



LEADING
FINE
CHANGE

Lifetime
Value Creator

ABOUT THIS REPORT

This Report is the third Sustainability Report of LOTTE Fine Chemical (LFC). The company has published and disclosed a report to stakeholders annually since its first report in 2016 to notify internal and external stakeholders of the sustainability of the company, and to listen to their expectations and demands. This Report integrates both financial performance and non-financial performance in one report, so that investors and other stakeholders can better understand the management status and corporate value of LFC.

REPORTING PERIOD AND SCOPE The reporting period is from January 1, 2017 to December 31 of the same year, and when it is deemed important information for stakeholders, the activities of Q1 2018 are also contained in the report. In the case of quantitative performances, the company has included data for the past three years to identify trends. The data with annual changes are based on the fiscal settlement date (December 31), and if necessary the company has disclosed information about the separate data collection period. This Report focuses on the economic, environmental and social performance of LOTTE Fine Chemicals' Ulsan complex as well as its Seoul office and Incheon plant. Some of the data disclosed include the performances of overseas subsidiaries, subsidiaries and supply chains.

REPORTING PRINCIPLES This Report is based on the "GRI Guidelines" to disclose performance by index and plan. The reporting status of the items recommended by the GRI Guidelines can be found in the GRI Guidelines Index on page 61. In order to ensure the reliability of the Report, LFC conducted a process to verify the contents of the Report and the factuality of the data through an independent assurance body. The results of the assurance can be found on page 64.

In addition, LFC applied ISO 26000, the international standard for social responsibility, and reported the performance of the UN Global Compact as the Advanced Level.

REPORTING STANDARDS LFC's sustainability report can be viewed and downloaded via its homepage (<http://www.lottfinechem.com>). For more details or questions, please contact the Team stated below. We are looking forward to hearing the various opinions of stakeholders.

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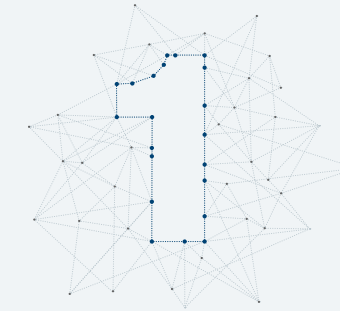
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You may download this Report via the website of LFC.

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Dear Stakeholders,

Allow me to extend my sincere gratitude for the continued interest and encouragement that you have shown toward LOTTE Fine Chemical.

LOTTE Fine Chemical (LFC) has made various efforts to enhance business competitiveness in 2017. First, the company decided to close its polysilicon business and its biodegradable resin business, both of which are not economically feasible, while the company expanded its HECELLOSE[®] products facilities, which are expected to be profitable. LFC sought to strengthen its specialty business through continuous development of new applications. In particular, profitability of the company has been remarkably recovered due to improved market conditions for caustic soda and raw materials for epoxy, ECH, a chlorine-based product in which the company has made preemptive investments.

As a result, the company's sales in 2017 reached KRW 1,159.5 billion and net income KRW 89.2 billion. Furthermore, operating profit reached KRW 111.1 billion, up sharply from KRW 29.7 billion in the previous year. Thanks to such performance, the highest dividends per each share were distributed. The share price of the company has more than doubled to KRW 64,900 (as of the end of 2017) from KRW 30,250 (as of the beginning of 2017). LFC believes that this achievement was possible because of the support and encouragement of our stakeholders who have always trusted the company during the period of poor earnings due to sluggish market conditions after making preemptive investments over the past period.

In 2018, the company faces uncertainties. Trade restrictions and retaliation are expanding due to the powerful countries' policies pursuing national interests first, which has an immediate and direct impact on corporate activities. In addition, the 4th industrial revolution, which is represented by artificial intelligence (AI), Internet of



Things (IoT), and big data, is breaking down the boundaries between industries and countries and dramatically changing the paradigm of management. As such, it is not easy for companies to predict the future.

Despite these uncertainties, LFC continues to make efforts to become a sustainable company. From a business point of view, the company has established a mid- to long-term vision of "Global Leader in Fine Chemicals" and is focusing on fostering Qualitative Growth & Enhancing Profitability, completing Capacity Expansion on Schedule and pursuing Operational Excellence. In order to fulfill our responsibilities, the company has established its CSR initiative "The World of Sharing and Mutual Cooperation" and established 3 + 1 social contribution strategies such as "Happy Family, Dreamy Future, Warm Companion, and Clean Environment." In particular, social contribution activities such as the "Urban Box Farming Campaign", "Multicultural Little Baseball League Club", and "Ulsan Whale Festival" are gaining great popularity among various stakeholders.

This Report is the third Sustainability Report of LOTTE Fine Chemical since 2016. The expectation levels for sustainability management required by society have been increasing rapidly. LOTTE Fine Chemical will pursue sustainability management that meets the expectations of stakeholders and will become a company that is loved by all of you.

Thank you.

May 2018
CEO of LOTTE Fine Chemical

Hong-Yul Lee

Since its establishment in 1964, LFC has been part of the history of the advancement of the Korean chemical industry. LFC, as the specialty chemical company based on time-honored capabilities and experience accumulated over the past 50 years, is leading new markets, and the company will continue its innovation and growth to create sustainable value which can be shared with the stakeholders.

Company Overview

Company Name	LOTTE Fine Chemical Co., Ltd.
Date of Establishment	August 27, 1964
Industrial Classification	Chemical product manufacturing
Address of Head Office	19, Yecheon-ro, 217 beon-gil, Nam-gu, Ulsan, South Korea
Employees	820

(As of the end of December 2017)

Far-reaching impacts



Leveraging Synergy Effects



LFC has successfully completed its business restructuring in February 2016, and has established a new growth base by strengthening synergies with LOTTE Group's chemical business sector based on its accumulated experience and technology gathered over the past 50 years. In 2017, LFC's challenges and innovations generated meaningful and tangible results in economic, social and environmental fields, and the company was able to take one step closer to the Group's vision of "Lifetime Value Creator."

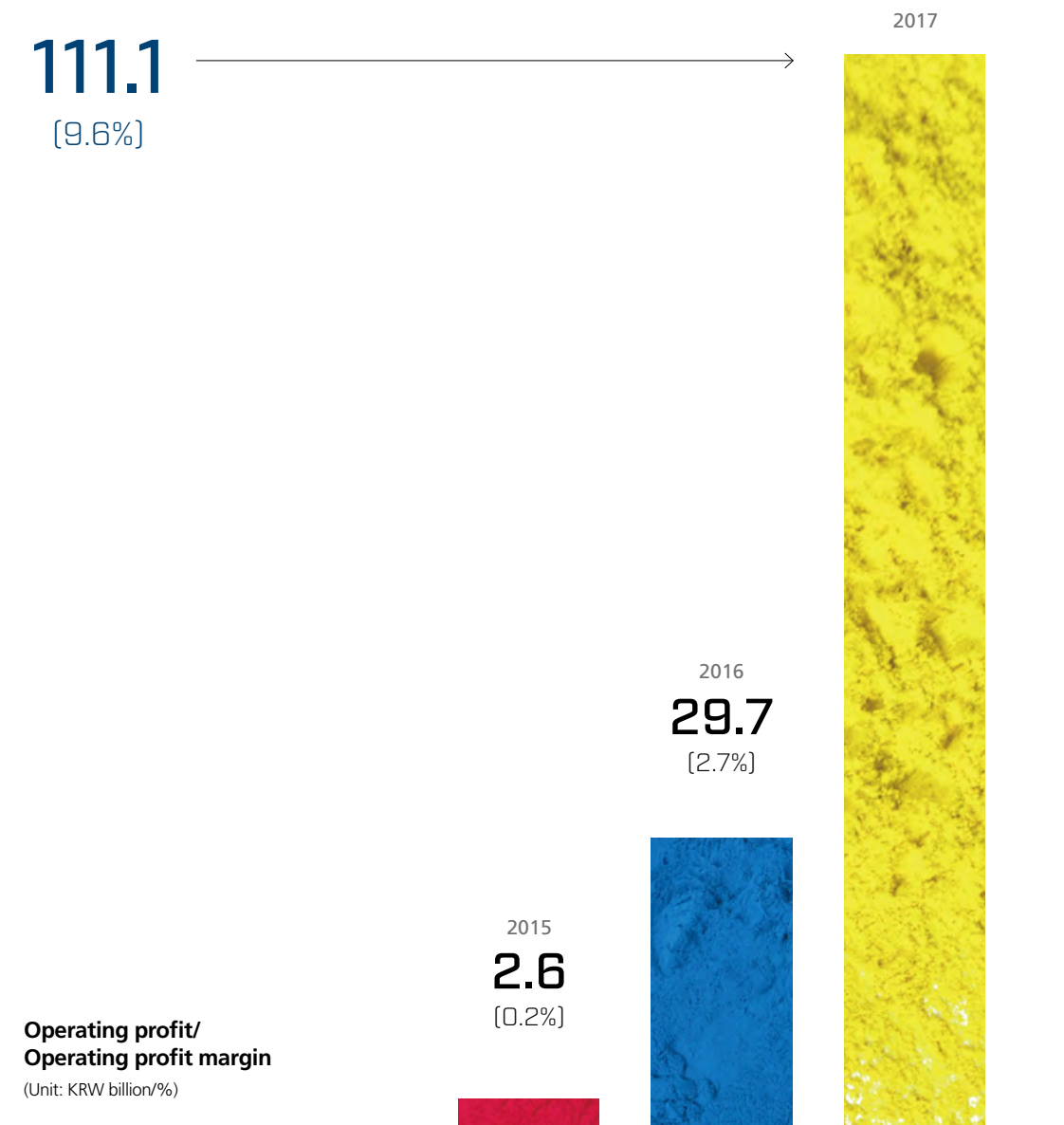
COMPANY VISION

In order to play a key role in LOTTE Group's chemical business sector, LFC has established a mid-to long-term vision of "Global Leader in Fine Chemicals."

Accordingly, the company will strengthen its synergies based on its position in the domestic market established by LOTTE Group and the network and operating capabilities in the global chemicals markets that the Group's chemical affiliates have developed. LFC will also foster qualitative growth, enhance profitability, complete capacity expansion on schedule, and pursue operational excellence, in order to grow into a sustainable company.



Robust and Profitable Growth



LFC exceeded its targets and recorded financial results that surpassed the market expectations, thanks to business efficiency and maximization of synergies that have been steadily promoted since its incorporation into LOTTE Group. In particular, the operating profit has risen from KRW 2.6 billion in 2015 to KRW 111.1 billion in 2017 following KRW 29.7 billion in 2016, and the operating profit margin has also improved by 6.9p year-on-year. This revenue growth is expected to continue in 2018, and accordingly, LFC plays a major role in the growth of LOTTE Group's chemical business sector.

SYNERGY CREATION

PRODUCT INNOVATION

STRONG INDICATION

MAJOR PRODUCTS

||| ADDING VALUES

The major areas of LFC are chloride relatives used in various industrial fields, high functional cellulose relatives, and ammonia products for enriching our lives, and electronic materials as a key to IT innovation.



Based on long-term, accumulated technical power and know-how in the general chemical field, LFC has built a business portfolio focused on high value-added products and has driven sustainable growth while expanding into specialty chemical businesses with cellulose products. Furthermore, LFC is making efforts to secure technology and cost competitiveness through continued investments and R&D activities to become the global leader in fine chemicals.

High Functional Cellulose Products

Capsule coating material for medicine, AnyCoat®

AnyCoat® is a high functional product used in coating and as a capsule raw material for medicine which enhances medicine delivery with characteristics such as viscosity, water solubility, and water-holding capacity.

Uses Capsules, coatings for medicine (for stomach and intestines), etc.

Food additive, AnyAddy®

AnyAddy® improves food texture using viscosity, water solubility, and maintainability.

Uses Food additives, health functional food coatings, gluten substitute additives, etc.

PRODUCT INNOVATION
STRONG INDICATION

REDUCING HARMMS



PRODUCT INNOVATION
STRONG INDICATION

Additive for construction, MECELLOSE®

MECELLOSE® is a water-soluble macromolecule product that performs specific functions such as thickening, moisturizing, lubricating, and stabilizing.

Uses Cement mortar, tile cement, ceramic extrusion, polymerization, etc.

Additive for paint, HECCELLOSE®

HECELLOSE® is added to paints and healthcare products including shampoo and body lotion. And it is a water-soluble polymer product that increases functions such as thickening and moisturizing.

Uses Paint, detergent, personal care, home care, medicine, oil drilling, etc.

Value-added Eco-friendly Products

Nitrogen oxide reducer, EUROX®

EUROX® is a catalyst reductant that reduces NOx, which is the cause of secondary fine dust emitted from diesel engines. It is a brand that LFC developed independently and is used in automotive and industrial SCR equipment. LFC is producing high quality EUROX® through strict quality control and inspection processes. Recently, due to the strengthened regulations on air pollution, the adoption of the SCR system that can effectively reduce nitrogen oxides in diesel vehicles is increasing, and it is expected to contribute to the growth of the company and to the protection of the air environment.

FINANCIAL PERFORMANCE

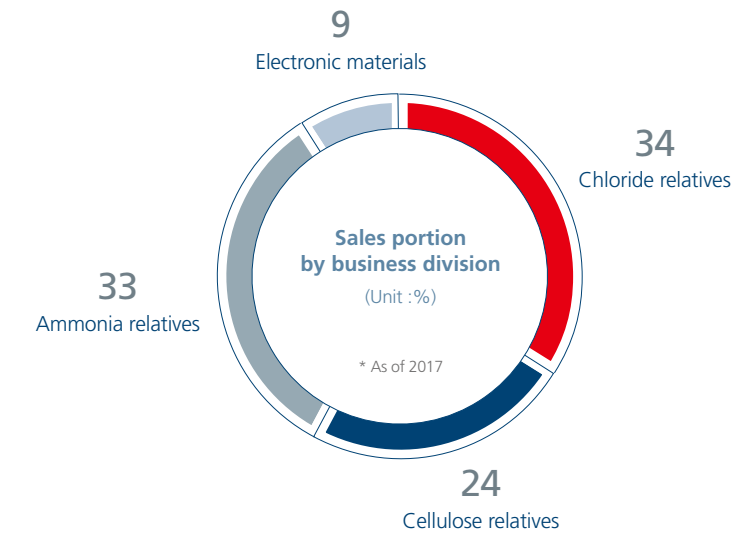
	2015	2016	2017
Summarized statements of comprehensive income (Unit: KRW million)			
Sales	1,161,863	1,110,704	1,159,511
Operating profit	2,554	29,750	111,125
Net profit	89,979	(43,547)	89,231

	2015	2016	2017
Summarized statements of financial position (Unit: KRW million)			
Total assets	1,684,225	1,530,938	1,641,304
Total liabilities	520,645	419,274	448,598
Total equity	1,163,580	1,111,664	1,192,706

	2015	2016	2017
Key ratios (Unit :%)			
Operating profit margin	0.2	2.7	9.6
Debt to equity ratio	44.7	37.7	39.0
ROE	7.6	(3.9)	7.5
CAPEX	1,740	363	631

* Based on K-IFRS consolidated financial statements

Stock price (Unit: KRW)



Far-reaching changes

In December 2017, LOTTE Group announced a new social contribution slogan, "The World of Sharing and Mutual Cooperation" and presented the Group's three core values of "Happy family", "Dreamy future" and "Warm companion" providing directions for its social contribution activities. LFC strives to faithfully fulfill its responsibilities as a corporate citizen by actively fulfilling social contribution policies of the Group and further promoting the "3 + 1 Specialization Strategies" by adding "Clean environment" as our representative social contribution field.



01

Happy Family

LFC supports the happiness and well-being of families through various social contribution activities targeting families and women.



02

Dreamy Future

LFC supports future generations by expanding our contribution activities linked to the local communities targeting children and adolescents.



03

Warm Companion

LFC finds ways to grow with local communities based on mutual growth activities with small business owners.



04

Clean Environment

LFC carries out local environmental improvement activities to respect and preserve the natural environment.



01

Happy Family



LFC supports happiness and well-being of family through various social contribution activities targeting families and women. Major activities include sponsoring women in multicultural families, service day for employees' children, activities for improving the living environment, and baking services for the Korea National Red Cross.



02

Dreamy Future



LFC supports future generations by expanding its contribution activities linked to the local communities targeting children and adolescents. Major activities include sponsoring multicultural orchestra groups, sponsoring the little baseball club, donating books, and support for children with disabilities. "Ulsan Swings" is composed of children from eight countries including China, Mongolia, Canada and Vietnam. LFC has been steadily supporting it since its establishment in 2014.



03

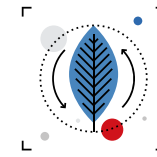
Warm Companion



LFC finds ways to grow with local communities. Major activities include support for whale festivals, Kimchi sharing activities, and corporate joint convention programs. In addition, in an effort to fulfill its commitment to the community, the company donates winter goods and Christmas gifts to our community at the end of the year.

04

Clean Environment



LFC carries out activities to preserve the natural environment. Major activities include the Urban Box Farming Campaign and the Taehwa River protection campaign. The Urban Box Farming Campaign has been promoted since 2010, and the Taehwa River protection campaign has been steadily developed since 2005, becoming two of our representative social contribution activities.

Green Change



SUSTAINABILITY MANAGEMENT

LOTTE Fine Chemical will pursue sound corporate governance and continuous growth, and will be a company that shares happiness with stakeholders.

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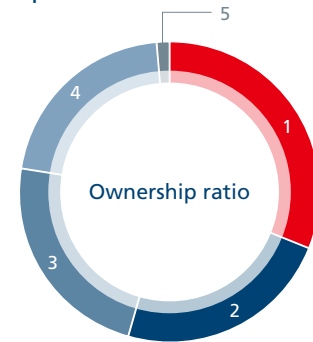
Corporate Governance

Shareholders Status

Composition of shareholders

The total number of listed shares of LFC is 25,800,000, all of which are common stock.

Ownership ratio



(As of the end of December 2017)

	Name of shareholders	Percentage
1	LOTTE CHEMICAL	31.13%
2	Individual investors	23.33%
3	Institutional investors	23.22%
4	Foreign investors	21.04%
5	Treasury stock	1.28%
	Total	100.00%

Composition and Activities of the BOD

Composition of the BOD

LFC operates a Board of Directors (BOD) by ensuring transparency of the BOD as the highest decision-making body, and carrying out management activities based on checks and balances. The BOD consists of two inside directors, a non-executive director, and two outside directors, who are the experts in each field. Based on the independence requirements, outside directors provide professional opinions regarding the company's major decisions in terms of sustainability management and evaluate and review the performance of the company. The Board meeting is held regularly in accordance with the annual operating plan, but a temporary Board meeting is convened in case of urgent decision-making issues. In addition, in order to prevent conflicts of interest, voting rights of the directors are limited in accordance with the Commercial Act and the Board of Directors' regulations.

