse by employees. We have made public the way of reporting complaints and dealt with the employees or managers who have committed harassment and abuse in accordance with the "Employee Disciplinary Punishment Provisions of Wanhua Chemical". During the reporting period, Wanhua had no incidents of harassment and abuse.

Prohibition of Discrimination

Wanhua provides fair, just and reasonable work opportunities, and upholds the principle of non-discrimination in deciding on employment, salary, training opportunities, promotion, dissolution of labor relations or retirement. Age, sex, race, nationality, region, disability, sexual orientation, religious belief, marital status and politics status shall not be considered as criteria for screening and recruitment. During the reporting period, there was no discrimination in Wanhua.

Freedom of Religious Belief and Association

Wanhua does not interfere with employees' freedom to abide by religious beliefs or customs. All employees have the right to freedom of religious belief, freedom of collective bargaining and freedom of association. During the reporting period, there were no infringements on employees' right to free association and collective bargaining in the company's supply chain. Trade unions sign collective labor contracts with the company on behalf of the employees. During the reporting period, all the employees have been protected by collective contracts.

Remuneration and Benefits

Wanhua implements the principle of equality between men and women and equal pay for equal work in terms of salary and remuneration for its employees. Wanhua complies with relevant national and local policies on remuneration and benefits to protect the legitimate rights and interests of every employee. At the same time, Wanhua has improved the treatment regarding welfare and vacation, including the salary structure, housing, maternity leave and paternity leave.

Wanhua also organizes training, sports meets, group weddings, Thanksgiving Day and other activities to build a unique corporate culture and enhance cohesion and the consistency of values.



Blue Sea Sands · Talk about the Future--School-enterprise Co-construction Forum of Wanhua Chemical in 2018

The "Blue Sea Sands · Talk about the Future--School-enterprise Co-construction Forum of Wanhua Chemical in 2018" was successfully hosted by the Human Resources Department, Marketing Department, President Office and Academia Sinica. 44 teachers from 16 universities including Peking University, Beijing University of Chemical Technology, Dalian University of Technology, Dongbei University of Finance and Economics, East China University Of Science and Technology, Nanjing Tech University, Qingdao University of Science and Technology, Shandong University, Sichuan University, Tianjin University, Zhejiang University, Zhengzhou University, China University of Mining and Technology, China University of Petroleum (Beijing), China University of Petroleum (East China) and Central South University were invited.



By region:

| Number of employees in the company | 2016 | 2017 | 2018 |
|------------------------------------|------------------------------|------------------------------|------------------------------|
| Yantai region | 5294 | 6412 | 7070 |
| Ningbo region | 1333 | 1423 | 1641 |
| Beijing region | 182 | 172 | 172 |
| Guangdong region | 164 | 151 | 264 |
| Group (Total) | 6973 (including 263 interns) | 8158 (including 542 interns) | 9147 (including 575 interns) |

Note: The number of employees in 2018 is as of December 31, 2018.

按性别划分:

| Company | 2016 | | 2017 | | 2018 | |
|------------------|------|--------|------|--------|------|--------|
| | Male | Female | Male | Female | Male | Female |
| Yantai region | 83% | 17% | 85% | 15% | 85% | 15% |
| Ningbo region | 81% | 19% | 81% | 19% | 82% | 18% |
| Beijing region | 74% | 26% | 72% | 28% | 73% | 27% |
| Guangdong region | 85% | 15% | 83% | 17% | 80% | 20% |
| Group (Total) | 83% | 17% | 84% | 16% | 84% | 16% |

By age:

| Company | 2016 | | | 2017 | | | 2018 | | |
|------------------|----------------|-----------------|----------------|----------------|-----------------|----------------|----------------|-----------------|----------------|
| | < 31 years old | 31-50 years old | > 50 years old | < 31 years old | 31-50 years old | > 50 years old | < 31 years old | 31-50 years old | > 50 years old |
| Yantai region | 69% | 25% | 6% | 68% | 27% | 5% | 64% | 30% | 6% |
| Ningbo region | 75% | 23% | 2% | 74% | 24% | 2% | 67% | 31% | 2% |
| Beijing region | 45% | 52% | 3% | 45% | 51% | 4% | 45% | 51% | 4% |
| Guangdong region | 89% | 10% | 1% | 88% | 11% | 1% | 89% | 11% | 0% |
| Group (Total) | 70% | 25% | 5% | 69% | 27% | 4% | 65% | 30% | 5% |

