

Communication on Progress (COP)

한화케미칼
2017.07



Part 1. Hanwha Chemical Introduction

1. CEO Declaration Statement
2. Company Profile
3. The 10 Principles of UNGC
4. Sustainability Management System
5. Stakeholder Communication

Part2. 2016 Hanwha Chemical Sustainability Performance

1. Disclosure on Management Approach (DMA)
2. Reducing Environmental Impact
3. Securing Sustainable Competitiveness
4. Contributing to Regional Development
5. Nurturing Human Resources
6. Building Strong Partnership

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To our distinguished stakeholders,

I would like to express my heart-felt gratitude to you for your unwavering interest in and encouragement to Hanwha Chemical.

We at Hanwha Chemical strives to make continuous efforts to reinforce our sustainable management system, while focusing on generating positive impacts around the world through constant communications with our stakeholders.

We firmly confirm our consistent supports for the UN Global Compact (UNGC) and the ten principles of the UNGC since 2014.

In this report, we have highlighted our key performances from July 2016 to June 2017 in the following four areas: Human Rights, Labor, Environment and Anti-corruption.

We look forward to your continued interest and encouragement of our sustainability management as we create a sustainable tomorrow that enhances the value of human life.

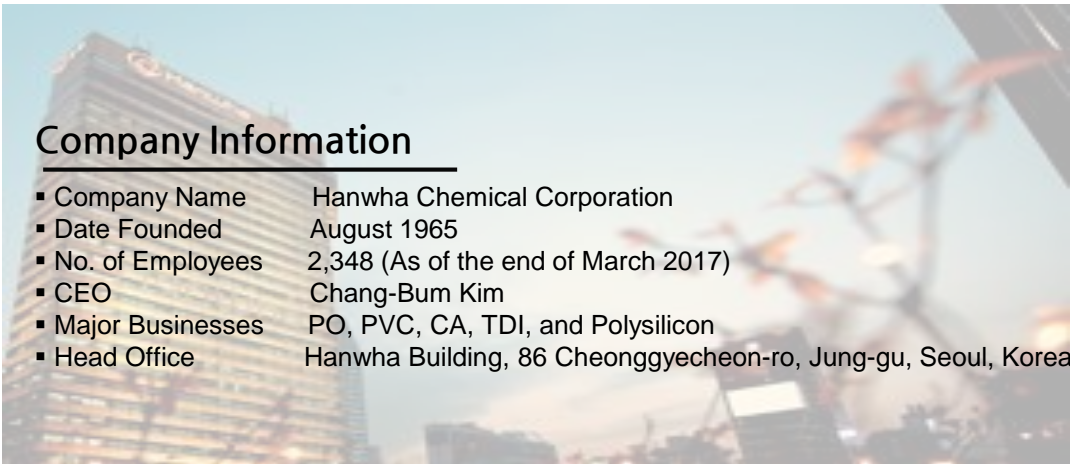
Thank you.

Chang-Bum Kim
President & CEO
Hanwha Chemical

Since its founding in 1965, Hanwha Chemical has led the Korean petrochemical industry through market-leading general-purpose plastics and a variety of inorganic chemical products. As the first producer of PVC goods in Korea, Hanwha Chemical succeeded in producing a full array of primary petrochemical products, including LDPE(Low Density Polyethylene), LLDPE (Linear Low Density Polyethylene), and CA (Caustic soda/chlorine). Based on its leadership in the petrochemical market, Hanwha Chemical is now achieving prominence in the polysilicon and Toluene Diisocyanate (TDI) fields, leaping forward as a leader in the chemical industry with its unrivaled creativity and competitiveness.

Company Information

▪ Company Name	Hanwha Chemical Corporation
▪ Date Founded	August 1965
▪ No. of Employees	2,348 (As of the end of March 2017)
▪ CEO	Chang-Bum Kim
▪ Major Businesses	PO, PVC, CA, TDI, and Polysilicon
▪ Head Office	Hanwha Building, 86 Cheonggyecheon-ro, Jung-gu, Seoul, Korea



Product at a Glance

Hanwha Chemical offer top-of the-line products through R&D activities and market analysis.