(As of the end of December 2017)

Classification	Name	Career Profile
Inside director	Hong-Yul Lee	2014 Representative Director of Uz-Kor Gas Chemical
		2012 Representative Director of Daesan MMA
		2010 Head of Production Sector of Honam Petrochemicals
	Kyung-Moon Jung	2016 Head of Planning Sector of LOTTE CHEMICAL 2015 Director of Vision Strategy Office of Policy Headquarters of LOTTE Group 2012 Director of International Office of Policy Headquarters of LOTTE Group
Non-executive director	Jong-Min Yun	2017 Head of HR Innovation Office of LOTTE Holdings (President) 2014 Head of Policy Planning Department of LOTTE (Vice-president) 2003 Team Leader of Policy Planning Department of LOTTE
		Outside director
Seok-Hwan Park	2014 Auditor and Outside Director of LOTTE CHEMICAL 2012 Ambassador of the Embassy of Republic of Korea in UK 2011 1st Vice Minister for Foreign Affairs and Trade	
Auditor	Byung-Hong Kim	

* Outside director Seok-Hwan Park has retired in March 2018 after his term expired. Tae-Hee Woo was newly elected as outside director at the 54th ordinary general meeting of shareholders held on March 22, 2018, and the appointment was approved as of April 2, 2018 after approval of employment by the Government Ethics Committee.

Activities of the BOD in 2017

The BOD operates the ordinary and extraordinary BOD meetings as necessary, and deliberates and resolves the major management issues of the company as stipulated by the applicable laws, the articles of incorporation, and the BOD regulations. In 2017, a total of eight Board meetings were held and a total of 25 resolutions were passed. The average attendance rate of the outside directors was 100%.

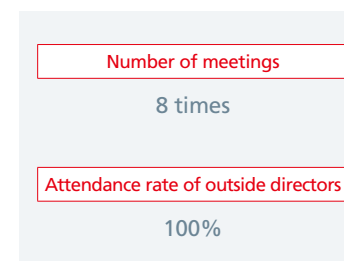
The BOD shall be convened by the chairperson of the Board or a director appointed by the Board, and resolutions are made by the attendance of the majority directors and the majority votes of the attending directors, except as otherwise provided in the applicable laws and regulations.

In addition, LFC discloses information on the Board, including the composition and performance of the Board of Directors and its subcommittees, and major resolutions, on its website. In addition, LFC discloses business reports on a regular basis and makes prompt and accurate disclosures required by laws and regulations and discloses matters that may have a material effect on shareholders and stakeholders.

Key resolutions of the Board

No.	Date	Key Agenda Items
1st	Feb. 9, 2017	• Approval of the 53rd financial statements and business annual report
2nd	Feb. 21, 2017	• Convening of the 53rd annual general meeting of shareholders and agenda thereof • Report on position adjustment of executives • Report on promotion and retirement of executives • Report on evaluation of operation of internal accounting management system in 2016 • Auditor's report evaluating operation of internal accounting management system • Report on the result of inspecting whether compliance control standards are followed
		• Appointment of CEO • Appointment of directors • Appointment of members of the management committee • Approval of execution of the 54th director compensation • Adoption of limit in remuneration of executives • Approval of limit in remuneration of executives in 2017 • Change in regulation on payment of retirement allowance for executives
3rd	Mar. 24, 2017	• Expansion of HEC • Issue of converted corporate bond • Provision of loan to S-EnPol • Approval of limits for transactions with major shareholders • Exercise of exclusive signature rights to overseas subsidiary in Europe • Reported: Business performance (Q1 of 2017) and projections (1st half of 2017)
4th	Apr. 28, 2017	• Sales of biodegradable resin business • Approval of M&A between LOTTE BP Chemicals and Asea Acetyls • Transaction of Pension Fund with special interest person • Approval of limits for transactions with major shareholders • Appointment of manager in charge of fair trade self-compliance • Reported: Business performance (1st half of 2017) and projections (2017)
		• Approval of brand name use • Contract for brand name use • Contract for advice on management and management support
5th	Jul. 27, 2017	• Approval of limits for transactions with major shareholders • Reported: Business performance (Q3 of 2017) and projections (2017) • Report on progress in sales of biodegradable resin business • Report on progress in SMP rehabilitation procedure
6th	Sep. 29, 2017	• Establishment of business plan for 2018 • Approval of comprehensive limits for transactions with major shareholders in 2018 • Result of sales of S-EnPol • Progress in bankruptcy procedure of SMP
7th	Oct. 27, 2017	
8th	Dec. 21, 2017	

BOD meetings in 2017



BOD Status

Transparency in appointing directors and expertise of outside directors

With its total assets less than KRW 2 trillion at the end of the previous year, the company does not have an obligation to operate an outside director nominating committee. However, for fairness and independence in management, it elects directors through nomination by the BOD and resolution by the general meeting of shareholders. Directors are required to satisfy the qualifications defined in the applicable laws and regulations and articles of incorporation and have integrity, sound ethical awareness, and a proper job mind, and to represent the long-term and balanced interests of all shareholders and stakeholders of the company. In addition, outside directors are judged by their suitability in consideration of field expertise and diversity. Accordingly, the company has elected directors who can make independent decisions and have no significant personal interests in the company.

Sub-committees of the BOD

To improve the efficiency of management activities, the Management Committee, the Compensation Committee and the Related Party Transactions Committee have been established as sub-committees of the BOD.

(As of the end of December 2017)

Sub-committee	Composition	Position	Purposes and Authorities
Management Committee	2 inside directors	Chairman Hong-Yul Lee Member Kyung-Moon Jung	<ul style="list-style-type: none"> Efficiency of management and operation Resolution of matters delegated by the BOD
Compensation Committee	2 outside directors 1 inside director	Chairman Dong-Geul Byun Member Seok-Hwan Park Member Kyung-Moon Jung	<ul style="list-style-type: none"> Objectivity and transparency in calculating director compensation Compensation limits of registered directors to be submitted to the general meeting of shareholders Other matters delegated by the BOD
Related Party Transactions Committee	2 outside directors 1 inside director	Chairman Dong-Geul Byun Member Seok-Hwan Park Member Kyung-Moon Jung	<ul style="list-style-type: none"> Secure transparency in company management by establishing an autonomous fair trade compliance system

Evaluation and compensation of the BOD

Directors' remuneration is paid fairly and transparently through the resolution of the meeting of general shareholders, and the results are disclosed in accordance with related laws or regulations.

Independency of auditing

LFC conducts audits in accordance with the Commercial Act, Capital Market and Financial Investment Business Act. The auditor establishes an internal audit plan in an independent position based on relevant regulations and conducts auditing. If necessary, the auditor can request the Board of Directors to report on the business or conduct audits through a survey of the company's assets.

Selected as best company in "MK-Daishin Economic Research Institutes Governance Awards" (Among companies with total assets less than KRW 2 trillion)

In September 2017, LFC received a high score in evaluation of board and committee and management transparency, and was named the best company in the manufacturing sector with less than 2 trillion won in MK-Daishin Economic Research Institutes Governance Awards.



Risk Management

Risk Management

Risk management system

In a rapidly changing business environment, the importance of risk management centered on corporate environment, safety, and response to external media is increasingly emphasized. LFC manages company-wide risks (financial/non-financial) and business-specific risks, and the risk management system of the company enables rapid decision-making and early response.

Risk management organization

LFC has formed a risk management organization for efficient risk management at the company-wide level. The management organization is responsible for the overall situation judgment based on the occurrence of risks and the organic reaction among departments. In particular, the company established a Risk Management Committee to quickly and systematically respond to crisis situations at the company-wide level.



Risk Management Process

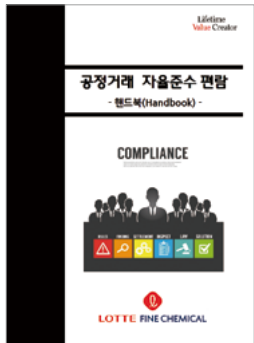
Process of responding to risks

LFC operates a risk response process according to the level of risks. For levels A and B with higher risk levels, the Risk Management Committee is convened for a company-wide response. For level C risks at lower level, a prompt response is made under the control of the executive manager in charge and follow-up reports are made to the risk management committee.

Classification	Standard of Judgment	Response
A	Situations that have a lethal impact on business activities	Minimize damage, recover corporate image, minimize legal problems, and need urgent restoration
B	Situation that could be the social issues in case of insufficient response	Rapid restoration, prevent the issue from becoming A level issue by preventing legal problems in advance, etc.
C	Situation that can be solved only by initial response	Prevent the issue from becoming B level issue through quick problem-solving efforts by the responsible department

Compliance Management

Promoting Compliance Culture



Distributing a handbook on fair trade compliance

Compliance management system

To LFC, compliance management means recognizing not only economic and legal liabilities but also ethical responsibility as a basic obligation, and striving to abide by the laws and principles in all business activities, decision-making and business activities. In addition, the company seeks to prevent legal risks from happening by identifying various legal risks in the company's business activities in advance, and to eradicate illegal acts and fraud to establish a sound corporate culture. To this end, LFC is internalizing compliance awareness, building and strengthening a compliance management system, establishing clear standards of conduct for the Compliance Program, and providing compliance education.

Organization in charge

LFC pursues compliance management activities led by the Legal Compliance Team. The team presents the overall direction of compliance management, including the establishment and implementation of compliance management strategies, and constantly monitors compliance implementation status to prevent unethical behavior. The company also has various systems to prevent recurrence such as system imposing disciplinary action on the employee who is engaged in a problem. LFC is also committed to various activities to raise awareness of its employees' compliance with laws and regulations.

Organization by issue

Internal transactions	Price collusion	Subcontract	Disclosure
Finance Team	Legal Compliance Team	Purchase Team	Corporate Management Team

Proliferation of company-wide compliance management

LFC established the Compliance Management Charter on July 17, 2017, and announced it to all employees. In order to ensure employees comply with the Improper Solicitation and Graft Act (Anti-Graft Law), the company amended the Improper Solicitation and Graft Regulation (in Sep. 2016) conforming to the global level and enacted and implemented standard code of conduct, checklists, and guidelines related to the prohibition of illegal solicitation in their real life. In addition, the company has created and distributed the Handbook on Fair Trade Compliance in order to enhance compliance awareness among employees. Moreover, in order to settle compliance management culture, LFC distributes compliance management bulletins once per week to share the value of compliance management and improve employees' ethical awareness.

Enhancing employees' compliance awareness

Every year, LFC conducts compliance management training and various activities to create a consensus among its employees and to make them implement voluntary compliance management and spread awareness among employees on a regular basis. In addition, mandatory education on compliance and ethical management is provided to newly hired employees. In 2017, 100% of all employees attended company-wide compliance management training. Employees of partner companies also completed the training. In addition, to comply with Compliance Management Rules and to diagnose implementation of compliance management culture, the company conducts monitoring every year and reflects the monitoring result in the management activities to continuously practice compliance management.

Strengthening compliance with laws

For high-risk departments such as the sales department and departments working with subcontractors, inspections on fair trade compliance program are conducted twice a year, and the results are reported to the management to raise awareness of the personnel in charge and make them correct any issues in a timely manner. In addition, LFC is engaged in activities such as internal transaction disclosure management and inspection of the disclosure system to comply with LOTTE Group's fair trade policies.

Risk response process by situation

LFC operates a risk response process to minimize damage by establishing an advance risk management system, a risk response system, emergency response flow and detailed response guidelines for each risk situation. The risk situations include environmental incidents related to chemical materials, safety incidents caused by natural disasters, financial risks and legal risks caused by violation of the laws, etc.

Financial risk management

The purpose of financial risk management is to improve the financial structure and the efficiency of fund management so that stable and continuous management performance can be achieved even under various financial risks such as market risk. In particular, the overall risk management policy of the company focuses on the unpredictability of financial markets and on minimizing the potential adverse effects on financial performance.

Non-financial risk management

LFC identifies the non-financial crises that affect companies, and establishes regulations on organization and duties in response to crises, so that all the executives and employees can systematically respond to the crisis to minimize damage.

Environmental risk management In order to minimize the negative environmental impact in the process of business and environmental risks due to environmental incidents such as chemical leaks, fires, and explosions, the company has built a company-wide chemical management system and systematically analyzes and manages risks using the system. To respond to policy and economic risks due to domestic or overseas environmental regulation, LFC continues to keep monitoring the relevant regulation and policies and to reflect the results in its business and internal guidelines.

Safety risk management LFC manages safety risks so that a safety accident does not develop into a social disaster. It conducts safety training not only for its employees but also for its resident business partners and supports safety inspection and facility improvement. The employees and business partners join LFC in creating a safe work environment, including identifying risk factors in the work sites and turning them into innovation tasks. In June 2017, LFC held a workshop for establishing the continued safety management plan together with Environmental Resources Management (ERM), and the company will set up an improvement plan based on the survey results on safety awareness.

Compliance risk management With strengthening of corporation-related laws and regulations, legal risks make it difficult to preserve a corporation's good reputation (e.g., negative external image formed). To respond to the tougher regulations and prevent potential legal risks, the company conducts compliance management strictly.

LFC implements a fair trade education program to prevent any chance for possible violations of law during work, not only for the relevant personnel in charge but also for those in related departments, and operates an intensive on-site inspection system. Twice a year, the company conducts compliance inspections for departments which face high compliance (CP) risks such as sales department and contract-related departments and reports the result to management in order to raise the relevant personnel's awareness and make timely corrections. Also, it requires that any risk for violations of law must be subject to confirmation by the Legal Compliance Team and Support Department.



Online whistleblowing system
– Online Sinmungo

Online whistleblowing system

Online whistleblowing, called 'Online Sinmungo,' is a system through which irregularities of employees can be reported if they are engaged in unfair business practices and bribery that violate compliance management by using their superior position. Regarding matters reported, the company conducts inspections on the works and fact-finding research to confirm whether such irregularities actually happened, and takes follow-up measures such as discipline, improvement of business processes, and compliance training for cases in which irregularity is confirmed. In addition to the online whistleblowing system, the company also receives reports via diverse channels including telephone, fax, mail, and personal visits. LFC also strives to establish a transparent and fair corporate culture by thoroughly protecting the identity of the complainant and notifying the results, if necessary.

* Number of cases reported to the Online Sinmungo per year (two cases in 2016, three cases in 2017)

Fair Trade

Organization of fair trade compliance

In order to systematically and efficiently operate the fair trade compliance program (CP), each department has a compliance officer under the Legal Compliance Team. The Legal Compliance Team acts as a control department for all matters related to fair trade. Requests for purchase and general transaction agreements should be made only in forms that have been reviewed and verified by the Legal Compliance Team both in Korean and English, and all other contracts should also be subject to final review and verification by the Legal Compliance Team. This enables the company to check fair transactions from company-wide perspective and manage risks by sharing information among all businesses.

Fair trade compliance program (CP)

The company introduced its fair trade compliance program (CP) in 2006 and has been working to prevent unfair trade practices. As a part of its efforts, it has prepared and distributed the CP handbook as the work manual and conducts regular training for work site personnel regarding amendments in the relevant laws. The company makes internal diagnoses focusing on major work sites. The company adopts an internal system with which it can prevent and check any possibility of violation of laws with the help of an in-house fair trade expert in all aspects of the business including new business, sales and purchasing.

LFC takes the initiative for fair trade practice to secure competitiveness, and the company presents clear standard of compliance, and prevent any violation of laws. As a result of these efforts, in the past three years including 2017, LFC has not had a single case of fair trade law violations, nor has it been fined.

Strengthening the capability to conduct fair trade

LFC has established rules of engagement for compliance after introducing the CP, and operates diverse educational programs. In order to strengthen its fair trade capabilities, the company systematically provides CP training for each duty or high-risk department. The company provides training to high-risk departments and personnel in charge of sales, purchasing, materials management, and personal information handlers. Special training is provided for overseas subsidiaries and local subsidiaries.

Compliance message




LFC's compliance management activities will serve as a foundation to maintain the status of the company and pursue sustainable growth. Based on this, the company is committed to pursuing the happiness of all stakeholders, contributing to economic development, and contributing to human happiness through the following commitments.

<p>First,</p> <p>All employees must be well aware of, and comply with, work-related laws.</p> <p>Where an employee conducts his/her job based on conjectures without correct understanding of the law, there is a high chance of violating the law.</p>	<p>Second,</p> <p>As for any matter of which the legality is debatable or is uncertain, all employees must check such matters.</p> <p>All employees, when uncertain, must inquire of the Legal Compliance Team and support departments and thus prevent legal risks in advance.</p>	<p>Third,</p> <p>Not only violating the law directly but also instructing, approving, assisting or tolerating the foregoing must not be allowed</p> <p>All employees violating the law or internal regulations shall be held strictly accountable.</p>
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Sustainability Management System

Establishment of Sustainability Management System

To implement sustainability management, LFC has set seven core areas which cover the economy, society and environment. To habituate and enhance its employees' awareness of sustainability management, the company conducts a variety of training including compliance management training, information security training, safety training, and "Fine Company" training. LFC intends to manage and improve the performance in the seven core areas of sustainability management.

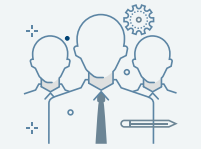
Core Areas	Strategic Tasks	Background	Implementing Tasks
 Compliance Management	Continue to spread compliance management Promote stakeholder communication	Demands on corporate transparency and compliance management is increasing. Opinions of stakeholders are becoming important.	<ul style="list-style-type: none"> Strengthen fair trade capacity Strengthen compliance management Raise awareness of employees Set up internal and external stakeholder groups Conduct in-depth interview with representative stakeholders and reflect related issue in the report
 Safety and Health Management	Advance safety and health system	Workers' safety and health are the most fundamental elements.	<ul style="list-style-type: none"> Manage safety through safety guard and preventive inspection Establish a Code of Safe Behavior Operate customized healthcare programs Obtain international certification for safety, environment and health management system Enact the environmental safety and health policy
 Environmental Management	Advance environmental management system Strengthen energy efficiency system	Strengthened environmental regulations affect client's decisions.	<ul style="list-style-type: none"> Energy-saving activities and management of greenhouse gas and environmental pollutants emission Operate environmental regulation monitoring system Disclose EHS (Environment, Health & Safety) strategy and performance Continuously monitor pollutant reduction activities Reappointed as Green company
 HR Management	Develop human resource and support for growth Create a corporate culture that strikes a balance between work and family life	The need for talented people with expertise and sales force is expanding. Balancing work and family life is becoming more important to enhance the welfare and rights of employees.	<ul style="list-style-type: none"> Operate human resource development program such as an academy for technical experts and engineers Operate employee happiness creation program Family-friendly company certification Maternity protection system Activate employee communication channel
 Social Contributions	Strengthen community-based social contribution activities	Interest in corporate social responsibility is increasing.	<ul style="list-style-type: none"> Establish and implement company-wide CSR strategy Expand volunteer activities Manage volunteer activities and publicize the activities
 Shared Growth Management	Establish standards for win-win cooperation	As expectations for social responsibility increase, mutual growth with partner companies is recognized as a key factor.	<ul style="list-style-type: none"> Apply Group Compliance Committee's Recommendations Strengthen financial support, safety and health communication and education
 Customer Satisfaction Management	Develop customized products and provide solutions	The quality of the products and services is getting important as the customer's demands related to the products are continuously strengthened.	<ul style="list-style-type: none"> ISO 9001 Quality Management System Certification Draw up quality improvement tasks Customer visits and voice of customers

Stakeholder Engagement

Key Issues of Stakeholders

At the heart of all sustainability management activities pursued by LFC are stakeholders. LFC intends to communicate with its stakeholders from the planning stage of sustainability to share their concerns and countermeasures. The company is striving to build a positive relationship with stakeholders by reflecting their opinions and requests in its management activities and creating sustainable values together.