By education background:

| Company | 2016 | | | | | 2017 | | | | | 2018 | | | | |
|------------------|--------|--------|----------|----------------|--------|--------|--------|----------|----------------|--------|--------|--------|----------|----------------|--------|
| | Doctor | Master | Bachelor | College degree | Others | Doctor | Master | Bachelor | College degree | Others | Doctor | Master | Bachelor | College degree | Others |
| Yantai region | 1% | 16% | 27% | 47% | 9% | 2% | 15% | 27% | 48% | 8% | 1% | 14% | 26% | 49% | 10% |
| Ningbo region | 0% | 2% | 22% | 68% | 8% | 0% | 2% | 20% | 71% | 7% | 0% | 3% | 20% | 68% | 9% |
| Beijing region | 1% | 44% | 36% | 11% | 8% | 2% | 43% | 34% | 10% | 11% | 2% | 49% | 28% | 9% | 12% |
| Guangdong region | 0% | 2% | 13% | 85% | 0% | 0% | 1% | 11% | 88% | 0% | 0% | 3% | 12% | 85% | 0% |
| Group (Total) | 1% | 13% | 26% | 51% | 9% | 1% | 13% | 26% | 52% | 8% | 1% | 12% | 25% | 52% | 10% |

By nationality

| Company | 2017 | | 2018 | |
|------------------|-----------------|----------|-----------------|----------|
| | Han nationality | Minority | Han nationality | Minority |
| Yantai region | 97% | 3% | 97% | 3% |
| Ningbo region | 97% | 3% | 97% | 3% |
| Beijing region | 94% | 6% | 87% | 13% |
| Guangdong region | 99% | 1% | 98% | 2% |
| Group (Total) | 97% | 3% | 97% | 3% |



Employee employment rate

| Company | New employee | | | Employment rate | | |
|------------------|--------------|------|------|-----------------|------|------|
| | 2016 | 2017 | 2018 | 2016 | 2017 | 2018 |
| Yantai region | 528 | 1329 | 930 | 10% | 21% | 13% |
| Ningbo region | 64 | 139 | 186 | 5% | 10% | 11% |
| Beijing region | 14 | 13 | 18 | 8% | 8% | 10% |
| Guangdong region | 1 | 10 | 79 | 1% | 7% | 30% |
| Group (Total) | 607 | 1491 | 1213 | 9% | 18% | 13% |

Employee churn rate

| Company | Separated employee | | | Employee churn rate | | |
|------------------|--------------------|------|------|---------------------|------|------|
| | 2016 | 2017 | 2018 | 2016 | 2017 | 2018 |
| Yantai region | 238 | 150 | 192 | 5% | 3% | 4% |
| Ningbo region | 86 | 54 | 77 | 7% | 4% | 5% |
| Beijing region | 12 | 23 | 12 | 7% | 17% | 7% |
| Guangdong region | 10 | 21 | 15 | 6% | 14% | 8% |
| Group (Total) | 346 | 248 | 296 | 5% | 4% | 4% |

Target employee turnover rate for 2025

The employee churn rate is under 5%.

Performance in 2018

The employee churn rate of Wanhua Chemical in 2018 is 4%.

Wanhua strictly abides by the relevant local policies in China on the implementation of employee maternity leave (or paternity leave) to protect the legal rights and interests of every employee.

Retention after parental leave

| | 2017 | | 2018 | |
|--|------------------------|--------------------------|------------------------|--------------------------|
| | Male (paternity leave) | Female (maternity leave) | Male (paternity leave) | Female (maternity leave) |
| Total number of employees entitled to parental leave during the reporting period | 3714 | 734 | 4492 | 889 |
| Total number of employees taking parental leave during the reporting period | 354 | 263 | 399 | 219 |
| Number of employees to return during the reporting period after parental leave | 354 | 192 | 399 | 152 |
| Total number of employees who actually returned to work during the reporting period after parental leave | 354 | 192 | 399 | 152 |
| Total number of employees who remain on duty 12 months after returning from parental leave | 351 | 191 | 396 | 149 |
| Return rate of employees taking parental leave % | 100.00% | 100.00% | 100.00% | 100.00% |
| Retention rate of employees taking parental leave % | 99.15% | 99.48% | 99.25% | 98.03% |