PO

- LDPE
- EVA
- LLDPE
- HDPE
- W&C Compounds

PVC

- PVC Resin
- Copolymer
- Terpolymer
- Paste Resin
- Plasticizers
- OA
- PA/MA

CA

- Caustic Soda(NaOH)
- Chlorine (Cl₂)
- EDC
- VCM
- ECH
- Hydrochloric Acid (HCL)
- HYPO

TDI

- TDIs
- TDI Derivatives
- TM
- TDA

Polysilicon

- Polysilicon

2016 Key Economic Performance

Total Assets	73,326	(Unit: KRW 100M)
Sales	34,827	
EBITDA	5,749	



Human Right

- ✓ Principle1. Business should support and respect the protection of internationally proclaimed human rights; and
- ✓ Principle2. make sure that they are not complicit in human rights abuses.

Labor

- ✓ Principle3. Business should Uphold the freedom of association and the effective recognition of the right to collective bargaining;
- ✓ Principle4. the elimination of all forms of forced and compulsory labor;
- ✓ Principle5. the effective abolition of child labor; and
- ✓ Principle6. the elimination of discrimination in respect of employment and occupation.

Human Right

- ✓ Principle7. Business should Support a precautionary approach to environmental challenges;
- ✓ Principle8. undertake initiatives to promote greater environmental responsibility; and
- ✓ Principle9. encourage the development and diffusion of environmentally friendly technologies.

Anti-Corruption

- ✓ Principle10. Business should Work against corruption in all its forms, including extortion and bribery.

To become a leader in the chemical industry with creativity and competitiveness, Hanwha Chemical devises strategies for sustainability management that focus on reliable products and services, lead to investment and confidence from shareholders, and inspire pride in employees.

Declaration for Sustainable Growth

As a forward-looking, socially responsible company, Hanwha Chemical requires all employees to observe six key principles in their daily operations. These principles reflect the Company’s business objectives and management philosophy:

- We conduct all business to ensure social and environmental sustainability and benefit.
- We respect regional characteristics and contribute to the local development
- We address the wishes of stakeholders and improve in areas where they raise concern
- We meet our duty to law and ethical standards sincerely and fairly
- We respect the importance of environmental management and comply with environmental safety and health guidelines
- We share with communities and contribute through social activities with pride and responsibility



Key Directions of Sustainability Management

Classification	Directions	Organization
Environment Management	<ul style="list-style-type: none">• Diversify the business portfolio through eco-friendly and future-oriented approaches• Continuously improve the stability and eco-friendliness of products• Foster competitiveness in renewable energy technologies• Provide environmental, safety, and health management systems	<ul style="list-style-type: none">• Production Team• R&D Center• Environment Safety Team
Human Resource Management	<ul style="list-style-type: none">• Implement fair, systematic HR development• Adopt systems to encourage work-life balance• Empower female employees• Improve organizational culture through the Great Work Place principle	<ul style="list-style-type: none">• HR Planning Team• HR Development Team
Volunteer Management	<ul style="list-style-type: none">• Set clear objectives for social outreach activities• Conduct social contribution programs to engage local communities• Promote employees' voluntary and active participation• Continue in social contribution activities customized for beneficiaries	<ul style="list-style-type: none">• General Affairs Team• Corporate Planning Team
Partnership Management	<ul style="list-style-type: none">• Grow the Company's business with customers• Establish partnership based on growth and trust• Provide education and other supports for partner companies	<ul style="list-style-type: none">• Sales Teams• Communication Team• Procurement Team
Integrity Management	<ul style="list-style-type: none">• Comply with laws and market regulations• Conduct periodical education programs and appoint fair-trade compliance officers• Develop ethical guidelines and whistle-blowing system	<ul style="list-style-type: none">• Sales Teams• Communication Team• Legal Affairs Team

Hanwha Chemical develops close cooperative relationships with stakeholders, including customers, shareholders, suppliers, non-profit organizations and government agencies, and regularly provides them with relevant information through its sustainability reports, website and social media. The Company provides the communication channels listed below in order to reflect the opinions of stakeholders on sustainable development.