Employees




Key Issues **Work-life balance**

Comments and Responses

- Expand welfare benefits for executives and employees
 - Collect opinions through communication channels and prepare related standards (rules of the company, etc.)
 - Support counseling center for employees
 - Support medical expenses
 - Provide housing loan
 - Improve work environment
 - Family Day (every Wednesday, Friday)
 - Implement Ten Recommendation for Work Innovations of the Ministry of Employment and Labor

Customers



Key Issues **Receive complaints**


Comments and Responses

- Complaints of product quality and shipping
 - Constantly respond through various communication channels such as the online whistleblowing system and manage the details through customer satisfaction surveys


Key Issues **Product inquiries**

Comments and Responses

- Product-related inquiries (usage, type, etc.)
 - Designate a responsible person for products on the website, make regular/irregular visit and conduct education on products



Shareholders/ Investors



Key Issues **Sales growth and profitability**

Comments and Responses

- Management strategies for sales growth and profitability
 - Shareholders' meeting, Disclosure on earnings (quarterly disclosure)

Key Issues **Sound corporate governance**

Comments and Responses


- Enhance transparency in business operations
 - Disclose executive compensation and payment standards, and strengthen operation of the Board and its accountability

Key Issues **Shareholder payout policy**

Comments and Responses

- Maximize shareholder value through distribution strategies including dividends
 - Semiannual and final dividend payment

Partner Companies



Key Issues **Enhance operational support**

Comments and Responses

- Risk management and management enhancement
 - Conduct education on safety and subcontracting transactions, and implement internal incentive system

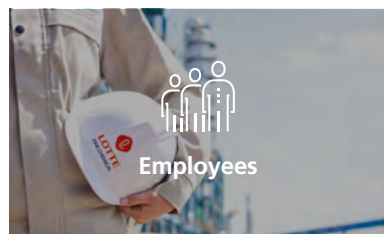
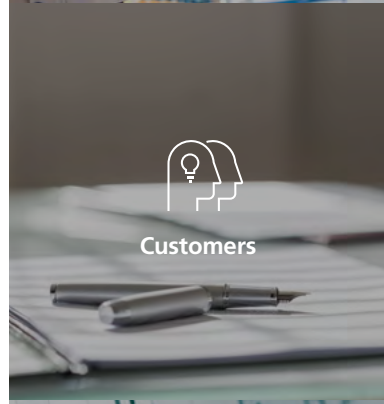



Key Issues **Technical and human resources support**

Comments and Responses

- Technology development/protection support and dispatch of experts
 - Support technology development and dispatch specialist staff of the company

Stakeholder Group and Communication Channels

LFC has derived diverse stakeholder pools based on the ISO 26000 standard. LFC's stakeholders are classified into three groups according to their legal, financial and operational responsibilities and influence on the company – Key stakeholders, Strategic stakeholders, and Other stakeholders. Key stakeholders of LFC include employees, customers, shareholders and investors, partner companies and local communities. Opinions gathered through communication channels of each group are reviewed firstly by the working unit in charge, and important issues are reported to the Board of Directors and chief executive officers so that the opinions of the stakeholders are actively reflected in management activities.

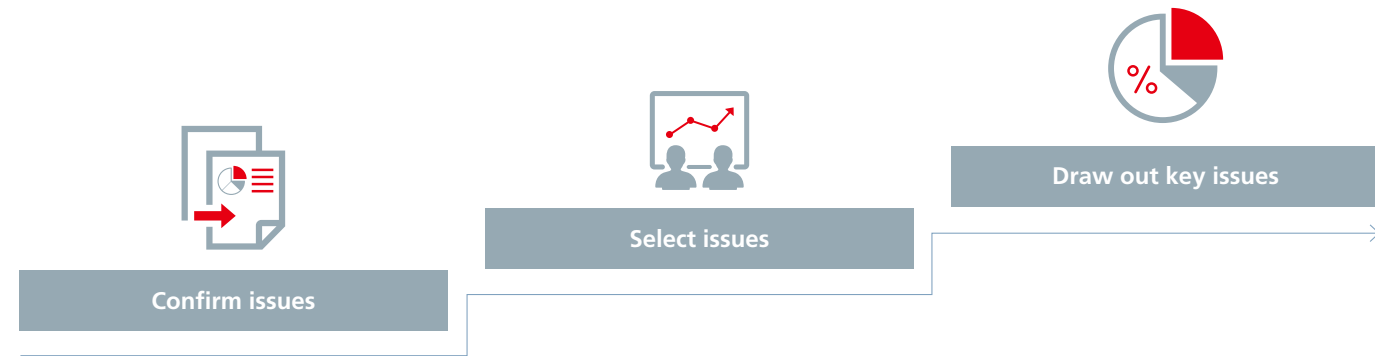
	Definition	Issue	Stakeholder Group	Communication Channel	Cycle
Internal	Employees and their families	<ul style="list-style-type: none"> - Employment stability - Working conditions - Organization development 		<ul style="list-style-type: none"> • 'Soh-tong Insight' (Web) • Labor-Management Council • Industrial Safety and Health Committee 	<ul style="list-style-type: none"> Year-round Quarterly Quarterly
	Individual customers and corporate customers	<ul style="list-style-type: none"> - Product quality - Complaint handling - Logistics transportation processing 		<ul style="list-style-type: none"> • Online whistleblowing system – 'Online Sinmungo' • Customer Service Office (Call center) • On-site visit by the technology department • Product seminars • Customer satisfaction survey • Voice of the customers • Website 	<ul style="list-style-type: none"> Year-round Year-round Year-round Regularly/Year-round Once a year Year-round Year-round
External	Individual investors, institutional investors, and largest shareholders	<ul style="list-style-type: none"> - Management strategy for sales growth and profitability - Shareholder return policy 		<ul style="list-style-type: none"> • Shareholders' meeting • IR 	<ul style="list-style-type: none"> Once a year Year-round
	Contractors, raw material suppliers, and product OEM companies	<ul style="list-style-type: none"> - Win-win cooperation 		<ul style="list-style-type: none"> • Online whistleblowing system – 'Online Sinmungo' • Training for partner companies 	<ul style="list-style-type: none"> Year-round Year-round
	Government agencies and local governments, local residents, and NGOs	<ul style="list-style-type: none"> - Local development and support 		<ul style="list-style-type: none"> • Social contribution activities • Attend local council • Community environmental cleanup activities 	<ul style="list-style-type: none"> Year-round Year-round Year-round

Materiality Assessment

Materiality Assessment Process

Decision process of reporting issues

The Global Reporting Initiative (GRI), which provides a global standard for the sustainability report, presents the principles to ensure that key issues are selected and reported in accordance with the following process. LFC faithfully reflects GRI's report issue decision process and has prepared this report to ensure 'sustainability context,' 'materiality,' 'completeness' and 'stakeholder inclusiveness' as proposed by GRI.



Background of sustainability

Media analysis

- Search domestic and foreign articles (1,767 cases) related to sustainability management (2017.1.1 ~ 2017.12.31)

Competitors analysis

- Analyze domestic and overseas benchmarking companies in same industries and key issues of sustainability management of global leaders in sustainability management

Sustainability management trend analysis

- Analyze megatrends related to sustainability management that are recognized both domestically and internationally
- Analyze detailed indicators of global standards related to sustainability management (GRI, ISO26000, UN Global Compact, IIRC*)

Internal sustainability management strategy and KPI analysis

- Analyze sustainability management Goal & Target described in the Sustainability Report of the past years
- TF Interview

Materiality

Social concern

- Interview with representatives from eight major external stakeholder groups (government, labor unions, NGOs, subsidiaries, business partners, customers, community, shareholders and investors)
- Media exposure
- Awareness of benchmarking company

Business impact

- Evaluation by 60 internal employees related to sustainability management
- Assess materiality of issues, alignment with mid- and long-term strategy, financial impact and reputation

Completeness

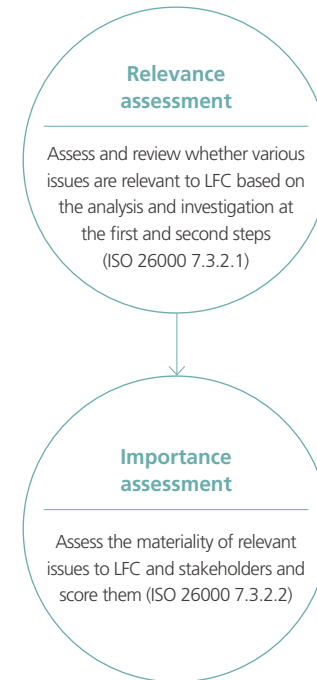
Identify key issues based on stakeholders' interests and business impact assessment results

Disclose information on major issued identified

*International Integrated Reporting Council: An international organization established to integrate and disclose financial and non-financial information

Materiality Assessment Results

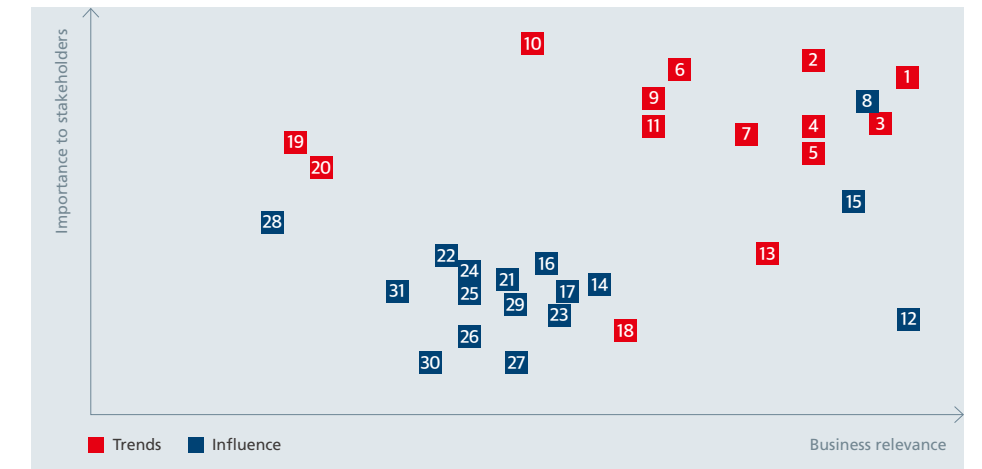
Materiality assessment



* Other issues: Risk management, prohibition of discrimination against vulnerable groups, ensuring economic and social rights of local members, fostering competent business partners, efforts to create wealth and raise income in the local community, checking CSR level of business partners, spread CSR to business partners, soundness of corporate governance, awareness of CSR necessity by the management, providing training for employees, avoiding collusion, etc.

Identification of material issues

LFC conducted a neutral evaluation through stakeholder engagement and identified 31 related issues from a total of 115 sustainability issues, and selected 13 final report issues through materiality assessment.



2017 Rank	Material Issues	Page	2017 Rank	Material Issues	Page
1	Increased demand for transparency (Compliance)	19	17	Increased influence of government policy (Compliance, Environment)	19, 30
2	Business performance and distribution (Economy)	6	18	Fair competition (Customer)	20
3	Ensuring workers' safety and social communication (Safety and Health)	38	19	Increased demand for fair trade (Mutual Growth)	50
4	Customer service support and dispute resolution (Customer)	47	20	Increased importance of employees' rights and roles (Employee)	43
5	Strengthening environmental regulations (Environment)	30	21	Sustainable utilization of resources (Environment)	30
6	Preventing environmental pollution (Environment)	33	22	Providing opportunities to create jobs (Employee)	40
7	Expanding profit through export (Economy)	6	23	Efforts to support community investments (Community)	53
8	Intensified competition (Customer)	45	24	Promoting social responsibility within the area that company has influence (Mutual Growth)	50
9	Increased international instability (Customer)	45	25	Participating in community development (Community)	53
10	Increased demand for distribution structure (Customer)	45	26	Fair marketing activities (Customer)	48
11	Contributing to education and cultural development in community (Community)	53	27	Depletion of natural resources, such as fossil fuels, etc. (Environment)	30
12	Fair and appropriate consideration of working conditions (Employee)	40	28	Increase in alternative energy sources (Environment)	32
13	Increased consumer focus on health and environment (Safety)	35	29	Consumer data and privacy protection (Customer)	48
14	Increased customer price sensitivity (Customer)	45	30	Guaranteeing fair employment and employment relations (Employee)	42
15	Awareness of social responsibility (Community)	53	31	Widening gap between the rich and the poor (Community)	55, 56
16	Increased environmental pollution waste (Environment)	34			

Stakeholder Interview

LFC is listening to the voices of various stakeholders including customers, investors, employees, business partners, and local communities. The company pays close attention to their opinions and actively reflects them in its management to grow together with its stakeholders.



Health and Safety

Recently, as the industry has advanced highly, and as chemical substance distribution increases and the new chemical substances are introduced, the possibility of large-scale chemical accidents has increased more than ever. LFC strives to ensure that safety is a top priority for all business activities and preemptively manages safety issues before problems occur.



Employees

LFC is working hard together with its employees in order to stabilize their jobs and improve their working and living environment. In order to create a happy workplace for employees as well as their families, it is important to create an environment where employees can work efficiently and focus on their duties.



Business Partners

Customized training programs and systematic quality improvement seminars of the company are enhancing the work capacity of related workers and understanding of fine chemical quality systems. Various technical support projects are helping to strengthen the competencies of business partners.



Social Contributions

Urban Box Farming Campaign has been conducted for nine years (as of 2018). The Urban Box Farming Campaign is the representative social contribution campaign of the company, which aims to realize sustainable eco-cities.



“Company that prioritizes safety”

Recently, as the industry has advanced highly, and as chemical substance distribution increases and the new chemical substances are introduced, the possibility of large-scale chemical accidents has increased more than ever. LFC believes that safety is a top priority for all business activities and has thus established a health management database to manage it preemptively before problems arise. The database is used to check whether the operator concerned has been trained in chemical hazards. In addition, the company is using management programs to check whether major safety issues arise, considering the characteristics of each task. Accidents can be prevented if all the persons obey the principles of the safety environment in performing their roles. In order to become a first-class company that is safe and environment-friendly, the company hopes to further strengthen its safety management infrastructure and raise employees' awareness of the safety environment.

Hye-Ri Moon
Nurse at Safety
Management Team
LOTTE Fine
Chemical

Safety and Health

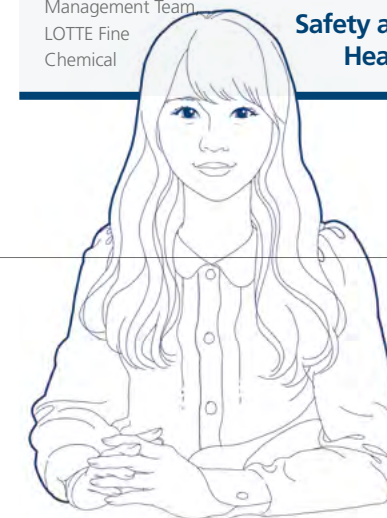
Business Partners

“Company that considers the future of small and medium-sized enterprises”

Customized training programs and systematic quality improvement seminars of LFC are enhancing the work capacity of related workers and understanding of fine chemical quality systems. Various technical support projects are helping to strengthen the competencies of business partners. The first step towards shared growth starts with understanding each other's field situation and circumstances. Business partners need to find various ways to grow together with their technology, and LFC needs to understand the situation in the field and to consider the principle of win-win cooperation with business partners rather than management for short-term performance. In the midst of changes in the domestic and global economy and environment, and the constant competition, the win-win growth through the strengthening and fostering of the technological capabilities of the business partners will become the foundation for the future of the company.

In addition, in order to operate its plants safely and efficiently, LFC has implemented a safety consultation body and has established the safety and health management system. As a result of its mutual efforts, the company has recorded accident-free workplaces for many years.

Young-Oh Lim
CEO of AnyTech



Employees

“Workplace where the company grows together with employees”

LFC is working hard together with its employees in order to stabilize their jobs and improve their working and living environment. In order to create a happy workplace for employees as well as their families, it is important to create an environment where employees can work efficiently focusing on the duties. LFC designates Wednesdays and Fridays as “Family Love Day,” making employees leave their workplace at the regular time. The company also operates daycare centers and shortens working hours for pregnant women. In particular, LFC provides support to employees to ease their burden of childcare through the unconditional leaves of the spouse and paternity leave system, thereby achieving a balance between work and life. In addition, general medical screening of employees and their spouses, loans for residential stability, and chartered fund loans are very helpful in creating a better working environment. The company desires to expand communication with its employees and resolve the grievances and inconveniences of its employees and become a company that grows together with employees.

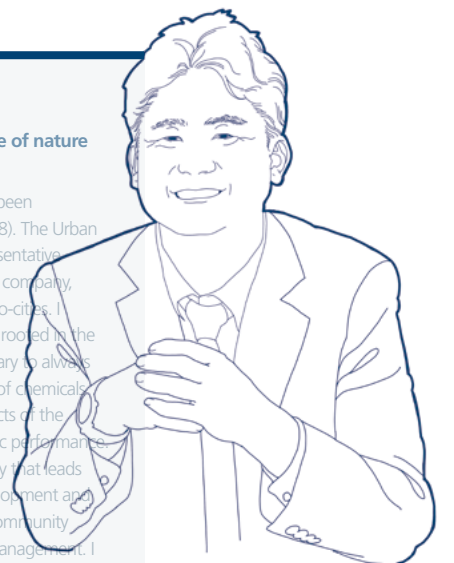
Kyung-Don Kang
Senior Manager at Quality Section,
LOTTE Fine Chemical

Social Contributions

“Company that shares the value of nature with citizens”

Urban Box Farming Campaign has been conducted for nine years (as of 2018). The Urban Box Farming Campaign is the representative social contribution campaign of the company, which aims to realize sustainable eco-cities. I think that corporate sustainability is rooted in the environment. Therefore, it is necessary to always take into consideration side effects of chemicals and environmental destruction effects of the chemicals before pursuing economic performance. I hope that LFC becomes a company that leads the national chemical industry development and provides convenience to the local community through comprehensive business management. I look forward to continuing the interchange activities that will harmonize with the local community and contribute to the development of society through cooperation in various fields in the future.

Seok Yun
Director-General, Ulsan Forest (Civic Group)





SUSTAINABILITY ISSUES

LOTTE Fine Chemical enhances the value of
life and harmony with the environment to
provide new value as a Lifetime Value Creator.