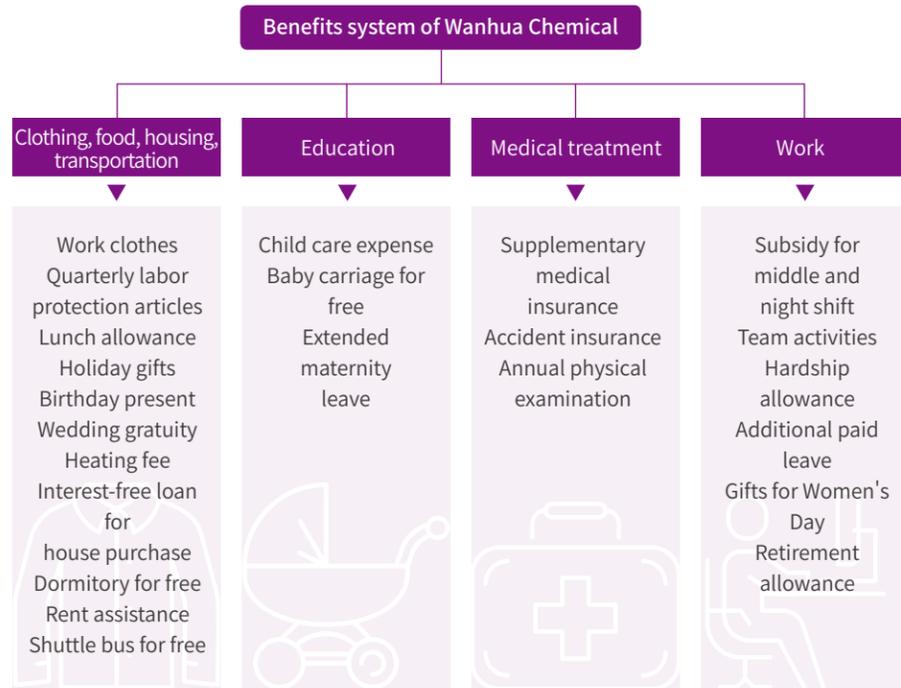
Benefits System

Talent is the priority. Merit is achieved by virtue of talent, and careers are expanded by talent. Wanhua understands the importance of stable talent for Wanhua's development, and continues to think about ways of retaining talent.

Based on the strategic development needs of the company and the methodology of the external professional consulting company, Wanhua has set up and formulated a reasonable remuneration management system. Wanhua provides competitive remuneration and bonuses for employees, and regularly improves the remuneration. Male and female employees receive equal pay for equal work, and the minimum salary for all Wanhua employees is higher than the local (refer to Beijing, Yantai, Ningbo, Guangdong) minimum salary level. Wanhua provides benefits for all on-the-job and retired employees, and provides a greater guarantee for special groups, such as female employees in lactation period, who can apply for extended maternity leave in addition to the state-specified maternity leave.

In addition to paying the full amount of five social insurance and one housing fund for all employees in accordance with state regulations, Wanhua has established a complete system of fringe benefits.





Employee Care

Wanhua implements our employee care policy through multiple channels such as trade unions, and kindness fraternities. Wanhua has established the "kindnessfraternity" and a compassionand mutual assistance fund. The fund is managed in accordance with the Interim Measures for the Administration of Mutual Assistance Fund for Employees of Wanhua Chemical Group Co., Ltd. to help Wanhua employees to alleviate emergency difficulties caused by severeillness or misfortune.

When a major change occurs atWanhua, the affected employees will be notified at least one year in advance. Wanhua was in an expansion period in 2018, with no layoffs or other major incidents, and no complaints or claims.