Key Communication Channels



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Disclosure on Management Approach (DMA)

The contents of this COP are determined based on the following key issues, and other issues are also included in this report. Further information is provided in the company website(hcc.hanwha.co.kr) and DART (dart.fss.or.kr)

Title	Importance of issues	Responding Activities	Plans
Reducing environmental impact	To address issues arising as the major products of the company are related to chemical substances as a petrochemical company	<ul style="list-style-type: none"> ● Control of air pollutant dispersion ● Operation of an on-site water analysis laboratory ● Asbestos-free workplaces ● Chemical incidents emergency responses ● GHGs response 	Implementing a world-class, integrated chemical management system for efficient data gathering and energy consumption control
Promoting workplace safety	To cope with public awareness of workplace safety and employee health	<ul style="list-style-type: none"> ● Fire fighting programs and events ● Sharing growth with and safety awareness of partner companies ● Expanding healthcare activities of employees 	Holding more employee education programs and informal meetings with partner companies
Securing sustainable competitiveness	To secure sustainable business growth through customer- and eco-friendly product development	<ul style="list-style-type: none"> ● Analysis on substances restricted and TVOCs ● Development of eco-friendly plasticizers and PSRs 	Exploring more eco-friendly technologies and products
Contributing to regional development	To fulfill corporate citizenship in line with the group's social contribution philosophy through active charity activities	<ul style="list-style-type: none"> ● Social welfare improvement, culture and arts patronage, region-friendly activities 	Expanding region-friendly social contribution activities, and communication channels
Nurturing human resources	To implement scientific and professional talent development programs for global expansion and business diversification strategies	<ul style="list-style-type: none"> ● HR recruit and development programs ● Employee welfare programs ● Labor-management cooperation 	Promoting labor-management communication to improve working environment and performance
Building strong partnership	To build mutual trust with partner companies by promoting fair trade and assisting their business growth	<ul style="list-style-type: none"> ● Procurement policy, supplier evaluation system improvement ● Sharing growth with partner companies ● Quality management and CS process 	Building more mutually beneficial relationship with partner companies through management supports and educations
Enhancing integrity management	To ensure transparency and fairness in management to achieve the company's goal becoming a leader in the global chemical industry	<ul style="list-style-type: none"> ● Fair trade practices ● Ethical management and internal control 	Promoting ethical management through continual educations

As a responsible member of the community, Hanwha Chemical pursues strict management standards and systems to minimize emission of environmental pollution and chemical substances.



Air Pollution Protection

Air Pollution Reduced through Sources Management

The Company's Yeosu Plant produces hydrochloric acid the thermal cracking of chlorinated organic wastes. During the scrubbing process in its production of hydrochloric acid, the plant periodically employs TMS* to monitor the concentration of pollutants. The plant also uses barcode tags and implements LDAR* systems to track suspicious non-point sources of pollutants that may generate volatile organic compounds (VOCs) and hazardous chemicals. Through this periodic monitoring, the plant maintains its emissions of air pollutants at 30% below legal maximums.

* The Telemetry System (TMS) is an automatic, around-the-clock air pollution treatment system that allows the Company to measure levels in the concentration of air pollutants and to keep related data at an air-pollution control center. Yeosu Plant currently operates three TMSs and plans to launch a new OXY-S process.

* The LDAR (Leak Detection And Repair) system is designed to periodically measure chemicals generated from non-point pollutant sources, including valves, flanges, and pumps at production facilities. In the event of out-of-range emissions, the system repairs emitting facilities. The Yeosu Plant currently operates an LDAR system for 6 production teams and more than 110,000 points.

Water Conservation

Wastewater Concentration Controlled by Water Analysis Laboratory

Yeosu Plant operates an on-site water analysis laboratory to check wastewater parameters such as pH, COP. And SS in a daily basis for each process. Additionally, 11 major hazardous wastewater substance are analyzed by GC-MS* equipment that allow the plant to measure and maintain concentration levels of the wastewater discharges at 30% below those required by the regulation.