- 30
Environmental Management
- 35
Safety & Health
- 40
Employees
- 45
Customer Value
- 50
Mutual Growth
- 53
Local Community



Environmental Management

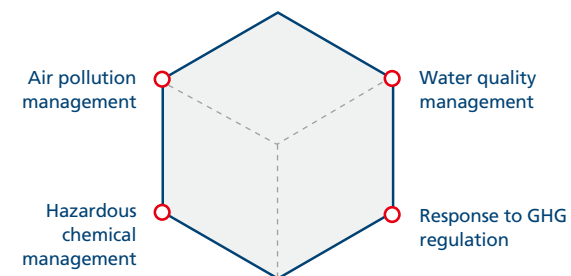
BUSINESS & SOCIAL CONTEXT

With global consensus on air pollution and the global warming crisis, the response to climate change is recognized as a common task of all nations. The international community is actively discussing demands for increase of green management investment, response to the preemptive greenhouse gas (GHG) regulation, the introduction of new and renewable energy, and GHG emission trading system.

OUR APPROACH

LFC is actively responding to climate change and expanding investment in green management to lead the company's sustainable growth. To this end, the company intends not only to reduce direct GHG emissions by improving process and adopting high-efficient facilities but also to reduce indirect GHG emissions by producing high-value-added products and converting into structure producing energy-efficient products.

OUR STRATEGY



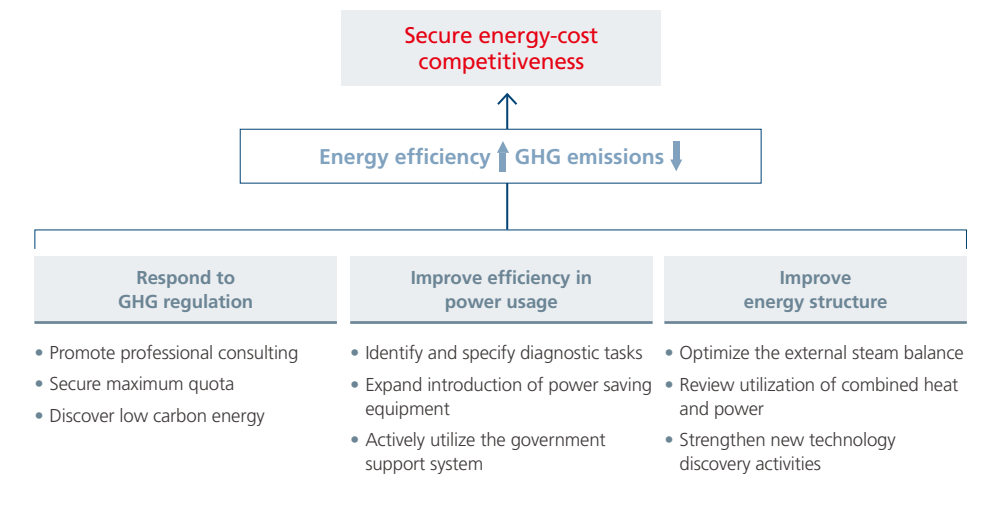
NEXT STEP

In order to expand green management, LFC plans to continuously produce eco-friendly chemical products such as emission reduction and energy saving products from the product development stage, and plans to release EHS (Environment, Health & Safety) strategy and performances to the public. In addition, the company will actively respond to climate change and GHG reduction, along with production of products that minimize environmental impacts in various fields such as industry, medicine, and daily life.

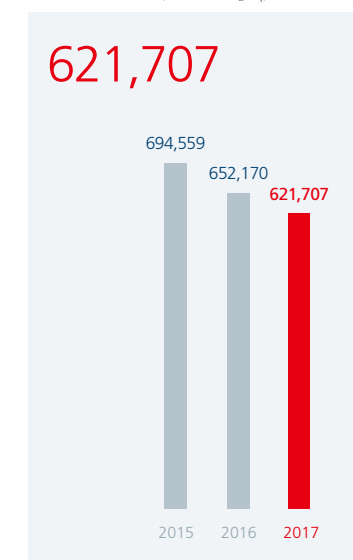
Response to Climate Change

Strategy for GHG emissions

As an energy-consuming company, LFC has set the company's target related to GHG emissions and has continued its efforts to continuously improve them. The company is actively implementing GHG and energy efficiency improvement activities such as adoption of energy innovation programs. In addition, through the GHG emission trading system implemented since 2015, the company has set a reduction target for each production department in the company, thereby internally achieving the emission target under the GHG emission trading system.



GHG emissions (Unit: tCO₂eq)



Strengthening internal management

In accordance with the Energy Use Rationalization Act, the company continuously strengthens the MRV (Measure, Reporting, and Verification) system for greenhouse/energy real-time management systems and measuring instruments. This plays a major role in raising the quantitative credibility in the company's GHG emissions and energy consumption. In addition, LFC is working to identify GHG/energy reduction tasks centered on the executives of each production department in the company. As a result, reduction targets are assigned to each team and division, and the Production Innovation Team is managing KPI.

Reducing GHG emissions

LFC has identified 24 tasks to reduce GHG emissions, and reduced 360,000 tCO₂eq of GHG by using low-power pumps, improving the discharge system, and replacing electrodes.

Building an integrated energy management system

LFC holds an "Energy Innovation Day" as a way to establish and implement a challenging goal to reduce energy consumption by managing energy usage in Ulsan, Seoul and Incheon in real time. The company is continuously promoting energy saving every day by sharing its works with technology department (establishing guidelines and improvement plans), production department (applying guidelines and improvement efforts), and energy department (constructing system and daily feedback).

Environmental investment amount
(Unit: KRW 100 million)

100.5

* Based on Business Report

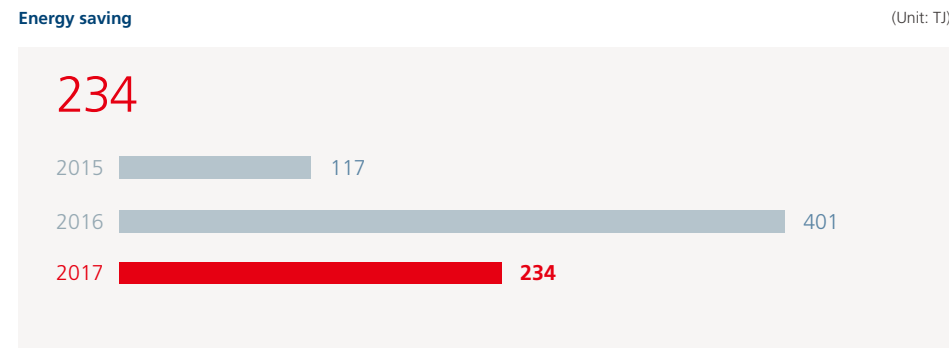
Eco-friendly product sales
(Unit: KRW 100 million)

3,265

* Based on EUROX®, ammonia water, green material product sales

Energy usage (Unit: TJ)

Classification	2015	2016	2017
Direct energy consumption			
- All energy sources except for purchased electricity and steam	1,064	480	355
Indirect energy consumption			
- Purchased power usage, purchased steam	13,085	12,678	13,806
Total	14,149	13,158	14,160



Energy efficiency innovation activities

In order for efficient energy use and cost reduction, each production department has set key indicators (KPI), and all employees are searching improvement items through the company-wide innovation program. In addition, through a proposal system, the company encourages energy innovation activities by rewarding the employees for innovative ideas.

Activities improving energy efficiency in process and facilities (Ulsan)

- Introduce low power type electrolytic cell, introduce low power type membrane for electrolytic cell
- Reduce steam through minimized DCH composition
- Produce additional steam by reusing waste heat from incinerators
- Save power through improved drying processes
- Replace electrolytic cell electrode
- Save power through optimization of the entire process

Preventing Environmental Pollution



Environmental management system certification

¹⁾ Flare Stack: It is a system that burns gas or highly volatile liquid steam and discharges it to the atmosphere. It safely discharges the contents quickly in case of an accident such as leakage or fire to prevent spread of disaster.

Air pollution prevention activities

LFC has established stricter operating standards (30% of the statutory emission allowance) than the statutory emission allowance. In addition, to reduce odors and VOC (volatile organic compounds), the company operates a direct combustion facility (Flare Stack¹⁾, RTO) and periodically checks for odors.

Installing automatic exhaust gas measuring system

The company installs automatic measurement system of flue gas emission on the main outlet in the workplace to automatically and continuously measure the emission of pollutants such as sulfur oxides, nitrogen oxides, and chlorine. The company also set up and operates a tele-monitoring system (TMS) to systematically manage the air quality around the plant.

Strengthening management of air pollutants

In order to manage the arsenic acid emission facilities, the company established arsenic acid emission facility inventory for a total of 10 sorts including eight specific air pollutants by utilizing LDAR (Leak Detection And Repair), thereby minimizing accident risk through real-time monitoring and timely remodeling. In 2017, the company reduced boiler utilization rates and reduced nitrogen oxides and sulfur oxides emissions by using clean fuels.

Air pollutant emission status (Unit: Kg/Year)

Classification	2015	2016	2017
NOx	65,621	41,458	17,563
SOx	15,298	19,206	1,048

Strengthening standards of water pollutants

LFC has a monitoring system for the source of wastewater in the production process, and manages the status of wastewater generation on a daily basis. In addition, the company installed and operates an advanced treatment facility (Carbon Filter) to reduce pollutants in the final treatment water at wastewater treatment facility. In addition, LFC has strengthened the in-house operating standards for water pollutant emissions 50% lower than the statutory limit. When the emission concentration exceeds the standard, the company issues an environmental report to reduce pollutant emissions.

Strengthening management of wastewater at workplace

The wastewater discharged from the Ulsan complex is treated first in the wastewater treatment facility in the plant and then processed in the second stage in the Yeonhyeon sewage treatment plant operated by Ulsan City. The company is reducing the amount of wastewater generated by setting targets for reducing wastewater by major sources of wastewater and improving the process of recycling wastewater.

In 2017, the company invested in ECH wastewater facilities to improve management of wastewater for direct discharge.

Strengthening waste management and making investment

LFC manages all the treatment processing of generated wastes through an online system. In 2017, the company invested in old wastes disposal sites and waste storage sites.








Operating waste-reduction facility

The company has various types of dehydrators such as Decanter, Filter Press, and Belt Press to optimize dehydration efficiency depending on the characteristics of each wastewater sludge, and the company applies different dehydrators and operation method depending on the wastewater treatment plant to get optimal hydration effect.

Waste discharge status (Unit: Ton/Year)

Classification	2015	2016	2017
Specified waste	1,109	891	1,306
Regular waste	69,126	60,858	66,233
Recycle	24,474	17,868	29,944

Investment in environment

Noise	Waste materials	Hazardous materials
 KRW 0 million	 KRW 600 million	 KRW 4,560 million
Energy	Water quality (including city water)	Atmosphere (including odors)
 KRW 990 million	 KRW 3,330 million	 KRW 490 million
Accident prevention	Total	
 KRW 80 million	 KRW 10,050 million	

* Based on the 2017 Business Report



Safety & Health



Safety education
(Unit: Hour)

24

* All employees complete 100%

Process Safety Management (PSM) grade

P

* Regular safety education hours that each employee should take for one year are reflected

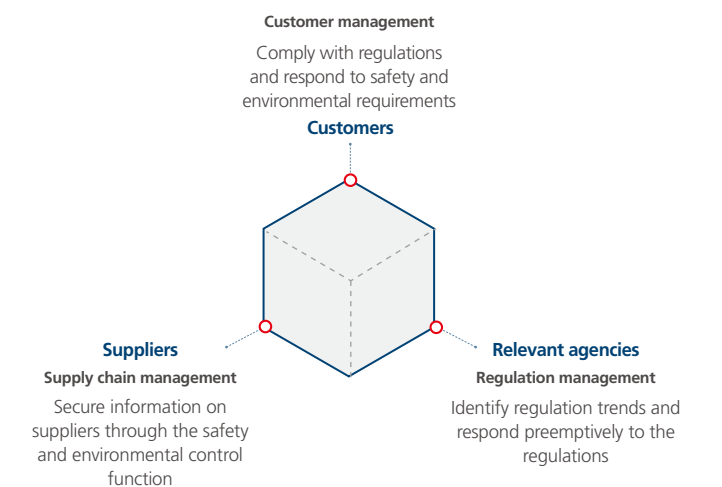
BUSINESS & SOCIAL CONTEXT

Interest in the safety of products is on the rise worldwide as the number of high-tech materials and products increases thanks to technological development, enhancing convenience of living. In order to respond to domestic and overseas regulations and customer requirements, we have to minimize the risk factors that can occur throughout the entire process from raw material production to product use and its disposal.

OUR APPROACH

LFC is actively engaged in activities to preemptively and positively respond to safety and health issues. Safety and Disaster Prevention Team under the control of the Environment & Safety Department leads efforts to establish a pleasant and safe workplace by establishing 'Safety Golden Time' as a new corporate culture in order to settle down safety and health practice in the plant.

OUR STRATEGY



NEXT STEP

The first purpose of safety management is human respect. LFC controls products from the design stage to investment, production, use and disposal to make the safest products. In addition, the company continually develops and supports various EHS (Environment, Health & Safety) related education, practice, and experience programs. LFC will strive to lead the safety culture of global top level by disclosing the performances.

Direction of Safety and Health Policy

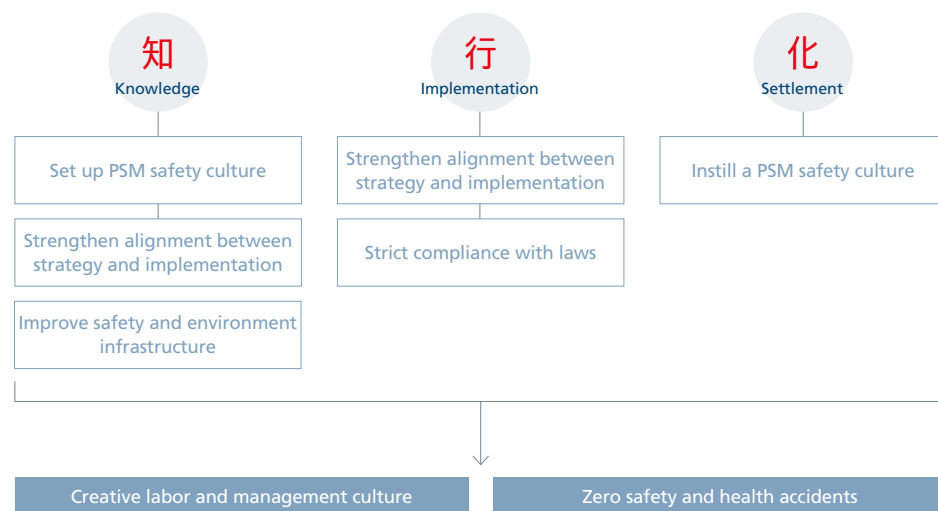
Organization for safety & health

In order to achieve sustainable growth and development of the company, LFC has established safety and health goals that are free from accidents. In order to achieve this, the company has established action strategies such as instilling a PSM safety culture, strengthened alignment between strategy and execution, improvement of safety and health infrastructure, and strict compliance with laws and regulations. With the clear understanding of strategy (Knowledge), PSM education and engineer meetings are held (Implementation) on a weekly basis to settle a safety culture (Settlement). In order to strengthen and manage the safety and health management system, the Safety-Environment Division was set up as a separate organization, and the Safety Management Team under the control of the Division is supervising safety and health management works at the workplace.

Strategy for safety & health

LFC realizes the management philosophy of the company by establishing and implementing a sustainable development plan for human respect and environment-friendly production system. Based on the on-site environmental safety management system, the company desires to achieve Vision of "A Workplace without Three Issues (No Accident, No pollution and No Disease)" under a pleasant and safe environment through "Zero Safety and Health Accident".

Safety and health strategy



Safety-Health-Environment Notice (SHE Notice)

Workplace safety certification and verification

As a PSM target site, LFC prepares process safety reports on process safety data, process risk assessment, safety operation plan and emergency action plan and submits them to the Minister of Employment and Labor. The Ulsan plant was credited P grade in the PSM grade evaluation conducted in June 2017, and the Incheon plant has maintained the S grade since 2016. In addition, the Ulsan complex and the Incheon plant have jointly obtained KOSHA/OSHAS 18001 certification in compliance with the safety and health management system.

Safety-Health-Environment Notice (SHE Notice)

Through the internal communication channels, the company provides guidance on specific waste disposal standards, nighttime and holiday work management, and safety work rules. LFC also designates safety inspection days every week to strengthen management activities by themes.

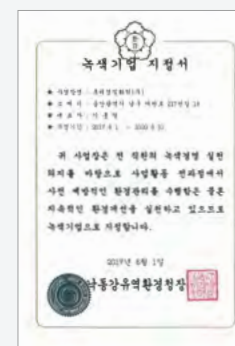
Strengthening Chemical Substances Management System



Sampling Box

Reappointed as a Green Company

LFC has strived to implement environmental improvement and green management investment plans and comply with related laws since it has been reappointed as a Green Company on June 1, 2017.



Managing chemicals through system

LFC collects and controls small quantities of reagents as well as all products and chemical substances that are brought in and out. In particular, the company has reestablished the relevant system to manage the entire process of hazardous chemicals and operates a chemical management system (CMS) to increase work efficiency through systematic management of information on chemical substances. In particular, in 2018, LFC plans to upgrade and stabilize the chemical substances management system.

Responding to chemical substances regulation

The company actively complies with the Act on the Registration and Evaluation of Chemical Substances (Chemical Evaluation Act) and the Chemical Substances Control Act (Chemical Control Act). LFC establishes a system for the management of regulated substances to be registered under the Chemical Evaluation Act and to be controlled under the Chemical Control Act to identify new and registered chemical substances and harmful chemical substances in our products and raw materials. The company manages the quantity of chemical material delivered in and out including harmful chemical substances by system and use it for performance reports and statistical surveys.

In particular, related to the Chemical Evaluation Act, the company joined the material-specific consultation body to complete the joint registration of existing chemical substances by June 2018. LFC plays a representing role for major products sectors. LFC successfully enforces the joint registration obligation to register, manufacture, import, and distribute the substances in order to prevent any human or environmental accidents by producing and utilizing information on harmful substances on human health and the environment.

Improving chemical handling facilities

In order to prevent chemical accidents, the company is constantly replacing aging equipment and piping, and strengthening accident monitoring and enhancing disaster prevention facilities in preparation for leakages from business premises due to rain. LFC has developed an infrastructure to respond quickly to emergencies by installing new PSV and gas leak detectors to detect chemical leaks. The entire plant has a sealing process, but the company has improved the sampling process required for analysis of specific products and quality to ensure the safety of workers who might have been exposed to chemical substances. In addition, the company plans to secure safety and reliability of the facilities by gradually improving chemical substance treatment facilities.

Renewing environmental liability insurance

In accordance with the Act on Liability for Environmental Damage and Relief (Environmental Relief Act), the Company renewed environmental liability insurance by June 30, 2018 to prepare for risks.