Kindness Fraternity



The customer service department atWanhua Chemical' sHome of Employeeson Zhujiang road provides washing, mending, entertainment and other services for the convenience of the employee



Wanhua Mom' s House is named "Demonstration Mom' s House" by the Yantai Trade Union Federation



Seek truth from facts and innovate in science and technology-celebration of the 40th anniversary of Wanhua



Fight together in harmony-Group Wedding for 100 Couples in 2018 (the company invested RMB 997,000 in group weddings in 2018, up 28 percent from the previous year)

Wanhua On My Mind

| Department | Name of Model Worker | Evaluation From the Company | Employee's Evaluation of the Company |
|---|----------------------|--|---|
|  Finance Department | Zhuang Chaowu | Dedicated and conscientious, brave and innovative | Wanhua is a national enterprise honored by society. Its cultural values are full of warm and positive energy, the company's leaders are innovative and hard-working, and the company is full of talented employees. |
|  Performance Chemicals Department | Li Hailong | Takes the lead, not afraid of difficulties | Wanhua attaches great importance to greening and environmental protection, and you can feel the vitality of green in Wanhua Park. |
|  聚醚事业部 | Lian Juqing | Hard-working and dedicated without shirking responsibility | The hard work and dedication of employees at Wanhua and innovative R & D stimulate the passion and morale of employees and family members to contribute to the establishment of a world-leading new chemical materials company. |
|  Global Operation & Control | Jiang Jiande | Hard-working and throws himself into work | Wanhua is a model of chemical industry innovation in China. Advanced ideas and systems of international automation can be implemented rapidly. |
|  Petrochemical Company | Wang Desong | Deepens work arrangement and acts with precision | Wanhua is an excellent enterprise with sustainable development motivation and makes employees feel the utmost respect. |
|  Marketing Department | Wang Renyu | Takes customer-oriented accurately | Wanhua is a green and environmentally friendly sustainable development enterprise and a company that is responsible to society and employees. |
|  Wanhua Ningbo | Han Guang | Practical and innovative, dares to think and dares to act | Good work deserves good pay. Wanhua is a platform for learning innovation and mutual achievement. |
| | Zhao Xianqing | Cautious and conscientious, and devoted quietly | Wanhua is a green and modern chemical enterprise that is warm, has a vigorous spirit, and is aspiring and aspirant. |
| | Feng Huiqiang | Provide optimized technical innovation to ensure safety | Wanhua is an enterprise worthy of employees' confidence, care, and lifelong trust. |
|  Yantai Production Base of Wanhua Chemical | Xu Changbao | Work hard and continuous dedication | I can feel the sense of caring everywhere at Wanhua. Wanhua gave me the strength to pursue excellence. |
| | Li Caihua | Focused on proficiency and technology inheritance | The company provides us with a good working, living, and learning environment, a platform to show our self-worth, so that we can fully devote ourselves to work and feel the fulfillment and happiness in our careers. |
| | Su Jingran | A fighter who likes a challenge | Wanhua provides us with a garden-like working environment. |
|  Academia Sinica | Hu Zhan | Stays true to the mission and forges ahead | Wanhua is a responsible company. It takes responsibility for the safety of its employees, the quality of its products and the surrounding environment. |
| | Yi Guangquan | Makes unremitting endeavors and works hard | Wanhua is a company with a high sense of social responsibility and humanistic care. As an employee, we can feel the warmth of home and a sense of responsibility as a social citizen. |