* GC-MS: Gas Chromatography – Mass Spectrometer

Strategies for Climate Change Response

To proactively deal with global climate change and participate in emissions trading schemes, Hanwha Chemical has introduced a company-level organization dedicated to climate change response. This organization preemptively identifies risk and opportunity factors and devises strategies to address management issues related to climate change. It also shares information on these climate change issues throughout the Company, thereby encouraging employee participation and promoting awareness. As part of the Group's task force for emissions trading, the organization also assists in the enactment and execution of its Group-wide guidelines.

Mid-to-long-term Vision and Target

Vision : To become a Green Global Chemical Leader through green, sustainable growth
Target : To participate effectively in emissions trading schemes through low-carbon systems and technologies



To secure sustainable competitiveness, Hanwha Chemical conducts sustainable technology development and develops eco-friendly products.



Analysis of Eco-friendliness

The eco-friendliness of products is one of the most significant issues in sustainability management. Hanwha Chemical manages product quality through analysis of restricted hazardous substances (RoHS) and total volatile organic compound (TVOC). In addition, the Company has obtained certification from the Korea Laboratory Accreditation Scheme (KOLAS) for its advanced hazardous materials analysis system. Analyses and assessments include the following:



Classification	Details
Analysis of Hazardous Substances	<ul style="list-style-type: none">• Six restricted hazardous substances (RoHS), including Pb, Cd, Cr, Hg, PBBs, and PBDEs• Nine phthalates*, including DMP, DEP, DIBP, DNBP, BBP, DEHP, DNOP, DINP, and DIDP• Other materials restricted upon request, such as heavy metals, in addition to those designated in the RoHS
TVOC Analysis and Evaluation	<ul style="list-style-type: none">• TVOC*, FA* and individual VOC* analysis, including 20L Small Chamber, Headspace, TD, Tedlar bags, HPLC, GC, GC, and MSD, for raw materials and finished products• TVOC discharged from and FA for raw materials and finished products for construction and materials used in automotive interiors

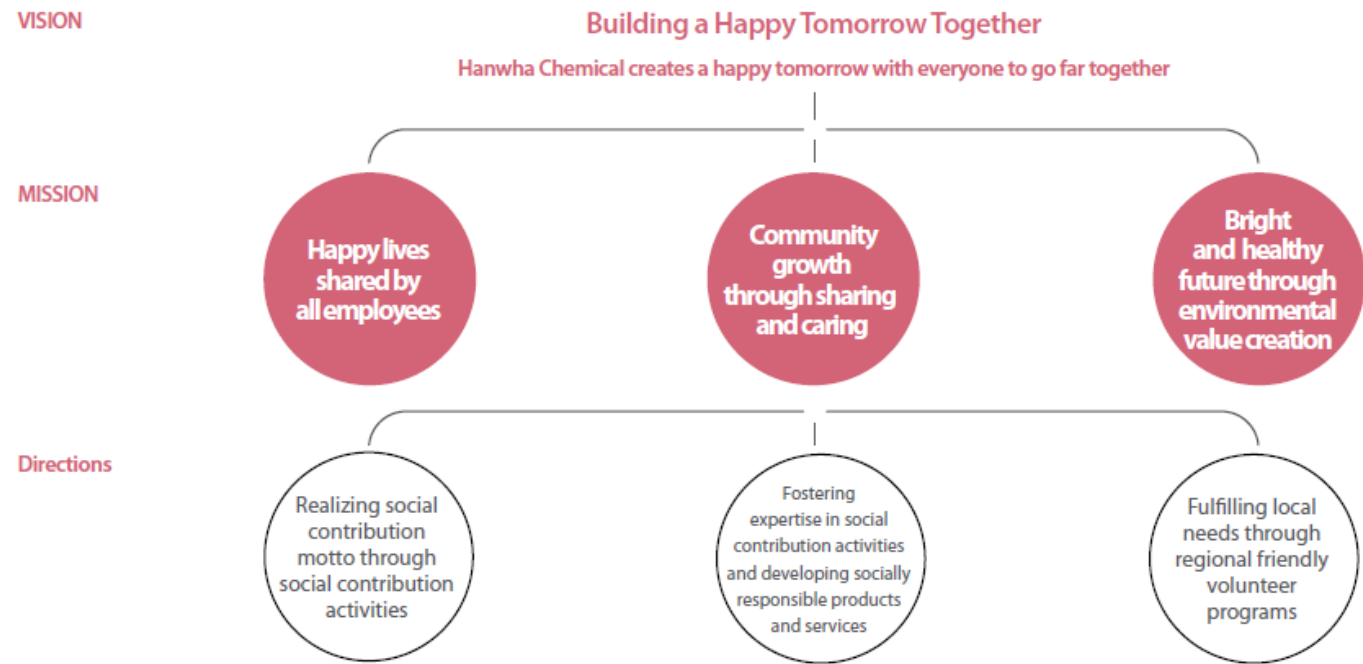
* Phthalates are chemical additives used in the softening of plastics
* TVOC stands for total volatile organic compounds
* FA stands for failure analysis
* Volatile Organic Compounds (VOC) cause photochemical smog by generating oxidizing materials such as ozone through photochemical reaction in the air.