Status of facilities covered by insurance

Classification	Facilities that should mandatorily be covered by insurance	Ulsan Complex	Incheon Plant
Air quality	Discharging facilities of specific atmospheric pollutants (Type 1 to 5), Discharging facilities of business site with Type 1 atmospheric pollutants	○	○
Water quality	Discharging facilities of specific water quality hazardous materials (Type 1 to 5), Discharging facilities of business site with Type 1 water quality hazardous materials	○	○
Waste materials	Designated waste treatment facility	X	X
Soil	The hazardous chemical manufacturing and storage facilities are among the aspects that should be prepared/submitted in terms of the hazardous material management plan	○	○
Hazardous materials	The hazardous chemicals treatment facility is among those that should prepare/submit the hazardous material management plan	○	○
Marine	Facility with a total capacity of 300kL or more among the oil and hazardous liquid storage (including stockpile) facilities	○	X

Embodying Safety and Health



Safety & health management system certificate

Establishing safety culture and promoting activate communication

LFC holds various meetings to raise awareness of the environment and safety of all employees and to provide motivation for voluntary environmental safety management. Through this, the company builds a consensus on safety and establishes a safety-oriented culture to prevent human errors. LFC provides regular safety training of 24 hours per year (statutory hours) to all employees based on monthly themes.

Safety related key issues

Target	Name of the meeting	Cycle	Participants	Main contents
CEO	Weekly meeting with CEO	Weekly	CEO, Head of Production Division, Executives	Report on current progress of main action projects, Sharing of major safe environment issues and trends
Head of Production Division	Weekly plant meetings	Weekly	Head of Production Division, Executives, Department managers	Report on the current progress of detailed action projects
	Safe environment plant meetings	Monthly	Head of Production Division, Executives, Department managers	Sharing of major safe environment KPI performance and industry trends
Department Managers/ Leaders	Safety Contact	Weekly	Designated executives or above level	Proposal of a safe environment guide and sharing of accident cases
	Lunch meeting of management supervisors	Monthly	Management supervisors (general managers)	Sharing of safe environment trends/issues/ guides and explanation of action plans
Engineers	Engineers' meeting	Monthly	Engineers' meeting members	Listening to voice of engineers, improvement of safe environment work process
	PSM engineers' meeting	Regularly	PSM engineers	Sharing of PSM guide and discovery of irrationalities, independent inspection and independent audit of PSM
Occupational Safety & Health Committee	Occupational Safety & Health Committee	Quarterly	Occupational Safety & Health Committee of labor and management	Discussion of safety and health policies between labor and management, discussion of solutions for irrationalities
	Working session of the Occupational Safety & Health Committee	Regularly	Occupational Safety & Health Committee of labor union, safety management team	Checkup and discussion between labor and management of anomalies in a safe environment

Employee safety and health education status

Regular safety training	Emergency response training
24 hours/person	Once every two months

* Based on annual performance in 2015-2017

Cooperative safety and health

Supporting business partners' KOSHA 18001 LFC supports the resident business partners to establish a safety and health management system (KOSHA 18001) to achieve accident-free workplaces through win-win cooperation with business partners. The safety and health management system is carried out in accordance with "Plan-Do-Check-Action," so that all the members and organizations of each business partner can evaluate risks according to the scope and contents of work and voluntarily establish safety measures and independently review their effectiveness. By the year 2017, a total of seven business partners have obtained the certificate supported by LFC and the process for newly contracted business partners is underway. All resident business partners of LFC operate a safety and health management system.

Preparing and distributing the Material Safety Data Sheets

The Material Safety Data Sheet (MSDS) is an important resource that discloses the company's product information to the public, which should be prepared and kept by law. LFC has established business regulations in mutatis mutandis compliance with the United Nations "Global Harmonization System (GHS) on Classification and Labeling of Chemical Substances." Since 2008 when GHS was not mandatorily applied under the Industrial Safety and Health Act, the company has changed MSDS to GHS and shared it through SES (Safety Environment System). In addition, by attaching MSDS-based warning labels to containers, the company ensures the safe use by all employees.

Safety is the top priority at LFC Ulsan Complex

LFC prioritizes safety of the plant. The company conducts safety activities focusing on prevention of disasters such as fires, explosions and suffocation. In addition, the company concentrates on three major accidents such as falls, strangulation, and electrocution in managing the site. For safety management activities, the workers basically wear protective gear (helmets, ear caps, safety glasses, etc.) according to each process, and conduct external safety activities to ensure that the working conditions on site are properly managed. In particular, LFC is making its best for safe workplace by carrying out activities such as safety education, safety campaign (maintenance work), accident-free resolution convention, joint safety inspection, safety patrol, etc. to achieve an accident-free record through an accident free/disaster free campaign.

Integrated Safety, Environment and Health System

Establishing an integrated Safety, Environment and Health system

LFC has established an integrated system for safety, environment and health in order to promote efficient and systematic safety, environment and health management. Furthermore, the company implements policies that provide guidelines for safety, environment and health management.

Complying with internal standards that are stricter than environmental laws

LFC efficiently operates the safety, environment and health integrated information system to comply with all environmental laws and regulations. In addition, the company has set up its own standards that are stronger than the national regulations. The company is actively implementing the standards.

Obtaining international certification for Safety, Environment and Health management system

LFC has attained international standards such as ISO 14001 (International Standard for Environmental Management System) and OHSAS 18001 (Health and Safety Management System) complying with the requirements of international certification bodies including the international organization for standardization, ISO, to manage safety, environment and health according to the international standards.

Establishing Safety, Environment and Health policies

Since the declaration of the environmental management policy in 1996, the company has enacted safety, environment and health policies as basic guidelines for strengthening the environment-friendly management system and actively implementing environmental management activities.

Safety, Environment and Health management policies

01

The company recognizes safety, the environment, and health as the top priority of management, and consideration of environmental safety is a top priority in all aspects of design, production, use, and disposal of products.

02

All employees of the company shall comply with laws, regulations, and other requirements and participate in environmental safety accident prevention activities through continuous training and education.

03

The company establishes advanced environmental, safety and health management systems and focuses on the establishment and development of the PSM system in order to provide various kinds of support and efficient use of energy, prevention of environmental pollution, prevention of safety accidents and maintenance of a pleasant work environment.

04

The company communicates openly with neighboring companies, local residents, customer shareholders and fulfill corporate social responsibilities.

Key strategies for Safety, Environment and Health



Employees

+
Education cost per person
(Unit: KRW 10, 000)

104



+
Training time per person
(Unit: Hour)

47



+
Parental leave ratio
(Unit: %)

77



BUSINESS & SOCIAL CONTEXT

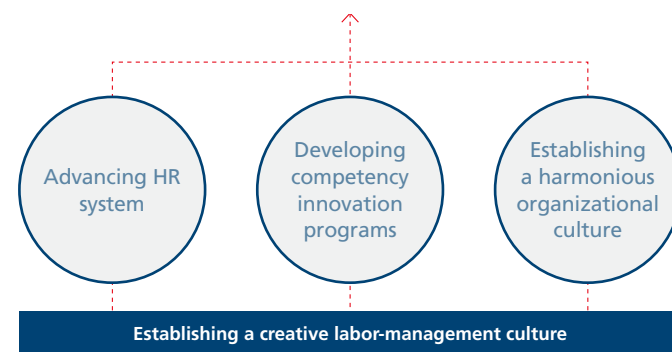
The company's competitiveness starts with efforts to secure and nurture talents. Particularly, in order to flexibly respond to the rapidly changing global economic conditions and to develop technologies ahead of other competitors, the development of employees' capabilities and a creative labor-management culture are indispensable. In particular, in order to increase business diversity and sustain the growth of the companies, continuous efforts are required.

OUR APPROACH

LFC enhances its core competencies by efficiently managing the environment associated with its executives and employees. The company also enhances its organizational competitiveness by providing various programs such as strengthened communication functions, grievance resolution process, strengthened welfare system, fair evaluation and compensation to guarantee the rights of employees, and to create a proper work culture and ultimately to respect human rights. LFC strives to enhance employee loyalty and motivation by strengthening welfare and promoting rights, thereby ultimately enhancing human capacity.

OUR STRATEGY

Stable and strategic personnel infrastructure and support capacity to create a basis for better performance



NEXT STEP

In order to respect the rights of our employees, LFC intends to promote communication programs, develop human rights business processes, and conduct various activities such as education and training. In addition, the company plans to build a foundation to grow into a global company by raising productivity and loyalty.

Human Resources Development



Education on Fine Company



Education on processing

Human resource development system

LFC systemizes and implements training by position, job function, global competency, and knowledge so that employees can observe the basic principles and actively deal with the job according to the position and situation. In addition, the purpose of job training is to improve individual job skills of all members and to strengthen global competencies and innovation capabilities.

Educational performance

LFC cultivates its employees as business leaders through various systems, from the recruitment stage to the human resource development stage. LFC invests about KRW 1.04 million and about 47 hours per person per year in education and training to cultivate talented people. LFC carries out various education programs for each level so that all members can demonstrate their leadership skills according to different situations.

Training time per person

Classification	2015	2016	2017
Training time per person (Unit: Hour)	72	45	47

* Including all employees

Education by position

LFC operates a variety of training programs for each position to strengthen the work capacity that its employees should have. In order to recognize the roles and responsibilities that have changed since the promotion and to set the direction for the future, the newly appointed officers, promoted managing director, and new executive officers should be trained. In addition, the company provides basic competency training necessary for upper level positions to the candidates for promotion so that they can perform their jobs smoothly. In the case of new recruits, LFC provides educational programs in stages after they enter the company to ensure early adaptation.

Education on job function

In order to strengthen the competencies required for each job, the company supports the participation in training provided by outsourced professional organizations and acquisition of job related qualifications. LFC also holds a systematic on-site training technology academy to ensure safety and manufacturing competitiveness and to secure knowledge. In order to cultivate core human resources, the company supports engineers to enter graduate school of engineering graduate school of Seoul National University.

Training on global competency

LFC supports the improvement of global competence of its employees through internal language courses and external language support. The company introduces language incentive programs such as language funds and linguistic allowances, and creates an organizational culture that promotes and motivates language learning through global special lectures. In addition, LFC expands its understanding of cross-cultural issues and equips its employees with global business capabilities through education for new employees and returnees, and training for local recruiting personnel.

Education on knowledge

LFC strengthens its basic competencies by providing employees with education on basic attitudes and common sense, core values, prevention of malpractice and sexual harassment. The company is also helping to participate in forums in various fields to grasp the latest management and social trends and network business.

Cooperative Labor-Management Culture



Providing snacks on site

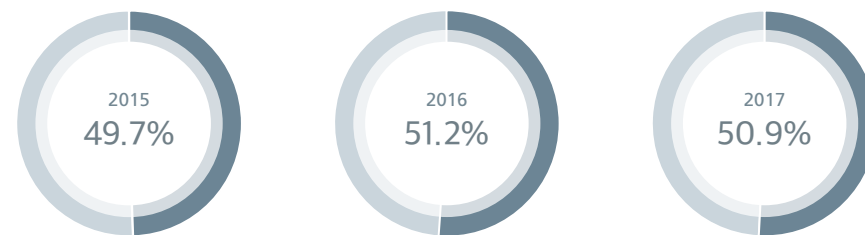
Establishing a cooperative labor-management culture

Since its establishment in 1971, the labor union of LFC has built up great trust and communication while building a “creative labor and management culture” and continuously implemented joint programs for win-win relationships between labor and management. While declaring its determination to eliminate conflicting relationships and strengthened global manufacturing competitiveness, the labor and management will strengthen internal innovation and focus on capacity enhancement by focusing on securing the services of master workmen.

Labor union status

Founded in 1971, the labor union is now comprised of three bureaus and 14 departments. The scope of union members is based on collective agreement (assistance manager and staff), and it is possible to join and leave freely. As of the end of 2017, there were 413 members of the labor union, which amounted to about 77.2%. There are three full-time members of the labor union, including the chairman of the labor union, who is elected by the members’ vote for a term of three years. The company guarantees the union’s independent decision-making and activities, and the union is democratically operated in accordance with the opinion of the union members.

Collective agreement application rate (2015-2017)



* Collective agreement application rate: The number of union members/Average annual employee numbers (excluding executives)

Labor-management cooperation program

LFC strengthens the creation of employees’ happiness based on the “Creative Labor-Management Culture.” The company expands its activities, which were conducted only by the representatives of the labor and management, to use them as channels for labor-management cooperation. LFC organizes workshops for representatives of the union and management once a year, and for executives and general union members twice a year. The company also hosts sports event to strengthen communication between labor and management. In addition, happiness creation programs for employees such as winter English ski camps for their children, tours for their parents, support for snacks (ice water), and activities for clubs are carried out.

Joint safety activities for accident-free workplace by labor and management

Hi-Five movements Labor and management work together to prevent disasters in the five major dangerous fields with high risk of death in production sites where large-scale maintenance work is carried out every year. The company is actively contributing to productivity improvement through industrial accident prevention.

Establishment of joint labor-management safety culture The labor and management conduct campaign to establish a systematic safety culture to realize accident-free and injury-free workplace. To this end, the labor and management joint and regular safety inspections hold quarterly Occupational Safety and Health Committee meetings, conduct facility maintenance activities, and conduct joint safety campaigns to raise safety awareness on the spot.

Happy Company



Winter English ski camp for children of employees



Tours for parents of employees

“Wise and Lovely Children,” LFC’s nursery school for happy mom

In April 2017, LFC opened a daycare center for children of its employees. The center opens from 7 a.m. to 7 p.m. Monday through Friday. Both parents who have jobs can thus safely leave their children at the center. Parents are also provided with information on the diet that considers nutrition for children. In this way, the company is making various efforts to balance the work and life of its employees.



Welfare and benefits system

Recognizing that employees’ satisfaction and happiness are important factors that determine the future of the company, the company aims to become a “Great Company” to work for through the realization of “Great Work Place.” To this end, the company provides a wide range of welfare and benefits so that members of the company and their families can enjoy a stable life.

Medical expense support system

In order to reduce the burden of medical expenses for employees and to promote health, LFC supports medical expenses of not only employees but also spouses for actual expenses. For employees and spouses over age 30 years, the company provides comprehensive medical checkups so that they can receive precise screenings.

Family-friendly company certificate

LFC actively encourages leaving the office on time by designating every Wednesday and Friday as a “day of family love,” and it was certified as a family-friendly company in December 2016. LFC has established a happy organizational culture that is loved not only by employees but also by their families.

Operation of a flexible work system

LFC operates a flexible work system that enables employees to select their working times according to their needs such as parenting and self-development. The company has pursued the best performance by enhancing work efficiency through efficient time operation, and employees are able to maintain a balance between work and family life as well as job satisfaction by selecting their working hours.

Strengthening maternity protection system

LFC actively recommends maternity leave and parental leave of employees to ensure conditions for employees’ long-term working and to resolve the social issue of low birthrates. LFC supports for safe delivery such as by a work-hour reduction system and offering checkups during pregnancy. In addition, it provides five-day paid paternity leave to spouses. In particular, LFC operates a policy through which talented women can be confident in displaying their abilities by preventing unequal treatment and any disadvantages in employment, pay, and career path by the use of maternity leave.

Based on the policy, the actual use of the maternity protection system has increased and 77% of employees qualified for maternity leave utilized their maternity leave in 2017. Since January 2017, LFC has extended the maternity leave period to a maximum of two years, allowing male employees access to a mandatory paternity leave of one month to reduce the parenting burden on employees. In addition, LFC opened a nursery school for happy moms in its Ulsan plant in April 2017 to promote a balance between work and family life.

Operation of counseling center, “Do Dream”

LFC provides channels to effectively mitigate different types of stress that occur in daily life from work and home through the Do Dream Center, a counseling center. The company regularly delivers information about mental health through a monthly internal mail and online bulletin board, and it operates a guide to, and execution of, a psychological test, and a meditation program.

Management philosophy respecting human rights

LFC implements respect for the human rights of individual employees in accordance with the human-centered management philosophy and the dignity of human beings stated in the Constitution. The company prohibits compulsory labor and child labor, abides by the Labor Standards Act, and strictly prohibits discrimination based on academic background, region of origin, sex, age, religion, and race. In particular, the company fairly treats employees in the personnel and welfare systems such as recruitment, placement, promotion, salary, education and retirement. No cases of discrimination has been detected during the reporting period in 2017 and there are no areas of business that could seriously impair the freedom of association and collective bargaining.

Corporate Culture of Communication

Promoting a culture of communication

Based on the philosophy that "satisfaction and happiness of employees determine the future of a company," LFC has made a consistent effort to create the best work environment and to communicate with employees. LFC operates diverse welfare systems, and it has expanded online and offline channels for enforcement of a culture of communication to resolve any difficulties and discomfort of employees.

CEO meeting

The CEO shares the company's business philosophy and listens to the difficulties and opinions of employees by arranging on-site meetings directly with employees. Through consistent operation as a place for forming a consensus and communication between management and employees, LFC has established a mutual respect of opinions and communication as its corporate culture.



Tea party at Seoul Office



Brief meeting at Incheon Plant

Operation of online communication channel, "Soh-tong Insight"

Through an internal communication portal called "Soh-tong Insight", management and company news, useful living information, and family events and club event introductions are shared with the whole company. Also, LFC's employees can participate voluntarily in an internal bulletin board that provides them with a space where they can express opinions and communicate with each other. In particular, on the "Soh-tong Avatar (anonymous bulletin board)" they can upload posts anonymously and communicate even more frankly with the company, and resolve difficulties. LFC has striven to communicate with external customers and potential employees by operating a social networking service (social media such as blogs and Facebook) of the company.

Salon de Panorama

LFC operates the "Salon de Panorama," a multi-purpose lounge for employees to refresh themselves from work and produce creative ideas. Also, they can have free discussions on works and host exhibitions, small parties and tea parties, where they can have fun and recharge their motivation along with their colleagues.



Salon de Panorama



Watch a baseball game together



Customer Value

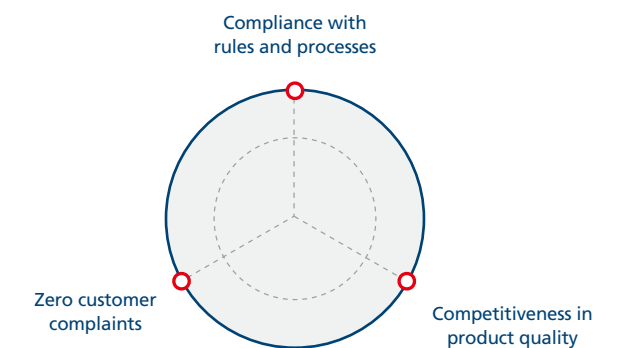
BUSINESS & SOCIAL CONTEXT

Recently, social interest in safety and environmental impact of products has been increasing, and domestic and external regulations and customer demands are strengthened. In order to pre-emptively respond to these changes and fulfill its responsibilities to the products, the company needs to thoroughly manage the entire process from raw material procurement to final product use and disposal. LFC strives to minimize the risk factors, actively respond to the customers' demands on technology development, and continuously invest.

OUR APPROACH

LFC works to improve customer satisfaction with product quality and to discover and improve nonconforming factors in products in advance. Based on its quality management system, the company carries out related activities such as manufacturing quality control, strengthening quality control of raw materials, and conducting process audits. LFC also operates a "Voice of Customers" system to check and improve quality based on customers' opinions.

OUR STRATEGY



NEXT STEP

Customers' demands for product quality and service are constantly growing. LFC constantly strives to actively respond to customer complaints and opinions. To this end, the company periodically visits customers to listen to their voices and analyze and respond to the opinions gathered through the "Voice of Customers" channel. LFC will actively implement product quality stabilization and customer value enhancement.