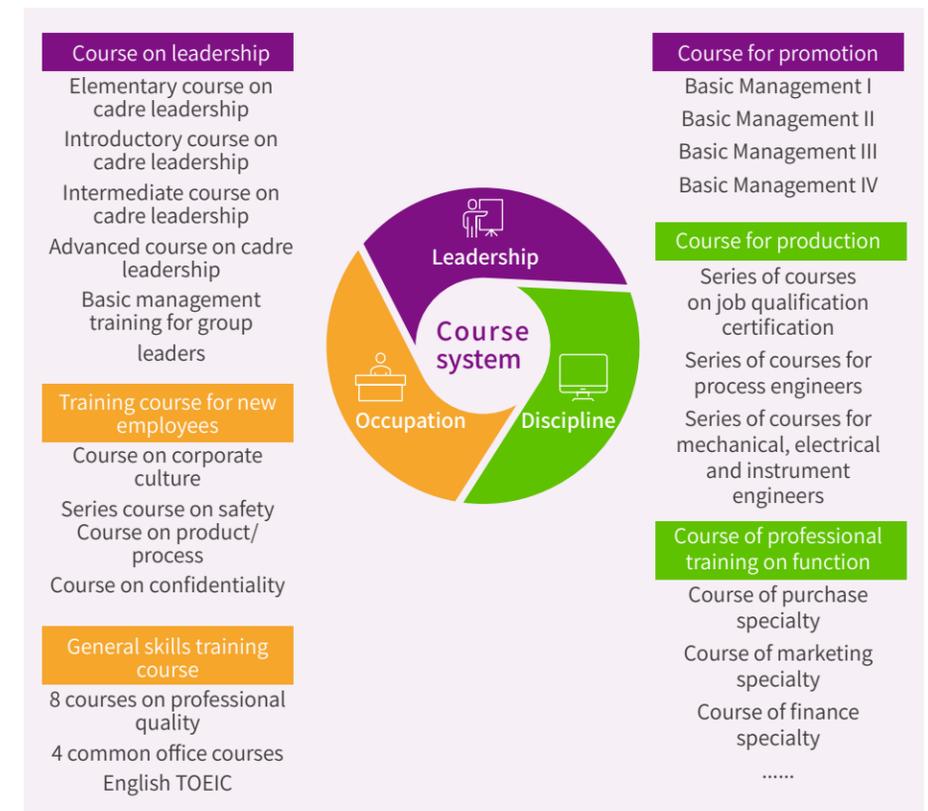
EDUCATIONAL DEVELOPMENT

Education and training

Wanhua's Human Resources Department is responsible for the establishment of a systematic training system and employee development system to comprehensively enhance the ability of employees at all levels and provide talent for the company's rapid and sustainable development. Wanhua emphasizes "lifelong learning", "employee learning", "full-process learning", and "group learning". By maintaining our learning ability, Wanhua solves obstacles along the road to development in a timely manner and continuously overcomes the limits to our company's growth, thus maintaining a trend of sustainable development. Wanhua conducts regular performance and professional development assessments for all employees according to Performance Management System of Wanhua Chemical.

Wanhua's training methods include internal training, external training, and online learning. The company's OA platform has a special "learning portal", and employees can sign up through the learning portal to participate in the company's various types of training, such as general course training, English training, training on the basics of management, safety training examination for all employees, security training examination and so on. Training will be issued regularly on the company's website, and employees may arrange training to suit their own schedule.

After nine years of development, accumulation, and practice, Wanhua has now established six categories of courses for all employees.



| Content | Date | Male (regular worker) | Female (regular worker) | Regular worker |
|---|--------|-----------------------|-------------------------|----------------|
| Average hours of training per year per employee | 2016 年 | 37 | 37 | 37 |
| | 2017 年 | 40 | 40 | 40 |
| | 2018 年 | 71 | 71 | 71 |

All employees of Wanhua including 117 security personnel are trained in the knowledge of social responsibility and skills at different periods.



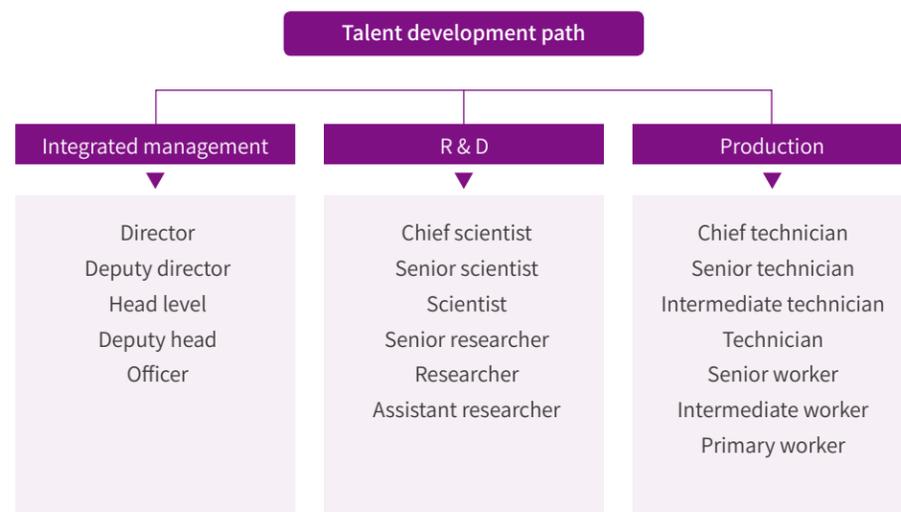
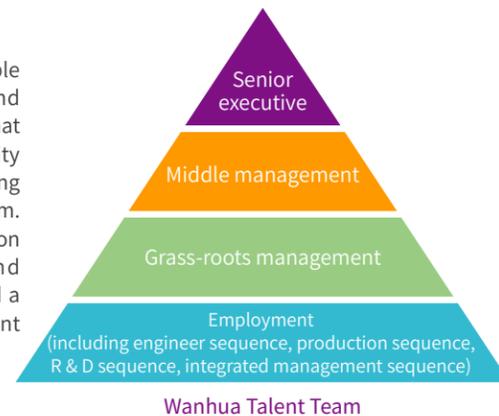
In the first "Intern Program of undergraduate, master and doctor", 54 interns came to Wanhua for internships, and 28 were employed.