Our Eco-friendly Main Product : ‘Eco-DEHCH’ (Eco-friendly Plasticizers)

As the world’s awareness of environmental protection rises, the monitoring and regulation of chemical substances has become more stringent than ever. The market for PVC plasticizers is also undergoing increased interest in eco-friendly materials. Along with this market change, the development of high-quality non-phthalate plasticizers is urgently needed. In response to the growth of eco-friendly markets, Hanwha Chemical is developing eco-friendly non-phthalate plasticizers. Following toxicity tests, it has completed verification and registration of these products as eco-friendly materials. The company has started commercial producing of perfect non-phthalate plasticizers, *Eco-DEHCH*.



Hanwha Chemical upholds a certain motto in its social contribution : “If you want to go fast, go alone. If you want to go far, go together.” To this end, the company continually implements new activities to address the wide range of social issues facing communities. Currently, its social contribution focuses on next-generation natural energy sources that it can contribute and share with communities.



Strategies of Social Contribution

Hanwha Chemical’s social contribution strategies assist people in developing eco-friendly lifestyles through future-oriented technology and natural energy sources for local communities. Its CSR extends into fields of social welfare, culture and art patronage, education, and other public charity work through cooperation with outside professional organizations, especially for future generations and the less privileged.

Contributing to Regional Development

Hanwha Chemical tailors CSR activities to each community and business. The Company focuses on four key areas: social welfare for the underprivileged; patronage of culture and arts; development of local communities; and education and public interest, in search of more structured social contribution.



1 Social Welfare for the Underprivileged

Hanwha Chemical implements a variety of social contribution programs to improve the welfare of the underprivileged. For example, the Company assists in vocational training for the disabled. At the main office and plants, the Company conducts soccer classes for students twice a month, and a youth soccer championship each year to nurture athletic talent in future generations. During the winter, employee volunteers deliver coal briquettes to socially-marginalized neighborhoods at risk of exposure to the cold.

3 Warm-hearted Community Relationships

Hanwha Chemical actively interacts with local communities and contributes to their development. The Company provides free meals, kimchi-making event, house repairs, and coal briquettes for the elderly and children near its plants, including the head office, Yeosu Plant, Ulsan Plant, and Daejeon R&D Center. It also supports families with multicultural backgrounds.