Quality Management System

Strategies for quality management

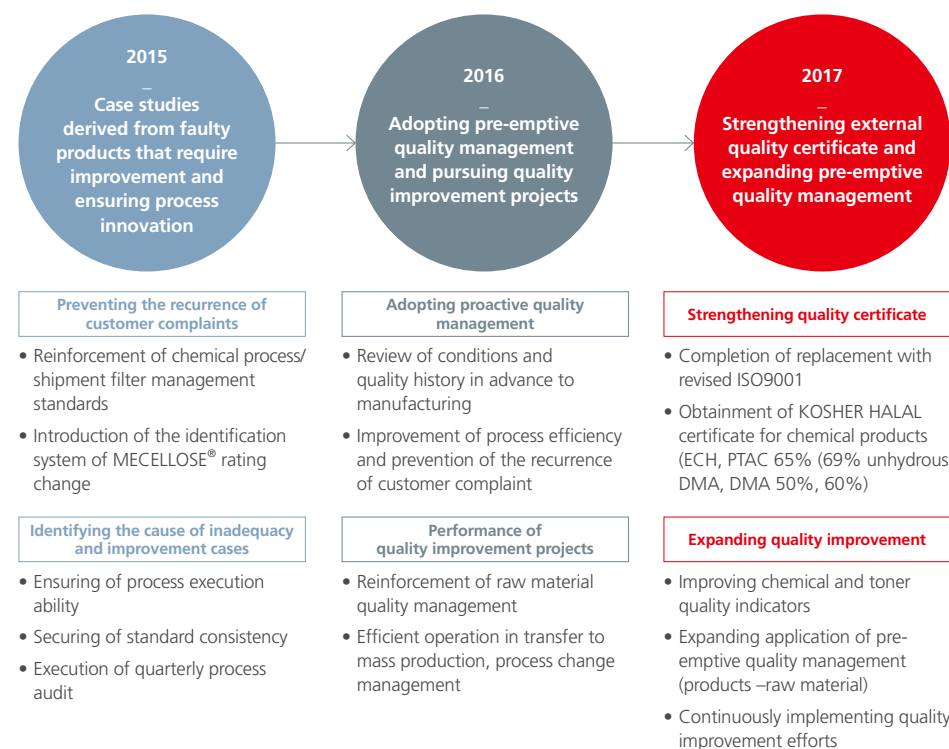
LFC has operated a quality management system (ISO 9001) throughout all management activities such as the purchase of raw materials, production, testing, sales, shipping and transportation, and post-management to ensure "Global Top-Tier quality competitiveness." LFC completed the examination for revision of ISO991 in 2015 and renewed its certificate. Also LFC has striven to discover and improve any inadequate elements of products while raising customer satisfaction with product quality.

Ensuring global top-tier quality competitiveness



Quality-management performance and future direction

To ensure quality competitiveness, LFC has executed diverse activities including process development, establishment of a quality assurance (QA) system, and case studies derived from faulty products that require improvement. Based on these activities, LFC plans to reinforce the foundation of quality management and pursue improvement projects for quality competitiveness.



Manufacturing quality management system



Manufacturing quality management

To analyze the cause of any inadequacy during the occurrence of any error in a process or a product, LFC operates a checkup conference system in which relevant departments participate for production quality, and development. Through this system, LFC identifies fundamental causes, establishes solutions, and confirms the execution results. LFC operates the pre-emptive quality management system under which it checks manufacturing conditions and quality history before starting production.

Execution of process audit

To review the response system for customer complaints and improve any inadequacies activities, LFC carries out process audits. Through these, LFC can inspect the reliability of products and services delivered to customers and establish a culture where employees work based on the standards and processes. LFC plans to consistently perform intensive improvement activities by selecting a main theme determined through the process audit each quarter.

Strengthening raw and subsidiary material quality management

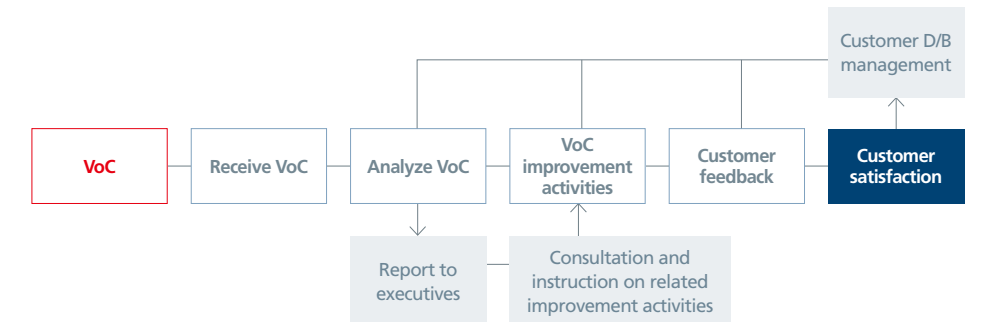
LFC has raised customer satisfaction with the quality of its products by fortifying quality management of raw and subsidiary materials subject to intensive management. In order to reinforce quality management, each business department has classified major raw and subsidiary materials, chemicals, and catalysts into inspection¹⁾, substitution of a report card²⁾, and non-testing³⁾. LFC plans to expand on receiving inspection of raw and subsidiary materials subject to intensive management, and it will establish a quality verification system of raw materials and products during the early stages of introduction by applying the system to new materials and a supplier authentication process.

Customer Satisfaction

Responding to "Voice of Customers"

LFC responds quickly to customer complaints through its voice of customer system, which is linked to sales, production and quality. The customers' feedback received is analyzed to identify the cause and the appropriate improvement is implemented. LFC plans to prevent the recurrence of customer's complaints due to careless management, and respond more systematically to customers' demands by building up database.

VoC system



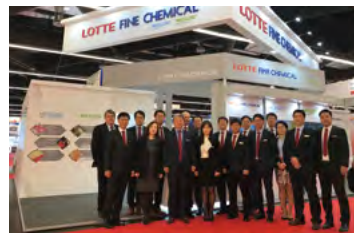
Expanding overseas customer channels

To respond to diverse demands of customers, LFC has performed joint research, customer invitation events, exhibitions, and seminars, and from the results of these activities it has tried to offer optimized products and solutions to customers. The company has attended The European Coating Show (ECS), the Conventional Pharmaceutical Ingredients & Intermediates (CPhI) Worldwide, the Institute of Food Technologists (IFT), introduced HiEND, HiPER, ETC, AnyCoat[®] and AnyAddy[®], which are the brands of MECELLOSE[®] and HECCELLOSE[®], and offered optimal solutions according to customers' demands. At the same time, LFC held presentations at the Drymix Mortar Conference and held meetings with related parties for technical cooperation and open innovation in the R&D sectors.

¹⁾ Inspection: Raw material of which quality may change after inspection and warehousing and having a significant effect on product quality

²⁾ Substitution of a report card: Raw material that has no quality issue during inspection for over one year and has stable quality

³⁾ Non-testing: Raw material or subsidiary material relevant to process operations, that has no quality property issue after warehousing for over two years



European Coating Show (ECS) 2017



2017 CPhI Worldwide

European Coating Show (ECS) 2017

ECS is the world's largest global exhibition for paint and related industries held in Nurnberg, Germany, and it is held by turns in conjunction with ACS held in the United States. In 2017, more than 1,100 companies from 80 countries attended the exhibition. The company also offered solutions to increase customer satisfaction by introducing HECCELLOSE® and MECCELLOSE®, which are the paint additives, and other general chemical products.

CPhI Worldwide

LFC has participated in CPhI Worldwide, the largest exhibition of the industry for eight consecutive years since 2011. In 2017 CPhI Worldwide was held in Frankfurt, Germany. A total of 2,500 companies from 150 countries participated, and LFC attended in order to listen to the demands of customers and offered solutions while introducing AnyCoat®, a coating material for drugs.

Asia Pacific AdBlue Conference (APAC)

In 2016 and 2017, LFC sponsored the "Regulation of Emission Gas and Urea Solution Conference" held in Tokyo, Japan under the supervision of Integer Research, a UK research organization specialized in emissions. At the conference, domestic and overseas government officials, the commercial vehicle manufacturers, LFC, and others participated in the discussion on the current status and future prospects of emission regulation and the urea industry. Through the urea conference, the company shared the reduction cases in the advanced markets and the technology of SCR devices, raising the brand awareness of EUROX® products and informing them of the superiority of products as the representative urea of Korea.

Fair marketing activities

LFC has established its own standards in relation to marketing communications and product supply, and complied with Act on the Consumer Protection in Electric Commerce, etc., Act on Management of Outdoor Advertisement, etc. and all relevant laws and regulations related to advertisement under the Broadcasting Act. As a result, in 2017, there has been no violation of laws relating to communication of products and services.

Customer information protection activities

LFC operates a dedicated information protection organization in order to strengthen its information protection activities and has taken the highest level of protection measures in accordance with the Personal Information Protection Act, and Act on the Promotion of Information and Communication Network. In addition, the company regularly carries out regular education and management/supervision for all employees in order to raise awareness of information protection and to collect, store, use, provide and destroy personal information safely.

Obtaining certification on customer information protection and strengthening monitoring

LFC obtained ISO 27001, an international standard for information protection in 2017. LFC monitors personal information handlers to prevent leakage and alteration of personal information. Upon occurrence of an accident, the company immediately notifies the customer and establishes/implements accident response plan so as to minimize the related damage.

Internal audit for customer information protection

Protection measures	Major contents
Administrative protection measures	<ul style="list-style-type: none"> Collect only required personal information at minimum Obtain consent for collecting personal information Disclose privacy policy for the processing of personal information After using personal information, be sure to destroy it Conduct regular training for all employees
Technical protection measures	<ul style="list-style-type: none"> Control access control and encrypt DB to prevent leakage of information due to hacking Install and operate anti-malware software to prevent malicious programs Comply with related laws such as keeping records of access
Auditing system for information protection	<ul style="list-style-type: none"> Conduct periodic audits once a year on personal information protection activities

Customer Information Protection



ISO 27001 – international standard for information protection

R&D

Key strategies

LFC possesses enough capabilities and experience to grow sustainably in the specialty chemical field such as industrial, food and pharmaceutical cellulose ether relatives and amine relatives and chloride relatives. For research and development, LFC has striven to achieve a corporate vision by enhancing the competitiveness of existing businesses, reinforcing the execution of new business, and furnishing customers with "differentiated technologies."

Organization in the research and development

In order to ensure manufacturing competitiveness and technology leadership and actively respond to technological development needs, R&D organization of the company consists of four teams, and each research team conducts various research projects.

R&D performance and outcomes

To satisfy the gradually diversifying needs of customers and develop new business opportunities for the future, LFC has strengthened research and development activities. In addition, through continuous research and development, the company is aiming at quality innovation, cost reduction, process technology development, and safety improvement in various product groups. At the same time, we are carrying out base technology research to ensure mid- to long-term competitiveness.

R&D activities for green materials

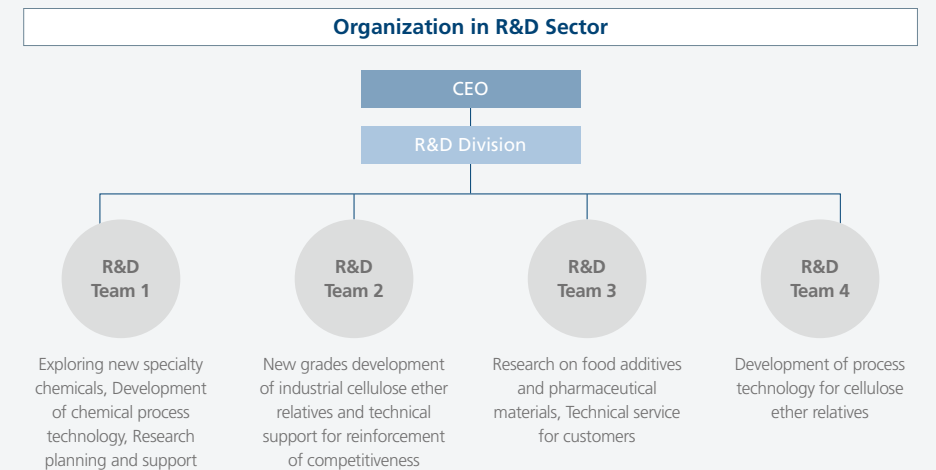
Development of high functional additive MECCELLOSE® HiEND for construction

With the trend for the use of large tiles for decoration and wall finishes, demand for quality tile cement with excellent adhesion strength is growing. Attuned to such market demands, LFC developed its MECCELLOSE® HiEND series product, a high functional additive for construction that reinforces the slip resistance, adhesion strength and long open time of tile cement.

Development of MECCELLOSE® ETC standard for general purpose architectural additives

LFC developed the MECCELLOSE® ETC series products that are not used for general purpose but for specialized functions. ETC specification, which is different from general purpose product, improves the adhesive strength as well as the open time for tile cement and the application of the product has been extended to the finishing products such as Render and Plaster. The company is currently developing a new ETC specification which has higher adhesion strength and open time and workability, and the company plans to strengthen its position in the general purpose market through continuous expansion of product series.

Key Strategies		
R&D Division Mission	Providing differentiated technology power to make a quantum leap for the company	
Focused strategies to pursue	Enhancing and expanding competitiveness of existing businesses	Securing execution platform for new business
	<ul style="list-style-type: none"> Diversification of product portfolio and development of value added use Competitiveness in cost and quality and strengthening of customer network Research of fundamental technology to secure mid-to-long term competitiveness 	<ul style="list-style-type: none"> Ensuring base technology for new business and identifying the item Optimization of introduced and developed technology



Development of high-performance MECCELLOSE® for cement extrusion

Demands for cement-extruded panels is increasing due to the increased demands for buildings such as houses, public offices, stadiums, and shortening construction period. To respond to such demands and in order to improve the performance and productivity of cement extruded products, it is required to have excellent extrudability in high temperature environment and thickening agent with enhanced form retention. Based on these needs for technologies, LFC has developed MECCELLOSE®, an optimized product for cement extruded panels and are expected to greatly contribute to the productivity improvement of its various extruded products.

R&D activities for food and pharmaceutical materials

Food and pharmaceutical material development and research

Recently, 3 grades of highly viscous HPMC developed for tablet medicine of the western countries have proven to be suitable HPMC carriers in the generic and improved drug fields, which are expected to grow steadily in the global pharmaceutical market. In addition, LFC focuses on drug research in the form of various open innovations such as joint research and development and entrusted technology development, and develops products and professional technical services that meet the needs of major pharmaceutical companies.

Development of functional mixed products for food

Food requirements in the food market are also rapidly changing as customers' needs become more diversified. AnyAddy® functional blends continue to develop to enhance user convenience with these customized standards leading these trends.

Strengthening the competitiveness of chemical products

Chlorine-based chemical process technology research

The company has found synthetic catalysts that achieve the best efficiency of the methane (MC) process and has achieved results in research on the efficiency improvement of allyl chloride synthesis in the epichlorohydrin (ECH) production process. Through continuous process technology development, LFC will be a leader in leading the best technology in the ever-intensifying chemical products business.



Mutual Growth

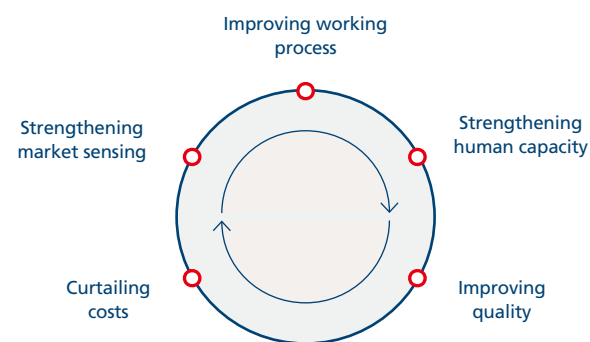
BUSINESS & SOCIAL CONTEXT

As the expectation of corporate social responsibility grows, win-win growth with business partners becomes essential for sustainable management. Advanced global corporations manage the issues of unfair treatment, human rights, environment, and safety for business partners including their 2nd-tier and 3rd-tier suppliers. In addition, the problems of the business partners have a direct impact on the business of the company, and the judgment of general consumers and government agencies on that is becoming very strict.

OUR APPROACH

LFC pursues shared growth in various aspects including technology and product quality through win-win cooperation with our partners. The company plans to actively encourage its business partners to fulfill their social responsibilities through financial and technical support. LFC also plans to contribute to the growth of SMEs by providing equal opportunities through fair and transparent procedures in selecting and evaluating the business partners.

OUR STRATEGY



NEXT STEP

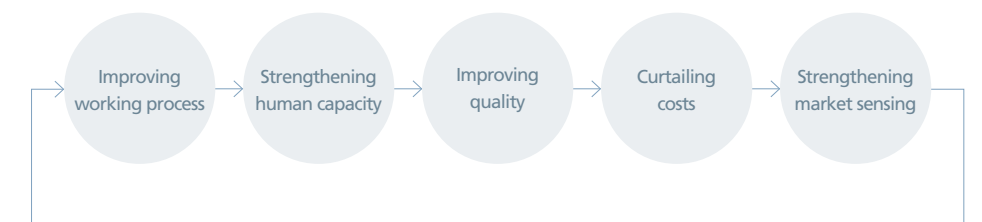
Recently, as the social paradigm shifts, the concept of global competitiveness is shifting from competition among individual companies to competition between supply networks as well as the systems of the business partners including business partners. LFC plans to actively respond to these changes and continuously develop and support diverse shared growth programs that meet the needs of business partners.

Win-win Growth

Strategy and direction

LFC maintains fair cooperative relationships with its partners through various efforts for win-win such as conclusion of fair trade agreements and improvement of contract system based on the five key growth strategies of "Improving work process, Strengthening of human capacity, Improving quality, Curtailing costs and Strengthening of market sensing." In addition, the company is actively pursuing joint growth businesses based on a healthy collaborative culture and is working to lead the market so that the competitiveness of its partners can be led to the upgrade of sustainability of LFC.

Key strategy



Active adoption of LOTTE Group Compliance Committee Recommendation

Based on the Group's policy for win-win cooperation and shared growth, LFC is solidifying its foundation. In particular, in January 2018, the company proactively adopted the Group Compliance Committee's recommendation and fully revised procurement management regulations, thereby maintaining a virtuous circle of partnerships with its partners and actively working on win-win cooperation. Based on this partnership, LFC can lead the market by enhancing the competitiveness of business partners.

Improving the joint growth process

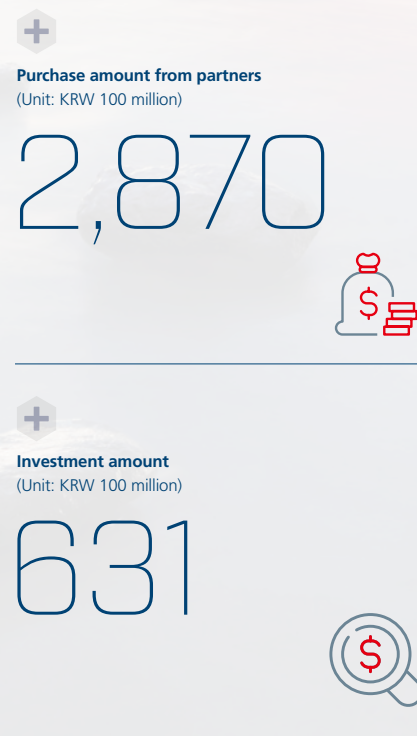
Standard contract was registered in its company regulation in September 2017 in accordance with the Group guidelines and applied it in all contracts with the partners. LFC also receives confirmation from the Legal Compliance Team regarding major changes in contracts, to conduct fair and transparent business transactions with partners.