Wanhua Chemical was awarded the "Special Contribution Award for Interns' Exchange" by IAESTE

Career Development

Wanhua provides employees with suitable positions based on their situations and makes full use of their talents to ensure that every employee will have the opportunity to make full use of their talents by applying those talents in a position that suits them. Based on the company's scale, production characteristics, business model and development strategy, we have planned a talent team structure, talent development path and management mechanism.



Talent Management Mechanism

- For the global development of the company, Wanhua has established an international talent pool and conducted international talent training. In addition, we have also set up a talent pool for key potential talent and successors. Each year, we take stock of key talents with the general manager of the department and sort out the talent training plan. We have face-to-face interviews with key talent to understand their needs and formulate solutions. Through Wanhua University, Wanhua teaches according to its aptitude, provides corresponding training, and relies on the company's rotation system to enable employees to fully understand the company's operations, thus ensuring the comprehensive, in-depth, and international development of talent.
- Wanhua conducts regular annual evaluations of employees, and introduces key talent diagnosis and evaluation tools, such as Hogan Evaluation and Gallup Strengths Evaluation, to improve our talent evaluation and assessment system.

Wanhua established a regular Wanhua Chemical Performance Management System, introduced key talent diagnosis and evaluation tools such as Hogan Evaluation and Gallup Strengths Evaluation, improved the talent evaluation and assessment system, and guided and encouraged employees at all levels to actively learn and develop.

| Planned of Talent Training in 2025 | Talent Training Achievements in 2018 |
|---|--|
| 对 Benchmarking advanced enterprises and studying the organizational structure of different stages of business development and the rational allocation of personnel. | 328 technicians |
| Consider in advance the reserve of talents for new businesses. | 176 in-service managers |
| Relying on Wanhua university to accelerate the growth of employees. | 464 new managers |
| Acquiring and training international talents. | Training of 5,186 employees to be promoted |

Focusing on the strategic goal of the company in 2025, based on the requirements for cadres with faith, ability, innovation, responsibility, and good conduct, and relying on the management mechanism of cadres, we will carry out "mixed training" that integrates centralized training, post-practice, action learning, mentoring and team learning, and implement systematic training through categories and levels.



The Fourth School-enterprise Co-construction Forum & Innovation and Application Competition of Wanhua Chemical

COMMUNITY CARE

As we rapidly grow and develop, Wanhua has also promoted the common growth of surrounding communities. Adhering to the value of gratefulness & dedication, on the basis of fully utilizing our own scientific and technological advantages, we assisted in providing education to communities and institutions of higher learning to promote communication between our company and the public.

In 2018, Wanhua spent RMB 1.91 million on public welfare, 1.5 times the investment amount of 2017. In 2018, Wanhua established the Wanhua Chemical Scholarship at 19 key chemical engineering schools in China to support the training and education of talent in the chemical industry. During the reporting period, the expenditure of scholarships was RMB 970,000 and more than 200 outstanding students are awarded.

The support of surrounding communities has been a major factor in allowing Wanhua to develop smoothly. We fully realize that enhancing the transparency of operations benefits both the public and our company. Wanhua regularly releases information on safe operations and monitoring results to the community to protect the right to know of residents in the surrounding communities.

Targeted poverty alleviation is also an important topic of community care at Wanhua. We respond positively to the government's call to receive poverty alleviation tasks, precisely connect poverty alleviation targets, and strive for the best poverty alleviation performance. Wanhua helps the local government to build infrastructure such as street lights, roads, sports and fitness facilities, public health, and greening through targeted assistance and community co-development activities. In the past three years, Wanhua has allocated more than RMB 20 million for targeted poverty alleviation.