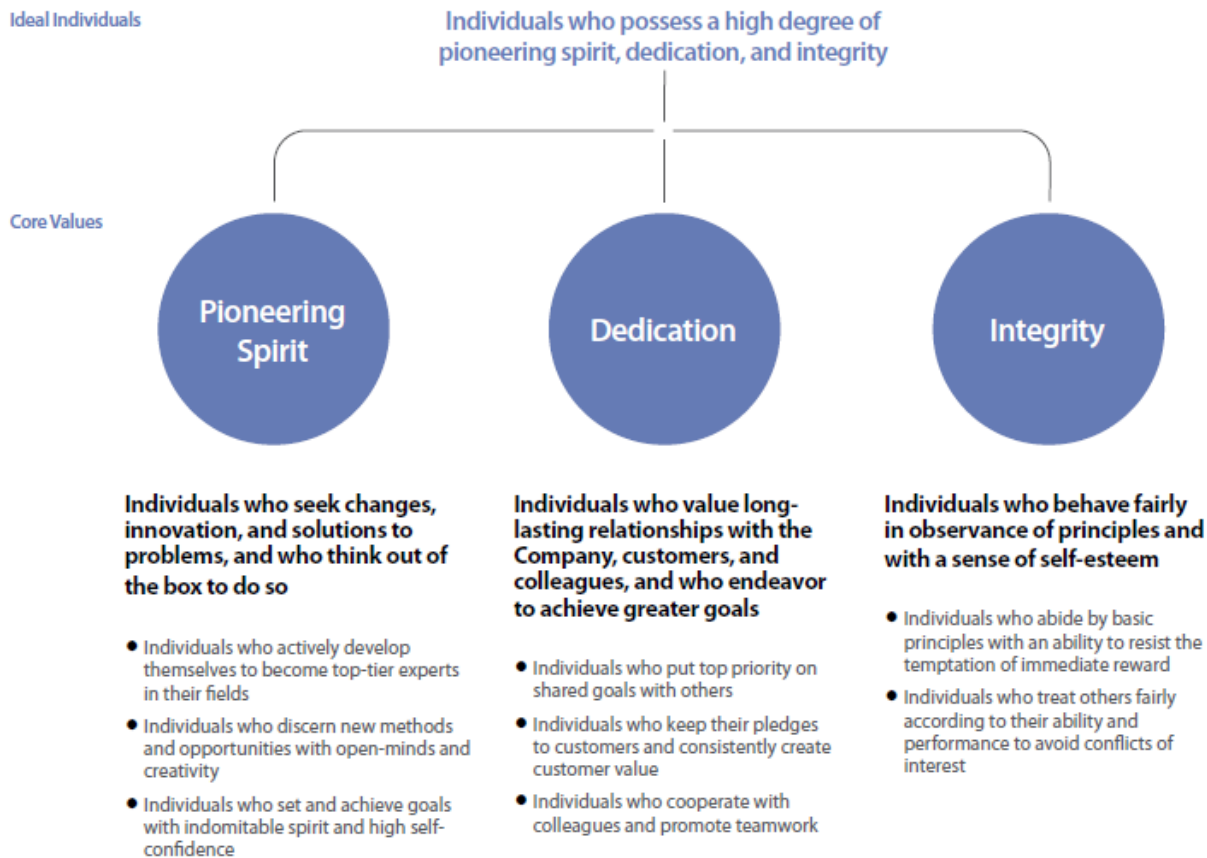
2 Culture and Arts Patronage

To further enrich people's lives, Hanwha Chemical continues to expand its patronage programs for culture and the arts. The Company sponsors an annual Symphony Festival at the Seoul Arts Center and conducts concert tours, helping to develop an audience for classical music. Since 2006, its national Pottery Contest for the Physically disabled has encouraged them to participate in creative leisure and cultural activities. During the third traditional arts festival from 2015 to 2017, the Company is promoting traditional culture in five areas of education and hands-on experience; activities include a traditional percussion quartet, drama, calligraphy, and folklore.

4 Education for Future Leaders

Since 2013, Hanwha Chemical has conducted the Energy Class for Tomorrow, a volunteer program that provides an opportunity for employees to help elementary students in communities near its plants. The program consists of interesting lectures for children and offers hands-on experience in difficult science topics. In the program, Company researchers, engineers and other volunteers visit schools and deliver lectures on energy issues, renewable energy sources, and solar cells. The outcome for the children is to assemble and run a race with solar-power cars for a hands-on understanding of renewable energy.

Hanwha Chemical understands the importance of its people as it enhances global presence and diversifies its business portfolio. To this end, it conducts a range of training programs and continually innovates its systems for human resources.



The Core Values for Hanwha Chemical

Hanwha Chemical has grown based on trust and loyalty - the trust that allows it to build trustworthiness and the loyalty enables it to make a relationship last in any situation. The Company fosters talented individuals with its core values in mind, including a pioneering spirit, dedication, and integrity.