Two-way communication with business partners

LFC periodically (once a quarter) communicates to listen to the difficulties of the partners and seek solutions. In particular, the company has formed a common consensus on the elimination of unfair trade practices and on safety management. LFC has also created a free communication channel for subcontractors' complaints and actively reflected their opinions on the company's management or transactions with partners.

Strengthening partnerships

In 2018, Production Headquarter of LFC invests more effort and time in the environmental safety of the plant under the motto "Making a safe plant." In order to promote strong partnerships with business partners based on win-win management policies, the company makes various efforts and improvements such as spreading fair subcontract policies, compliance with related laws and prevention of violation through clear R&R.



Safety Management Activities for Business Partners

Financial support and incentive system

LFC pays out all of the transaction price in full cash instead of bills so that the payment can be made quickly to the partners, and especially for SMEs, the company pays the price within 15 days after the close of the tax bill. In addition, LFC has introduced an early payment system for business partners that need urgent funding at the end of the year, the New Year, and major holidays.

The company operates an incentive system that evaluates and compensates employees for safety and job management every year. Based on its own standards, LFC awarded incentives in 2017 according to the results to four A-class companies and two B-class companies.

Strengthening communication and education about safety and health

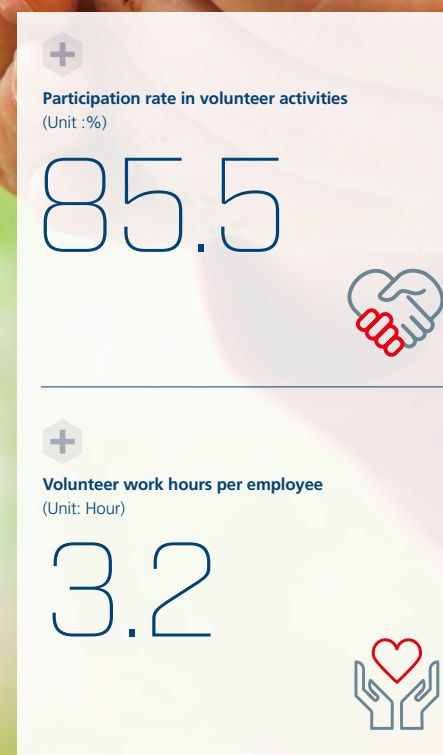
Given the characteristics of the chemical industry, it is very important to ensure safety in manufacturing processes. To manage the safety of the employees of its partners, LFC holds a weekly safety meeting and a monthly safety advancement conference with its partners. Through the safety advancement conference attended by the plant manager, representatives of partners, and managers, the company shares major notices, accidents, and activities for pursuing safety and health for its partners and offers a place to discuss it. Moreover, LFC gives special safety education on unsafe behavior and conditions, accidents, forklift safety, and risk assessment, and it also offers health education such as wearing of air respirators and CPR through briefings about measurement results of the work environment.

Internal training for support departments

Safety is indispensable value for both the production organization and the support organization. In order to accurately recognize the importance in purchasing and to appropriately respond, LFC conducts internal education. The company strives to understand safety equipment, its role and mechanical mechanism to operate the plant safe. As part of that, LFC plans to provide training on safety valves and rupture boards in 2018. The company plans to contribute to the safety of the plant through the continued internal education related to safety.



Local Community



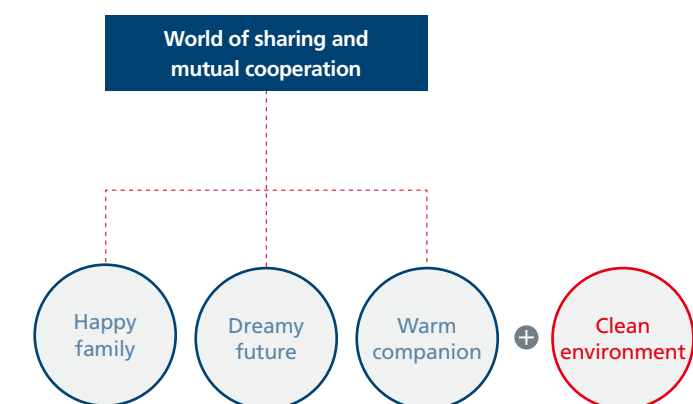
BUSINESS & SOCIAL CONTEXT

Recently, social contribution activities have evolved into CSV (Creating Shared Value) activities that go beyond simple donation activities, and business activities themselves are solving social problems and creating corporate profits and social values for win-win. In this trend, companies can actively engage in social contribution activities to build a positive corporate image and expand opportunities to communicate with the local community.

OUR APPROACH

LFC implements management for shared value to create value that grows together with local communities. At the same time, the company makes an environmentally friendly change in its communities and communicates with local community through various activities to make a difference for children, the future of society. Since 1967, LFC's social volunteer group has been working on the development of local communities. The company will continue to expand its specialized contribution activities, and will endeavor to be recognized and trusted by local communities.

OUR STRATEGY



NEXT STEP

LFC continues to plan social contribution activities that help the self-reliance of the underprivileged and solidarity with the local community. In addition, the company strengthens the value of society through environmental protection activities centered on the local community.

Social Contribution System

Social contribution strategy

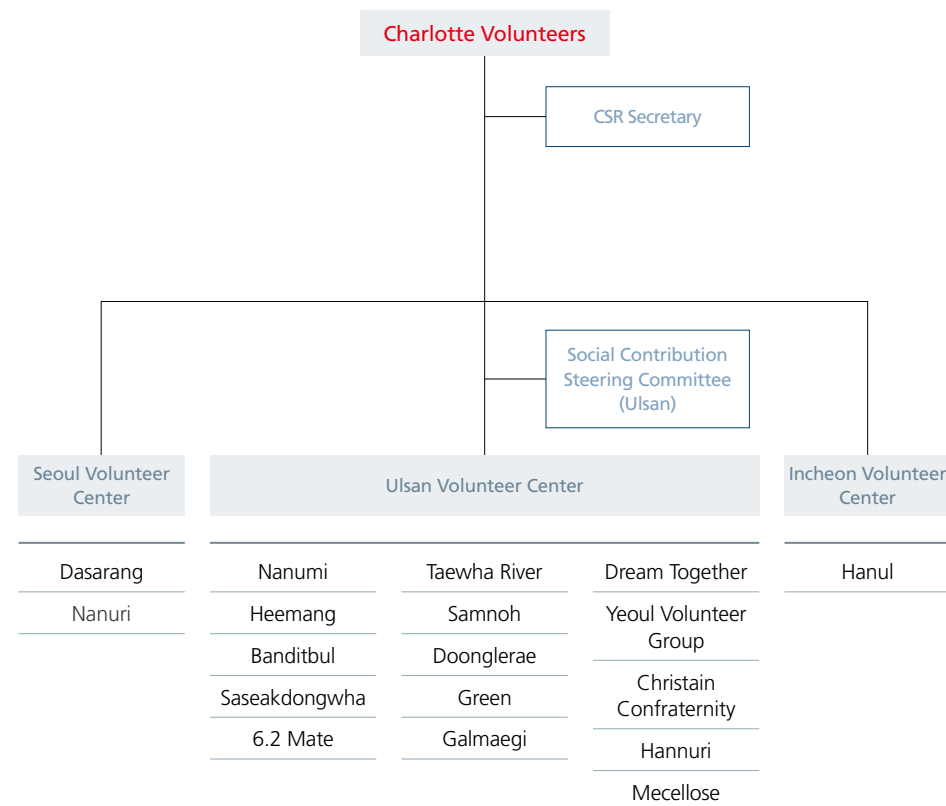
In December 2017, LOTTE Group decided to pursue diverse businesses by adding core values based on the slogan of "World of Sharing and Mutual Cooperation" through discussions by the Social Contribution Committee.

LOTTE Social Contribution Committee's three core values include "Happy family, Dreamy future, and Warm companion." LOTTE Group strives to grow into a company that fulfills its social responsibilities through activities based on the women's and children's support programs and accelerators program.

In line with this, LFC plans to develop a "3 + 1 strategy" by adding "Clean environment," which is the representative contribution activity area, to the three core values of LOTTE Group.

Social contribution organization

In order to implement its social contribution activities efficiently and strategically, the company is operating a separate social volunteer group for each volunteer center. In addition, in order to set up systematic corporate strategies and plans, the company establishes and operates CSR Secretary.



Social contribution fund

LFC's social contribution fund is divided into the funds raised by employees and the matching grant made by the company. In 2017, a total of KRW 430 million in social contribution funds was raised. These funds are used in a variety of social contribution activities such as welfare facilities, support for vulnerable groups, promotion of local culture, promotion of healthcare, educational support, and environmental protection.



Employee donations

Deduction from employee salary, Donation of prize money of employee who proposed good business idea



Company matching grant

Matching grant supported by company (at the ratio of 1: 1 in employee fund amount)

Major Social Contribution Program

Happy family

"Happy Love House" activity for multicultural families The Charlotte Volunteer Group conducts home repair volunteer activities for family living in poor environments by selecting one family each year in connection with the MICOS Children Center. The company strives to improve the living environment of multicultural families, such as a spacious storage space for efficient use of space, a clean kitchen, and replacement of lamp bulbs in their homes.

Donating "Mini-Pop-up Books" to multicultural families LFC encourages employees to participate in volunteer programs through which employees and their families deliver handmade products every year. In 2017, 550 mini pop-up books were delivered to multicultural families in Ulsan.

Baking and sharing activities Employees of LFC Seoul Office establish a tie-up with local community households in cooperation with the Korean Red Cross' Nambu Blood Center, conducting quarterly bread sharing activities for low-income families in the local communities.



Love House volunteer activities



Donating mini-pop-up books to multicultural families

Dreamy future

Support for after-school classroom activities LFC has supported after school activities such as learning support and birthday parties for children in elementary school in connection with the Yangjae Social Welfare Center.

Support for "Ulsan Swings," baseball league club In June 2017, LFC invited 'Ulsan Swings' baseball club, a multi-cultural little baseball team, to the LOTTE Giants's match, which was held at Ulsan Munsu Baseball Stadium. Swings is the first multicultural baseball team in Ulsan with 19 members from 8 countries including China, Mongolia, Canada and Vietnam.



Support for after-school classroom activities



Inviting Ulsan Swings baseball club to baseball game

Warm companion

Support for the Ulsan Whale Festival In May 2017, LFC supported Ulsan Whale Festival and participated in the parade to communicate with the local community.

Participating in joint enterprise program of social contribution LFC participated in the 'Corporate volunteer HANDS ON activity – Dream-Ket production,' jointly sponsored by the Ulsan city and Ulsan city volunteer center. The company delivered a dream-ket consisting of winter necessities, such as winter clothes and vitamins, to the local community for a warm sharing.



Participating in joint enterprise program of social contribution agreement in Ulsan

Year-end neighborliness campaign LFC has conducted love sharing activities in the local communities near the plants such as kimchi-sharing, Christmas gift delivery, support for the disabled and donations.

Clean environment

Urban Box Farming Campaign Celebrating 8th anniversary of the campaign, employees of LFC distributed boxed vegetable gardens and blueberry seedlings to 3,500 Ulsan citizens. Also holding various events hand in hand with the citizens, including a hands-on family booth experience and urban farming education, the company received great support from the participants. LFC plans to continue this campaign and share the value of nature with the citizens.

Bamboo Shoots Protection Campaign in Taehwa River Grand Park's Bamboo Forest LFC holds a campaign to protect the bamboo shoots in Taehwa River Grand Park in Ulsan. This campaign is held every year from mid May to June, with employees and their families to prevent damage and harvest, and to promote the importance of bamboo shoots protection to the citizens.

Social contribution awarded in 2017

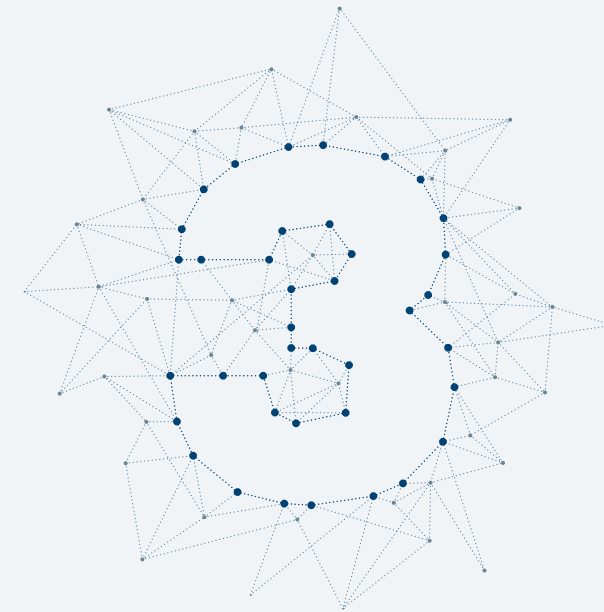
- **Multicultural Little Baseball Club** Awarded by the head of Ulsan Southern Police Station (May 14)
- **Support for Ulsan Whale Festival** Awarded by the head of Ulsan Nam-gu town hall (Jun. 30)
- **Support for Welfare of the Disabled** Awarded by the head of Ulsan 2nd Sports Center (Dec. 22)
- **Selected as Certified Family-friendly Company Concerning Multicultural Family** Awarded by the head of Ulsan Nam-gu town hall (Dec. 29)



Urban Box Farming Campaign



Awarded by the head of Ulsan Nam-gu town hall (Dec. 29)



APPENDIX

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Facts & Figures

Economic Performance

(Unit: KRW million)

Classification	2015	2016	2017
Current assets	583,397	569,184	697,028
Cash and cash equivalents	219,295	210,111	131,712
Short-term financial instruments	1,000	30,000	225,000
Held-to-maturity financial assets	31	109	89
Derivatives and financial assets	12	0	0
Accounts receivable	171,238	162,887	186,081
Other current financial assets	24,626	20,696	6,855
Other current assets	15,197	8,570	8,644
Inventories	151,998	136,811	138,647
Non-current assets held for sale	-	-	-
Non-current assets	1,100,828	961,754	944,276
Long-term financial assets	31	31	25
Held-to-maturity financial assets	213	112	50
Other non-current financial assets	20,215	3,189	4,100
Available-for-sale financial assets	108,107	26,180	23,516
Investment in joint venture	173,816	168,660	191,700
Property, plant and equipment	760,862	717,133	708,100
Intangible assets	33,600	24,130	15,096
Other non-current assets	1,367	897	1,112
Deferred income tax assets	2,617	21,422	577
Total assets	1,684,225	1,530,938	1,641,304
Current liabilities	185,332	202,786	354,565
Non-current liabilities	335,313	216,488	94,033
Total liabilities	520,645	419,274	448,598
Equity attributable to owners of the parent	1,163,580	1,111,664	1,192,706
Capital stock	129,000	129,000	129,000
Capital surplus	302,905	302,905	302,905
Other components of equity	18,802	18,802	18,802
Accumulated other comprehensive income	(159)	(134)	(247)
Retained earnings	713,032	661,091	742,246
Non-controlling interests	-	-	-
Total equity	1,163,580	1,111,664	1,192,706
Sales	1,161,863	1,110,704	1,159,511
Operating profit (loss)	2,554	29,750	111,125
Net profits	89,979	(43,547)	89,231
Profit attributable to:			
Owners of parent	93,865	(43,547)	89,231
Non-controlling interests	(3,886)	-	-
Earnings per share	3,685	(1,710)	3,503
Number of companies subject to consolidation	4	3	3

Distribution of Economic Value

GRI Index	Classification	2015	2016	2017
102-37, 201-1	Shareholders	12,735	7,641	20,376
	Employees	126,274	96,775	110,476
	Government/Public institutions	26,210	19,494 ²⁾	11,807
	Local community	468 ¹⁾	388	561
	Business partners	373,676	319,442 ³⁾	368,530

^{1), 2), 3)} Data was modified due to the changes in the sum logic, such as corporate tax and other corporate tax.

Environmental Performances

GRI Index	Classification	Unit	2015	2016	2017	
301-1	Product	Production volume	Ton	2,137,232	2,221,727	2,362,891
302-1, 2	Energy	Energy consumption	TJ	14,149	13,158	14,160
		Energy consumed per unit production	TJ/Product-Ton	0.007	0.006	0.006
302-4, 5		Decrease in energy consumption	TJ	117	401	234
303-1	Water	Water consumption	Ton	11,080,670	11,163,890	12,111,430
		Water consumed per unit production	Ton/Product-Ton	5.185	5.025	5.126
	Water withdrawal by source	Streams	Ton	11,080,670	11,163,890	12,111,430
305-1, 2	Greenhouse gas (GHG)	Total emissions	tCO ₂ eq	694,955	652,170	621,707
		GHG emissions per unit production	tCO ₂ eq/Product-Ton	0.325	0.22	0.26
		Direct emissions (Scope 1)	tCO ₂ eq	114,702	71,508	100,713
		Indirect emissions (Scope 2)	tCO ₂ eq	580,253	578,162	520,994
		Decrease in GHG emissions	tCO ₂ eq	7,297	34,944	5,902
305-7	Other air pollutants	NOx emissions	kg	65,621	41,458	17,563
		SOx emissions	kg	15,298	19,206	1,048
306-1	Wastewater	Total weight of wastewater	Ton	8,386,890	8,200,790	8,415,900
		Wastewater discharge per unit production	Ton/Product-Ton	3.924	3.691	3.562
	Water pollutants	Total weight of COD	Kg	213,396	235,714	236,578
		COD discharge per unit production	Kg/Product-Ton	0.100 ⁵⁾	0.106 ⁶⁾	0.100
306-2	Waste materials	Total weight of waste	Ton	73,719	61,749	67,540
		Waste discharge per unit production	Ton/Product-Ton	0.034	0.028	0.029
		Specified waste	Ton	1,009	891	1,306
		Regular waste	Ton	69,126	60,858	66,233
		Incineration	Ton	1,457	298	1,443
		Landfill	Ton	44,189	42,860	35,447
		Others	Ton	15	724	705
417-1	Investment and procurement	Recycling	Ton	24,474	17,868	29,944
		Recycling rate	%	34.9	28.9	44.3
417-1	Investment and procurement	Total environmental protection expenditures and investments	KRW million	29,136 ⁷⁾	6,176	10,046
		Green procurement	KRW million	2,626	2,926	3,756

⁴⁾ Daily data (2016) was revised to annual data based on per unit production. ^{5), 6)} Error with per unit production was corrected due to changes in production figures.

⁷⁾ Changed to business report disclosure standard.