First Community Cultural Festival & Community-enterprise Spring Party of Wanhua Chemical



Wonder lab Public Science Popularization Open Day



Popularization Open Day "Communication with students of excellent performance" held by Yantai Industrial Park and Dajijia Middle School



Doctor's lecture hall



Doctor's lecture hall

LOOKING FORWARD

Since our establishment 40 years ago, Wanhua has grown from a small synthetic leather factory to the world's largest MDI producer, expanding from the polyurethane industry to the petrochemical and fine chemical industries, from domestic operation to international development, and from the simple goal of "providing ordinary people with leather shoes" to the ambition of "becoming one of the world's top 10 chemical enterprises and the world's top 500 most competitive companies". This has been made possible through the dedication of generations of Wanhua employees.

Wanhua's comprehensive and sustainable development capability is the key to achieving and maintaining world-class competitiveness. We have set up a Sustainable Development Commission. Based on the UN's 2030 Agenda for Sustainable Development and 17 goals for sustainable development, the Wanhua Sustainable Development Commission analyzes the future development of Wanhua from economic, environmental and social angles, and focuses on innovation in science and technology as a driving force, undertaking the responsibility of development. We will keep going and will not fail in the execution of our mission.

In 2018, Wanhua made great achievements in sustainable development in different fields such as product and management innovation, safe production, and progressing towards zero emission. General Secretary Xi Jinping affirmed Wanhua's path of independent innovation during his visit to Wanhua's Yantai Industrial Park. We will sum up our experience and lessons, make persistent effort, and forge ahead towards our goals.



REPORT VERIFICATION



ASSURANCE STATEMENT

SGS-CSTC STANDARDS TECHNICAL SERVICES CO., LTD.'s REPORT ON SUSTAINABILITY ACTIVITIES
IN THE SUSTAINABILITY REPORT OF WANHUA CHEMICAL GROUP CO., LTD. FOR 2018

NATURE AND SCOPE OF THE ASSURANCE / VERIFICATION

SGS-CSTC Standards Technical Services Co., Ltd. (hereafter as "SGS") was commissioned by Wanhua Chemical Group Co., Ltd. (hereafter as "Wanhua Chemical") to conduct an independent assurance of the Wanhua Chemical Group Co., Ltd. **Sustainability Report (2018)** (hereafter as "the Report"). The scope of the assurance, based on the SGS Sustainability Report Assurance methodology, included the text, data, graphs and statements contained in Chinese version of the Report 2018. Data and information are verified by SGS auditors at No.59, Chongqing Street, Economic and Technological Development Zone, Yantai, Shandong Province, P.R., China, where is the headquarters of Wanhua Chemical Group Co., Ltd. was not included in this assurance process.

The management of Wanhua Chemical are responsible for the information in the Report and its presentation.

Our responsibility is to express an opinion on the text, data, graphs and statements within the scope of assurance with the intention to inform all Wanhua Chemical's stakeholders.

SGS sustainability report assurance protocols are based on internationally recognized guidance, including the Principles contained within the GRI STANDARDS (2016) and guidance on assurance level of AA1000 series standards.

The Report has been assured at a moderate level of scrutiny using our protocols for:

- Evaluation of content veracity; and
- Evaluation of the report based on the core option of GRI STANDARDS.

The assurance comprised a combination of pre-assurance research and onsite verification activities. We have interviews with relevant employees and documentation and record review at the headquarters of Wanhua Chemical.

Financial data drawn directly from independently audited financial accounts has not been checked back to source as part of this assurance process.

STATEMENT OF INDEPENDENCE AND COMPETENCE

The SGS Group of companies is the world leader in inspection, testing and verification, operating globally and providing services including management systems and service certification; quality, environmental, social and ethical auditing and training; environmental, social and sustainability report assurance. SGS-CSTC affirm our independence from Wanhua Chemical, being free from bias and conflicts of interest with the organisation, its subsidiaries and stakeholders.

The assurance team was comprised with people who have knowledge, experience and qualifications for this assignment, including Sustainability Reporting Lead Auditor, CCAA Registered ISO 9001 Auditor, ISO 14001 Auditor and ISO 45001 Auditor.