Hanwha Chemical promotes employee engagement and satisfaction of partners through fair performance-based assessment and compensation.

Recruitment and Development

Hanwha Chemical looks for individuals with a high potential in global business and understand its future growth drivers. In addition to periodic recruitment twice a year, the Company hires talent on a rolling basis as needed in each function and business. It recruits and nurtures promising young talent through its close relationship with academia. The Company provides prospective recruits with a variety of information through online and overseas job fairs.

Welfare and Benefits

Hanwha Chemical provides a variety of welfare programs that place great value on the personal lives of employees. In one example, The Company offers a personal leave program called Refresh, which provides all employees with vacations lasting ten or fewer days-time that they can use for self-development.

The Company contributes to the well-being of employees by providing an in-house cafeteria, medical expenses for employees and their families, stipends of congratulations and condolence, and commuter bus services. In addition, employee clubs receive support, and the company provides an online library, welfare points, family days, invitation events for parent, and a variety of sports events.



Happy Workplace

- Commuter bus services at head office, Yeosu and Ulsan Plants
- Auto maintenance costs supports
- In-house cafeteria
- Employee clubs supports
- Day-off and employee gifts on foundation day (October 9) and Labor Day (May 1)



Healthy Workplace

- Medical expenses for employees and their families
- Operation of medical service rooms at plants
- Periodical health exams for employees and their spouses
- Various sports facilities
- Various sports events



Self-development and Vacations

- Degree programs including overseas MBAs, executive MBAs, and PhD programs
- Support for participation in regional specialist programs and overseas conferences
- Education expenses for intensive English and other foreign language courses
- Financial supports for in-house and external job training and leadership programs
- Online library for employees
- Rewards for exemplary employees
- Rewards for employees with long services (10, 20 and 30 years) and support for overseas travels
- Rewards for outstanding employees by job function each year
- 5-day work week and "Refresh" vacations (up to ten days)
- Use of Hanwha Resorts across the country at member prices
- Use of a recreation center provided by each plant during summer vacation season



Housing and Children's Education

- Company housing at workplaces and dormitories for singles
- Supports for moving costs
- Provision of interest-free housing loans
- Congratulatory money for children's admission into schools and education expenses
- Leaves and stipend for congratulation and condolence
- Maternity protection programs including leaves and financial supports
- Work hours reduction during pregnancy
- Operation of daycare centers
- Flexible working hours during child-rearing

Hanwha Chemical supervises and monitors all procedures in purchasing and selects suppliers according to well-defined evaluation guidelines. Through its partner relations, the Company contributes to the health of the market and helps suppliers develop their businesses, contributing in turn to its own reputation for trustworthiness.

Procurement Policies

Hanwha Chemical observes its own procurement guidelines. These guidelines cover all procurement steps including requests, orders, inspection, payments, and handling of defective items, thus ensuring proper management of the purchasing process. The head office and plants sign purchase contracts with suppliers after completing a thorough evaluation of estimates, supply capacity, track records, and reputation. For the procurement of regional and overseas plants, the Company prefers their local suppliers.

Supplier Evaluation

Hanwha Chemical evaluates suppliers before contracts and in follow-up reviews under various criteria, including business performance and credit ratings, organization and facilities for safety control, employee safety training, and health exams. The Company also evaluates suppliers' involvement in environmental conservation.

Selection and Support of Excellent Suppliers

Hanwha Chemical expands bidding opportunities for excellent suppliers selected through follow-up reviews. The Company also builds strong relationships with suppliers by listening to their opinions through cultural events and informal meetings with CEOs. Through active communication with partners, the Company is practicing its social contribution motto, "If you want to go fast, go alone. If you want to go far, go together."

Follow-up Evaluation for Contractors



Field Departments

- Safety programs
- Safety supervisors



Purchasing Teams

- Level of cooperations
- Product quality
- On-time delivery
- Credit ratings



Maintenance Teams

- Proactive preparations
- Prevention of safety incidents
- Quality control programs
- Supervision

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