Social Performance

GRI Index	Item	Classification	Description	Unit	2015	2016	2017
102-8	Employees	Total	Total No. of employees	Person	823	822	820
			Male	Person	742	739	734
			Female	Person	81	83	86
		By type	Permanent	Person	804	804	800
			Temporary	Person	19	18	20
			By age	Under 30	Person	133	94
			30-50	Person	627	651	635
			Over 50	Person	63	77	75
			402-1	Collective bargaining	Coverage rate	Percentage of employees covered by collective bargaining agreement	%
401-1			Newly hired employee	Person	25	20	27
			Employee turnover	Employee turnover rate	%	0.9	1.7
401-3	Employment	Parental leave	No. of employees covered by parental leave	Person	20	16	13
			No. of employees on parental leave	Person	8	9	10
			Parental leave rate	%	40.0	56.3	76.9
403-2	Industrial accident		No. of Industrial accidents	Case	1	0	1
			Industrial accident rate	%	0.15	0	0.16
			Hours of work lost	Hour	648	0	888
404-1	Education and training	Employee education and training	Total hours of employee training	Hour	59,184	36,911	38,700
			Training hour per person	Hour	71.91	44.9	47.20
405-1	Diversity	Minority groups	Persons with disabilities	Person	22	22	21
			Recipients of patriots & veterans benefits	Person	42	43	41
			Foreigners	Person	1	1	2
412-2	Investment	Human rights training	Hours of human rights training	Hour	1	1	1
			Percentage of employees having received human rights training	%	100	100	100
205-2	Anti-corruption	Anti-corruption training	Percentage of executives having received anti-corruption training	%	100	100	100
			Percentage of employees having received anti-corruption training	%	100	100	100
205-3	Incidents of corruption and actions taken		No. of incidents of corruption	Case	0	0	0
			No. of disciplinary actions or dismissals due to corruption	Case	0	0	0
			No. of contracts terminated, or not renewed, due to corruption	Case	0	0	0
416-1	Customers' safety & health	Safety & health assessment	Percentage of product/service categories having received industrial safety assessment	%	100	100	100
			Regulatory compliance	Violation of industrial safety regulation	KRW million	8	0
417-2, 3	Marketing communication	Regulatory compliance	Fines for non-compliance with regulations concerning marketing communications, including advertising and promotion	KRW million	0	0	0
			Incidents of non-compliance with regulations concerning marketing communications, including advertising and promotion	Case	0	0	0
418-1	Customer privacy	Complaints	Complaints received from the external agency or government concerning leakage of customer privacy	Case	0	0	0
			Number of identified leaks, thefts, or losses of customer data	Case	0	0	0

GRI Standards Index

Aspect	Description	Assurance		
		Page	Remarks	
Organization profile	102-1	Name of the organization	5	
	102-2	Primary brands, products, and/or services	6~7, 66~67	Special page and appendix
	102-3	Location of organization's headquarters	5	
	102-4	Countries with significant operations	5	
	102-5	Nature of ownership and legal form	14~15	
	102-6	Markets served	6~7	Within special page
	102-7	Scale of the reporting organization	5	
	102-8	Information on employees and other workers	5, 60	
	102-9	Description of the organization's supply chain	50~51	
	102-10	Significant changes during the reporting period lasting to size, structure, or ownership or its supply chain	61~63	No material change
	102-11	Implementation of the precautionary approach or principle	17~18	
	102-12	External initiatives that the organization endorses	63	
	102-13	Memberships of associations such as industry associations	68	
Strategies	102-14	Statement from the most senior decision maker of the organization	2~3, 6~7	Within special page
Ethics and integrity	102-16	Organization's values, principles, standards and norms of behavior	19~20	
Governance	102-18	Governance structure of the organization	14~15	
	102-40	Stakeholder groups engaged by the organization	22~23	
Stakeholder engagement	102-41	Collective agreement	42	
	102-42	Basis for identification and selection of stakeholders with whom to engage	22~23	
	102-43	Approaches to stakeholder engagement by type and by stakeholder group	22~23	
	102-44	Key topics and concerns raised through stakeholder engagement, and how the organization has responded to them	22~25	
Identified material aspects and boundaries	102-45	List of entities included in the organization's consolidated financial statements (subsidiaries and joint venture)	58~59	
	102-46	Definition of reporting contents and boundaries of topic	24~25	
	102-47	List of material topics	24~25	
	102-48	Re-description of information	61~63	No material change
	102-49	Changes in report	ABOUT THIS REPORT	
	102-50	Reporting period	ABOUT THIS REPORT	
	102-51	Recent date of report	ABOUT THIS REPORT	
	102-52	Reporting cycle	ABOUT THIS REPORT	
	102-53	Enquiry on report	ABOUT THIS REPORT	
	102-54	Reporting method according to GRI Standards	61~63	
	102-55	GRI Index	61~63	
	102-56	External assurance	64~65	

Aspect	Description	Assurance	
		Page	Remarks
Procurement practices	103 Management approach	50~52	
	204-1 Percentage of the procurement budget used for significant locations of operation spent on local suppliers	50~52	
Anti-corruption	103 Management approach	19~20	
	205-1 Risk assessment on corruption at the workplace	19~20	
	205-2 Notice and training on anti-corruption policy and procedure	19~20	
Fair competition	103 Management approach	19~20	
	206-1 Legal actions on unfair transactions such as anti-competition acts and monopoly, etc.	61~63	No cases of violation
Energy	103 Management approach	30~34, 59	
	302-1 Energy consumption within the organization	30~34, 59	
	302-4 Reduction of energy consumption	30~34, 59	
	302-5 Reductions in energy requirements of products and services	30~34, 59	
Emissions	103 Management approach	30~34, 59	
	305-1 Direct greenhouse gas (GHG) emissions (Scope 1)	30~34, 59	
	305-2 Energy indirect greenhouse gas (GHG) emissions (Scope 2)	30~34, 59	
	305-3 Other greenhouse gas (GHG) emissions (Scope 3)	30~34, 59	
	305-5 Reduction of greenhouse gas (GHG) emissions	30~34, 59	
	305-7 NOx, SOx, and other significant air emissions	30~34, 59	
Waste	103 Management approach	30~34, 59	
	306-2 Waste by type and disposal method	30~34, 59	
	306-3 Outflow of harmful materials	30~34, 59	
Labor-management relations	103 Management approach	40~44	
	402-1 Minimum notice periods regarding operational changes	40~44	
Safety and health	103 Management approach	35~39	
	403-1 Percentage of total employees represented by joint health and safety committee	35~39	
	403-2 Type of injury and rates of injury, occupational diseases, lost days, and absenteeism, and total number of work-related fatalities, by region and by gender	35~39	
	403-3 Incidence rate of occupational diseases or employee with high risks	35~39	
Training and education	103 Management approach	40~44	
	404-1 Average hours of training per year per employee by gender, and by employee category	41	
Diversity and equal opportunity	404-2 Programs for skills management and lifelong learning that support the continued employability of employees	40~41	
	103 Management approach	40~44	
No-discrimination	405-1 Governance organization and diversity in employees	42~44	
	103 Management approach	40~44	
No-discrimination	406-1 Cases of discrimination and correctional measures	61~63	No cases of discrimination

Aspect	Description	Assurance	
		Page	Remarks
Human rights assessment	103 Management approach	40~44	
	412-2 Training on human rights policy and procedures relating to business	40~44	
Local communities	103 Management approach	53~56	
	413-2 Workplace which may have substantial or potential material adverse impact on the society	61~63	No workplace which has adverse impact
Social assessment on supply network	103 Management approach	50~52	
	414-1 New business partner screened through social impact assessment	50~52	
Customer health and safety	103 Management approach	35~36, 45~46	
	416-1 Safety and health impact assessment on products and services	35~36, 45~46	
Marketing and labeling	103 Management approach	47~48	
	417-2 Cases violating laws and self-compliance regulations concerning products and services information and labeling	48, 63	No case of violation
	417-3 Violation of regulations concerning marketing communication	48, 63	No case of violation

LFC's SDGs

In order to participate in the SDGs, LFC has reviewed the implementation status of each of the 17 targets and plans to continue to set targets for items which have relevant to the characteristics of LFC.



Independent Assurance Statement



Reface

KFQ was engaged by LOTTE Fine Chemical (further 'LFC') to provide limited assurance on the 'LOTTE Fine Chemical Sustainability Report 2017' (further 'the Report'). Our responsibility is to perform a limited assurance engagement and to express a conclusion based on the work performed. KFQ conducted its assurance based on completeness of the data and information provided by LFC. LFC is responsible for all contents within the Report including the reporting principles and standards.

Independence

KFQ is not involved in the preparation of any part of the Report, other than providing an assurance opinion, and there has been no interest between LFC and KFQ. KFQ has no biased opinion on stakeholders of LFC.

Assurance Standards

KFQ identified the followings as its scope:

- AA1000 Assurance Standard (2008)
- AA1000 Accountability Principles Standard (2008)
- GRI Standards
- UN SDGs (Sustainable Development Goals)

Assurance Scope

KFQ identified the followings as its scope:

- LFC's sustainable management activities and performances of the headquarter and all business establishment (domestic and overseas) described in the Report
- Compliance with the guidelines according to GRI Standards Core Option
- GRI Standards compliance assessment regarding contents of the Report and assurance principles of reporting quality
- Application of Type 1 assurance approach according to AA 1000 APS 2008 and AA 1000 AS 2008 to assess compliance with inclusiveness, materiality and responsiveness principles and reliability of sustainability performance information. The term 'Moderate Assurance' used in AA 1000 AS is designed to be consistent with 'Limited Assurance' as articulated in ISAE 3000.
- Core subjects and linkages with UN SDGs

Assurance Procedures

KFQ designed procedures to have reasonable assurance of the Report's critical errors or inappropriate information. KFQ verified the reliability of the contents, processes and systems of data generation and report preparation.

Document Review We reviewed the reliability of non-financial data in respect of the 'Sustainability' by cross-checking with the Report and GRI Standards, quantitative data of LFC, and media research information. We also confirmed that the financial information has been appropriately extracted from the internal documents and the financial statements of the business report of the following system (<http://dart.fss.or.kr>).

On-site Verification KFQ visited LOTTE Fine Chemical headquarter and conducted on-site verification to confirm reliability of the sustainability activities and performance data contained in the Report and to evaluate the effectiveness of the reporting process. We performed verification in the accuracy aspect of the aggregated data from LOTTE Fine Chemical. These procedures included the following:

- Materiality assessment process, stakeholders inclusiveness, key issues, internal response procedures, and etc.
- Assessment of data analysis and descriptions and sustainable management performance in the Report
- Consistency between the financial data contained in the Report and the audited financial statements 2017
- Interviews with relevant staff responsible for providing information in the Report

Resolution of Findings KFQ confirmed that some errors, inappropriate information, and ambiguous expressions found during on-site visit were properly reflected in the final Report.

Limitations The Report has been prepared solely for LFC in accordance with the terms of our engagement. We do not accept or assume responsibility to anyone other than LFC for our conclusions we have reached in the statement. Completeness and responsiveness of sustainability performance information presented in the Report have inherent limitation due to their nature and the methodology used for determining, calculating and estimating such data. Accordingly, we do not express a reasonable assurance conclusion.

Opinion

Based on the verification activity stated herein, KFQ confirmed that the Report meets the GRI Standards 'Core Option'. According to the principles of AA 1000 APS 2008 and AA 1000 AS 2008, inclusiveness, materiality and responsiveness, sustainability performance information were assessed and KFQ could secure reasonable grounds to provide Type 1 level of assurance with the following confirmation:

1. (Stakeholders Inclusiveness) LFC subdivided thirteen stakeholders as five groups related to the major issues of sustainable management. To hear any concerns and opinions from them, LFC had a customized communication strategy for each stakeholder group and reflected their responses and opinions to its sustainable management activities.
2. (Sustainability Context) In terms of sustainability, LFC continues to actively respond to the economic, environmental and social effects that stakeholders require based on the core issues. These sustainable management activities and performances were properly contained in the Report.
3. (Materiality) LFC established issue pools and reviewed by internal guidelines and external assessment criteria (GRI Standards, DJSI, UN SDGs, media coverage, benchmark, and issue analysis) in compliance with the materiality assessment process. As a result, LFC appropriately reflected that thirteen key topics derived from the process along with key performance in 2017.
4. (Completeness) LFC applied reporting scope, boundary and temporal criteria. We confirm that the Report is suitable for stakeholders to assess sustainability performance.

Recommendation for Improvement

For further advanced sustainable management, LFC needs to review the sustainable management vision, strategy and execution of the sustainable management in a long-term perspective, and the result should be reflected on its management activities. In addition, KFQ recommends to set up continuous management improvement measure in order that LFC's sustainable management activities (complementation of key issues selected through materiality assessment, development of systematic monitoring plans for performance data, data analysis, and so forth) can be executed comprehensively with its internal system.



July 2018
Seoul, Korea

CEO **Nam Dae Hyun**
Korean Foundation for Quality (KFQ)

List of Products

Category	Product Name	Abbreviation	Chemical Formula	CAS No.	Characteristic / Purity	Packing	Application	Others
Chlor-Alkali Derivatives	Sodium Hydroxide		NaOH	1310-73-2	Liquid, 25%, 50% ap. solution	Tank lorry, Bulk vessel, Pipe	Chemical agent, Pulp & Paper processing	
	Sodium Hypochlorite	HYPO	NaOCl	7681-52-9	Colorless or slightly yellow liquid, 12% solution	Tank lorry	Bleaching agent, Disinfectant	Domestic only
	Hydrogen		H ₂	1333-74-0	Gas, 99.99%	Pipe	Hydrogen peroxide raw material, Hydrodesulfurization	Domestic only
	Hydrochloric acid		HCl	7467-01-0	Liquid, 35% aq. solution	Cylinder, Tank lorry	Agrochemicals, Pharmaceuticals	Domestic only
	Methyl Chloride	MC	CH ₃ Cl	74-87-3	Colorless, liquefied gas, 99.9% min.	940Kgs Cylinder	Agrochemicals, Organic synthesis, Quaternary ammonium salt	
	Methylene Chloride	MCL	CH ₂ Cl ₂	75-09-2	Colorless, clear, volatile liquid, 99.9% min.	250Kgs Steel drum, 20MT ISO-Tank, Tank lorry	Electronic material processing, Pharmaceuticals, Metal cleanser, Urethane foaming	
	Chloroform	CFM	CHCl ₃	67-66-3	Colorless, clear, volatile liquid, 99.9% min.	250Kgs Steel drum, 20MT ISO-Tank, Tank lorry	Pharmaceuticals, Solvents, Fluorocarbon refrigerants (R-22)	
	Epichlorohydrin	ECH	C ₃ H ₅ OCl	106-89-8	Colorless, clear, 99.9% min.	240Kgs Steel drum, 19MT ISO-Tank, Tank lorry, Bulk vessel	Epoxy resin, Synthetic glycerin, Water treatment chemicals	EU REACH registered
	S-Quata® (3-chloro-2-hydroxy Propyl)Trimethyl Ammonium Chloride)	PTAC	C ₆ H ₁₅ Cl ₂ NO	3327-22-8	Colorless liquid, 65% min. (S-Quata 885), 69% min. (S-Quata 889)	230Kgs PE Drum, 1.1MT IBC, Flexibag, Tank lorry	Additives for starch, High-quality pulp, Personal care product	EU REACH registered
Cellulose Ethers	MECELLOSE®	MC (Methyl Cellulose)		9004-67-5	White or yellowish powder	20kg: Paper bag with PE inner liner 350kg: PP Jumbo bag with PE inner liner	Tile adhesives, EIFS/ETICS, Plasters & Renders, Ceramic & Cement extrusion, Joint compounds, Paints & Coatings	
		HPMC		9004-65-3				
		HEMC		9032-42-4				
	HECELLOSE®	HEC		9004-62-0		25kg: Paper bag with PE inner liner 450kg: PP Jumbo bag with PE inner liner	Paints & Coatings, Personal care, Joint compounds, Oil field, Emulsion polymerization, Detergents, Construction applications	
		HPMC		9004-65-3			Film coating, Binder, Sustained release, Formulation, Capsule making	
	AnyCoat®	HPMC-P		9050-31-1		20kg, 25kg: Fiber drum with PE double inner bag	Enteric coating, Solid dispersion	Kosher, ISO 9001
		HPMC-AS		71138-97-1				
AnyAddy®	MC		9004-67-5	20kg, 25kg: Fiber drum with PE double inner bag	Foods, Dietary supplements	Certificate: FSSC22000 (GFSI)		
	HPMC		9004-65-3					
Ammonia Derivatives	Monomethylamine	MMA	CH ₃ NH ₂	74-89-5	Colorless liquid, 40% min.	170Kgs Steel drum, 20MT ISO-Tank	Pharmaceuticals, Alkylalkanolamines (MDEA), Soil fumigant, Pesticide	
		DMA	(CH ₃) ₂ NH	124-40-3	Colorless liquid, 50%, 60% min. gas, 99.8%	160Kgs Steel drum, 19MT ISO-Tank	Rubber vulcanization accelerator, Agrochemicals, Surface active agent, Water treatment,	
	Eurox®		(NH ₂) ₂ CO	57-13-6	Colorless urea solution, 32.5% and 40%	10L PET, 200L Drum, 1000L IBC, Bulk vessel	Selective catalytic reduction (De-Nox) in diesel engine (32.5% for automobile, 40% for industry)	
	Ammonia		NH ₃	67-56-1	Colorless liquid, 99.5% min.	Tank lorry, Pipe	Urea, Caprolactam, Acrylonitrile, Hydrazine	
	Tetramethyl Ammonium Chloride	TMAC	(CH ₃) ₄ NCl	75-57-0	Colorless solution, 58% min.	20MT ISO-Tank	TMAH raw material, Oil & Gas industry	
Tetramethyl Ammonium Hydroxide	TMAH	(CH ₃) ₄ NOH	75-59-2	Colorless solution, 20% or 24.9% min.	190Kgs PE drum, 20MT ISO-Tank, Tank lorry	Photoresist development, Anisotropic etchant		

Membership

Korea Institute Chemical Engineers	Korea Listed Companies Association	Ulsan Chamber of Commerce and Industry
Korea Specialty Chemical Industry Association	Korea Customs Logistics Association	Ulsan Civil Defense Working Council
Korea Chemicals Management Association	Korea International Trade Association	Green Company Council
Korea Pharmaceutical Traders Association	Korea Management Association	Ulsan Yecheon Safety Association
Korea Industrial Technology Association	Korea Fire Safety Association	Ulsan Shipper Logistics Council
Korea Hydrogen Industry Association	National Emergency Plan Association	Ulsan Industrial Security Council
Korea Responsible Care Council	Southern Fire Safety Promotion Council	Ulsan Prosecutor's Office Environmental Protection Association
Korea Electric Engineers Association	Korea Association of Occupational Health Nurses	Ulsan Environmental Engineering Association
The Federation of Korean Industries	Korea Fair Competition Federation	Ulsan Safety Communication Committee
Korea Chlor Alkali Industry Association	Incheon Environmental Volunteer Association	Korea Health Supplements Association
Korean Nurses Association	Incheon Environmental Engineering Association	Korea Gas Safety Corporation Information Member
Ulsan Electric Association		

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