VERIFICATION / ASSURANCE OPINION

On the basis of the methodology described and the verification work performed, we are satisfied that the information and data contained within the Report is accurate, reliable and provides a fair and balanced

representation of Wanhua Chemical's sustainability activities in 2018.

The assurance team is of the opinion that the Report can be used by the Wanhua Chemical's Stakeholders.

We believe that Wanhua Chemical has chosen an appropriate reporting option in accordance with GRI Standards, and information contained within the Report can be used by its stakeholders.

GRI STANDARDS CONCLUSIONS, FINDINGS AND RECOMMENDATIONS

In our opinion, the Report is presented in accordance with the core option of GRI Standards and fulfill all required content and quality criteria.

Principles

Stakeholder Inclusiveness

Wanhua Chemical establishes a diversified stakeholder dialogue mechanism. Key stakeholders are engaged in diversity communication. A special stakeholder engagement was arranged in this reporting cycle.

Sustainability Context

Wanhua Chemical fully considers the sustainable development background in the industry, and shows its sustainability performance in economic, environmental and social issues.

Materiality

Wanhua Chemical determined reporting material issue by two-dimension analysis of sustainability impact and stakeholder engagement. Disclosures in the Report are described appropriately.

Completeness

Wanhua Chemical set up sustainability framework and disclosed its sustainability performance in economic, environmental, and social area with completeness.

Balance

Positive and negative impacts and performance are both disclosed in the Report.

Comparability

Wanhua Chemical shows the historical data in the Report. Stakeholders can get the comparable information from these historical data.

Accuracy

Wanhua Chemical's data management mechanism is objective and complete, which can guarantee the accuracy of the data in the Report.

Timeliness

Wanhua Chemical would report annually and stakeholders can get its sustainability information in a timely manner.

Clarity

Descriptions, charts, pictures, and other forms are used in the Report, sustainability information are clearly presented.

Reliability

The data and information in the Report can be traced and verified by internal collection, recording, compiling, analysis and disclosure to ensure the quality and materiality.

Management Approach

Management Approaches are described clearly in the Report.

General Disclosures

The general disclosure part of the Report is in accordance with requirements of GRI Standards core option.

Topic-Specific Disclosures

Topic-specific disclosures on economic, environmental, and social areas can be described in detail and in accordance with GRI standards.

Findings and suggestion

Best practices, advices on sustainable development management are all described in the Internal Management Report and submitted to Wanhua Chemical for continuous improvement.

Limitations of assurance

Only onsite verification at Wanhua Chemical headquarters office, data of affiliates were not traced to source records.

Signed:

For and on behalf of of SGS-CSTC Standards Technical Services Co., Ltd.



Ben Tsang

Senior Director, China and Hong Kong
Certification and Business Enhancement
30th Sep., 2019

A-16F, Century YuHui Mansion, No.73, Fucheng Road, Beijing, P.R. China
www.sgsgroup.com.cn

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READERS' FEEDBACK

Dear reader,

Thanks for reading this report!

This is the second sustainable development report drafted by Wanhua Chemical in line with GRI standards. Prior to this, we have issued this Report for ten consecutive years. We look forward to receiving your valuable comments and suggestions on this Report, and we are more than willing to adopt your ideas to better improve our future reports.

You are welcome to answer the following questions, and pass on this questionnaire to the contact below by email or other means:

Contact: Wanhua Sustainable Development Committee

Contact number: +865358203394

E-mail: stocks@whchem.com

Contact address: No. 59 Chongqing Avenue, Economic and Technological Development Zone, Yantai City, Shandong Province

Postal code: 264000

1. Please tick "✓" the corresponding cell in the table

| Questions: | Yes | No | Not sure |
|---|--------------------------|--------------------------|--------------------------|
| (1) Do you think this Report mirrors the significant impact on the environment, economy and society, and the Company's achievements in these areas? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (2) Do you think this Report discloses real, accurate and valid information? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (3) Do you think this Report is clear and easy to understand in terms of its descriptions, content arrangement and graphic design? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

2. Open-ended questions:

(1) Which part of this Report do you like best?

(2) What other information do you think needs to be disclosed in this Report?

(3) What are your expectations for the future sustainable development reports of Wanhua Chemical?

3. Please, if you may, leave your information, so that we can provide timely feedback on your comments and suggestions:

Name: _____ Company: _____

Contact number: _____ E-mail: _____

Contact address: _____

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